# Picture-Book Reading in Mother-Infant Dyads Belonging to Two Subgroups in Israel

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NINIO, ANAT. *Picture-Book Reading in Mother-Infant Dyads Belonging to Two Subgroups in Israel.* CHILD DEVELOPMENT, 1980, **51**, 587–590. This study investigated vocabulary acquisition in the context of joint picture-book reading in mother-infant dyads belonging to 2 social classes. 20 middle-class and 20 lower-class dyads were observed, the infants ranging in age between 17 and 22 months. In both groups interaction focused on the eliciting or the provision of labeling information. The most frequent formats consisted of cycles headed by "What's that?" questions, by "Where is X?" questions, and by labeling statements emitted by the mother. Cluster analysis revealed that these formats and other measures of input language fell into 3 groups, each apparently representing a different dyadic interaction style. In the high-SES group, each style was associated with the size of a different vocabulary in the infant: productive, comprehension, and imitative vocabularies. In the low-SES group, the proportion of maternal "what" questions was correlated with the infant's level, whereas "where" questions and labeling statements were not adjusted to the infant's level. Low-SES mothers talked less and provided less varied labels for actions and attributes. They asked less "what" questions and more "where" questions. High-SES infants had a bigger productive vocabulary, and low-SES infants had a bigger imitative vocabulary. The rate of development was slower in the low-SES group, as evidenced by lower correlations with the age of the infant.

The Israeli population contains two major subgroups which differ in their socioeconomic status as well as in their ethnicity. The Oriental Jews, originating from Asian and North African countries, are on the average of lower education and hold lower-level occupations than Jews originating from Europe and North America.

Children from lower-class, Oriental families exhibit an intellectual deficit, which is well established by 4 years (Lieblich, Ninio, & Kugelmass 1972). This study attempts to trace some antecedents of this deficit in the second year of life. It is widely believed today that one major source of class-related intellectual deficit is impoverished mother-infant interaction, in particular in its linguistic components (e.g., Tulkin & Kagan 1972). Certainly the evidence is strong that in Western societies lower-class mother-infant dyads engage less in talking than middle-class dyads (e.g., Wooton 1974). Observers of new immigrant families from Asia and North Africa in Israel have also described them as having very little verbal interaction with infants (Feitelson 1954; Goshen-Gottstein 1975; Kohls 1956; Weintraub & Shapiro 1968). Apart from this suggestion, which has not been documented yet by systematic research, very little is known about mother-infant interaction in the African-Asian lower class, although children from this background comprise about 60% of all the child population in Israel.

Previous research on class differences in the interaction patterns of mother-infant dyads (e.g., Snow, Arlman-Rupp, Hassings, Jobse, Joosten, & Vorster 1976) does not provide a good starting point for the exploration of this population. This body of research tended to focus on the linguistic analysis of maternal input language rather than on describing the actual content of interaction.

The present study looks for possible class differences in dyadic interaction in the context of joint picture-book reading. This activity belongs to a family of interactions vis-à-vis representational materials which are considered by some to be of major importance for language acquisition (e.g., Werner & Kaplan 1963).

Ninio and Bruner (1978) described joint picture-book reading in a single middle-class

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dyad over a span of 10 months. Maternal behaviors within this context were aimed either at imparting labeling information or, more frequently, at eliciting active behaviors from the infant by means of "What's that?" questions. Any active behavior was accepted as an attempt at labeling, with the mother immediately substituting the adult label for the infant's nonverbal or nonstandard communications.

The present study investigated the book-reading behavior of 40 mother-infant dyads, half of high SES and of European origin, half of low SES and of Asian and North African origin. The SES was measured by a score representing the father's educational level and occupational status (Lieblich et al. 1972). Mean SES scores were 6.20 for the low-SES group (SD = .77) and 11.70 for the high-SES group (SD = .66), the difference significant, $t(38) = 7.43 > 2.42$, $p < .01$. The infants were Jewish, firstborn, 10 males and 10 females in each status group. They were 17–22 months old (in the high-SES group, mean age = 19.3 months, SD = 1.8; in the low-SES group, mean = 19.8, SD = 1.7).

Each dyad was observed once at home. The mother was provided with two picture books and asked "to look at the books" with her infant. After finishing with these, a third book was provided, and the mothers were asked to elicit from the infants a demonstration of "all the words he knows which are shown in the book." Three measures of "book-reading vocabulary" were obtained this way: the productive, the imitative, and the comprehension vocabularies, which were measured by the number of different words the children produced, imitated, or pointed to.

The sessions were recorded by audiotape and also by hand. The records were transcribed according to the framework of Ninio and Bruner (1978), including the content of verbal utterances as well as several nonverbal behaviors, such as vocalizations, smiles, gestures at the book, and the direction of child's gaze. Transcripts were prepared by one experimenter. Further analysis was done by two independent coders. Intercoder reliability ranged between 85% and 100% for different variables, with a mean of 96%.

The book-reading interaction of the first two books was analyzed into interaction cycles, each focusing on a different picture. Content analysis revealed the existence of three recurring formats, consisting of cycles headed by maternal "What's that?" questions, "Where is X?" questions, and labeling statements. These headings were usually followed by the child's response—verbal, gestural, or echoic—to which the mother provided positive or negative feedback. "What" questions started a mean of 48% of all maternal cycles in the high-SES group, and 35.7% in the low-SES group. The SES difference was significant (tested by a partial correlation with SES, with the age of the infant controlled, $r = .31$, $p < .05$). "Where" questions started a mean of 6.7% of cycles in the high-SES group versus 15.5% in the low-SES group, $r = -.32$, $p < .05$. Labeling cycles occurred equally frequently in both groups (37.1% and 38.8%).

There were no SES differences in the structural aspects of the book-reading dialogue, such as turn taking, or the length of interaction cycles. Mothers in both groups initiated most cycles and participated actively in nearly all of them. There were no differences in the quantity, positiveness, or informativeness of feedback. However, high-SES mothers emitted, on the average, 20% more words and 30% more utterances than low-SES mothers, $r = .28, .27$, both $p$'s $< .05$. Although similar class differences in the quantity of talk have been observed in other societies, this pattern in the Israeli low-SES group is probably influenced by traditional Oriental-Jewish child-rearing practices.

Low-SES mothers used a relatively meager vocabulary to describe the pictures. They pointed out and taught the names of 17% less objects, 24% less actions, and 47% less attributes (SES difference significant only for attributes and actions). In this they proved themselves to be adequate teachers of a basic nominal vocabulary but less than adequate in providing more advanced language input.

There were no SES differences in the readiness of infants to initiate or to participate in book reading, to emit vocalizations, and to emit well-formed labels in various types of cycles. However, lower-class infants had a smaller productive vocabulary, $r = .30$, $p < .05$, and a bigger imitative vocabulary, $r = -.30$, $p < .05$. In the high-SES group, a median of 75% of all the different words the infants exhibited knowledge of was productive, as compared to only 36.5% in the low-SES group. This reflects a genuine difference in knowledge and not in the tendency to answer questions or the tendency to imitate, since there were no SES differences in the emission of labels in cycles beginning, respectively, with "what" questions and with maternal labels.

The intercorrelational structure of maternal and infant variables was subjected to a cluster analysis (Sattath & Tversky 1977). A good fit was achieved: the proportion of variance accounted for was 87% and 68% in the high- and low-SES groups, respectively.

In both groups, three clusters formed, containing similar variables. These clusters might be best interpreted as representing three different dyadic interaction styles. The first of these focuses on the production of labels by the infant. Labels are elicited by "what" questions, and new information is provided in the form of feedback utterances. Apart from the relevant maternal variables, this cluster also contains all the variables reflecting the infant's readiness to emit active behaviors in general and vocalizations and labels in particular. In other words, the "eliciting style" is used with active infants who frequently emit behavioral responses, which then might be shaped by the mother in the manner of operant conditioning.

The second cluster, including "where" questions, represents an interaction style in which the mother preempts most of the talking and the infant is required merely to indicate comprehension by pointing. The mother imparts information in large quantities, with great variety. Positive feedback tends not to include a label, probably because the label has already been uttered by the mother in her "Where is X?" question, and because the infant tends not to provide a verbal behavior which requires semantic or phonetic modification.

The third cluster represents a style primarily focused on information giving by the mother rather than on information eliciting from the child. The style consists of the tendency to open cycles by a maternal labeling statement and of the mother's emitting many labeling utterances in general. Feedback tends to be positive. The frequency with which the labeling style is employed is negatively correlated in both groups with all measures of infant language development, such as activity level (−.52, −.61); vocalization (−.53, −.22); the probability of a vocalization being a well-formed word (−.37, −.30); emission of labels in cycles initiated by "what" questions (−.32, −.56), by labeling statements (−.54, −.25), or initiated by the child (−.40, −.20). Labeling statements, then, represent the mother's way of coping with an essentially incompetent, nonparticipatory infant.

In the high-SES group, each interaction style was associated with a related vocabulary size: the label-eliciting style with productive vocabulary, the gesture-eliciting style with comprehension vocabulary, and the labeling style with imitative vocabulary. This implies that in high-SES dyads the frequency of the various styles is finely adjusted to the specific benefit the infant gets out of playing the games. In the low-SES group, all three vocabulary-size variables fell into the label-eliciting cluster, implying a lack of fine adjustment.

Although low-SES infants as well as high-SES ones tended more to emit labels when asked for them, that is, in cycles beginning with a "what" question (with a .80 and .74 probability), and less in cycles beginning with maternal labels (.20 and .30) or with "where" questions (.18 and .02), low-SES mothers initiated a lower proportion of cycles with "what" questions than high-SES mothers. In other words, low-SES mothers were less skilled in eliciting words from their infants. This might account, in part, for the relatively fewer productive items in their infants' vocabulary. It is not unreasonable to suggest that this deficit is a forerunner of the pronounced linguistic and intellectual deficit of this group at 3–4 years of age.

Despite the limited age range of the sample, all infant variables were positively correlated with age. However, the correlations were consistently higher (and only significant) in the high-SES group. This probably indicates that in the 17–22-month age range, the rate of development is slower in the low-SES group. Regarding maternal variables, the same pattern emerges. Whereas in the high-SES group there is a significant increase with age in the behaviors making up the "eliciting style," no such age trends occur in the low-SES group. For the low-SES mothers, this is definitely not a period for increased activation, informativeness, or for the provision of more difficult information.

In conclusion, low-SES mothers might be thought of as adequate teachers of vocabulary for their infants' present level of development, but their teaching style is not future oriented, not sensitive to changes in the infant's needs and capabilities, and therefore probably inadequate for the enhancing of rapid progression to more complex levels of language use. Already, their lack of skill in eliciting active labeling from their infants has probably resulted in the latter having a less firmly established productive vocabulary than high-SES infants of the same age.

These results open a number of directions along which intervention programs aimed at the low-SES population might be developed.

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