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ABSTRACT

This paper reports findings of a main study and a corollary study designed to clarify the relationship between interpersonal and intrapersonal language by examining the spontaneous classroom interpersonal verbal output of children 4-5 years old in relation to social class and intelligence. The report presents (1) preparation of the data of the main and corollary studies for computer analysis, (2) extensive revision and refinement of the specially designed Functional Category System (a comprehensive instrument covering all verbal statements of the preschooler), and) analysis of the results. Findings from the main study support ignificant relationships between some IQ effects and some soci-l class effects as indicators of linguistic effectiveness (performance). Ethnicity (black, white) was significant only in interaction with some social class effects. Significant sex effects were noted. The corollary study assessed effects of a school readiness program or a child development program and indicated that, in general, no subjects showed significant pre-post changes in IQ. IQ scores of advantaged children (in accord with their initial selection) remained significantly higher than those of children selected from the two Head Start programs. (WY)

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Differences in the Spontaneous Classroom Interpersonal Language of Preschoolers Differing in Intrapersonal Linguistic Effectiveness

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It is essential to distinguish between interpersonal language for communication and intrapersonal language for thinking, in the quest for effective language intervention programs for the disadvantaged preschooler. As Vera John (1966) has pointed out, until we know more about the relationship between inter- and intrapersonal language, we are setting up compensatory language programs in the dark. Structured programs which purport to teach language for thinking are making the untested assumption that we know how intrapersonal language develops, much less how to teach it. On the other hand, child development programs which purport to teach language for communication and language for thinking in some meaningful relationship are handicapped by our limited understanding of how the development of inter- and intrapersonal language interrelate.

The objective of the main study is to clarify this relationship between interpersonal language and intrapersonal language by examining the spontaneous classroom interpersonal verbal output of preschoolers in relation to two indicators of intrapersonal linguistic effectiveness: social class and IQ. A corollary study compares the interpersonal classroom language of a school readiness oriented Head Start center with one in which the program is based on a child development approach.

It was necessary to devise an instrument to categorize the spontaneous classroom interpersonal language of preschoolers. A Functional Category System was developed, a description of which can be found in the discussion of procedures below. The Category System lies at the heart of the study. It was developed to be comprehensive, covering all verbal statements of the preschooler, and to contain all distinctions which seemed relevant for an understanding of the development of intrapersonal language.

The Functional Category System was developed during 1967-68 (see Progress Report 1967-68). During the following year, reliability of the system was established and data on the main and corollary studies were collected (see Progress Report 1968-69). The major tasks during the period covered by the present report have been (1) the preparation of the data of the main and corollary studies for computer analysis, (2) extensive revision and refinement of the category system, and (3) the analysis of the results.

This report will describe the findings of the main study and the corollary study.

Main Study: Differences in Spontaneous Classroom Interpersonal Language of Preschoolers Differing in Intrapersonal Linguistic Effectiveness

The purpose of the main study was to relate the scores on the Functional Category System for interpersonal language to two indicators of intrapersonal linguistic effectiveness -- social class and IQ. Ethnicity, sex, age, and school program were control variables, but their independent effects were also analyzed. The term linguistic "effectiveness" rather than "competence" is used because modern linguistic usage of the term "competence" denotes capacity while usage of the term "performance" denotes functioning. We use "effectiveness" to describe performance. That is, the IQ in our study refers to functioning rather than capacity.

Subjects

The basic sample consisted of 42 Ss selected from five schools that have in common a "child development" approach. The Ss range in age from 4-0 to 5-0. Advantaged Ss include six white and six black children with three boys and three girls in each group. White Ss were selected from a middle-class nursery in the Bank Street Head Start Evaluation sample, so that IQs were available.[1] Since all but one white S tested at the nursery scored 109 or above in IQ, only those scoring 109 or above were included. The six white advantaged Ss constituted the total sample of tested Ss with IQs above 109 in the afternoon classroom. This classroom was selected for observation because it contained the largest number of suitable Ss plus a balanced sex distribution. The mean IQ in this group was 119.5.

The six black advantaged Ss consist of all of four middle-class four year olds at a private school for middle- and upper-middle-class families plus two from a comparable private school selected to balance the overall sex distribution. They range in IQ from 102 to 128, with a mean IQ of 115.8

Disadvantaged Ss include ten High (107 and above), ten Medium, and ten Low IQ (below 92) black Ss from a Head Start center in the Bank Street Evaluation sample. There were five girls and five boys in each group. The IQ limits of the High and Low groups were defined by the available sample. For the Medium group, those with IQs as close to 100 as possible were selected.

In addition to this basic sample, the corollary study provided data on 12 additional black Head Start four year olds, six girls and six boys, in a "school readiness" program in the Bank Street Head Start Evaluation sample. Ss were selected to include an equal number of boy-girl pairs at each IQ level: High, Medium, and Low. When only one High IQ pair was available,

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1. Stanford-Binet IQs were available on all Ss in the Bank Street Head Start Evaluation sample. Ss were tested by members of the Evaluation team shortly before they were observed for this study. Only four of the black middle-class Ss needed testing for the study. Binets were administered shortly after their observations. Two of the black middle-class Ss had WISC IQs available at their school.

an additional Middle IQ pair was added. The final sample included one High IQ, three Middle IQ and two Low IQ pairs.

The balanced child development subgroups of the basic sample were selected with means tests in mind. When our statistical consultant, Mrs. Jack Cohen, recommended multiple regression analysis, it was possible to add the school readiness subgroup plus three additional Ss who did not fit the requirements of the above subgroups. The latter include a black Head Start "school readiness" S who was six months younger than 4-0, a white S whose IQ of 78 was 31 points lower than any other white S, and a black High IQ (107) Head Start S, one girl in excess of the five girls needed for that subgroup. Adding these 15 Ss to the basic sample of 42 yields a total of 57 Ss.

Procedures

Observation Procedures: Language Samples

For all 57 Ss, 12 three-minute verbatim language samples were collected as described in Progress Report 1967-68. For the vast majority of these Ss, six time samples were collected by each of two observers on four different days, with three samples per day. This optimal diversification was not always feasible. For some Ss all 12 time samples were collected by one of the two observers. However, a minimum of two different days of observation was required. Again, for the majority of Ss, the two observers did not know the IQ. However, this was not always feasible for one of the observers, the senior author, since she needed to participate in the selection of Ss. Colleagues were instructed to omit names in these discussions but slips occurred. Data collection was conducted from October to February, except for four of the six middle-class black group. The latter, all at the same private school, were considerabl younger than the rest of the group, so that it was necessary to wait until the spring and, in one case, the fall of 1969, until all Ss were 4-0.

Scoring Procedures: The Functional Category System

The Functional Category System for Spontaneous Interpersonal Preschool Language was comprehensive and contained all distinctions which seemed relevant to an understanding of the development of intrapersonal language. The approach was functional because previous research has been almost exclusively concerned with structural analysis, though there are those who argue persuasively that structural or syntactic development cannot be understood apart from semantic, motivational or functional considerations (Fodor, 1966; Jacobson /see Bruner, 1966, Chapter 5/). In addition, it was felt that a functional analysis would have greater relevance for the complex socio-affective processes probably involved in class and race differences.

The original category system and reliability studies are fully described in earlier Progress Reports (1967-68, 1968-69). Because the system was designed to be comprehensive, it was extremely cumbersome with 205 scores. It was necessary to contract the system before proceeding to relate the scores to the independent variables. A major task of this period has been the revision of the category system based on frequency of occurrence in the data of the main and corollary studies. Table 1 describes the original and revised category systems.

Table 1

Comparison of Original and Revised Scoring Systems

	Original	Revised
1. Total Scores		
Scored Statements	1	1
Scored & Non-Scored Statements	1	1
Scores	1	1
Double Scores	1	1
Sum	4	4
2. Category Scores		
I Expressive	1	1
II Desire Implementing	1	1
III Rights Implementing	1	1
IV Ego Enhancing	1	1
V Me Too	1	1
VI Joining	1	1
VII Collaborative	1	1
VIII Reporting	1	1
IX Learning Implementing	1	1
Sum	9	9
3. Sub-Category Score	32	34
4. Subscores, renamed Special Scores[1]	131	22
5. Appended Scores	17	12
6. Non-Scores	13	7
7. Combination Scores	---	27
Sum of the Scores	206	115

1. Renamed Special Scores because in the revised system, they can cut across categories.

The original system designates nine major functional categories of interpersonal spontaneous language. These have been retained in the revision. They are: Expressive (I); Desire Implementing (II); Rights Implementing (III); Egocentric Pride Enhancing (IV), covering personal motives; Me Too (V); Joining (VI); Collaborative (VII), covering social motives; Reporting (VIII), a miscellaneous category resembling the primitive social speech of Vigotsky; and Learning Implementing (IX), covering a cognitive motive. As can be seen in Table 1, the system as a whole yields seven kinds of scores:

1. Total Scores, which include the number of Scored Statements, the number of Scored and Non-Scored Statements, the number of Scores, and the number of Double Scores (the maximum permissible per statement).

2. Category Scores (listed above), which designate the nine major functions of interpersonal spontaneous language.

3. Within a category, Subcategory Scores, which designate major avenues for implementing a given function, e.g., implementing a desire by asking for something vs. by stopping a frustrator of a desire. Many of the subcategory distinctions are based on whether the statement involves a positive or a negative assertion. For example, asking for something denoted a positive assertion of desire implementing; stopping a frustrator a negative assertion.

4. Within a subcategory, Subscores, which designate the style or specific context involved in the implementation of a function, e.g., displaying pride in competence vs. pride in possession. In the revision, the term Special Scores has been substituted for "Subscores" because some of these distinctions cut across categories in the revised system.

5. Appended Scores, which include mainly structural distinctions such as whether the statement is a question, whether it includes an introductory exclamation ("Miss B"), etc. Also included here is whether the statement is directed to the teacher or to a child.

6. Non-Scores, which are designated for statements that are not spontaneous or interpersonal, e.g., intrapersonal statements or answers to others' statements, etc.

7. Combination Scores, which combine any of the above. Several of the Combination scores combine two or more negative subcategories to denote a form of angry or frustrated talk.

It can be seen in Table 1 that the Total Scores and the Category Scores have undergone no revision. The Subcategory Scores have undergone minimal revision. Five of the categories -- I, II, III, VIII, and IX -- maintain the same subcategory structure. In two of the categories -- Me Too (V) and Collaborative (VII) -- the structure contained Subscores only, and no superordinate Subcategory Scores. On the basis of the same inductive-deductive process that determined the original subcategories, using frequency data from the main and corollary studies, these Subscores were grouped to form new Subcategory Scores. For example, Subscores for "Disagreeing and Agreeing," in a collaboration, were so infrequent that they were incorporated into a more inclusive

collaborative subcategory. For two of the other categories -- Egocentric Pride Enhancing (IV) and Joining (VI) -- the same inductive-deductive process suggested a reorganization of the existing subcategory structure. In total, as can be seen in Table 1, the number of subcategories was expanded from 32 to 34.

The major revisions involved the Subscores, now called Special Scores. Table 1 shows that their number was reduced by 108 -- from 131 to 22. The main determinant in the reduction was the low frequency of occurrence of many of these scores. For 32 Subscores the score was moved to a different subcategory or category. The remaining 76 were subsumed by the directly superordinate Subcategory Score.

In addition, several low frequency Subscores were combined to form a Special Score with a higher frequency. For example, "Sharing and Postponing" distinctions occurred in the original as four Subscores in two different categories -- Desire Implementing (II) and Rights Implementing (III). These four Subscores were combined into one Special Score which now cuts across Categories II and III. Many Special Scores were also clustered as Combination Scores, on a rational basis. For example, "Sharing and Postponing" (a Special Score) combined with "Permission Please" (a Special Score), "Collaborative Giving" (a Subcategory Score) and "Modulations" (an Appended Score) were clustered to make up the Combination Score, "Qualified Talk."

Other Combination Scores, derived by the same inductive-deductive procedure mentioned above, include "Angry Talk," "Frustration Talk," "Playing with Words," "Academic Talk," etc. Although there were no Combination Scores in the original system, it had been anticipated that the data of the study would suggest these clusters.

Finally, the reduction in the Appended Scores and Non-Scores was again determined by frequency of occurrence and rational considerations. For example, "Name Calling" and "Cursing" were so rare that they were combined into a single Appended Score.

The total number of scores has been reduced from 206 to 115, with a basic system of 34 functional subcategories. Considerable rescoring was necessary.[1] In addition to combining Subscores into supraordinate Subcategories and clustering the Combination Scores, rescoring was necessary when Special Scores were created by combining Subscores, when Subcategories were reorganized, or when Subscores moved to new Subcategories.

We were very encouraged by the fact that the system seemed relevant to the data, especially in the light of our aim to cover all interpersonal statements of the four year old. No new scores were necessary, although new combinations of existing scores appear promising.

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1. All verbal statements affected by revisions in the category system were rescored to accord with the new system. No statement was discarded from the sample.

Following revision and rescoring, a codebook and recodebook were constructed for computer analysis (a copy of each is attached).[1] Table 2 shows the variables of the code and recodebooks as they relate to the variables of the main and corollary studies. It can be seen that variables 1 through 6 of the codebook are the independent variables of our studies:[2] school program, age, ethnicity, class, sex, and IQ. The 115 dependent variables of our studies, i.e., the 115 scores of the revised category system, are covered in variables 7 through 83 of the codebook and variables 84 to 121 of the recodebook.

The data were coded for two basic measures: (a) Frequency, the frequency of scores per S, and (b) Interval, the number of three-minute observation intervals in which the score occurred per S (maximum 12).

Statistical Treatment of Data: Study of Functional Category System Variables -- Further Selection of Variables

The basic statistical design involved a multiple regression analysis with social class, IQ, ethnicity, sex, age, and program as the independent variables, and the 115 scores of the Functional Category System as the dependent variables. However, the number of category scores, though reduced from 205 to 115 in the revision, was still extremely cumbersome. In addition, the interrelationships among scores had not as yet been studied empirically to evaluate the structure of the Functional Category System. The latter was by far the more significant objective since, as Cazden (1966) has pointed out, we know nothing about how these multiple functions of interpersonal language develop and how they relate to the development of intrapersonal language. It should be clear that any elucidation of the domain of interpersonal language as embodied in the category system scores would facilitate the interpretation of the results of the multiple regression analysis.

For these reasons, two Factor analyses were carried out -- a Five-Factor and a Ten-Factor analysis. All Subcategory, Special, Appended and Non-Scores were included in the Factor analysis matrix. Category Scores and Combination Scores were not included since the Factors themselves were to serve the same purpose as these supraordinate scores. It may be recalled that seven of the nine original categories were assumed to be interrelated in a continuum of ego differentiation from the undifferentiated Expressive category (I) through the pivotal Egocentric Pride Enhancing category (IV) to the role differentiated Collaborative category (VII). In addition, each of the seven categories contained Positive and Negative subcategories (e.g., for the Egocentric Pride Enhancing category, one could boost one's ego or denigrate another). These negative scores were clustered in the negative Combination Scores -- Frustration General, Frustration Rights, Angry Denigration, Angry Exclusion, and Indirect Hostility.

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1. A copy of the revised scoring system is in preparation.

2. The codebook order of these variables follows Head Start Evaluation Center protocol rather than the focus of our study.

Table 2

Codebook and Recodebook Variables in Relation to Independent and Dependent Variables (Category System Scoring)

CODEBOOK	INDEPENDENT VARIABLE #	PAGE #
School Program	1	1
Age	2	3
Ethnicity	3	4
Class	4	4
Sex	5	4
IQ	6	4

	DEPENDENT VARIABLE #	Frequency	3-min.intervals
Total Scored Statements	7	6	10
Subcategories	8-41	6-7	10-12
Special Scores	42-54	8	12
	74-82	9	14
Appended Scores	55-66	8-9	13
	83	10	14
Non-scores	67-72	9	13
Total Scored & Non-scored Statements	73	9	14

RECODE BOOK		Frequency & 3-min.intervals
Categories	84-92	1
Total Scores	93	1
Total Double Scores	94	1
Combinations	95-113	2-4
Percent Conversions	8-113	5
Additional Combinations	114-121	6-8

The following list will describe each of the Factors and discuss them in relation to the structure of the category system. Factor components are listed in order of their factorial loadings, the highest listed first. A glance at the first two or three components in each list is sufficient usually to understand the Factor. With few exceptions, involving mainly the discarding of low frequency, low loading, inconsistent components, Factor components were retained as analyzed. Each component was weighted equally, because the small sample of Ss did not appear to justify a refined weighting procedure at this time.

Five-Factor Analysis

Factor 1: Adult Oriented (Dependent on and Identified)

Permission Please (.75).[1] Special Score -- Desire Implementing (Category II) and Rights Implementing (Category III). Requesting permission and/or stating "please."

Desire Request to Teacher (.75). Special Score -- Desire Implementing (Category II).

Teacher Directed Statements (.70). Appended Score.

Spinner Repetition (.50). Non-Score indicating a seemingly automatic rhythmic repetition of a statement, not in the service of persistence.

Modulation (.46). Appended Score explaining, justifying, rationalizing or persuading, often containing "because." Usually associated with Desire Implementing (Category II) or Rights Implementing (Category III).

Delight (.44). Special Score -- Reporting (Category VIII). With delight.

Learning-Old (.29). Subcategory -- Learning Implementing (Category IX).

Discussion

It can be seen that Factor 1 is most related to the Positive statement of Desire Implementing and Rights Implementing (Categories II and III) and to dependency on the teacher. The latter introduces an interesting additional element into the Factor. Together with Permission Please, Modulations, and Learning-Old, the element of identifying with adult values is added to the dependency aspects of the Desire Implementing category. With Delight added, we have a Factor suggesting dependency, trust, and identification with the adult world.

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1. Factor loading.

Factor 2: Angry Talk (Negative Self-Assertion)

Name Calling and Cursing (.89). Appended Score.

Negative Affective Tone - Additional (.86). Appended Score.

Denigrating Others - Direct and Indirect - General (.83). Subcategory -- Egocentric Pride Enhancing (Category IV).

Denigrating Others - Direct and Indirect - Power (.77). Subcategory -- Egocentric Pride Enhancing (Category IV).

Me Too - Different (.68). Subscore[1] -- Me Too (Category V).

Desire Implementing - Clowning (.67). Subscore -- Desire Implementing (Category II).

Teasing and Testing Limits (.59). Subcategory -- Egocentric Pride Enhancing (Category IV).

Defending Against Exclusion (.57). Subcategory -- Joining (Category VI).

Stopping a Frustrator of Possession Rights (.52). Subcategory -- Rights Implementing (Category III).

Not Desiring (.45). Subscore -- Desire Implementing (Category II).

Excluding Self and Others (.43). Subcategory -- Joining (Category VI).

Defending Against Denigration - Power (.42). Subcategory -- Egocentric Pride Enhancing (Category IV).

Negative Expressive - Main (.41). Subcategory -- Expressive (Category I).

Defending Against Denigration - Evaluative (.40). Subcategory -- Egocentric Pride Enhancing (Category IV).

Defending Against Other, Who is Stopping S as a Frustrator of Desire (.37). Subcategory -- Desire Implementing (Category II).

Discussion

This Factor brings together almost all the negative statements in all the subcategories. As such it subsumes most of the scores included in the Combination Scores which were created for the same purpose: Frustration - Rights, Frustration - General, Angry Denigration, Angry Exclusion, and Indirect Hostility. It also adds the Negative subcategory of the Expressive Category (I).

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1. Subscores in the original scoring system are listed as such. In the revised system they are listed under Special Scores (see Codebook).

Factor 3: Egocentric Thrust (Positive Self-Assertion)

Sharing and Postponing (.77). Special Score -- Desire Implementing (Category II) and Rights Implementing (Category III).

Rights Assertion - Positive (.70). Subcategory -- Rights Implementing (Category III).

Egocentric Pride in Possessions (.67). Subscore -- Egocentric Pride Enhancing (Category IV).

Me Too - Competitive (.64). Subcategory -- Me Too (Category V).

Disagreeing in Collaboration (.62). Subscore -- Collaboration (Category VII).

Continuation of Previous Statement (.61). Appended Score.

Denigrating Others - Evaluative (.59). Subcategory -- Egocentric Pride Enhancing (Category IV).

Defending Against Other, Who is Stopping S as a Frustrator of Possession Rights (.59). Subcategory -- Rights Implementing (Category III).

Egocentric Pride -- Competence (.56). Subscore -- Egocentric Pride Enhancing (Category IV).

Song (.51). Nor-Score.

Persistence - Exact Repetition (.37). Appended Score.

Assuming Teacher's Role - Evaluative (.38). Subcategory -- Egocentric Pride Enhancing (Category IV).

Egocentric Pride in Knowledge (.32). Subscore -- Egocentric Pride Enhancing (Category IV).

Discussion

This Factor most closely resembles the positive assertions of Egocentric Pride Enhancing (Category IV). Also important is the positive assertion of possession rights -- Rights Implementing (Category III). It adds the Competitive - Me Too Statements (Category V) and Collaborative Disagreeing (Category VII). These additions plus the Appended Continuation and Persistence scores enrich the image of positive self-assertion denoted by Category IV.

Factor 4: Peer Interaction

Child-Directed Statements (.63). Appended Score.

Orders and Threats (.62). Special Score -- Desire Implementing (Category II) and Rights Implementing (Category III).

Joining - Specific (.57). Subcategory -- Joining (Category VI).

Stopping a Frustrator of a Desire (.55). Subcategory -- Desire Implementing (Category II).

Egocentric Pride - Evaluative (.46). Subcategory -- Egocentric Pride Enhancing (Category IV).

Collaborative Dramatic Play (.45). Subcategory -- Collaborative (Category VII).

Collaborative Giving (.43). Subcategory -- Collaborative (Category VII).

Collaborative - General (.43). Subcategory -- Collaborative (Category VII).

Introductory Salutation (.41). Appended Score.

Defense Against Denigration - General (.37). Subcategory -- Egocentric Pride Enhancing (Category IV).

Intense Excited Tone - Additional (.34). Appended Score.

Expressive - Positive - Main (.29). Subcategory -- Expressive (Category I).

Reporting - Other (.26). Subcategory -- Reporting (Category VIII).

Discussion

This Factor brings together two of the categories concerned with peer relations -- Joining (VI) and Collaborative (VII). Together with Child-Directed Statements, Stopping a Frustrator of a Desire (II), Orders and Threats (II and III), and Excited and Positive Affects, this Factor seems to characterize the give and take of peer preschool society.

Factor 5: Linking to Others with Words (Self-Inclusion)

Mutual Chanting (.56). Special Score -- Me Too (Category V) and Collaborative (Category VII).

Report Self-Product (.49). Subscore -- Reporting (Category VIII).

Report Self-Do (.45). Subscore -- Reporting (Category VIII).

Me Too (.42). Subcategory -- Me Too (Category V).

Report Things (.36). Subcategory -- Reporting (Category VIII).

Report Self-Attribute (.32). Subscore -- Reporting (Category VIII).

Discussion

Factor 5 is perhaps the most interesting Factor both because the combination was not anticipated in the structure of the scoring system and because the results show it to be significantly related to intrapersonal linguistic effectiveness. It combines the Me Too - General Score (which was expected to be related to effectiveness) with the Report Self, Report Things scores and Mutual Chanting. Since the Me Too denotes a self-referring linking to another S's statement, while the Report responses link S's inner thoughts to others and Mutual Chanting links to others with word games, this Factor seems to denote the kind of social speech that Vigotsky (1962) proposes as a basis for the development of egocentric speech and inner thought. A rich network of social links seems to be created by, and reflected in, a web of words which tie S to the other's inner thoughts and the other to his inner thoughts. As such, this Factor seems to create, define, and maintain, the undifferentiated pre-egocentric social speech which we have designated pre-egocentric social speech, while Piaget's social speech (Piaget, 1926), taking into consideration the feelings and thoughts of the listener, defines our post-egocentric social speech (see Progress Report 1967-68). We will return to this distinction in the discussion.

Ten-Factor Analysis

A Ten-Factor analysis was undertaken for exploratory purposes. With a small sample of 57 Ss, it was anticipated that many of the Factors would be spurious. The results show that three of the ten Factors were essentially the same as three of those in the Five-Factor analysis -- Angry Talk (2), Egocentric Thrust (3), and Peer Interaction (4). One of the ten Factors, Factor 7, combined elements of Factor 1 (Adult Oriented) and Factor 5 (Linking to Others with Words). Another Factor, 8, was an interesting component of Factor 3, Egocentric Thrust. Finally, Factor 6 represented a new cluster, not found in the Five-Factor analysis. These three Factors seemed meaningful enough to add to the original five, making a total of eight Factors.

Factor 6: Positive Interest in Objective World

Learning-Old (.53). Subcategory -- Learning Implementation (Category IX).

Delight (.53). Special Score -- Reporting (Category VIII). With delight.

Report Things (.47). Subcategory -- Reporting (Category VII

Spinner Repetition (.43). Non-Score indicating a seemingly automatic rhythmic repetition of a statement, not in the service of persistence.

Expressive - Positive - Main (.37). Subcategory -- Expressive (Category I).

Discussion

Factor 6 aligns interest in the objective world of the Report Things Subcategory with much of the Learning Category (IX), and with positive affect. This is a logical cluster, similar to Piaget's Adapted Information category (Piaget, 1926). It concerns itself with the external world rather than the self.

Factor 7: Linking to Others Including Adults (Self-Inclusion)

Desire Implementing (.79). Subcategory -- Desire Implementing (Category II).

Report Self-Attribute (.71). Subscore -- Reporting (Category VIII).

Report Self-Do (.65). Subscore -- Reporting (Category VIII).

Teacher-Directed Statements (.59). Appended Score.

Report Self-Product (.44). Subscore -- Reporting (Category VIII).

Me Too (.38). Subcategory -- Me Too (Category V).

Discussion

Factor 7 combines the dependent aspects of Factor 1, Adult Oriented, including Desire Implementing and Teacher-Directed, with the self-linking aspects Me Too and Report Self of Factor 5. By omitting Mutual Chanting and Report Things, there is a shift from a linking by means of word focus to a linking through interpersonal relating. Because Factor 7 shows this interesting shift, it was added to the list of Factors, though it was obvious that Factors 5 and 7 would correlate very highly. The obtained correlation was .76.

Factor 8: Academic - Competitive Oriented

Egocentric Pride in Knowledge (.73). Subscore -- Egocentric Pride Enhancing (Category IV).

Assuming Teacher's Role - Competence (.59). Subcategory -- Egocentric Pride Enhancing (Category IV).

Me Too - Competitive (.50). Subcategory -- Me Too (Category V).

Discussion

This Factor seems like an interesting component of the Egocentric Thrust, Factor 3, especially so for the study of school program effects. (Factor 3 correlates .74 with Factor 8). It seems to deal with the same distinction as the Academic Combination score. Since Factor 8 was validated by the Factor analysis, it was substituted for the Combination Score.

It can be seen that the Factor analysis lends strong support to the inductive-deductive process upon which the category system and its revision were based. Factor 1 covers Categories II and III; Factor 2 covers the Combination Scores which include the negative Subcategories of the Categories. Factor 3 covers Category IV mainly; Factor 4 covers Categories VI and VII. Factor 5 covers Category V and aspects of Category VIII. Factor 6 combines aspects of Categories VIII and IX. Factor 7 is a composite of Factors 1 and 5. Factor 8 is a component of Factor 3.

The factorial validity of the category system, while quite good, was far from perfect. The factor analysis provides rich material for possible future revision of the system. However, it seems premature to undertake further revision until more data is available to verify the findings of the factor analysis.

The eight factors formed the core of a list of dependent variables which were subjected to multiple regression analysis. Because it was considered premature to rely solely on the factor analysis, 32 additional scores were selected for multiple regression analysis.

The main basis for selecting the 32 variables was a correlation matrix containing all 115 scores and all six independent variables plus a list of the mean frequency of occurrence of each score. Any score which correlated significantly with any of the independent variables taken singly, and all scores with high frequency of occurrence were eligible for selection. Where the correlation matrix of scores or the factor analysis suggested that a score was redundant or that a combination of scores was empirically unjustified, these scores were dropped. Also included in the list of 32 were scores which the research literature suggested as significant even though they showed no significant correlations with the independent variables taken singly, e.g., Collaborative Dramatic Play. The final list of 32 scores and 8 Factors covered all the major

distinctions of the scoring system, categories and subcategories, and combination scores, except for the Expressive category. Here the Negative subcategory was covered by the Angry Talk Factor; the Positive subcategory was too infrequent to analyze by itself.

Statistical Treatment: Multiple Regression

It has been noted that correlation matrices including all 121 independent and dependent variables were obtained. Since the scoring system provided two sets of measures, Frequency and Interval, two such matrices were calculated, one for each measure. The results of the two matrices were very similar, as might be expected since the correlation between the two measures is .76 for Total: Scored Statements. However, the correlations with the independent variables were generally slightly higher for the Interval measure than for the Frequency measure. For example, the correlation of the Me Too score with IQ was .48 for the Interval measure and .41 for the Frequency measure; Qualified Talk correlated .53 with social class for the Interval measure, but .47 for the Frequency measure.

The results indicate that the Frequency measure was more subject to error, as might be expected from the much larger range of the Frequency measure. The Frequency Total varied from 4 to 156; the Interval Total varied from 1 to a maximum of 12 intervals of observation. An added source of error presented by the Frequency measure involved the phenomenon of continuation in verbal sequences, conversations. If two children were engaged in conflict involving denigrations, this could include as many as 15 insults during a given interval, depending on the other child's reaction or some interruption by an external event. For the Frequency measure this would be scored 15; for the Interval measure only a score of 1 would be obtained. If the child was frequently engaged in such denigration he could obtain as high a score as 12 for the Interval measure. On the other hand, if this was a 15 statement sequence never to recur, the Frequency measure would give him 15 points for the single sequence. That is, both individual S's and individual conversations could increase the error variance for the Frequency measure dramatically, accounting for the greater stability of the Interval measure.

Finally, and most important, the Interval measure served to modulate the effects of Total Frequency on each score. It was originally planned to report the data in terms of raw scores as well as percent scores, since both ways of examining the data appeared promising. However, the range of Frequency scores (4 to 156) and of Interval scores (1 to 12) was so great as to introduce a serious error into the percent conversions.[1] Ss who talked very little would have an inordinately powerful influence on the means of a percent analysis. Ss who talked a great deal would have a weakened influence on the means. Fortunately, the Interval measure, with its inherent limited range of 0 to 12, served to minimize the effects of total verbal productivity.

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1. Our statistical consultant has suggested that in future work a minimum number of statements per S, rather than a constant number of intervals of observation, should be required.

For these reasons, and because of the very high cost of the computer procedure, the multiple regression analyses were carried out using only the Interval measure. One Frequency measure, Total Number of Scored Statements, was of sufficient interest to include in the analysis.

Results

A report on the multiple regression analysis for Total: Scored Statements will be followed by a report on the multiple regression analysis for the Functional Category scores, the eight Factors and the selected scores.

Verbal Productivity

Table 3 shows the statistically significant effects of class, IQ, ethnicity, sex, age, and program on the Frequency and Interval measures of verbal productivity. The Frequency measure is based on the number of scored statements (mean for N = 57 is 60.6, s.d. = 37.4); the Interval measure is based on the number of intervals in which scored statements occurred (mean for N = 57 is 9.2, s.d. = 2.8).

For the Frequency measure, it can be seen that class and IQ, the indicators of interpersonal linguistic effectiveness, are significantly related to verbal productivity, r = .33 and .27 respectively, while the control variables, ethnicity, age, sex, and program, are not. It can also be noted that for the Interval measure only IQ produces a significant effect, .34. The social class effect for the Interval measure tends toward significance (.10 level of significance), with a correlation of .23. The loss of significance is probably a statistical artifact, resulting from the fact that the mean Interval score was 9.2,[1] quite close to the maximum of 12 intervals. In any case, the results suggest that class has a stronger effect on verbal productivity when the amount of talk within each interval is taken into consideration, while IQ has a stronger effect when the number of silent intervals are considered. In the latter case, the effects are striking.

While 45% of the 168 intervals observed in children of IQ of 90 or below were silent, only 17% of the 300 intervals of the Medium IQ Ss and 14% of the 216 intervals of the High IQ Ss were silent. Ss in the Low IQ group were silent almost half of the intervals observed. This finding is consistent with the recent Harvard study comparing middle- and lower-class children below six. In that behavioral study, lower-class Ss spent significantly more time in "non-task" activity. Silence, and not doing anything, together with a clinically observed withdrawal from others in our sample, suggests a syndrome of silent withdrawal. This syndrome seems related to the phenomenon of "tuning out" noted by many observers of the disadvantaged child (e.g., Blank and Solomon, 1969). However, the syndrome of silent withdrawal is a broader concept which

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1. None of the other scores selected for study exceed a mean Interval score of 5.5 and an s.d. of 3.2 except for the Appended Score -- Statements Directed to Children (mean 7.4, s.d. 3.2).

Table 3

Significant Partial Correlations[1] between Interpersonal Verbal Productivity and Social Class and IQ (Intrapersonal Linguistic Effectiveness Indicators) and Ethnicity, Sex, Age, and Program (Control Variables)
(Multiple Regression, N = 57)

	Independent Variables					
	Intrapersonal Linguistic Effectiveness Indicators		Control Variables			
Dependent Variables Interpersonal Verbal Productivity	Social Class	IQ	Ethnicity	Sex	Age	Program
Frequency Total	.33	.27	--	--	--	--
Interval Total	--	.34	--	--	--	--

1. An r of .27 is significant at .05 level; r of .34 is significant at .01 level.

could subsume and help to explain tuning out. The latter refers to cognitive operations, as if S was not also tuned out emotionally and socially. The syndrome of silent withdrawal has been observed in preschool settings where spontaneous interaction with others, peers, teachers and materials seems lacking. The syndrome of silent withdrawal directs our attention to the social-affective context of cognitive functioning.

The verbal productivity results are consistent with those of previous studies. Hess (1969) has pointed out that a significant relationship between social class and verbal productivity is a consistent finding in all interview and research settings. Our own work would add the preschool setting as well, when spontaneous interpersonal speech is observed. We would also add that IQ is related to verbal productivity, when social class is controlled.

Hess (1969) notes that Labov, presenting data on adolescent peer street culture, has questioned these consistent findings. In fact, Labov (1968) has not questioned the findings. He merely questions a competence explanation for the findings. He argues for a performance explanation. He stresses the importance of the functional-interpersonal aspects of language, the social context, for an understanding of the weak performance of urban blacks on language tasks in school, in research settings, and on IQ tests, all white middle-class settings with adults. As such, his approach is consonant with our own. It is these functional-interpersonal factors that the Category System was designed to study.

Functional Category Scores

Tables 4 and 5 show statistically significant results for the Functional Category Scores -- Table 4 gives the multiple regression results, Table 5 gives the mean Interval scores. Table 4 shows that seven of the eight Factors were significantly correlated with at least one of the independent variables, social class, IQ, ethnicity, sex, age, and program. For these seven Factors, their statistically significant component scores are listed for the independent variable where the Factor was statistically significant. This includes 13 component scores.

In addition, Table 4 shows a Non-Factor list with one Appended score and three Non-Scores, not included in the Factors. Also listed under Non-Factor are Qualified Talk, Frustration - General, and Learning Implementing, supraordinate scores which are members of more than one significant Factor and statistically significant in themselves. Altogether Table 4 summarizes the statistically significant results of seven Factors and 20 scores.

Table 5 shows the mean Interval scores for the same list of variables in relation to social class, ethnicity, and program subgroups. Identifying data for each subgroup are also shown including age, IQ, and verbal productivity. The means in Table 5, while interesting in themselves, are of special significance in estimating the interaction effect between social class and ethnicity.

Table 4

Statistically Significant Partial Correlations[1] between Interpersonal Functional Category Scores and Social Class and IQ (Intrapersonal Linguistic Effectiveness Indicators) and Ethnicity, Sex, Age, and Program (Control Variables)
(Multiple Regression, N = 57)

	Independent Variables					
	Indicators of Intrapersonal Linguistic Effectiveness		Control Variables			
Dependent Variables Interpersonal Functional Category Scores:	Social Class	IQ	Ethnicity	Sex	Age	Program
Factor 1. Adult Dependent and Identified	---	---	---	-.33	---	---
Desire Request to Teacher[2]	---	---	---	-.30	---	---
Qualified Talk (Partial)[3]	---	---	---	-.29	---	---
Factor 2. Angry Talk - Negative Self-Assertion	.47*	---	-.43	---	---	---
Angry Denigration	.44	---	-.47	---	---	---
Angry Exclusion	.40	---	-.48	---	---	---
Indirect Hostility	.41	---	-.32	---	---	---
Frustration - Rights	.45	---	-.34	---	---	---
Frustration - General (Partial)[3]	---	---	-.36	---	---	---
Factor 3. Egocentric Thrust - Positive Self-Assertion	.31	.27	---	---	---	---
Song	.39	---	---	---	---	---
Qualified Talk (Partial)[3]	.37	---	---	---	---	---
Modulations	.45	---	---	---	---	---
Factor 4. Peer Interaction	n o t s i g n i f i c a n t					

1. A correlation of .27 is significant at .05 level; .34, significant at .01 level.

2. Statistically significant factor component correlations are listed for each independent variable showing a statistically significant correlation with the factor score.

3. Supraordinate scores whose elements occur in more than one factor in the Five-Factor analysis. Modulations is element of Qualified Talk.

*Variables positively correlated with class and negatively with ethnicity suggest significant interaction effects (see text).

Table 4 (cont'd)

Dependent Variables Interpersonal Functional Category System:	Independent Variables Indicators of Intrapersonal Linguistic Effectiveness Social Class	IQ	Control Variables Ethnicity	Sex	Age	Program
Factor 5. Linking to Others with Words (Self-Inclusion)	.28	.36	---	---	---	---
Me Too	.29	.37	---	---	---	---
Report Self	---	.29	---	---	---	---
Factor 6. Objective World Positive Interest	---	---	.32	---	---	---
Factor 7. Linking to Others and Adults (Self-Inclusion)[1]	.28	.27	---	---	---	---
Desire Request to Teacher	.29	---	---	---	---	---
Me Too	.29	.37	---	---	---	---
Report Self	---	.29	---	---	---	---
Factor 8. Academic - Competitive	---	---	---	---	---	.28
Egocentric Pride - Knowledge	---	---	---	---	---	.27
Non-Factor Scores						
Answers to Pears	---	.39	---	---	---	---
Questions	---	---	---	-.28	---	---
Intrapersonal	---	---	---	.28	---	---
Non-Word	---	---	---	.44	---	---
Qualified Talk[2]	.37	---	---	-.29	---	---
Frustration - General[2]	---	---	-.36	---	---	---
Learning Implementing[2]	---	---	---	---	---	.29

1. Factors 6-8 emerged in the Ten-Factor analysis. Their components also appeared in the Five-Factor analysis, where the factor was statistically significant for a given independent variable.

2. See footnote 3 on preceding page.

Table 5

Means for Social Class, Ethnicity and Program Subgroups -- Identifying Data, Verbal Productivity, and Interpersonal Functional Category Scores

	Head Start			Middle Class		
	School Readiness	Child Development	Total	White	Black	Total
Identifying Data						
N	13	31	44	7	6	13
IQ						
mean	95.1	96.9	96.2	113.6*	115.8	114.6
s.d.	13.6	18.6		15.0	10.8	
Age						
mean	54.0*	54.4	54.3	51.4	54.3	52.8
s.d.	4.4	3.9		3.0	4.3	
Verbal Productivity						
Total Frequency						
mean	58.8	52.1	55.4	64.1	104.5	82.8
s.d.	36.9	33.2		31.2	45.6	
Total Interval						
mean	9.0	8.6	8.9	10.6	11.7	11.1
s.d.	2.2	3.2		1.4	.8	
Interpersonal Functional Category Scores[1] Interval Measure - 12 intervals						
Factor 1. Adult Dependent and Identified						
mean	77.8	64.2	69.8	116.7	104.5	111.1
s.d.	41.9	38.8		51.3	75.4	

*The white middle-class mean IQ is depressed by one deviant S (additicnal to the basic sample) with an IQ of 78 and 13 statements. The school readiness mean age is depressed by one deviant S, aged 3 years, 6 months. The effects of deviant Ss are partialled out in the multiple regression analysis, but they strongly influence the means.

1. Means are listed for all 8 Factors and for statistically significant factor components when social class, ethnicity and program are significantly correlated with the Factor score. Also listed are Non-Factor scores significantly correlated with social class, ethnicity and program.

Table 5 (cont'd)

	Head Start			Middle Class		
	School Readiness	Child Development	Total	White	Black	Total
Factor 2. Angry Talk - Negative Self-Assertion						
mean	78.6	49.9	59.7	66.4	209.7	132.5
s.d.	65.6	39.0		49.8	217.3	
Angry Denigration						
mean	2.3	1.1	1.5	.6	5.0	2.6
s.d.	2.3	1.6		.8	4.3	
Angry Exclusion						
mean	.8	.6	.7	.3	2.2	1.2
s.d.	.9	.8		.5	1.2	
Indirect Hostility						
mean	2.6	1.7	2.0	2.6	6.0	4.2
s.d.	2.8	1.8		1.5	4.3	
Frustration - Rights						
mean	1.2	1.0	1.1	1.4	3.5	2.4
s.d.	1.4	1.3		1.4	2.1	
Frustration - General[1]						
mean	2.5	2.4	2.4	.9	3.5	2.1
s.d.	1.9	1.8		.7	2.8	
Factor 3. Egocentric Thrust - Positive Self-Assertion						
mean	114.9	94.0	102.5	109.4	209.7	155.7
s.d.	95.6	63.6		75.5	145.4	
Song						
mean	1.1	.7	.8	.7	3.2	1.8
s.d.	.9	.9		.8	4.3	
Qualified Talk[1]						
mean	2.7	3.0	3.0	6.9	7.7	7.2
s.d.	2.6	2.8		3.9	3.7	
Modulations						
mean	.9	.9	.9	2.4	3.5	2.9
s.d.	.9	1.2		2.4	1.4	

1. Supraordinate scores whose elements occur in more than one factor in the Five-Factor analysis. Modulations is element of Qualified Talk.

Table 5 (cont'd)

	Head Start			Middle Class		
	School Readiness	Child Development	Total	White	Black	Total
Factor 4. Peer Interaction						
mean	121.0	110.7	116.4	113.4	177.0	142.8
s.d.	90.7	69.7		38.2	54.1	
Factor 5. Linking to Others with Words (Self-Inclusion)						
mean	39.8	43.3	43.2	77.4	88.7	82.6
s.d.	27.9	30.9		36.1	51.6	
Me Too						
mean	1.8	1.9	1.9	3.0	4.7	3.8
s.d.	1.4	2.1		1.9	2.2	
Factor 6. Objective World Positive Interest[1]						
mean	31.9	24.4	27.2	74.1	41.0	58.8
s.d.	31.3	22.6		47.8	14.6	
Factor 7. Linking to Others and Adults (Self-Inclusion)[1]						
mean	61.8	52.3	56.4	108.3	99.7	104.3
s.d.	34.8	34.5		32.2	69.7	
Desire Request to Teacher						
mean	2.2	1.4	1.6	4.4	3.5	4.0
s.d.	1.6	1.5		2.3	3.3	
Me Too						
mean	1.8	1.9	1.9	3.0	4.7	3.8
s.d.	1.4	2.1		1.9	2.2	
Factor 8. Academic - Competitive[1]						
mean	23.2	8.2	12.9	14.1	17.3	15.6
s.d.	37.3	14.1		24.2	28.5	
Egocentric Pride - Knowledge						
mean	.3	.1	.1	.1	.2	.2
s.d.	.6	.2		.4	.4	

1. Scores were subjected to a Five-Factor and Ten-Factor analysis. Factors 6-8 were added to the basic five factors on the basis of the Ten-Factor analysis.

Table 5 (cont'd)

	Head Start			Middle Class		
	School Readiness	Child Development	Total	White	Black	Total
Non-Factor Scores						
Qualified Talk[1]						
mean	2.7	3.0	3.0	6.9	7.7	7.2
s.d.	2.6	2.8		3.9	3.7	
Frustration - General[1]						
mean	2.5	2.4	2.5	.9	3.5	2.1
s.d.	1.9	1.8		.7	2.8	
Learning Implementing[1]						
mean	1.1	.5	.7	9	.7	.8
s.d.	.9	.8		.7	.8	

1. See footnote 1, page 16c.

Intrapersonal Linguistic Effectiveness Indicators

IQ Effects

IQ correlates significantly with Factor 3, Egocentric Thrust (r = .27), Factor 5, Linking to Others with Words (r = .36), and Factor 7, Linking to Others Including Adults (r = .27). (It may be recalled that Factor 7 combines aspects of Factor 1, Adult Oriented, with Factor 5.) Within Factor 3, there are no significant correlations in relation to IQ for any component score, though Pride in Possessions tends toward significance with a correlation of .24. Within Factors 5 and 7, Me Too and Report Self yield significant component scores. Correlations with IQ are .37 and .29 respectively. Mutual Chanting tends toward significance with a correlation of .26.

Among the Non-Factors, Answers to Peers is significantly related to IQ with a correlation of .39. Such spontaneous responsive statements might be viewed as another aspect of linking with others.

Social Class Effects

The same three Factors show significant effects of social class. Factor 3, Egocentric Thrust, .31; Factor 5, Linking With Words, .28; and Factor 7, Linking Including Adults, .28. Again, Me Too is a significant component score with a correlation of .29.

For social class, the component of Factor 7 which incorporates aspects of Factor 1, Adult Oriented (Dependent and Identified) assumes greater importance. Desire Requests to Teacher is significantly correlated with social class, .29. Qualified Talk is significantly correlated with social class, .37, as well as its component, Modulation, .45. Qualified Talk, which also includes Permission Please, Sharing and Postponing, and Collaborative Giving, is our strongest indicator of the socialization process. It is not surprising, though highly significant, that these variables emerge as being related to social class. It may also be noted that Qualified Talk tends toward a significant correlation with IQ, .26.

Social Class-Ethnicity Interaction Effects

The findings on Angry Talk, Factor 2, as well as all other variables showing a significant positive correlation for social class and negative correlation for ethnicity (i.e., blacks more than whites), cannot be interpreted without reference to mean differences among class and ethnicity subgroups (see Table 5). Because there were no white lower-class Ss in the sample, it was not possible to partial out the effects of interaction between class and ethnicity. In the absence of a white lower-class subgroup, a positive correlation with class when ethnicity is partialled out in conjunction with a negative correlation with ethnicity when class is partialled out, denotes that the black middle class exceeded both the white middle class and the black lower class. Whether main class effects or main ethnicity effects are also operative can only be estimated by examining the means in Table 5 to see whether the white

middle class joined the black middle class in exceeding the black lower class and/or the black lower class joined the black middle class in exceeding the white middle class.

For Factor 2, Angry Talk, it can be seen in Table 5 that there appears to be no main class effect. The white middle-class Ss showed less Angry Talk than both lower- and middle-class blacks. There also appears to be no main ethnicity effect. The lower-class blacks showed about the same quantity of Angry Talk as middle-class whites. The significant effect was the interaction between class and ethnicity. The black middle class showed about three times as much Angry Talk as any other subgroup.

When the means of the statistically significant component scores making up Factor 2 are examined (see Table 5), we find that the more socially controlled forms of Angry Talk are related to intrapersonal linguistic effectiveness. Angry Denigration and Angry Exclusion seem to have significant main effects for ethnicity with the lower-class black means joining the middle-class to exceed the white middle-class mean. In the case of Indirect Hostility (e.g., Teasing and Testing Limits), the white middle-class mean slightly exceeds the black lower-class. It is interesting to note that these social class findings are supported by the results correlating the Factor components of Angry Talk with IQ. Because Angry Talk (Factor 2) was not correlated with IQ, the correlations of the component scores are not listed in Table 4. It was found that the correlations of IQ with Angry Exclusion ($r = .28$) and Indirect Hostility ($r = .27$) were statistically significant, while the correlation of IQ with Angry Denigration, the most direct form of verbal anger, was not significant.

Stop Frustrator - Possession Rights (Frustration - Rights component of Factor 2) follows the same pattern as Indirect Hostility, that is, a significant interaction effect with middle-class blacks accounting for the significant ethnicity and class effects, and no apparent independent main effects (see Table 5). In fact, as with Indirect Hostility, the white middle-class mean slightly exceeds the lower-class black mean, though they are both quite similar. Frustration - Rights can be considered a socialized form of Frustration Talk in contrast with Frustration - General (no appeal to rights: "It's mine"). Frustration - General showed significant ethnicity effects with blacks exceeding whites, and no class effects (see Ethnicity Effects, below).

To summarize the Angry Talk Factor results, the amount of Angry Talk was significantly greater in the black middle-class Ss than in white middle-class Ss, but middle-class whites produce as much Angry Talk as the lower-class blacks. It is the form of expression of the Angry Talk, whether it is socialized or not, that appears to be significant in relation to indicators of cognitive effectiveness. It should be noted that the amount of non-verbal anger was not under study. Non-verbal anger would be assumed to be less socialized than verbal anger even in its most direct form.

Finally, one other Factor component showed significant effects for both class and ethnicity, Song (Factor 3, Egocentric Thrust), with correlations of .39 and -.36, respectively. As indicated by the means in Table 5, this again appears to be an interaction effect with middle-class blacks exceeding all other subgroups, and the means of the latter being quite similar.

Control Variables

Ethnicity Effects

The one significant correlate of black ethnicity which was not also correlated with class was Frustration - General ($r = -.36$), Stopping a Frustrator with no appeal to possession rights ("no"; "stop it"). This non-socialized form of Frustration Talk, in contrast to Frustration - Rights, shows middle- and lower-class blacks equally high and both exceeding the white middle-class sample. Table 5 shows that this is the only score where the lower-class mean exceeded the middle-class, though the difference was not significant. Unlike the findings for verbalized attacks, it may be that quantitative differences are important with regard to Frustration Talk as well as form of expression.

Table 4 shows that white ethnicity was related to Factor 6, Objective World Positive Interest. The correlation was .32 and unrelated to class. That is, the middle-class blacks did not join the middle-class whites in showing a significant increment relative to lower-class blacks.

It is interesting to note (see Table 5) that this Factor is the least frequent in occurrence (apart from Factor 8, which is a component of Factor 3). Like Piaget's results on Adapted Information (Piaget, 1926), our findings indicate that the spontaneous speech of young children is very rarely concerned with the objective world.

Sex Effects

Factor 1, Adult Oriented (Dependent and Identified) showed a significant correlation with sex, girls exceeding boys. Significant components include Desire Request to Teacher, $r = .30$, and Qualified Talk, $r = .29$. Teacher-Directed Statements tends toward significance with a correlation of .26.

Non-Factor scores significantly correlating with sex include Questions ($r = .28$), where girls exceed boys, and Intrapersonal Talk and Non-Words ($r = -.44$), where boys exceed girls. Non-Words often occurred as boys pushed their trucks making car sounds, talking to themselves.

Age Effects

None of the Factors was significantly correlated with age, as might be expected from the narrow age range. All Ss but one were 4-0 to 5-0 in age.

Program Effects

See Corollary Study, below.

Discussion and Relationships to Current State of Knowledge

The results can be organized for discussion by reference to the three-stage socialization process previously proposed to clarify existing contradictory usages of the concepts egocentric and social speech (Progress Report 1967-68).

The important Linking to Others, Factors 5 and 7, seem to resemble the Vigotsky type of social speech which he proposes as a basis for the later development of egocentric speech and inner thought (Vigotsky, 1962). With Report Self responses, the child seems to connect his inner thoughts to others as if the ego is not yet differentiated. With Me Too he takes everything he hears and links it to himself as if he is linked and linking to others. With Mutual Chanting too, as well as Desire Implementing and directing his speech to the teacher, he is expressing and maintaining, producing and reflecting a state of unity and cohesiveness with others. It is perhaps the opposite of alienation, or segregation, and chaos or disorganization. There is self-inclusion and participation. It is interesting too that Hess (1969), in discussing why there is a lower-class language deficit despite equal TV watching time, proposes "linking" and "meshing" as possibly critical explanatory concepts. Linking at face value seems highly related to the consistent finding of decreased verbal productivity related to social class. The silent-withdrawn child is anything but linked.

But linking does not appear to be the whole story. Our cognitively effective Ss also show more Egocentric Thrust, more Positive Self-Assertion (Factor 3), seemingly feeling their oats as separate, as well as feeling united. It seems probable that they need the links to others and the rich network of mutual stimulation that ensues (the opposite of stimulus deprivation) before they can venture out to act and think for themselves (richly provided with a web of interconnected thoughts).

Negative scores, Angry Talk and Frustration Talk, are associated in our sample with cognitive difficulties when not counterbalanced by positive-controlling forces. Positive Self-Assertion (Factor 3), Positive Interest in the Objective World (Factor 6), Links with Others (Factors 5 and 7) are all associated with indicators of cognitive effectiveness. It seems likely that a basic feeling of trust and union with complex interrelated ties to others characterizes a pre-egocentric social phase, before an effective egocentric phase can emerge. Factor 5 and Factor 7 seem to represent this pre-egocentric phase, supporting a Vigotsky "social phase" concept.

However, the data also point to the importance of a post-egocentric social phase involving what is more commonly understood as social, taking into consideration the needs of the other. This concept is close to Piaget's use of "social speech." Our data, associating Qualified Talk and the socialized forms of Angry Talk and Frustration Talk with cognitive effectiveness, point to the importance of the development of Piaget's kind of social speech for cognitive development as well.

It is important to propose that the common-sense (Piaget) type of socialized speech can probably not occur without prior as well as concomitant linking (Vigotsky) social speech. It would seem difficult to learn the

intricacies, modula[illegible]and qualifications of taking into consideration the feelings of othe[illegible] there were no strong network of positive links with others to sta[illegible]. In this context, the finding that girls are more adult dependen[illegible] identified is consistent with the sex-typing of a more protected chil[illegible]aring, with more and firmer links to adults. It was the boys who wer[illegible]re apt to talk to themselves and use non-words. Girls, too, consiste[illegible] do better at reading, six times better (Kagan, 1966). It is possible tha[illegible] links in particular, are more important with regard to school ac[illegible]ement than they are with regard to IQ scores.

In the light of the [illegible]rse reports on language programming in the literature, it is importa[illegible] to note what was not found in our study. First, inadequate speech, [illegible]ible, non-words, interrupted sentences or one-word statements whos[illegible]anings needed to be inferred ("Look," "Teacher") were not significan[illegible]ore frequent in the cognitively less effective Ss. This could lay [illegible]rest the brutal common practice of forcing a Head Start child to form a [illegible]grammatically complete sentence when he is trying to say something. It s[illegible]ly contradicts Bereiter's contention that the disadvantaged child speaks in "single words" or "without exaggeration these four year olds could make no statements of any kind" (Bereiter, 1966, p. 114).

There are one-word se[illegible]ances like "No" and "Stop" which are more frequent in the black Head Star[illegible] groups relative to the white middle-class. These sentences might benefit from elaboration. However, they do not seem to need structural, syntactic elaboration. They might benefit from functional, semantic elaboration in terms of the socialization of the response (post-egocentric social speech), discussions of sharing, turns, and postponing, providing S's links with others (pre-egocentric speech) are strong enough to care about these i[illegible]ricacies.

Secondly, though our results are generally consistent with those of the recent Harvard study with regard to their "non-task" findings as cited above, as well as their findings about making requests of the teacher and hostility (Ogil[illegible], 1969), we do not support their findings on adult role playing (White, 1969). Though none of our concepts was defined in exactly the same way, our Dramatic Play score seems similar to their Adult Role Playing. We were, in fact, surprised to find no relationship between our cognitive effectiveness indicators and Dramatic Play since abstract thinking is so obviously involved.

This brings us to our third and final point -- the finding that Peer Interaction, Factor 4, was not significantly related to the effectiveness indicators. This finding is not unexpected. In an attempt to study birth order effects, the family constellations of the Head Start sample were examined. Th[illegible] were so few Ss living in a single family unit that the effort had t[illegible] abandoned. Some multiple family units had as many as eight or ten children, many had five. It would seem as if there is no deprivation of peer interaction opportunities. In fact, fostering the two kinds of social speech represented by Factors 5 and 7 may well require a rich network of positive links from teacher to child in order to absorb the dissonance, the anger, and the hurt of the alienated lower-class child, and include him in the communication network of the classroom.

Labov (1968, in his linguistic studies of Negro Nonstandard English dialect) has observed the language of adolescent peer culture on the black ghetto streets. He emphasizes the silent withdrawal of the black child from the white, middle-class adult teacher, tester, and researcher, in contrast to the verbosity and eloquence of the language of the peer culture in the streets. Yet, he also notes that there are adolescents who are withdrawn even from the peer culture, consistent with our data. The fostering of the tender ties of pre-egocentric social speech would seem most critical for this pervasively silent, withdrawn child.

Qualitatively, Labov describes many of the phenomena we observe at the four-year level. Specifically, he notes the "tough" quality of the dialect, in contrast to the self-controlled (Labov stresses "overcontrolled") quality of Standard English. Labov recommends that the schools hire more indigenous paraprofessionals, especially young men from the ghettos to teach the boys, so that they can communicate with the children in their own "tough" yet eloquent dialect. Our data suggest that the ability to talk the tough dialect may not be as critical as the ability to absorb the toughness without returning it in kind, in order to establish the "tender" ties and strong interpersonal links which may be needed for teacher and child to work together. Altogether, Labov seems to minimize the importance of what we have called pre-egocentric social speech, the kind that reflects and maintains a state of being included and linked to others.

For a relevant sociolinguistic theory of cognitive deficit in the urban ghetto, the accumulating data support Lewis' (1966) concept of the "culture of poverty" rather than Bernstein's (1966) romantic formulations regarding group cohesiveness and mutual identity as a central feature of lower-class life. Lewis stresses the absence of mutual ties and community disorganization in the culture of poverty. While Bernstein's formulation may be relevant to an understanding of lower-class white society in stable England, it does not seem to be supported by the data on the black urban ghetto.

Corollary Study: Comparison of Spontaneous Interpersonal Language in School Readiness vs. Child Development Preschool Program

The corollary study is part of a larger intervention study carried out at the Bank Street Head Start Evaluation Center. For the school year 1968-69, a number of pre-post measures were applied to compare a "child development" approach with a "school readiness" approach. The Functional Category System was one of the measures in this study (see Progress Report, Zimiles, 1970 for a full description of the two kinds of programs).

Since pretesting was not completed until February, and since the use of interpersonal language is assumed to be highly responsive to situational context, it was expected that pretesting would show program effects. For this reason, it did not seem appropriate to study pre-post change scores. Instead, pretest and posttest data were examined independent of each other, except in the case of total verbal productivity.

Subjects

For pretesting, it was possible to utilize all the data on the 57 Ss in the main study by adding "Program" to the list of independent variables in the multiple regression analysis. Thirteen of these Ss were in a school readiness program; 44 were in child development programs.

For posttesting, only those Ss were available who were selected for the pre-post study at the Head Start Evaluation Center. For pretesting, this sample consisted of the 12 black Head Start four year olds in the school readiness subgroup of the main study, paired for IQ, sex, and age with 12 Ss selected from the sample of 31 Ss at the child development Head Start Center of the main study. There were two High IQ pairs, six Middle IQ pairs and four Low IQ pairs, with an equal number of boys and girls at each IQ level. In addition, the six advantaged white, middle-class, High IQ Ss of the main study, also in a child development program, were selected for the study.

By the time of posttesting, one school readiness S, one child development Head Start S and one advantaged S were lost to the sample, leaving ten matched Head Start pairs and five advantaged Ss, a total of 25. Table 6 shows the mean age and IQs for the two Head Start groups and the advantaged group.

Procedures

Pretesting was carried out from October to February, following the procedures described in the main study, with 12 three-minute language samples per S. Posttesting was carried out from April to June, using only six three-minute language samples per S. It was felt that six time samples would be sufficient to assess change in relation to the 12 pretest observations per S. One observer, the same as one of the two in the prestesting, collected all the post data. Each S was observed on a minimum of two different days.

It should be noted that the Category System was applied only when S was free to initiate spontaneous talk if he so desired. The observer's clock was stopped with teacher-initiated and teaching-machine-initiated activities. The latter was obviously much more frequent in the school readiness program.[1] However, the school readiness program was Montessori-like, with additional unstructured art and construction material available, so that often S chose and pursued his own activity or "work" (as it was called) without teacher direction. These were the times during which he was observed.

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1. There were no teaching machines at the child development center.

Table 6

Program Effects on IQ Scores

	Head Start Black		Middle Class White
	School Readiness (N = 10)	Child Development (N = 10)	Child Development (N = 5)
Pretest Age mean[1]	54.2	53.9	52.0
Pretest IQ -- mean	95.6	94.2	119.2
Posttest IQ -- mean[2]	93.0	87.7	121.0

1. Posttest age was five months later for all groups.

2. Pre-post differences are not significant for any subgroup.

Statistical Treatment of Data

For the pretesting, the multiple regression analysis of the main study the used, specifically, the correlations relating to the program variable.

The sample for which there is posttest data was too small for multiple regression. Analyses of variance were carried out on the same eight Factors and 32 scores. However, since the advantaged group differed from the Head Start in social class, IQ, and ethnicity, the combined effects of these three variables served to produce significant F-tests mainly where the advantaged group differed from the Head Start. Differences between the two Head Start programs tended to be obscured by the inclusion of the advantaged sample in the analysis. To study these differences it was necessary to carry out t-tests. With ten pairs, the likelihood of significant differences was very small. Therefore, significance levels at the .10 level will also be reported. For those variables showing significant pretest differences, the .10 level can be viewed as .05 on a one-tail test, since posttest differences would be expected to occur.

Results and Discussion

The language findings need to be placed in the context of any pre-post changes in IQ. Table 6 shows the effects of program on IQ score for the sample of 25 Ss who were both pre- and posttested. It can be seen that no group showed significant pre-post changes in IQ, the advantaged group remaining significantly higher than both Head Start groups, in accordance with the procedures for selecting subgroup samples.

Verbal Productivity

Table 7 shows the effects of program on verbal productivity for the Frequency measure and the Interval measure. Posttest means, based on six intervals of observation, have been doubled to allow ready comparison with pretest findings, based on 12 intervals. It can be seen that neither pretest nor posttest differences between Head Start groups were significant. These findings relate to time intervals when S was free to engage in spontaneous talk. Though the school readiness group was much more often engaged in teacher-initiated activities, the latter activities did not seem to depress verbal productivity during intervals when the school readiness Ss were free to talk spontaneously.

Table 7 shows that both Head Start groups gained in productivity from pre- to posttesting, but these gains did not approach significance for either the Frequency measure or the Interval measure. While the mean gains on the Frequency measure appear large, the error variance was also very large (i.e., only three of the ten school readiness Ss accounted for all the gains in Frequency from pre- to posttesting).

At posttesting, the advantaged group is shown to be significantly more productive (.01 level) than both Head Start groups on the Interval measure (see Table 7). In contrast, the Frequency measure shows a lower posttest mean for the advantaged group relative to the two Head Start groups, though the Head Start variance is so great that the differences are not significant. The instability of the Frequency measure (noted above) shows

Table 7

Program Effects on Total Productivity
Frequency and Interval Measures

Verbal Productivity Measure	Head Start Black School Readiness	Head Start Black Child Development	Middle Class White Child Development
Frequency			
Pre			
Mean	53.6	61.5	67.4
s.d.	31.9	40.4	19.7
Post[1]			
Mean	83.0	87.6	79.6
s.d.	44.2	49.0	7.6
Interval			
Pre			
Mean	8.8*	8.3	10.8
s.d.	1.9	3.6	.8
Post			
Mean	10.4	10.0	11.6
s.d.	2.3	2.0	.8

*Post scores are doubled for ready comparison with pre scores. The pretest is based on twelve intervals of observation; the posttest on six.

1. Pre-post differences are not significant for any subgroup.

itself most strongly on the posttest data where the sample size is reduced from 57 on pretesting to 25. On pretesting, the Frequency measure was significantly correlated with IQ and class; the Interval measure with IQ, as shown in Table 3.

Like the Head Start group, the advantaged group showed no statistically significant pre-post test changes in verbal productivity. Though the t-value for the pre-post change was 1.90, a t of 2.13 is required for significance at the .10 level with only four degrees of freedom.

Functional Category Scores

Pretest results on the Functional Category Scores which are significantly correlated with the program variable are shown in Table 4 in the last column. Table 5 shows the mean Interval score for these variables. It can be seen that Factor 8, Academic-Competitive, with a correlation of .28, and its component, Pride in Knowledge, with a correlation of .27, were significantly correlated with program, the school readiness sample exceeding the child development sample. The non-factor score, Learning Implementing, also correlated significantly with the school readiness program, .29.

It may be recalled that Factor 8 emerged in the Ten-Factor analysis as a component of Factor 3, Egocentric Thrust (Positive Self-Assertion). Factor 3 was significantly related to social class, .31, and IQ, .27, when taken as a whole. When Factor 8 is taken singly, the only significant correlate is with program, .28. Though the correlation with IQ is almost as high, .26, it falls short of significance. The results imply that Positive Self-Assertion as a general phenomenon is as significantly related to cognitive effectiveness as the academic, competitive self-assertion fostered by the school readiness program. In fact, Pride in Possessions was the only individual component of Factor 3 that tended toward a significant correlation with IQ (see IQ Effects, Factor 3, above).

The posttest results (mean Interval scores based on six intervals) on the Functional Category Scores can be found in Tables 8 and 9. Table 8 shows the statistically significant t-tests for differences between the two Head Start programs. Table 9 shows the statistically significant F-tests for these two groups plus the advantaged whites. It can be seen that the same academic-competitive orientation was maintained in the school readiness group.

Table 8 shows a significantly higher mean for Pride in Knowledge, and Table 9 shows a significantly higher mean for Assuming the Teacher Role - Competence. As noted above, these two variables plus Me Too - Competitive constitute Factor 8, Academic - Competitive. The factor itself shows a tendency for significance (.10) on the F-test (see Table 9). The school readiness group also shows a tendency toward significance (.10, Table 9) for the Non-factor score, Answers. This may be related to the question-answer orientation created by children assuming the teacher role with each other.

Table 8

Program Effects at Posttesting; Significant t-Tests
(Interval Measure - 6 Intervals)

Interpersonal Functional Category Score	Head Start Black School Readiness (N = 10)	Child Development (N = 10)	t	P-Value
Egocentric Pride in Knowledge	.4	0	2.11	.05
Modulations	1.4	.5	2.00	.10
Teacher Directed	2.7	2.0	1.82	.10
Collaborative Dramatic Play	.1	1.0	3.00	.01
Joining - Specific	.4	1.3	1.75	.10
Report Self Do	.3	.9	1.84	.10

Table 9

Program Effects at Posttesting:
Significant F-Tests
(Interval Measure - 6 Intervals)

Interpersonal Functional Category Score	Head Start Black School Readiness (N = 10)	Head Start Black Child Development (N = 10)	Middle Class White Child Development (N = 5)	F	P-Value
Assuming Teacher Role - Competence	.9	.5	.0	4.10	.05
8. Academic - Competitive	38.0	20.4	4.2	2.93	.10
Answers to Peers	.8	1.2	.2	3.08	.10
Report Self	.9	1.6	3.0	6.94	.01
Report Self Do	.3	.9	1.8	6.03	.01
Modulations	1.4	.5	2.0	4.07	.05
5. Linking with Words	29.3	45.0	68.4	3.23	.10
Qualitative Talk	2.5	1.7	4.2	3.12	.10

Posttesting also shows that the school readiness group tended toward significance in Teacher-Directed and Modulations, both components of the Adult Oriented Factor 1. This contrasts with the peer orientation of the child development group. Table 8 shows this group significantly higher in Collaborative Dramatic Play at posttesting, and tending toward significance with Joining. Both variables are components of the Peer Interaction Factor 4. These findings adequately reflect the contrasting structures of the two programs, with much greater teacher involvement in the school readiness Head Start program, relative to the child development. It appears that when the Ss speak spontaneously, they reflect these differences.

Table 9, with the analysis of variance results of posttesting, shows the mean of the advantaged whites significantly higher in Report Self, its subscore Report Self - Do (both components of Factor 5, Linking with Words), and Modulations (component of Factor 1, Adult Oriented and a subscore of Qualified Talk). Tending toward significance were Factor 5 and Qualified Talk. All of these scores were also significantly related to advantaged social class or IQ at pretesting.

It is interesting that the child development Head Start group at posttesting resembles the advantaged group with regard to Factor 5, Linking to Others with Words, while the school readiness groups resemble it with regard to Qualified Talk and Modulations (see Table 9). With its child-centered approach, the child development program seems to foster what we have called pre-egocentric social speech, a basic linking together with others. With its greater adult control, the school readiness program seems to foster what we have called post-egocentric social speech, taking into consideration the needs of the listener. Perhaps the encouragement of both kinds of social speech is in order, since both kinds seem correlated with cognitive effectiveness. Yet, if post-egocentric social speech rests on the prior development of pre-egocentric speech, the school readiness program may be pressuring for more advanced behavior on a tenuous foundation. Developmental studies are in progress to clarify these issues.

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CODEBOOK

Functional Category System of Spontaneous Classroom Interpersonal Language

A. Frequency of Statements Per Category

B. Number of Time Intervals in Which Statements Occurred Within Category

Column Number	No. of Columns	Range of Valid Codes	Item Description
1-4	Variable 4	0001-5999	Child/E&R Center ID Number
5-6	2	44 only	Spontaneous Language Behavior
7	1	1-3	1 - Pre & Post Data Available 2 - Only "Pre" Data Available 3 - Only "Post" Data Available
8	1	1-0	Evaluation Phase PRE 1 - 12 obs. FS (#16) 2 - 12 obs. KK (#04) 3 - 12 obs. FS & KK (#16 & #04) POST 4 - 6 obs. FS (#16) 5 - 6 obs. KK (#04) 6 - 6 obs. FS & KK (#16 & #04) OUTSIDE PRE/POST DESIGN 7 - 6 obs. FS (#16) 8 - 12 obs. FS (#16) 9 - 12 obs. KK (#04) 0 - 12 obs. FS + KK (#16 & #04)
9	① 1	1-9	Evaluation Sample Basic Sample 1 - Eval. Control (MH - PM) 2 - Eval. Comparison (Union Meth.) 3 - Non-Eval. Mid-Class (Blacks) 4 - Non-Eval. Head Start (Dixon, Rogers, Exum, Glover) Additional Sample 5 - Eval. Control (MH - AM) 6 - Eval. Comparison (St. Marg.) Secondary Sample 7 - Eval. Control (MH - Gurland) 8 - Eval. Comparison (Union - Davis 9 - Eval. Comparison (St. Marg. - Hicks)

Column Number	No. of Columns	Range of Valid Codes	Item Description
10	1	0-9	Pre Coding: For children with pre & post data or pre data only: A) Interval in weeks between child enrollment (i.e., fall 1968) and first series of observations (designated date between 6th & 7th of 12 three-minute observations). 1) 3-4 weeks 2) 5-6 " 3) 7-8 " 4) 9-10 " 5) 11-12 weeks 6) 13-14 " 7) 15-16 " 8) 17-18 " 9) 19 or more weeks 0) not applicable -- data coded on post only in Column 11 Post Coding: For children with pre post data only: B) Interval in weeks between first series of observations (as designated in A above) and second serie of observations (designated date between 3rd and 4th of 6 three-minute observations). 1) 12-16 weeks 2) 17-18 " 3) 19-20 " 4) 21-22 " 5) 23-24 " 6) 25-26 " 7) 27-28 " 8) 29-30 " 9) 31 or more weeks 0) not applicable

Column Number	No. of Columns	Range of Valid Codes	Item Description
11	1	0-9	Pre Coding: code 0 for all children. Post Coding: for children with post data only (code 0 for children with pre/post data). Interval in weeks between child's enrollment (i.e., fall 1968) and post-only observations (designated date between 6th & 7th of 12 three-minute observations or designated date between 3rd & 4th of 6 three-minute observations). 1) 22-24 weeks 2) 25-27 " 3) 28-30 " 4) 31-33 " 5) 34-36 " 6) 37-39 " 7) 40-42 " 8) 43-45 " 9) 46 or more weeks 0) not applicable: coded in Col. 10
12	1	1-9	Tester Ethnic Group: 1 - Negro 2 - Mexican-American 3 - Puerto Rican 4 - Other, White 5 - American Indian 6 - Oriental 7 - Eskimo 8 - Polynesian 9 - Other (including mixed)
13	1	1-2	Tester Sex: 1 - Male 2 - Female
14-15	(2) 2	24-72	Child's Age in Months at Time of Observation

Column Number	No. of Columns	Range of Valid Codes	Item Description
16	1	1-9	Language Spoken in Child's Home: 1-- Standard English 2 - Mexican Spanish 3 - Cuban, Puerto Rican Spanish 4 - Oriental 5 - American Indian 6 - Polynesian 7 - Eskimo 8 - Other Language 9 - Standard plus other than standard (bilingual)
17	(3) 1	1-9	Child's Ethnic Group: 1 - Negro 2 - Mexican American 3 - Puerto Rican 4 - Other, White 5 - American Indian 6 - Oriental 7 - Eskimo 8 - Polynesian 9 - Other (including mixed)
18	(4) 1	1-2	Child's Social Class: 1 - Middle Class 2 - Head Start
19	(5) 1	1-2	Child's Sex: 1 - Male 2 - Female
20-22	(6) 3	000-160	IQ Score
23	1	1-4	IQ Rank (for Pre Union Meth. only; except ID #1269, who is coded #4 -- not part of 30-child evaluation). 1 - High (107+) 2 - Medium (93-106) 3 - Low (92-) 4 - Not applicable
24-25	2	00-90	Mental Age in Months as per Pre/Post Binet

Column Number	No. of Columns	Range of Valid Codes	Item Description
26-29	4	0000-1339	For Evaluation Sample pair members: ID # of matched pair member. Code 0000 for unpaired children.
30-33	4	0000-1339	For unique extra pair (one of whose members is Non-Evaluation Sample) code ID #. For all other Ss code 0000.
34-35	2	00-31	Rank order of Parent Participation in Head Start Program (Pre Union Meth. only). Code 00 for not applicable.
36-37	2	00-31	Rank order of extent to which family fulfills needs of child (Pre Union Meth. only) code 00 for not applicable.
38	1	1-4	For Union Meth. only: person raising child: 1 - real parent 2 - grandmother 3 - foster parent 4 - not applicable

A. FREQUENCY OF STATEMENTS PER CATEGORY

Column Number	No. of Columns	Range of Valid Codes	Item Description
39-41	VARIABLE (7) 3	000-999	TOTAL NUMBER OF SCORED STATEMENTS
			EXPRESSIVE - X
42	(8) 1	0-9	Main X+
43	(9) 1	0-9	Main X-
44	(10) 1	0-9	Main X±
			DESIRES - D
45-46	(11) 2	00-99	D
47-48	(12) 2	00-99	SFD
49	(13) 1	0-9	DSFD
			RIGHTS - R
50-51	(14) 2	00-99	RP
52-53	(15) 2	00-99	SFRP
54	(16) 1	0-9	DSFRP
			EGO - E
55-56	(17) 2	00-99	EP
57	(18) 1	0-9	EPT
58	(19) 1	0-9	NYEP & NOtEP
59	(20) 1	0-9	DNYEP + DNOtEP
60	(21) 1	0-9	EE
61	(22) 1	0-9	EET
62-63	(23) 2	00-99	NYEE & NOtEE
64	(24) 1	0-9	DNYEE & DNOtEE
65	(25) 1	0-9	NYE & NOTE
66-67	(26) 2	00-99	DNYE & DNOTE
68-69	(27) 2	00-99	EETL

Column Number	No. of Columns	Range of Valid Codes	Item Description
	(VARIABLE)		ME TOO - MT
70-71	(28) 2	00-99	MT
72	(29) 1	0-9	MT >
			JOIN - J
73-74	(30) 2	00-99	J
75	(31) 1	0-9	NJ
76	(32) 1	0-9	DNJ
77-79	3	Blank	Blank
80	1	1 only	Card #1

CARD #2

1-8	8		Basic Info: same as Card #1, columns 1-8.
			COLLABORATIVE - COL.
9-11	(33) 3	000-999	Col.
12-13	(34) 2	00-99	Col. Dram.
14-15	(35) 2	00-99	Col. G
16-17	(36) 2	00-99	Chant
			REPORT - RT.
18-19	(37) 2	00-99	Rt. Self
20	(38) 1	0-9	Rt. Ot.
21	(39) 1	0-9	Rt. Tgs.
			LEARNING - L
22	(40) 1	0-9	LQ
23	(41) 1	0-9	Lold

Column Number	No. of Columns (VARIABLE)	Range of Valid Codes	Item Description
			SPECIAL SCORES
24	(42) 1	0-9	EPW
25-26	(43) 2	00-99	ITh (Orders & Threats)
27	(44) 1	0-9	PerPl (Permission Please)
28	(45) 1	0-9	Sh & P (Sharing & Postponing)
29	(46) 1	0-9	EPP
30-31	(47) 2	00-99	EPA
32-33	(48) 2	00-99	EPA Explicit
34	(49) 1	0-9	EPK
35	(50) 1	0-9	(Del.)
36	(51) 1	0-9	Rt. Self At, H, W
37	(52) 1	0-9	Rt. Self Do
38-39	(53) 2	00-99	Rt. Self Pr
40	(54) 1	0-9	L(Cor.)
			APPENDED SCORES
41-42	(55) 2	00-99	t (teacher-directed)
43-45	(56) 3	000-999	Chi (child-directed)
46-47	(57) 2	00-99	? (question)
48-49	(58) 2	00-99	c (continuation)
50-51	(59) 2	00-99	M (modulation)
52	(60) 1	0-9	X+ (expressive)
53-54	(61) 2	00-99	X- (expressive)
55-56	(62) 2	00-99	X± (expressive)
57-58	(63) 2	00-99	! (introductory salutation)
59-60	(64) 2	00-99	( ) (scorer inference)

Column Number	No. of Columns (VARIABLE)	Range of Valid Codes	Item Description
61-62	(65) 2	00-99	p (persistent repetition)
63	(66) 1	0-9	nc & ur (name-calling & cursing)
			NON-SCORES
64-65	(67) 2	00-99	Intra
66-67	(68) 2	00-99	U (inaudible)
68-69	(69) 2	00-99	nw (non-word)
70-71	(70) 2	00-99	sng (song)
72	(71) 1	0-9	Ans. (answer to peer)
73-74	(72) 2	00-99	Sp (spinner repetition)
75-77	(73) 3	000-999	TOTAL SCORED + NON-SCORED STATEMENTS
78-79	2	Blank	Blank
80	1	2 only	Card 2

CARD #3

1-8	8		Basic Info: same as Card #1, columns 1-8.
			ADDITIONAL SPECIAL SCORES
9-10	(74) 2	00-99	D-t
11	(75) 1	0-9	N-D
12	(76) 1	0-9	DC1
13-14	(77) 2	00-99	NYEP, NYEE, NYE
15-16	(78) 2	00-99	NOtEP, NOtEE, NOTE
17	(79) 1	0-9	MTdiff
18-19	(80) 2	00-99	MTch
20-21	(81)	00-99	J
22-23	(82) 2	00-99	Col Dg

Column Number	No. of Columns (VARIABLE)	Range of Valid Codes	Item Description
			ADDITIONAL NON-SCORE
24	(83) 1	0-9	Incpl.
25-27	3	Blank	Blank

B. NUMBER OF TIME INTERVALS IN WHICH STATEMENTS OCCURRED WITHIN CATEGORY

Card #3 continued

28-29	(7) 2	00-12	TOTAL NUMBER OF THREE-MINUTE OBSERVATIONS IN WHICH SCORED STATEMENTS OCCURRED
			EXPRESSIVE - X
30	(8) 1	0-9	Main X+
31	(9) 1	0-9	Main X-
32	(10) 1	0-9	Main X±
			DESIRES - D
33-34	(11) 2	00-12	D
35	(12) 1	0-9	SFD
36	(13) 1	0-9	DSFD
			RIGHTS - R
37	(14) 1	0-9	RP
38	(15) 1	0-9	SFRP
39	(16) 1	0-9	DSFRP

Column Number	No. of Columns (VARIABLE)	Range of Valid Codes	Item Description
			EGO - E
40	(17) 1	0-9	EP
41	(18) 1	0-9	EPT
42	(19) 1	0-9	NYEP & NOtEP
43	(20) 1	0-9	DNYEP & DNOtEP
44	(21) 1	0-9	EE
45	(22) 1	0-9	EET
46	(23) 1	0-9	NYEE & NOtEE
47	(24) 1	0-9	DNYEE & DNOtEE
48	(25) 1	0-9	NYE & NOTE
49	(26) 1	0-9	DNYE & DNOTE
50	(27) 1	0-9	EETL
			ME TOO - MT
51	(28) 1	0-9	MT
52	(29) 1	0-9	MT >
			JOIN - J
53	(30) 1	0-9	ŒJ
54	(31) 1	0-9	NJ
55	(32) 1	0-9	DNJ
			COLLABORATIVE - COL.
56-57	(33) 2	00-12	Col.
58	(34) 1	0-9	Col. Dram.
59	(35) 1	0-9	Col. G
60	(36) 1	0-9	Chant

Column Number	No. of Columns (VARIABLE)	Range of Valid Codes	Item Description
			REPORT - RT
61	(37) 1	0-9	Rt. Self
62	(38) 1	0-9	RtOt
63	(39) 1	0-9	Rt. Tgs.
			LEARNING - L
64	(40) 1	0-9	LQ
65	(41) 1	0-9	Lold
			SPECIAL SCORES
66	(42) 1	0-9	EPW
67	(43) 1	0-9	ITh (Orders & Threats)
68	(44) 1	0-9	PerPl (Permission Please)
69	(45) 1	0-9	Sh & P (Sharing & Postponing
70	(46) 1	0-9	EPP
71	(47) 1	0-9	EPA
72	(48) 1	0-9	EPA Explicit
7	(49) 1	0-9	EPK
74	(50) 1	0-9	(Del.)
75	(51) 1	0-9	Rt. Self At, H, W
76	(52) 1	0-9	Rt. Self Do
77	(53) 1	0-9	Rt. Self Pr
78	(54) 1	0-9	L(Cor.)
79	1	Blank	Blank
80	1	3 only	Card #3

Column Number	No. of Columns (VARIABLE)	Range of Valid Scores	Item Description
		CARD #4	
1-8	8		Basic info: same as Card #1
			APPENDED SCORES
9-10	(55) 2	00-12	t (teacher-directed)
11-12	(56) 2	00-12	Chi (child-directed)
13	(57) 1	0-9	? (question)
14-15	(58) 2	00-12	c (continuation)
16	(59) 1	0-9	M (modulation)
17	(60) 1	0-9	X+ (expressive)
18	(61) 1	0-9	X- (expressive)
19	(62) 1	0-9	X± (expressive)
20-21	(63) 2	00-12	! (introductory salutation)
22	(64) 1	0-9	( ) (scorer inference)
23	(65) 1	0-9	p (persistent repetition)
24	(66) 1	0-9	nc & ur (name-calling & cursing)
			NON-SCORES
25-26	(67) 2	00-12	Intra
27-28	(68) 2	00-12	u (inaudible)
29	(69) 1	0-9	nw (non-word)
30-31	(70) 2	00-12	sng (song)
32	(71) 1	0-9	Ans. (answer to peer)
33	(72) 1	0-9	Sp. (spinner repetition)
34	1	Blank	Blank

Column Number	No. of Columns	Range of Valid Scores	Item Description
35-36	(VARIABLE) (73) 2	00-12	TOTAL # 3-MINUTE INTERVALS IN WHICH SCORED + NON-SCORED STATEMENTS OCCURRED
37	1	Blank	Blank
			ADDITIONAL SPECIAL SCORES
38	(74) 1	0-9	D-t
39	(75) 1	0-9	ND
40	(76) 1	0-9	DCl
41	(77) 1	0-9	NYEP, NYEE, NYE
42	(78) 1	0-9	NOtEP, NOtEE, NOTE
43	(79) 1	0-9	MTdiff
44	(80) 1	0-9	MTch
45	(81) 1	0-9	J
46	(82) 1	0-9	Col Dg.
			ADDITIONAL NON-SCORE
47	(83) 1	0-9	Incpl.
48-49	2	00-24	Rank Order of Real Parent's Participation in Head Start Program (Pre Union Meth. only).
50-51	2	00-24	Rank Order of extent to which Real family fulfills needs of child (Pre Union Meth. only).
52-79	28	Blank	Blank
80	1	4 only	Card #4

BANK STREET COLLEGE OF EDUCATION
Frances F. Schachter, Ph.D.
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RECODE BOOK

Functional Category System of Spontaneous Classroom Interpersonal Language

RECODE VARIABLES
FOR FREQUENCY
FOR 3" INTERVALS

Variable	Description	Variable	Instructions
84	Expressive	8 9 10	Add
85	Desires	11 12 13	Add
86	Rights	14 15 16	Add
87	Ego Enhancing	17 18 19 20 21 22 23 24 25 26 27	Add
88	Me Too	28 29	Add
89	Join	30 31 32	Add
90	Col.	33 34 35 36	Add
91	Report	37 38 39	Add
92	Learning	40 41	Add
93	Total Scores	8 through 41 Inclusive	Add
94	Total Double Scores	7 93	Subtract Variable 7 from Variable 93

Variable	Description	Variable	Instructions
95	Denigration & Defense - EP		Add
	NYEP & NOtEP	19	
	DNYEP & DNOtEP	20	
96	Academic Talk		Add
	EPT	18	
	NYEP & NOtEP	19	
	DNYEP & DNOtEP	20	
	IQ	40	
	Lold	41	
	EPK	49	
97	E Plus (E+)		Add
	EP	17	
	EE	21	
98	EP Total		Add
	EP	17	
	EPT	18	
	NYEP & NOtEP	19	
	DNYEP & DNDtEP	20	
99	EE Total - A		Add
	EE	21	
	EET	22	
	NYEE & NOtEE	23	
	DNYEE & DNOtEE	24	
100	EE Total - B		Add
	EE	21	
	EET	22	
	NYEE & NOtEE	23	
	DNYEE & DNOtEE	24	
	EETL	27	
101	Frustration - General		Add
	SFD	12	
	DSFD	13	
102	Frustration - Specific		Add
	SFRP	15	
	DSFRP	16	
103	Frustration Talk Total		Add
	SFD	12	
	DSFD	13	
	SFRP	15	
	DSFRP	16	

ble	Description	Variable	Instructions
4	Angry Talk - Denigration		Add
	NYEP & NOtEP	19	
	DNYEP & DNOtEP	20	
	NYEE & NOtEE	23	
	DNYEE & DNOtEE	24	
	NYE & NOTE	25	
	DNYE & DNOTE	26	
6	Angry Talk - Exclusion		Add
	NJ	31	
	DNJ	32	
5	Angry Talk - Total		Add
	NYEP & NOtEP	19	
	DNYEP & DNOtEP	20	
	NYEE & NOtEE	23	
	DNYEE & DNOtEE	24	
	NYE & NOTE	25	
	DNYE & DNOTE	26	
	EETL	27	
	NJ	31	
	DNJ	32	
7	Qualified Talk		Add
	Col G	35	
	PerPJ.	44	
	Sh & P	45	
	M	59	
8	Defensive Total		Add
	DSFD	13	
	DSFRP	16	
	DNYEP & DNOtEP	20	
	DNYEE & DNOtEE	24	
	DNYE & DNOTE	26	
	DNJ	32	
09	Play With Words		Add
	TL	27	
	Chant	36	
	DCl	76	
10	Indirect Hostility		Add
	TL	27	
	MT>	29	
	NOtEP, NOtEE, NOTE	78	
	MT diff	79	
	Col dg	82	

Variable	Description	Variable	Instructions
111	MT & MT Chant		Add
	MT	28	
	MT >	29	
	MT ch	80	
112	Col. and MT Chant		
	Col.	90	Subtract Variable 80
	MT ch	80	from Variable 90
113	Inadequate Talk		Add
	U	68	
	( )	64	
	nw	69	
	Incpl.	83	

RECODE PERCENT

FOR FREQUENCY
FOR 3" INTERVAL

Scores

Instructions: Divide by Variable 7 for %

Variables 8 through 66 inclusive
and
Variables 74 through 82 inclusive
and
Variables 84 through 112 inclusive

Non-Scores

Instructions: Divide by Variable 73 for %

Variables 67 through 72 inclusive
and
Variable 83
and
Variable 113

RECODE RATING

FOR FREQUENCY
FOR 3" INTERVAL
FOR FREQUENCY %
FOR 3" INTERVAL %

VARIABLE

114 Total

Instructions -- Multiply the following:

Variable 84 x 1 =
Variable 85 x 2 =
Variable 86 x 3 =
Variable 87 x 4 =
Variable 88 x 5 =
Variable 89 x 6 =
Variable 90 x 7 =

Instructions -- Add the above.

115 Total - Rt.

Instructions -- Multiply the following:

Variable 84 x 1 =
Variable 85 x 2 =
Variable 86 x 3 =
Variable 87 x 4 =
Variable 91 x 5 =
Variable 88 x 6 =
Variable 89 x 7 =
Variable 90 x 8 =

Instructions -- Add the above.

VARIABLE

116 Positive

Instructions -- Multiply the following:

Variable 8 x 1 =
Variable 11 x 2 =
Variable 14 x 3 =
Variable 97 x 4 =
Variable 88 x 5 =
Variable 30 x 6 =
Variable 90 x 7 =

Instructions -- Add the above.

117 Positive - Rt.

Instructions -- Multiply the following:

Variable 8 x 1 =
Variable 11 x 2 =
Variable 14 x 3 =
Variable 97 x 4 =
Variable 91 x 5 =
Variable 88 x 6 =
Variable 30 x 7 =
Variable 90 x 8 =

Instructions -- Add the above.

RECODE VARIETY

FOR FREQUENCY ABOVE ZERO
FOR VARIABLES 118 THROUGH 121:
DIVIDE BY VARIABLE 7

VARIABLE

118 -- Categories:

Instructions -- Count the number of variables with frequency above zero.
Variables 84 through 92 inclusive.

119 -- Categories Positive:

Instructions -- Count the number of variables with frequency above zero.
Variables 8, 11, 14, 97, 88, 30, 90, 91, 92.

120 -- Sub-categories:

Instructions -- Count the number of variables with frequency above zero.
Variables 8 through 41 inclusive.

121 -- Sub-categories Positive:

Instructions -- Count the number of variables with frequency above zero.
Variables 8, 11, 14, 17, 18, 21, 22, 28, 29, 30, 33 through 41 inclusive.

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