

A Reassessment of the Vocabulary Environment of Low-Income American Children



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Abstract

Hart and Risley (1995) demonstrated correlations between maternal vocabulary, child verbal IQ, and family SES. This study replicated the findings using two longitudinal data sets of European American families (3 welfare and 12 working-class). It is desirable to find a simple predictor of school success, such as maternal vocabulary. If social class predicts maternal vocabulary, then the relationship should obtain across data sets, ethnic groups, and data collection approaches, which it does not.

Research Problem

Despite the fact that the gap between literacy achievement of children living in or outside of poverty narrowed significantly by approximately 0.4 percent between 2005 and 2007, the overall gap in achievement between these two groups of children remained at approximately 4 percent (Nation's Report Card-Reading, 2007).

Two Competing Explanations for Why American Children from Low-Income Homes Have Low School Achievement

Verbal IQ Predicted by Mother to Child Vocabulary

Welfare and working-class children suffer in terms of school achievement (The Nation's Report Card: Reading, 2007). The inference suggests that welfare and working-class children may have lower vocabulary exposure, which affects their IQ, which explains their school achievement.

In support of the verbal IQ explanation, Hart and Risley (1995) demonstrated that the frequency and quality of vocabulary spoken by mothers to young children, ages 1-3 years, is greater among those children of a higher socioeconomic status (SES):

- a) middle-class children heard 2,153 words per hour (tokens)
- b) working-class children heard 1,251 words per minute
- c) welfare children, whose families received public aid, heard 616 words per minute

Therefore, children who hear more words overall have higher verbal IQs and have higher school achievement (since we know that verbal IQ correlates positively with school achievement).

Home-School Mismatch Predicted by Configurations of Adult to Child Interaction

Vocabulary exposure may be configured differently across social classes and across cultural groups, which may contribute to an explanation based on a lack of match between home and school.

In support of the cultural configuration explanation, Ochs and Schieffelin (1984) reported on three developmental stories regarding:

- a) the upper middle-class academic family whose mother maintained nearly continuous eye contact with her non-sleeping baby and attributed meaning to nearly all infant vocalizations — "Sh-h, you're so tired," "Are you a hungry little bearcat?"
- b) the Kaluli mother who faced her baby outward toward the social world and attributed "language" to the child once he/she uttered the word for "breast"
- c) the Samoan mother who did not attribute "language" to the child until he/she made a negative comment on something that occurred in the social world of the mother and child

Therefore, there are radically different cultural configurations of how families construe "talking."

Research Questions

1. What are the mother-to-child vocabulary estimates in two other welfare and working-class families?
2. How do these other samples compare to the Kansas City welfare and working-class samples of Hart and Risley (1995)?
3. Do other people in the children's lives contribute to the vocabulary environment?

Method

Welfare Families (n=3)

- European American Urban (South Baltimore)
- Mother-headed households (n=3)
- Qualified for federal assistance
- Children between 17 and 22 months at start
- Followed for 12 visits, every 3 weeks
- Between 9 and 11 hours transcribed per child

Working-Class Families (n=14)

- European American Rural (Jefferson County)
- Two-parent households (n=11)
- Household income (M=\$34,850 for average family of 5.1)
- Children between 19 and 24 months at start
- Followed for 12 visits, every 2 months
- Between 1 and 4 hours transcribed per child

Coding Rules

Words were identified from the transcripts. Vocabulary addressed to children was sorted into two categories: maternal and other. All speech to and from the researcher was excluded from analysis.

Vocabulary reduction was performed in accordance with standard psycholinguistic studies of vocabulary (e.g., Hart & Risley, 1995; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). For example, "look" and "looking" and "looks" and "looked" when used as verbs were reduced to one word. If "look" was used as a noun — "Don't give me that look!" it was counted as a different word. Words that had irregular forms with different vowel sounds (eat / ate) were counted as two words. Only token results (all repeated instances of a given word) are reported in this poster.



Results

The total tokens per hour of mother speech to child (which is the same measure across all four groups) vary from 616 words on average in Kansas City Welfare families to 1,137 words on average in Kansas City Working Class. The South Baltimore Welfare mothers used an average of 1,050 words per hour and the Jefferson County Working Class mothers used an average of 1,043 words per hour. There were fairly large individual differences among the families. The number of tokens of speech from all community members in talk that occurs around the child is considerably higher. Unfortunately, the environmental assessment is not available on the Kansas City samples. Schneidman, Buresh, Shimpi, Knight-Schwarz, & Woodward (2009) have shown experimentally that word learning does occur through overhearing.

Table 1: Mean Vocabulary Tokens (per hour) to Children (ages 1-3) in Four Low-Income American Communities

Community Samples	Mother Speech to Child Tokens (range)	All Speech (Except Researcher) to Child Tokens (range)
South Baltimore Welfare (n=3)	1,050 (728-1,635)	1,719 (1,283-2,510)
Kansas City Welfare (n=6)	616 (231-947)	NA
Jefferson County Working Class (n=14)	1,043 (108-2,527)	1,902 (244-3,538)
Kansas City Working Class (n=13)	1,137 (268-2,353)	NA

Discussion

These findings hold implications for the mismatch versus IQ explanations. Hart and Risley (1995) suggest that maternal vocabulary varies directly with income such that income predicts verbal IQ. If this relationship is true, it should obtain across data sets and ethnic groups. However, in this study, we compared two groups of welfare families and two groups of working-class families and found no simple relationship between amount of maternal vocabulary and family income. Furthermore, in the data sets from South Baltimore and Jefferson County, which were collected in a manner more consistent with ethnographic participant observation, we found the verbal environment of the child to be considerably enhanced by normal interaction with family and friends. This finding suggests that the procedures used by Hart and Risley may have underestimated the actual verbal environments of their low-income participants. To this end, we call for a re-evaluation of the relationship between vocabulary and educational outcomes based on a more accurate consideration of the meaning-making practices within the families of low-income American children.

References

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