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American Parenting of Language-Learning Children: Persisting Differences in Family–Child Interactions Observed in Natural Home Environments

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Forty families were selected to represent the range of typical American families in size, race, and socioeconomic status. In data from 2½ years of once-monthly, hour-long observations of unstructured parent–child interactions in the home, parenting was examined over 27 months, including the time before, during, and after all the children learned to talk. Ten parent measures suggested by the literature all showed stability in expression within families across time but large differences among the 40 families. The 10 parenting variables clustered into 3 factors relating to (a) the absolute amount of parenting per hour, (b) parents' social interaction with their children, and (c) the contentive quality of the utterances parents addressed to their children. The amount of parenting per hour and the quality of the verbal content associated with that parenting were strongly related to the social and economic status of the family and the subsequent IQ of the child.

Child outcomes in terms of language and IQ scores are a product of the cumulative interactions between individual differences in ability and the kinds of learning opportunities different environments provide (Horowitz & O'Brien, 1989). The kinds of learning opportunities a family provides a child depend on the sociocultural organization of the home and what parents are trying to accomplish through interaction with the child (Durkin, 1987; Heath, 1989). Efforts to understand the relationships between child outcomes and differences in learning environments have focused on two aspects in particular (Wells, 1986): (a) the relationship between the quality of parent–child interactions and children's language development and (b) the relationship between home environment and cognitive development. Linking these two areas is research on child-rearing practices (McNally, Eisenberg, & Harris, 1991), which influence both the environments parents arrange for their children and how they respond as their children interact with those environments. Parent–child interactions, the organization of the home environment, and child-rearing practices come together in the construct, parenting.

The research on parent–child interactions contains numerous descriptions of language features ("motherese," semantic matching, and recasts; Rice, 1989; Snow, 1986) and contexts (book reading and games; Murphy, 1978; Ratner & Bruner, 1978) associated with optimal language development. The actual content of parent's speech to children, however, has hardly been examined (Gleason, 1988). Although the contribution of parental input to language acquisition remains to be ascertained (Shatz, 1982), there is increasing evidence that the amount of parent speech is related to children's vocabulary growth (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). The amount that individual parents talk to their children appears to remain fairly stable both before and during the time their children are learning to use words (Cohen & Beckwith, 1976; Nelson & Bonvillian, 1973). Amount of parental talk also tends to be associated with demographic and cultural characteristics. Relatively uneducated and economically disadvantaged parents tend to talk to their children less than do higher socioeconomic status (SES) parents (Gottfried, 1984; Heath, 1989); cultural norms influence what kind of and how much talking with children is socially acceptable (Fajardo & Freedman, 1981; Schieffelin & Ochs, 1983).

In the research on home environments, optimal cognitive outcomes have been associated with home environments that offer a child many and varied opportunities to learn through interaction with caring adults and age-appropriate materials (Gottfried, 1984). Measures of home environments such as the Home Observation for Measurement of the Environment (HOME) Inventory (Bradley & Caldwell, 1984) incorporate items that address the nature of parent–child interactions in conjunction with parental provision of play materials and variety in daily stimulation. Aspects of parent–child interaction are similarly integrated in measures of social environments such as the Purdue Home Stimulation Inventory (PHSI; Wachs, 1984).

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In Gottfried's (1984) meta-analysis of the longitudinal research on home environments, one factor highly and consistently correlated with child outcomes at age 3 was maternal involvement with the child. The aspects of parenting measured in this factor address the extent to which the parent encourages development by structuring and attending to the child's play with toys that engage the child in exploring new skills.

In research on child-rearing practices, favorable social outcomes have been associated with child rearing that is attentive to the child's changing capacities, tries to promote understanding of family rules rather than unthinking obedience, and is patient and persistent in gaining the child's compliance with expectations (Greenberger & Goldberg, 1989). A vast diversity of measures has been used to describe socialization practices (Lytton & Romney, 1991), and a number of instruments have been designed to assess parental attitudes and behavior (McNally et al., 1991). Greenberger and Goldberg (1989) have shown that for 3- to 4-year-old children, differences in parental investment in child rearing, rather than whether parents were working outside the home, were most highly associated with differences in styles of socialization and how parents perceived their children's behavior. How parents perceive their children's behavior depends in part on the social norms for appropriate behavior they want the child to approximate, but authoritarian parents were found to view their children's behavior less positively. Authoritarian use of negative control was associated with increased defiance on the part of the child in the study by Crockenberg and Litman (1990); with time a defiant 2-year-old may become increasingly antisocial (Patterson, DeBaryshe, & Ramsey, 1989) and be presented ever fewer opportunities to learn prosocial behaviors through talking with a parent.

Integrating parent–child interaction, organization of the home environment, and child-rearing practices requires observational data (Gleason, 1988; Miller, 1987) that reflect not what parents can do in controlled settings when given appropriate opportunities and materials but rather what they actually do on a daily basis in the home (Belsky, Gilstrap, & Rovine, 1984). We need "real data on what happens in many different households" (Gleason, 1988, p. 277) concerning how parents behave with their children and how stable family parenting practices are over time. We need to know which behaviors differ across families in amount and quality and how important to child development those differences are.

The present article reports data from a longitudinal observational study undertaken to investigate how children learn to talk through casual social interactions at home. After 2½ years of observing parents' everyday interactions with their children, we had an immense corpus of data on both children's language productions and on the varied language–parenting environments in which the children had learned to talk. The first question we needed to address was which of the many aspects of parenting were sufficiently and stably different among these normal American families to be of likely actual importance to individual differences in child development. The second question was to determine how these important aspects of parenting individually and in combination were related to the prior status of the families and subsequent outcomes of their children at age 3.

Method

Subjects

The subjects were 40 families recruited not as a random sample but to represent the range of typical American families in size, race, and socioeconomic status. All but 8 of the families were intact. At the end of the study when the children were 3 years old, the average family annual income was $28,000 (range = $4,000–$68,000). The median age of the mothers was 31 (range = 21–41 years) and of the fathers, 34 (range = 24–49 years). Median years of education for mothers was 13 (range = 11–18 years) and for fathers, 14 (range = 11–24 years). Socioeconomic index scores were assigned from Stevens and Cho (1985). One score was assigned per family: the higher of the two occupation scores in the 20 families in which both parents were employed. The Stevens and Cho occupation scores, based on the 1980 census for the total labor force, range from 13.98 to 90.45. The range across the 34 employed families was from 17.6 to 88.3 ($M = 43.6$, $SD = 25.1$); a score of 10.0 was added for the 6 families who were on welfare.

Fifteen of the children were Black (6 boys and 9 girls) and 25 were White (12 boys and 13 girls).[1] All of the children's first language was English. The children had a median of two siblings (range = 0–5); in 15 families another child was born during the period of the study. Average child age at the first observation was 9 months (range = 7–12 months). Observation ended when each child was 36 months old. An average of 28 months of observation (range = 25–32 months) was collected in each family. Within a month of the end of the study, each child was administered the Stanford-Binet IQ test by a professional psychologist unconnected to the research.

Families were recruited primarily through birth announcements, although friends and local agencies were also used as sources. Each family was given or sent a brief description of the goals and methods of the research. Then parents were contacted after a week or so to see if they were interested. Because it was crucial that families remain in the area over the period of the study, birth announcements were set aside for families who lived in apartments or trailer courts; then local City Directories were checked, and families were selected who owned their homes and had telephones. Priority was then given to mailing so as to maintain a balance in occupations represented and in sex of the child.

We scheduled an interview in the home of each family who indicated interest in the research. Two potential observers visited the home. First they described the study in detail and solicited and answered questions; then they reviewed the consent form and, after it was signed, scheduled the first observation. All of the families interviewed agreed to participate in the research. Each observation was scheduled at the parent's convenience; $5 was paid on each occasion. Initially 55 families were enrolled; 10 were dropped during the 1st year of the study either because they moved out of the city or because they could not be contacted to schedule an observation. The data from 5 families are not included in the present report because they lacked two observations from the full 2-year sequence.

Procedure

Observation. Because the goal of the study was to observe unstructured, naturally occurring interactions, both the letter sent to families and the initial interview emphasized that parents should do "what they usually do with the child" on a normal day. No constraints of any kind were placed on families concerning their activities, staying with the observed child, or the presence of siblings and visitors. Observers

[1] Black families were represented in upper, middle, and lower socioeconomic strata; when the families were equated for socioeconomic status, there were no significant differences in parenting by race.

never interacted with the children. They remained on the periphery of events and followed the child (with parent permission) if the child left the room the parent was in. Each observation was scheduled for an hour; if, as occasionally happened early in the study, the child went to sleep before at least 45 min of observation was recorded, another time was scheduled within the week to make up the remaining minutes.

During a home observation, the observer carried a tape recorder and a clipboard and used a pretrained set of codes to record continuous notes on the child's activities, who was present and speaking to the child, and nonverbal behaviors such as giving and pointing. Because rapport with the observer was deemed crucial both to maintaining families in the study and to the naturalness of the observations, the same observer recorded in a given home each month. Three observers recorded 90% of the observations; in 10 families, a fourth observer had to be replaced by one of the three within the 1st year of the study.

Because reliability sessions that introduced additional observers into a home were deemed too disruptive of the natural setting, no reliability recordings were made in the family homes. Rather, two families were recruited specifically to provide a setting for reliability assessment. The observers trained in these homes until they had achieved 90% or higher levels of agreement on each of the categories of speaker, turn, and interactional episode. Then every 6 months after regular observations began, the observers returned to one of the two family homes for a reliability observation. Interobserver agreements, calculated on the same categories as used during training, averaged between 86% and 91% on these three occasions.

Transcription. After each observation the observer transcribed the tape recording and placed each utterance at the appropriate point in the sequence of the contextual notes recorded in the home. Then she isolated those events in which the observed child participated and divided the transcript into interactional episodes. An episode was defined as ending whenever no one responded within 5 s of a speaker turn. The next turn to occur was then coded as the initiation of a new episode. Noted for each episode was its activity setting (routine care, book reading, or independent activity) and whether the parent was in the same room as the child. Each utterance and nonverbal behavior was assigned to a speaker (parent, child, other adult, or other child) and an adjacency condition (initiation, response, or continue to hold the floor).

Transcription reliability was assessed in two ways. First, a second observer transcribed a randomly selected section of 56% of the 1,318 tapes. The independent transcription was matched to the original in terms of speakers, utterances, and episodes. Intertranscriber agreement averaged 95% (range = 77%–100%). Second, 4 transcripts from each family, 2 from the 1st and 2 from the 2nd year of observation, were checked by a second observer against the tapes. The checker counted every word, turn, and episode disagreed with plus every word and turn audible but omitted from the transcript. Agreements on the 761,540 words, episodes, and adjacency conditions in the 180 transcripts averaged 98% (range = 97%–100%).

Coding and data analysis. Each transcript consisting of episodes, as well as utterances and nonverbal behaviors by speaker and adjacency condition, was typed into a computer file. Computer-assisted coding then assigned a part of speech (noun, verb, modifier, or functor) to each word and a code for phrase versus sentence to each utterance, and for sentences, codes for tense, number of clauses, and pragmatic function (declarative; imperative; "who," "what," "when," "where," and "how" questions; and yes/no questions). In addition, we assigned special codes to individual utterances to mark interactional features such as positive and negative feedback; self-repetition; and repetition, expansion, and extension of child utterances.

We assessed the reliability of this coding by recoding a randomly selected observation from half of the families from the final year of observation. The 120,246 utterance and word codes in the 22 recoded files were computer compared with the utterance and word codes in the original files; an average of 96% (range = 82%–98% per family) were identical codes.

Computer processing produced for each speaker by observation frequency counts of interactional and syntactic codes, of episodes and turns by activity setting, of total words recorded (tokens), and of words added to the cumulative dictionary of different words recorded (types).

Measures of Parenting

To aid in identifying attributes that would adequately characterize parenting as it relates to language interactions during the time children are learning to talk, we first chose aspects of parent behavior reported in the literature to be associated with child language and intellectual outcomes. Second, we defined these aspects in terms of measures collected in the longitudinal study and reduced the number of variables to 10.

Because the HOME Inventory (Bradley & Caldwell, 1984) defines aspects of parenting that have been represented in most subsequent studies of home environments (see Gottfried, 1984), items from this inventory were the source of variables indicating aspects of the home environment that set the occasion and influence the likelihood that a parent and child will engage in talk.

1. Chosen from Maternal Involvement with the Child was the extent to which the parent tends to keep the child in visual range. As a basis for talking about the child's activity, the parent needs to be able to see what the child is doing. Also, the tendency of parent and child to stay in proximity can be indicative of the child's activity level (Gandour, 1989; i.e., need for monitoring), attachment (Bretherton & Waters, 1985), and sociability (Breitmayer & Ramey, 1986), all of which influence the kinds of interactions that occur.

Present. This variable was measured in the longitudinal data as the percentage of the child's activity episodes that occurred in the presence of the parent (in the same room). A child activity episode was defined by the initiation of interaction by or with the child after at least 5 s of noninteraction. The initiator could be the child, parent, another child, or another adult; if children were alone, they could initiate interaction by talking to toys in episodes of pretending. Episodes in which the activity constrained the parent's proximity, such as routine care (feeding or dressing) and book reading, were not included.

2. Also chosen from Maternal Involvement with the Child was the extent to which the parent talks to the child while doing other work. When a busy parent pauses momentarily to interact with the child, the parent conveys both positive attention and receptivity to talk on the part of the child. The parent may comment on what the child is doing in a brief talk up (O'Brien, Porterfield, Herbert-Jackson, & Risley, 1979) or communicate with the child merely by giving a toy or wiping the child's nose.

Joins in the child's activity. This variable was measured in the longitudinal data as the percentage of child activity episodes in which the parent took a turn.

3. Chosen from Emotional and Verbal Responsivity was the extent to which the parent responds to the child's vocalizations. The parent's verbal response when the child tries to communicate—like the initiation of a passing comment on the child's play—conveys positive attention, receptivity, and interest in interacting about what the child is doing. After that, a parent's response to a child-initiated topic can become an occasion for incidental teaching, from which children have been shown to benefit cognitively (White, 1985) and in terms of language use (Hart & Risley, 1980).

Responds to child initiations. This variable was measured in the longitudinal data as the percentage of the child's initiations the parent responded to.

4. Chosen from Avoidance of Restriction and Punishment was the

extent to which the parent intervenes to restrict or correct what the child is doing. Parental restriction is an important indicator of how age appropriate the materials and activities provided to the child are. Parents who provide age-appropriate materials have fewer occasions to prohibit inappropriate behavior and can more readily redirect the child by enhancing the attractiveness of an alternative activity. Attractive materials provide parent and child a shared focus for talk in which the parent can encourage exploration rather than restrict, correct, or criticize what the child is doing.

Prohibitions. This variable was measured in the longitudinal data as the percentage of parent utterances that were imperatives directing the child to "stop," "quit," or "don't" (do that).

The parent's presence, interest, responsiveness, and restrictiveness influence how the parent talks to the child and thus influence the forms of language the child is exposed to (Durkin, 1987). Language used in the service of socializing the child—whether to behavioral, moral, or academic norms—is likely to be characterized by parental adaptations to ensure the effectiveness of communication and thus the probability that an immature speaker will understand and respond. These are the adaptations described in the language interaction literature as "motherese" (Rice, 1989).

We chose four variables from the language interaction literature to characterize aspects of parenting related to adaptations that enhance communication effectiveness, provide models and feedback to the child, and prompt behavior from the child. The basic definitions of these much-studied aspects (see Schumaker & Sherman, 1978) are given in Nelson (1973).

5. The difference between the length (in morphemes) of the parent's utterances and the child's was chosen as an indicator of the extent of parental adaptation to the child's level of comprehension. Parents are seen to gradually increase the length of their utterances to the child in step with the child's increasing utterance length (Nelson, 1973), presumably adjusting what they talk about with the child to signs of the child's increased understanding and readiness for more complex kinds of information. Matching to the child's level of comprehension ensures the effectiveness of immediate communication. Maintaining an utterance length slightly longer than the child's serves to challenge the child to increased understanding (Snow, 1986).

Mean length of utterance (MLU) distance. This variable was measured in the longitudinal data as the average number of morphemes between the parent's utterance length and the child's. Brown's (1973) rules were used to calculate parent and child MLU for each observation. To remove any effects of talkativeness, we calculated MLU for 100 consecutive intelligible utterances (or all utterances if less than 100), beginning after the second interactional episode or 10 child utterances, whichever came first. The difference between parent and child MLU was derived for each observation with nonzero child utterances and then averaged across all observations.

6. The number of different words addressed to the child was chosen to indicate the extent of parental modeling, exposing the child to different words and their meanings. The variety of topics parents talk about during interactions is related to the variety of materials and activities parents arrange for their children's notice. Parents provide educational toys and take their children on outings in part so that they can talk with the child and use the context for exposing the child to new words and concepts. Nelson (1973), for instance, found more parental education positively associated with more frequent object naming, more frequent trips away from home, and less TV watching.

Different words. This variable was measured in the longitudinal data as the average number of a parent's different words per observation. Because of limits on computer memory related to the corpus as a whole, words that could not generalize across families (proper nouns and private words) and onomatopoetic words such as animal sounds were not included in the count of different words.

7. Repetitions, expansions, and extensions of child utterances were chosen to indicate the extent of parental positive feedback to the child's utterances. When a parent responds by reflecting back what the child just said, the parent effectively recognizes the current importance of the child's contribution to the conversation. Repetition confirms the parent's understanding of what the child said during the time when so much of the child's speech is marginally comprehensible (Ryan, 1974) and provides an entry to correcting any misunderstandings the child may have concerning the meaning of a word (Dromi, 1990). Parental repetitions, expansions, and extensions both encourage the child to repeat after the parent and model more mature utterance forms for the child (Speidel & Nelson, 1989).

Repeats. This variable was measured in the longitudinal data as the percentage of parent utterances that were repetitions, expansions, or extensions of an immediately preceding child utterance. Repetitions included all the content of the child's utterance; in addition to repeating the content of the immediately preceding child utterance, expansions and extensions added content to it either within (as a deleted copula) or around the child's utterance.

8. Questions were chosen to indicate the extent that parents prompt the child to take a turn. Parental questions play an important role in keeping interaction going; long before children are talking, parents ask frequent questions that they answer themselves, taking the child's turn so as to maintain interaction (Schaffer, 1977). Parents use questions to learn about the child's current understandings and readiness for new information. Importantly for socialization, questions ask the child to display knowledge and skills that prepare the child for performance in classroom and test situations and for sharing in discussions of societal rules and expectations.

Questions. This variable was measured in the longitudinal data as the percentage of parent utterances that were questions.

One aspect of parenting relates to how often the parent is with the child and the extent to which the parent avoids undue restriction of the child's activities while displaying interest in what the child is doing through casual comments and responsiveness to the child's initiations. A second aspect of parenting relates to how the parent talks with the child, as well as the extent to which the parent models, prompts, and provides feedback, adjusting what is said to the child's current skill level. A third aspect of parenting links these two aspects in terms of family-typical child-rearing practices: how much time and talk parents expend in socializing their children and how much talking they expect their children to do. Culture is a primary determinant of child-rearing practices (Heath, 1989; Whiting & Whiting, 1975) that manifest in how homes are arranged, what restrictions are placed on children's activities, and the extent that parents adapt to children's developmental needs (Schieffelin & Ochs, 1983).

To link the aspects of the home environment that set the occasion for language interaction with the ways parents talk with their children during interactions, we chose two variables from items in the Child-Rearing Practices Report (see McNally et al., 1991).

9. Chosen from Rational Guidance were items indicative of the amount of talking a parent customarily does. Reasoning with the child, explaining rules and expectations, and letting the child know how the parent feels about the child's behavior can entail a lot of parent talk that exposes the child to a great variety of different words and concepts. Frequent parental talk is associated with an authoritative parenting style and its favorable child outcomes (Crockenberg & Litman, 1990) and with higher SES and more maternal involvement with the child (Gottfried, 1984).

Words. This variable—the amount of talking parents do—was measured in the longitudinal data as the average number of words the parent addressed to the child per hour.

10. Chosen from Control were items indicative of the extent to which the parent encourages the child to respond to parental talk, to

question rules and explanations, to be curious, and to ask for reasons. When a parent encourages a child to participate in rational guidance, for instance, the parent both displays respect for the child's opinions and prepares the child for self-control. In everyday conversation, when parents make their turns at talk contingent on the child taking a turn, they provide children an opportunity to learn about shared power and the control of environmental events (Finkelstein & Ramey, 1977).

Turns. This variable was measured in the longitudinal data as the average number of parent behavioral turns in parent–child activity episodes. Virtually always, the more turns the child took during interaction, the more behaviors were recorded on the part of the parent. A behavior could be nonverbal communication, but almost every parent nonverbal behavior was accompanied by an utterance. Each utterance was counted as a separate behavioral turn.

Each of the 10 measures of parenting was examined to determine (a) how greatly it varied across this sample of American families, and (b) how this variation related to status variables of child gender and birth order, family size and socioeconomic status, and the child's IQ at 36 months. Each parenting measure for each family was averaged across 27 hr-long sequential home observations from the target child's 10th to 36th month of age; during these months all of the 40 children learned to talk. To examine stability across time, we also averaged each measure across each child's observations from 10 to 18 months, 19 to 27 months, and 28 to 36 months (before, during, and after the time of greatest change in talking for most of the children). To examine relationships between variables, we transformed each to a z score. Product-moment correlations were run between the parenting measures averaged for each family. The measure of SES was the family occupation score derived from Stevens and Cho (1985).

Results and Discussion

Amount and Variation of Parenting Across Families

An examination of the ranges and standard deviations in Table 1 reveals that parents differed greatly from one another on each of the parenting measures. On measures of the home environment, most parents stayed with their children and joined in their children's activities almost all the time, but some participated in less than half of their children's activities. Although many parents responded to most of their children's initiations, some responded to less than half. Most parents used few or even no discouraging words with their children, but for others, up to one out of every five parent utterances were to prohibit something the child was doing.

On measures of language interaction, parent utterances averaged about 2½ morphemes longer than the child's, with some parents only slightly exceeding the child's utterance length and others exceeding it by over 4 morphemes on average. Language exposure varied almost fivefold across parents, from less than 100 different vocabulary words addressed to the child in an average hour to almost 500/hr. Although the proportion of repetitions, expansions, and extensions was low for all families, there was still a fivefold difference across families in the proportion of parent utterances that contained these "active listening" features. Almost a third of parent utterances to children were questions, with variation across families from less than 20% to almost 50% of parent utterances.

Measures of child-rearing practices showed the greatest variation across families. Although all parents talked to their children, the amount of talking showed a seventeenfold difference from just over 200 words addressed to the child per hour in one family to almost 4,000 words in another. Similarly, the amount of parent participation in each episode of parent–child interaction varied from an average of less than 2 parent turns per episode in one family to over 17 per episode in another.

Parenting Over Time

Table 1 also shows for each of the three time periods the mean and standard deviation for each of the 10 variables and the correlation of each variable with itself across the time periods. The high correlations indicate that families maintained the same position in relation to one another over time on all the parenting variables except *responds* and *repeats,* even as overall amounts of some parent variables changed. The means across time periods indicate that after the children began to talk and to gain skill in prompting and sustaining interaction, there was a general tendency for parents to be more responsive to the children's initiations, to talk to their children more, and to take more turns during interactions. What did not change markedly in parenting style over time was the percentage of parent utterances that were questions or prohibitions.

Relation of Parenting Variables to Status and IQ

As can be seen in Table 2, both family size and birth order were significantly, negatively correlated with the *present* and *joins* variables. Family size was also significantly, negatively related to the number of parent turns, words, and different words. Youngest children in large families did appear to be given a lesser share of parent time and attention, but there are no significant relationships seen between family size or birth order and IQ and the other parenting variables. Further examinations of the data will evaluate the extent to which the decreased amount of time and talk devoted to younger children in large families is compensated for by interaction with siblings.

No significant correlation is seen between child gender and SES, IQ, or any of the measures of parenting. This contrasts to frequent reports of a relationship between child gender and parent behaviors such as amount of parent talk (Wells, 1986). In the present sample, as it turned out, the two most talkative parents were mothers of boys.

Of all the measures of parenting, only two were not significantly correlated with family SES: the frequency of parent response to child initiations and the distance between parent and child MLU. The MLU distance variable is of additional interest in that a relatively longer distance between parent and child MLU is correlated not only with more parent words but with more different words addressed to the child. Further examinations of the data are planned to evaluate the extent to which positive child outcomes are associated with a speech style that, rather than simplifying to match the child's utterance length, maintains the integrity and complexity of adult speech.

Also interesting is the highly significant relationship between IQ and prohibitions. The variable *prohibitions* was chosen from the subscale of the HOME Inventory (Bradley & Caldwell, 1984), Avoidance of Restriction and Punishment; this subscale consistently accounted for the least amount of variance in cognitive development in Gottfried's (1984) meta-analysis.

Table 1
Means, Ranges, Standard Deviations, and Correlation Coefficients for Measures of Parent Behavior Observed in 40 Families

	Time period: Child age (in months)											
	Time 1–3: 10–36			Time 1: 10–18		Time 2: 19–27		Time 3: 28–36		Correlation across periods		
Parenting variables	Low–high	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	1–2	2–3	1–3
Present in same room as activity (% child episodes)	38–99	80	14	85	13	82	16	73	18	.62	.70	.72
Joins in activity (% child episodes)	47–100	82	14	87	13	84	15	76	18	.77	.76	.69
Responds to initiations (% child initiations)	42–77	63	8	54	11	66	11	70	9	.51	.63	.22
Prohibitions (% parent utterances to child)	0–20	4	4	4	4	4	4	4	3	.88	.73	.83
MLU distance (parent MLU minus child MLU)	1.3–4.1	2.4	0.6	2.7	0.7	2.5	0.7	2.0	0.7	.71	.75	.52
Different words said to child (no. per hr)	92–476	281	110	243	97	305	113	296	136	.87	.90	.78
Repeats, expands, extends child utterances (% parent utterances to child)	1–5	3	1	1	1	4	2	3	2	.34	.41	−.14
Questions (% parent utterances to child)	17–45	30	7	29	8	30	8	31	7	.69	.70	.53
Words said to child (no. per hr)	232–3,606	1,461	858	1,275	773	1,634	908	1,473	1,012	.92	.90	.80
Parent turns in interactions (*M* no. per parent episode)	1.8–17.4	5.3	3.5	4.3	2.1	5.6	3.4	6.0	5.4	.89	.93	.79

Note. MLU = mean length of utterance in morphemes.

Table 2
Correlations Between Parenting Variables and Family and Child Status Variables Averaged Across Child Ages 10–36 Months

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Amount															
1. Present	—														
2. Joins	−.89***	—													
3. Words	.64***	.72***	—												
4. Different words	.68***	.76***	.96***	—											
Interactive															
5. Responds	.16	.04	.45**	.40*	—										
6. Turns	.39*	.47**	.85***	.76***	.40*	—									
7. MLU distance	.03	.13	.42**	.42**	.15	.22	—								
Quality															
8. Repeats	.34*	.34*	.38*	.43**	.20	.38*	.06	—							
9. Questions	.28	.29	.33*	.42**	−.04	.17	.26	.43**	—						
10. Prohibitions	−.19	−.23	−.50***	−.57***	−.32	−.37*	−.23	−.43**	−.57***	—					
Status															
11. Gender	−.27	−.24	−.18	−.13	.01	−.10	−.09	.00	.09	−.09	—				
12. Birth order	−.53***	−.48**	−.23	−.26	−.21	−.01	−.13	.00	.10	−.13	.08	—			
13. Family size	−.58***	−.70***	−.35*	−.36*	.14	−.33*	−.12	−.26	−.15	.02	.32	.25	—		
14. SES	.37*	.47**	.57***	.63***	.17	.43**	.22	.39*	.36*	−.61***	.00	−.02	−.22	—	
15. Child IQ	.33*	.33*	.39*	.51***	.04	.21	.31	.33*	.54***	−.55***	−.11	−.04	−.08	.55***	—

Note. MLU = mean length of utterance in morphemes; SES = socioeconomic status.
* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Interrelationships Among Parenting Variables

The interrelationships among the 10 parenting variables are diverse (see Table 2). Some pairs of variables (such as *present* and *joins,* or *different words* and *words*) were not only highly correlated with each other but also showed an almost identical pattern of correlation with the other 8 parenting variables. Other pairs that were highly correlated (such as *words* and *turns,* or *different words* and *joins*) showed different patterns of association with the other parenting variables. Some variables showed unique patterns of strong and weak associations with other parenting variables, such as *prohibitions* or *questions.*

Therefore, a principal-components analysis was used to integrate the 10 parenting variables into three factors. The analysis used the 10- to 36-month average for each variable for each family; in the following, the factor loading of each variable is noted in parentheses. The first factor had strong positive loadings on the variables *present* (.92), *joins* (.94), *words* (.70), and *different words* (.71). The second factor had strong positive loadings on *responds* (.76), *turns* (.63), and *MLU distance* (.60). The third factor had strong positive loadings on *repeats* (.64) and *questions* (.89) and strong negative loading on *prohibitions* (−.75). The variables have been reordered in Table 2 to reflect these clusters.

To examine the relationship between child IQ outcome measures and the three factors derived from the analysis, we ran a stepwise multiple regression analysis with forced entry. The *z* scores for the variables within each factor were summed (with *prohibitions* summed as the positive percentage of parent utterances that were not prohibitions). When all three factors were in the analysis, the correlation with IQ was highly significant ($r = .63$); the beta weights were .22 for the first factor, $t(3, 36) = 1.74$, $p < .09$; .16 for the second factor, $t(3, 36) = 1.24$, $p < .22$; and .57 for the third factor, $t(3, 36) = 4.42$, $p < .001$.

The variables in the first factor all reflect absolute *amount of parent activity. Present* and *joins* measure how much of the child's active life is overseen and participated in by the parent. *Words* and *different words* are the actual amounts of words and vocabulary addressed to the child in an hour by the parent. As a whole these measures of the amount of parenting per hour in children's lives were strongly associated with the existing SES level of the family. Children of lower SES families received substantially less time and effort from their parents than did children of higher SES parents. These differences in amount of parenting per hour of child life were strongly correlated with subsequent IQ measures of the children.

The variables in the second factor all represent parents' *performance as a social partner* with their children. *Responds* reflects the likelihood that a parent will convert a child initiation into an episode of social interaction by responding to it. *Turns* indicates the length of each episode of social interaction as reflected by the number of turns the parent takes. The length of each parent turn is reflected in parent MLU in relation to the child's MLU. All of these parenting measures are dependent on the child's social behavior: the clarity and frequency of child initiations, the readiness of the child to continue taking reciprocal turns in each episode, and the child's attentiveness to parent utterances. Perhaps because these measures are strongly influenced by the context of social interaction, there is little overall association with the existing SES level of the family. These differences in how parents perform during social interactions with their children (as distinct from amount of social interaction per hour) are only minimally related to subsequent child IQ measures.

The variables in the third factor all reflect the *contentive quality of parents' utterances* whenever they talked to their children. There is a strong negative relationship between parents' propensity to prohibit their children's activities and their propensity to actively listen to their children by repeating, paraphrasing, or extending their children's statements; a similarly strong negative relationship is seen between parents' propensity to prohibit and the likelihood that they will encourage their children to continue talking by asking a question.

The contentive quality of parents' utterances to their children is strongly related to the family's existing SES level. In lower SES families, a substantial portion (up to 20%) of parent utterances to children function to prohibit the children's activities, whereas such discouraging words are rarely or never heard in higher SES families. Instead, children in higher SES families hear many more questions (up to 45% of parent utterances) and more frequent repetitions and elaborations of their own topics (up to 5% of parent utterances). These differences in the contentive quality of parent utterances are all strongly correlated with subsequent child IQ measures.

Because only 37% of parent utterances have been accounted for in the average family (30% *questions,* 3% *repeats,* and 4% *prohibitions*), it is likely that many other dimensions of the contentive quality of parent utterances can be found that are also related to subsequent child IQ (as the percentage that are labels, explanations, or descriptions and instructions related to what the child is doing). However, in the present results, the strong relationship between even low proportions of *prohibitions* and unfavorable child outcomes suggests that prohibitions have a toxic function beyond simply displacing questions and other high quality contentive categories of parent utterances.

Conclusion

To extrapolate these data on amount and variation in parenting to American families in general, one must assume that the times and conditions of these observations were representative of these families' lives together under other circumstances and that these families are representative of American families. We know that neither of these assumptions is precisely true. However, these families were selected from one Midwest city to reflect the range of status variables found in Black and White American families. Observations were made in the family homes, including whatever kith and kin were around, and in the context of whatever events and activities the families were experiencing. In every case parents and children became comfortable in the presence of the neutral interest of their observer. We feel that the frequent and internally reliable observations in these family homes are sufficiently valid representations of these families' parenting and that the families are sufficiently valid representatives of American families, so that the magnitude and variability of these data can be used as first approximations of the typical and the extremes in normal American parenting.

However, in considering these results, it is important to keep in mind that only well-functioning families would permit an observer in their home over an extended period of time. All the parenting displayed to our observers would be considered unremarkable in the larger arena of American society. Furthermore, all of the children in the study learned to talk and displayed a full range of fundamental competencies in learning from their environments. Even so, the most striking feature of these data is the absolute magnitude of the differences between families on most parenting variables. The enormity of the social stratification of the country is shown by the magnitude of the differences in the amount and quality of parenting experienced by children in high and low SES families. The major differences associated with differences in IQ were the extensive amount of time, attention, and talking that higher SES parents invest in their children and their active interest in what their children have to say.

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