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Aid to Dependent Children program is gradually emerging as a broadly gauged family and child welfare program, and the local agencies administering both it and other assistance programs must eventually become multiplefunction social agencies, staffed to provide the kind and quality of services that will help the individual family overcome such personal-social problems as have already been enumerated. This calls for Herculean efforts to upgrade the quality of current staffs of public welfare agencies and to attract imaginative and educationally qualified people to public welfare careers.

Money is becoming available through federal and state governments for general and for demonstration research. It can be anticipated that opportunities will increase for testing or demonstrating any idea that holds promise of enhancing our knowledge of the problems or of dealing more effectively with these problems of the socially deprived segment of the community that comes under the purview of public welfare agencies.

2. The Intellectual Development of Slum Children: Some Preliminary Findings*

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This study examines certain patterns of linguistic and cognitive behavior in a sample of Negro children from various social classes. Three major levels of language behavior—labeling, relating, categorizing—were analyzed. Consistent class differences in language skills were shown to emerge between groups of Negro children of different socioeconomic class.

THE traditional normative approach in the investigations of the cognitive life of children is being supplanted by new theory and new techniques. For example, the study by Kagan and Moss[5] on styles of conceptualization has shown that some children, as well as adults, exhibit a stable approach to a great variety of cognitive tasks. A major value of their work lies in the stress they place on interrelationships among discrete behaviors characteristic of the growing organism. In a longitudinal study of infants, Thomas, Birch and Chess,[10] working toward a similar goal,

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The data reported here were collected as part of a program, "Verbal Enrichment and School Achievement in Lower Socioeconomic Groups," which is supported in part by a grant from the Taconic Foundation to Martin Deutsch, Ph.D., and Alfred M. Freedman, M.D.
The entire staff of the Institute for Developmental Studies has contributed to this research. Martin Deutsch, the Director of the Institute, initiated and coordinated the large-scale studies of which I am presenting one aspect. I thank him specifically for his many contributions to this paper.
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are seeking to discover stable primary patterns of reactivity through observation of the child up to and including his first years in school. These studies, though derived from theoretical frameworks differing from that of Piaget,[3] still resemble his work in deriving explanatory concepts from observed behavior.

However, these studies, as well as the majority of current research, employ readily available subjects, that is, newborn infants of professional colleagues or children who attend schools affiliated with universities. This is one reason why there is as yet little knowledge about the subject of this paper, developmental studies of the urban slum child. His methods of discovering his world, classifying information and manipulating objects or people have hardly been studied.

It is this child, however, who presents the most severe and abiding challenge to the nation's educators; a challenge not only in terms of human tragedy, as Conant[1] reports in discussing the high percentage of boys out of school and out of work between the ages of 16 and 21, but in terms of the social and political health of the metropolis.

The Institute for Developmental Studies, whence this paper originates, is physically situated on the edge of a slum. The life of the children in this neighborhood differs from the life of the college-town subjects of typical developmental studies. Their play, their toys, the noises with which they live, the texture of their existence is not familiar to most research workers. An immediate problem facing an investigator is the selection of measures to use when assessing these children. How valid are traditional psychological tests for this purpose? Riessman[8] views a test as deeply affected by the social context in which it is given. Similarly, the classroom behavior and achievement of slum children, the traditional criterion variables for studies of intelligence, may be evaluated inappropriately by psychologists and teachers.

In our current research, the impact of the early social environment on the patterning of intellectual skills in young children is being examined within a program that encompasses the study of elementary school children of varying social class and ethnic backgrounds. The aim of this program is to ascertain those patterns of linguistic and cognitive behavior that are characterized by internal consistency and are related to the socio-economic environment of the subjects. To focus primarily on the influence of the social environment on intellectual development, it was advantageous to compare groups of children from a single subculture. Therefore, the subjects of this study were Negro children of various social classes.* Two aspects of the intellectual development of these children will be discussed: certain features of verbal behavior, such as the use of descriptive and integrative language, and the use of language as a conceptual tool, as in classificatory behavior.

VERBAL BEHAVIOR

Several studies show that children from lower-class backgrounds rely on shorter sentences in their speech than do their middle-class age-mates.[4] They have a more limited vocabulary and poorer articulation. Investigators have hypothesized that these differences are partially due to the more restricted nature of the environment in which children from low-

*In this regard the study resembles one by Esther Milner who also examined the relationship of social environment using only Negro subjects.

er-class homes are raised. Though the findings are consistent from investigator to investigator, the aspects of language behavior chosen for study have usually not been derived from a theoretical approach to language or cognition.

In these studies we have delineated three major levels of language behavior: labeling, relating and categorizing. A multilevel system of language analysis is useful theoretically and methodologically. However, processes characteristic of one level of verbal behavior may also operate, though to a more limited extent, at another level of language. Language and nonlanguage approaches are continuously integrated in the child's attempts to deal with his environment. The social scientist must impose units of observation and analysis upon ongoing behavior and his methods of "cutting the pie" may occasionally seem forced. Hence, the distinction between verbal behavior and classificatory behavior may appear arbitrary.

Labeling is similar to morphological analysis, in linguistic terms. When the child first learns to speak, he masters more or less precise relationships between perceived phenomena and their labels. This acquisition is both a receptive and expressive process. On the one hand the child is exposed to the word and its referent; subsequently, his own labeling actions become overt and these efforts receive social reinforcement.

Whereas motor exploration can be perfected by a child on his own, language as an effective internal process can only be learned from others. If the infant is to learn the skill of words, he needs the presence and active assistance of another speaker. Reliance upon language as a means of effective communication as well as cognitive exploration is particularly prevalent in the small, nuclear middle-class home. The lower-class child, on the other hand, is surrounded by many faces and cared for by many hands. He, too, experiences the hearing of a word and the seeing of an object, but his own first attempts at talking may go unrecognized.

Opportunities to hear simple labels repetitively are abundant in most normal environments. The names of foods, furniture and colors are repeated thousands of times in the hearing of the young child. Thus reinforcement for his own attempts at labeling may be of minimal importance for the child when faced with these "referents." The corrective feedback offered to the much-listened-to child gives him an opportunity to experiment with strategies of language behavior. He learns under what circumstances people listen to him, how he can attract attention, and hold it —what is easily understood. Thus, the child reared in a verbally rich environment, surrounded by adults who are responsive to his speech, can learn while rather young how to internalize the role of the speaker as well as the listener.

Measures of labeling. The empirical findings to be reported in this paper have been drawn from a large ongoing study of the verbal skills, intellectual performance and motivational approaches of 250 school children from various neighborhoods in Metropolitan New York.* Only some of the verbal and cognitive tasks drawn from the battery of the verbal survey will be discussed.

At this preliminary stage of the research, two questions seemed worth ex-

*This study, often referred to as the *verbal survey*, has continued for the past three years. The tests mentioned are a subpopulation of more than ten tests of language and conceptual behavior.

ploring: (a) Are relatively small differences in the socioeconomic environment of young Negro children reflected in their performance on certain selected tasks, and (b) is there a widening of socioeconomic differences as reflected in test performance when fifth-grade Negro children are compared with first-grade Negro children?

The Peabody Picture Vocabulary Test (PPVT) was used to measure receptive vocabulary and the WISC vocabulary scale to measure expressive vocabulary.

A third test of labeling behavior, designed by the author for this study, is aimed at testing two different processes in overt naming, using the same set of stimuli. In this "Verbal Identification Test," the children were first asked to *enumerate* what they saw on stimulus cards depicting simple events or groups of objects; then, the pictures were shown again and they were asked to give the most appropriate "title" for each picture, that is, to *integrate* the various parts of the picture. The first major hypothesis to be tested was that lower-class and middle-class children would differ little, if at all, in their enumerations, but they would manifest class differences in labeling tasks that require integrating.

Measures of relating. Besides labeling and enumerating, the young child also masters intraverbal relationships in his attempts to approximate language as he hears it. The second level of this language model is comparable to syntactical analysis, in linguistic terms. At this level the child learns to chain responses, just as he had learned earlier to fit objects together into meaningful wholes, during the sensory-motor stage of intellectual development as described by Piaget.[7]

The Word Association Test, a method of eliciting behavior at the relating level, was utilized to study the patterns of associations children make to stimulus words. Susan Ervin[8] has shown that responses to stimulus words in an association task can be analyzed by means of form-classes, that is, the similarity between the grammatical category of stimulus and response. In the process of word acquisition, children learn to group words into some kind of "filing system." Thus, even though two nouns seldom, if ever, follow each other in a spoken sentence, children gradually learn that they are functionally equivalent. Younger children are likely to give completion (or phrase) responses when participating in a word association experiment. The responses of older children are more adultlike, in that they associate noun with noun, verb with verb. In addition, children for whom the task of word association is difficult are expected to have longer latencies. Thus, the Word Association Test offers a highly sensitive, albeit indirect, measure of language socialization.

The second hypothesis tested in this study was that middle-class children would show a higher percentage of responses in the same form-class as the stimulus words and shorter latencies in this task than their lower-class age-mates. In this fashion, the middle-class child's behavior is more closely modeled after that of the adult, and may thus constitute a measure of the absorption of adult language patterns.

CLASSIFICATORY BEHAVIOR

The language-conceptual level specified in these studies relates to how the speaking organism uses language to categorize objects, people and events in his environment. Whereas labeling can be defined as the relationship between word and object (or referent), relating deals with intraverbal relationships. However, classifying cannot be adequately de-

fined by a single phrase. Classificatory behavior involves covert as well as internal language, a fact which greatly handicaps scientific inquiry into these processes.

Much of the behavior of the young child exploring his world is perceptual and motor. Words may be one of the primary and perhaps most essential methods by which the child pools his varied experiences in order to process incoming stimuli effectively. Luria[6] has described in detail the types of cognitive deficit exhibited by speech-retarded children (twins). One of their difficulties is in relating the present to the future. Lower-class children, due to their relative poverty of language, may also experience difficulties when pooling and processing varied experiences.

Measures of classification. Only a most limited account is presented here of the study of classificatory behavior in children, including the role of language in classification. The writer and co-workers designed a Concept Sorting task that consists of 16 cards. These pictorial stimuli can be grouped into functional pairs (sailor and boat, for instance) or in logically consistent piles or categories of four cards each (means of transportation, animals). After the child has finished sorting the cards into piles, the examiner elicits a verbal rationale about each sort from the child.

The third hypothesis in this study was that lower-class children would classify test stimuli according to functional criteria, and thus would sort into a greater number of piles of fewer cards each than middle-class children. Children high in verbal skills are more likely to group stimuli into categories distinguished by class names. The lower-class (and verbally less experienced) child was expected, even if he did sort cards according to concepts, to state the underlying concept indirectly, "they all have legs," instead of explicitly, "they are all animals."

Three dimensions of verbal and classificatory behavior have been emphasized as most likely to be affected by the social experience of the young child: (1) verbal behavior of the integrative type, as measured by part 2 of the Verbal Identification Test; (2) word associations, in which a higher percentage of form-class responses and shorter latencies were expected to be given by children from the more advantaged social groups; and (3) sorting behavior, in which middle-class children were likely to give concept-sorts accompanied by explicit verbalizations of the rationale for classifying.

COMPARISON OF THREE GROUPS OF NEGRO CHILDREN

For this preliminary report, a limited number of language and conceptual tasks likely to reflect differences in the socioeconomic environment of young children have been chosen for a comparison of the performance of three groups of Negro children in verbal and classificatory tasks.

Subjects. For these comparisons, three groups of Negro children have been chosen from the larger verbal survey population. These children can be grossly labeled as lower-lower class (Class I, in this report), upper-lower class (Class II), and middle-class (Class III children). Sixty-nine of the subjects in this study are enrolled in the first grade, while 105 children are currently attending fifth grade.

The Index of Social Class developed at the Institute was used to categorize the subjects into these three social groupings. This Index is an appropriately weighted composite measure of the occupational status of the main breadwinner (akin to

the Empey Scale of Occupational Prestige), education of the main breadwinner and the person-to-room ratio of the family. The weights assigned to the indicators are derived from a regression equation based on the degree of intercorrelation among these three variables. The information necessary to classify a child into one of the three social-class categories is elicited from the children being tested, and further verified by questionnaires mailed to the parents. Space does not permit us to describe in greater detail the very careful process by which these ratings have been calculated.*

The parent of the Class I Negro child of this study is likely to be an unskilled worker with approximately nine years of schooling. Few of the mothers work, and many of the families have children of all ages. The main breadwinner in the Class II family is likely to be a semiskilled worker, such as a truck driver, who has attended but not always graduated from high school. Many of the mothers in this socioeconomic class work, and the families tend to be smaller. Perhaps the most striking difference between these two groups of children is in the condition of their housing. The Class I child lives in an apartment nearly twice as crowded as the Class II child. The occupation of mothers among the Class III children of this study is likely to be as high or higher than that of the fathers. Most of the parents attended college, though many of them did not graduate. The fathers tend to be civil servants and owners of small businesses, while the mothers are trained nurses and teachers. The father is absent in nearly one-third of the Class I and Class II Negro families in this study, but this is true of only 4 per cent of the Class III Negro families. Crowding, then, seems to be a psychologically significant difference between lower-lower and upper-lower class families; the intactness of the family and the higher level of education of the parents seems most to differentiate the middle-class Negro families from the lower-class families.

RESULTS†

The performances of the three classes of children were compared on measures of receptive and expressive labeling. TABLE 1 presents the findings at this first level of language behavior. We predicted that these children would differ more in verbal behavior, which requires integrative language, than in descriptive language. There are no statistically significant differences at this level of behavior among first-grade children, though the trends are in the predicted direction. The large intragroup variability and the smaller number of children at this age level may be responsible for this lack of statistical significance. The most interesting finding revealed by these data is this: The performance of the fifth-grade middle-class Negro children is significantly better on the integrative part of the Verbal Identification Test, whereas there are no statistically significant differences on the enumeration part. By requiring the child to perform two different types of labeling with the same set of pictures, the psychological processes involved in the relatively passive acquisition of overlearned responses elicited in the first part of the Verbal Identification Test are

*The Index of Social Class, as yet unpublished, was developed at the Institute by Suzanne Keller and Estelle Cherry.

†The assistance of Miss Estelle Cherry, Mrs. Jane Ingling and Miss Renée Saltzberg in analyzing the results is gratefully acknowledged. I wish to thank R. Pies for his editorial help.

contrasted with the process of language production requiring summarizing and abstracting elicited in the second part.

One may argue that our findings merely substantiate trends revealed by the Lorge-Thorndike Intelligence Test, namely, that fifth-grade children, particularly Class I children, perform significantly worse on tasks requiring "intelligence." The results on the Verbal Identification Test may yield some insight into what is involved in performing well on an intelligence test. The middle-class children seem to have mastered the skill of choosing the most appropriate single response when presented with a complex task, while their behavior is similar to that of their poorer age-mates when they are required to enumerate and describe.

That differences among older children of differing socioeconomic backgrounds are wider than those among younger children has often been attributed to the increasing complexity of tasks designed for children in higher grades. It is interesting that, in these data, significant class differences are found with the younger children using the identical tests. It may be that the emergence of statistically significant differences among these groups is related less to the increase in the absolute differences in performance than to the decrease in intragroup variability. The highly uniform performance of the fifth-grade Negro children of Class III is particularly striking. This stabilization of responses within a group might reflect the action of cumulative, common social influences on these children. The widening of differences among these groups

TABLE 1

PERFORMANCE OF NEGRO CHILDREN ON LABELING TASKS: ANALYSES OF VARIANCE

	Grade 1: Socioeconomic Status					*Grade 5: Socioeconomic status*				
	I (n=27)	II (n=23)	III (n=19)	F (df=2, 66)	P	I (n=30)	II (n=46)	III (n=29)	F (df=2, 102)	P
P.P.V.T.										
Mean	57.5	55.3	62.8			P.P.V.T. not administered				
S.D.	7.9	13.9	10.9	2.99	N.S.					
Verbal Ident.										
(a) Enumeration										
Mean	53.9	51.4	59.9			64.3	69.5	71.2		
S.D.	15.6	14.6	15.8	1.57	N.S.	16.7	14.6	17.5	1.63	N.S.
(b) Integration										
Mean	46.5	47.7	54.5			63.6	67.4	69.2		
S.D.	11.9	15.9	12.4	2.50	N.S.	7.5	8.8	5.2	4.16	<.05
Lorge-Thorndike (IQ scores)										
Mean	96.4	99.6	103.0			88.6	97.5	100.0		
S.D.	12.6	13.6	14.2	1.43	N.S.	13.4	13.7	13.0	6.14	<.01
	(n=25)	(n=25)	(n=16)	(df=2, 63)		(n=31)	(n=32)	(n=15)	(df=2, 75)	
WISC Vocabulary										
Mean	11.6	15.3	14.9			26.1	30.2	33.7		
S.D.	5.9	6.6	6.2	2.75	N.S.	8.4	8.7	6.5	4.82	<.025

TABLE 2

PERFORMANCE OF NEGRO CHILDREN ON WORD ASSOCIATION TEST: ANALYSES OF VARIANCE

	Grade 1: Socioeconomic status					*Grade 5: Socioeconomic status*				
	I (n=25)	II (n=25)	III (n=16)	F (df =2, 63)	P	I (n=31)	II (n=32)	III (n=16)	F (df =2, 76)	P
Latency scores										
Mean	111.4	38.6	68.5			39.8	35.4	41.0		
S.D.	126.6	20.8	94.3	3.97	<.05	19.0	21.3	28.9	<1.00	N.S.
Form class										
Mean	2.4	3.9	3.9			5.5	6.5	7.2		
S.D.	2.3	2.4	2.9	2.81	N.S.	2.8	1.9	1.9	3.02	N.S.

with time is further illustrated by the significant results of the WISC Vocabulary Test and the Lorge-Thorndike Intelligence Test. In the latter, the fifth-grade subjects were administered the Non-Verbal Battery, Level 3, while the first-grade children were given the Level 1 test. The Non-Verbal Battery requires a child to choose the most appropriate member of a number of alternatives. The superiority of the Class III children on the integrative section of the Verbal Identification Test, designed to measure this type of behavior, suggests that the apparent IQ superiority of the middle-class children largely arises from their mastery of the skill of choosing a best-fit response.

At the relating level, differences in performance reach a statistically significant difference on the latency scores of the first-grade children. (See TABLE 2 for results on the Word Association Test.)* The remaining comparisons are in the predicted direction without reaching significance. The tendency to make more responses of the same form as the stimulus word increases sharply with age. This developmentally more advanced, or adultlike, behavior may be learned more indirectly by children than the integrative responses tapped by the Verbal Identification Test, which reveals class differences. The second hypothesis, then, is not confirmed in this preliminary presentation of findings.

The Concept Sorting Test is aimed at eliciting classificatory behavior in children. Because this is a relatively time-consuming task, only half the children could be tested. The "perfect" performance in this task consists of grouping the 16 stimulus cards into four piles, each representing a concept. After the child has finished sorting, a rationale for each pile is elicited from him. The third hypothesis in this study was that lower-class children would classify test stimuli according to functional criteria, and thus would sort into more piles of fewer cards each than would middle-class children. This prediction was confirmed at the fifth-grade level. In addition, the lower-class child was expected to be able to give fewer explicit rationales for his concept-sorts than the other children. A chi-square test for two independent samples was performed to determine whether the

*Dr. Phyllis Katz and Mr. Barry Karp were particularly helpful in analyzing and interpreting the data obtained by means of the Word Association Test.

relative number of explicit rationales differed among the three SES groups.[9] The results of these calculations are presented in TABLE 3.

Thus, fifth-grade lower-class children (Verbal Identification, Integrative section), and in their conceptual sorting and verbalization behavior. At the relational level of language, group differences are less striking (Word Association test).

TABLE 3

PERFORMANCE OF NEGRO CHILDREN ON CONCEPT SORTING TASK: ANALYSES OF VARIANCE

	Grade 1: Socioeconomic status					*Grade 5: Socioeconomic status*				
	I (n=11)	II (n=13)	III (n=13)	F (df=2, 34)	P	I (n=16)	II (n=30)	III (n=19)	F (df=2, 62)	P
Concept sorting Number of piles*										
Mean	7.3	5.9	6.7			6.4	5.6	5.0		
S.D.	2.3	1.7	1.5	1.99	N.S.	1.6	1.8	1.3	3.75	<.05

FREQUENCY OF EXPLICIT CONCEPT VERBALIZATION IN FIFTH-GRADE NEGRO CHILDREN†

Socioeconomic status	*Below Median*	*Above Median*	*Total*
I	13	3	16
II	18	12	30
III	7	12	19
Total	38	27	65

* The number of piles ranges from a perfect score of 4 all the way to 12.

† $X^2=7.11$, df=2, $P<.05$.

sort cards into more piles and give significantly fewer explicit verbalizations of their sorting behavior than do middle-class children. When evaluating these findings, as well as those presented above, it is important to remember that these preliminary results are based on relatively small numbers of subjects.

CONCLUSIONS

In brief, the following results were attained in this preliminary analysis of verbal and classificatory behavior in young Negro children. Middle-class children surpass their lower-class age-mates in possessing a larger vocabularly (WISC Vocabularly results) and a higher nonverbal IQ (Lorge-Thorndike), in their ability to produce a best-fit response

The emergence of significant group differences on these various tasks at the fifth-grade level may reflect stable patterns of language-conceptual behaviors in the middle-class children. Although similar trends exist at the first-grade level, they may be attenuated by the fact that the younger children, independent of social class, are primarily occupied with the acquisition of the rudiments of language.

The middle-class child has an advantage over the lower-class child in tasks requiring precise and somewhat abstract language. The acquisition of more abstract and integrative language seems to be hampered by the living conditions in the homes of lower-class children. Opportunities for learning to categorize and

integrate are rare in the lives of all young children; this type of learning requires specific feedback or careful tutoring. Such attention is far less available to the lower-class child.

Whatever their genesis, consistent class differences in language skills have here been shown to emerge between groups of children from the same subculture but of different socioeconomic class. By systematically examining features of the preschool lives of young children and clarifying their relationship to performance on language and conceptual tasks, it may be possible to facilitate the acquisition of these skills and thus improve educational methods for children of any class.

Throughout this report, the term "Class I children" has been used to characterize those children who live in our slums. The terms "socially disadvantaged" or "culturally deprived" enable us as social scientists to neutralize our feelings about life for children in the midst of abject poverty. The synthetic quality of these words perhaps reflects our anger and shame about the plight of these children and our ignorance and confusion about how best to help them.

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