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SUBCULTURAL DIFFERENCES IN CHILD LANGUAGE--AN INTER-DISCIPLINARY REVIEW.

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THE WAYS LANGUAGE IS USED BY CHILDREN IN VARIOUS SUBCULTURE GROUPS WERE INVESTIGATED, AND AN EVALUATION WAS MADE OF WHETHER OR NOT THE LANGUAGE OF ANY GROUP CAN BE CONSIDERED DEFICIENT BY USE OF SOME CRITERIA. THE AUTHOR EVALUATED RESEARCH IN LINGUISTICS, DEVELOPMENTAL PSYCHOLOGY, SOCIOLOGY, AND ANTHROPOLOGY DONE WITH CHILDREN OF DIFFERENT SOCIAL CLASSES AND MINORITY GROUPS. METHODS OF DESCRIBING NONSTANDARD ENGLISH IN TERMS OF ERRORS, CONTRAST, AND TRANSFORMATIONAL GRAMMAR WERE PRESENTED. THE AUTHOR STATED THAT BOTH SOCIAL AND PSYCHOLOGICAL CRITERIA ON THE DEFICIENCY OF NONSTANDARD ENGLISH EXISTS, BUT THAT THERE IS MORE EVIDENCE ON SOCIAL GROUNDS. HE OUTLINED SUCH MEDIATIONAL VARIABLES AS SOCIAL CLASS WHICH AFFECT LANGUAGE DEVELOPMENT. HE STATED THAT PHONOLOGY AND SENTENCE STRUCTURE MAY OBSCURE SUCH MEDIATORS AS THE NONVERBAL CONTEXT (WHICH INCLUDES AFFECTIVE QUALITY AND WHETHER THE CHILD TALKS TO ADULTS OR CHILDREN), AND THAT LANGUAGE STIMULATION MAY VARY IN QUALITY AND QUANTITY. THE PROBLEMS WHICH DIALECT DIFFERENCES POSE FOR LANGUAGE DEVELOPMENT SCALES WERE PROBED. THE AUTHOR SUGGESTED A CHILD'S LANGUAGE DEVELOPMENT BE EVALUATED FOR PROGRESS TOWARD THE NORMS OF HIS PARTICULAR SPEECH COMMUNITY. INTERINDIVIDUAL AND INTRAINDIVIDUAL MODES OF COMMUNICATION WERE PRESENTED. THE IMPORTANCE OF THE RELATIONSHIP BETWEEN THESE TWO MODES TO STUDIES OF SUBCULTURAL DIFFERENCES IN CHILD LANGUAGE WAS STRESSED. THIS ARTICLE IS A REPRINT FROM "MERRILL-PALMER QUARTERLY OF BEHAVIOR AND DEVELOPMENT," VOLUME 12, NUMBER 3, 1966. (TC)

SUBCULTURAL DIFFERENCES IN CHILD LANGUAGE: AN INTER-DISCIPLINARY REVIEW[1]

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The argument over whether children from Harlem or Appalachia should be called "culturally different" or "culturally deprived" is more than an empty terminological dispute. It reflects a basic and important question: Is the concept of cultural relativity valid in this subcultural context or not? More specifically, in what ways is the language used by children in various subcultural groups simply different, and to what extent can the language of any group be considered deficient by some criteria? It is the purpose of this paper to explore a large body of literature bearing on the basic question.

Necessarily, this review of the literature will be an inter-disciplinary one. Linguists describe the nonstandard dialects of English in formal ways. Developmental psychologists find variations in the rate of language acquisition by children that correlate with variations in status characteristics, e.g., of social class or ethnic background. Anthropologists and sociologists suggest that not only language, but speech, is structured. Under the heading of ethnography of communication or socio-linguistics, they examine the inter-individual functions that language serves in subcultural settings. Lastly, experimental psychologists studying the intra-individual, or mediational, role of verbal behavior are becoming interested in the individual and group difference among their subjects.

I will discuss these four strands of research in turn, not trying to list all the studies and their findings but concentrating instead on an analysis of significant issues. However, even though some of this work has been stimulated by pressing educational problems, the educational issues would require such a lengthy discussion in themselves that they must be considered as falling outside of the scope of the present paper.

Nonstandard versus Standard English

Dr. Martin Luther King, speaking in Selma, Alabama, just before the

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civil-rights march to the state capital, said:

> Those of us who are Negroes don't have much. We have known the long night of poverty. Because of the system, we don't have much education and many of us don't know how to make our nouns and our verbs agree. But thank God we have our bodies, our feet and our souls (*New York Times*, March 22, 1965, p. 1).

As will be seen, Dr. King's example is pertinent in a discussion of standard and nonstandard English.

Standard English has been defined as "the particular type of English which is used in the conduct of the important affairs of our people. It is also the type of English used by the socially acceptable of most of our communities and, insofar as that is true, it has become a social or class dialect in the United States" (Fries, 1940, p. 13). Nonstandard English, by contrast, refers to dialects which deviate from the standard in pronunciation, vocabulary, or grammar. Social or class dialects are thus usually grouped into three main types: Standard English, common or popular English, and vulgar or illiterate English. However, the methods of distinguishing or describing the latter two types also vary in themselves.

Methods of Describing Nonstandard English

The differences between nonstandard dialects and Standard English have been described in three principal ways: in terms of frequency of errors, of contrastive analysis, or of transformational grammar. The oldest method, now discarded, is simply to count "errors" or deviations from Standard English and express the sum as a percentage of total use of a particular part of speech (e.g., pronouns), or as a percentage of total words used. Three studies of child language (Templin, 1957; D. R. Thomas, 1962; Loban, 1963) provide information on such deviations. All three find that verb usage is the most frequent source of errors: specifically, violation of subject-verb agreement; deviant use of the verb *to be*, "especially for Negro subjects whose parents have migrated from the rural South" (Loban, 1963, p. 52); use of present for past tense; and use of *got* for *have*.[2] Other frequent errors are wrong forms of the pronoun, double negatives, and the use of *ain't*.

[2] This last instance deals primarily, of course, with *got* used as a transitive verb in a present-tense construction for *have* in the sense of "to possess, own, hold," etc., not with *got* as a past participle used with some form of *have* as an auxiliary verb. The writer recognizes that any discussion of *got*-versus-*have* is soon diverted into historic arguments on English usage, divergent British- and American-English practices, literary precedents running from Shakespeare to Shaw, and so on and so on—all of which are beyond the scope of this review. Moreover, it is my impression that the use of *got* is increasing among speakers of Standard English; built into the definition of Standard English is the concept of the changing norm.

A second method is to describe nonstandard forms of English in terms of a contrastive analysis, a technique adapted from research on foreign language teaching. This defines the points of maximum interference between the phonology, morphology or syntax of the speaker's native language and the "target language" which he is trying to learn. Thus a contrastive analysis would pinpoint, for example, the problems of learning English for a native speaker of Hindi. The same technique could be applied to the teaching of Standard English to speakers of nonstandard dialects.

However, this method entails making a separate analysis for each nonstandard dialect—regional, foreign-language background, or social class. Work is now in progress for Negro and Puerto Rican speech in New York City (Labov, 1965); for Negro and white middle- and lower-class speech in Chicago (Davis and McDavid, 1964; Pederson, 1964); for the speech of Negro students at Tougaloo College, in Mississippi (Beryl Bailey)[3]; and for the speech of school children in Washington, D.C. (Center for Applied Linguistics, 1965). These are particularly promising studies of language behavior and the psychological and sociological factors related to it. The Center for Applied Linguistics is also stimulating as well as coordinating activities in this field.

The third method uses the approach of "transformational grammar." Very briefly, each dialect is described in terms of the rules underlying it (descriptive, not prescriptive rules), and the rules for different dialects are then compared. A readable exposition of the basic theory is set forth by O. C. Thomas (1965). Rosenbaum (1964, p. 30) comments that the transformational approach "permits a precise and insightful characterization of the relatedness between grammatical systems" and notes some of the ways in which it seems to hold promise for dialect study. To date, the only example of this approach is Klima's (1964) analysis of the use of interrogative and personal pronouns in four "styles"—elegant or literary English, two intermediate styles, and vulgar English as found in the novels of Nelson Algren.

Nonstandard English as Deficient

There are both social and psychological criteria by which nonstandard speech might be considered deficient. The evidence on social grounds is the more conclusive. There is little question that speaking a nonstandard dialect is a social liability, creating a barrier to the speaker's acceptance in the dominant culture. As Jespersen ([1946], 1964, pp. 70-71) has observed:

> [It is to the advantage of the children to speak Standard English] not only materially, because they can more easily obtain positions in society which now—whether one approves it or not in the abstract—are given by preference to people whose speech is free of dialect, but also because they thus escape being looked down on on account of their speech, and are therefore

[3] Personal communication from Beryl Bailey, 1964.

> saved from many unpleasant humiliations. Apart from all this, merely by reason of their speaking they have a better chance of coming in contact with others and getting a fuller exchange of ideas.

Putnam and O'Hern (1955) provide recent evidence that features of nonstandard speech are indeed perceived and negatively evaluated by Standard speakers. Just which features elicit the most unfavorable reactions from teachers, employers, etc., is one of the points under study in several of the contrastive analyses referred to earlier.

Whether nonstandard English is, in addition, a cognitive liability to the speaker is much harder to determine. First, Standard English might be a more powerful means of communication. But all other things, such as vocabulary, being equal there is no evidence that this is so. "It is generally the very small points that are fixed upon as objectionable, often insignificant things that hardly affect the value of the language as a means of communication" (Jespersen [1946], 1964, p. 56n.).

Second, the child who speaks a nonstandard dialect may have difficulty understanding his teacher and his schoolbooks. The evidence on this point is unclear. Cherry (1964) reports a pioneer attempt to use the Cloze technique "to evaluate the extent to which information is successfully communicated from teachers to pupils of various social backgrounds and the degree of effective communication among children from different social backgrounds" (p. 23). Words were deleted according to a predetermined sequence from samples of teacher and peer-group speech, and the child's comprehension was measured by his ability to replace the exact word or suggest a substitute that made semantic or grammatical sense. Despite methodological problems in oral presentation of the speech samples and in the reliability of the scores, there were three major results: (1) social-class differences in understanding teacher speech were more apparent among fifth-graders than first-graders, but this effect was not maintained when intelligence was controlled statistically; (2) there were no social-class differences among fifth-graders in comprehending lower-class peer speech, but middle-class children were significantly superior to lower-class children in comprehending middle-class peer speech, and this effect was maintained even when intelligence was controlled; (3) Negro-white differences in these receptive language skills were virtually absent. In interpreting these results, we should note that while lower-class fifth-graders had more trouble understanding middle-class peer speech, the decreased comprehension across social-class lines was not reciprocal. The middle-class children understood lower-class peer speech as well as did the lower-class children. This finding suggests that dialect differences are confounded with other linguistic variables, such as vocabulary load and utterance complexity.

Here is a key problem. It is hard to determine whether nonstandard dialects are, "other things being equal," just as good a means of communica-

tion as Standard English. For such "other things" as the total repertoire of words and grammatical patterns are, in fact, rarely equal. Fries (1940, p. 287f.) reached the following conclusion:

> Over and over again . . . it appeared that the differences between the language of the educated and that of those with little education did not lie primarily in the fact that the former used one set of forms and the latter an entirely different set. In fact, in most cases, the actual deviation of the language of the uneducated from Standard English grammar seemed much less than is usually assumed. . . . The most striking difference between the language of the two groups lay in the fact that Vulgar English seems essentially poverty stricken. It uses less of the resources of the language, and a few forms are used very frequently.

Fries's language samples were taken from the correspondence of American citizens with agencies of the federal government, and it could be argued that the writers of Vulgar English were particularly impoverished in meeting the demands of that task. However, Loban obtained comparable results from an analysis of oral language of children in an informal interview. Thus it seems unlikely that the relative position of high and low social-class groups on a richness-impoverishment dimension can be explained wholly in terms of each given situation.

Loban (1963) used a two-level analytical scheme developed for his research. In the first level, utterances were classified into one of nine structural patterns—e.g., subject-verb-object (*George eats onions*), or subject-linking verb-predicate nominative (*Onions are roots*). In the second level, the component parts of these nine patterns were examined. From a comparison of the speech of a high group and a low group, selected on the basis of language ability but contrasting on socio-economic status as well, Loban (1963, p. 46) concludes:

> All these subjects . . . use the relatively few structural patterns of the English language. Thus structural pattern reveals less remarkable differences than does dexterity of substitution *within* the patterns. The important differences show up in the substitution of word groups for single words, in the choice and arrangement of movable syntactic elements, in the variety of nominals, and in strategies with prediction.

In other words, there is evidence that not only do nonstandard dialects use different rules once a particular construction has been selected (the so-called "errors") but, more importantly, people speaking these dialects tend to use fewer of the optional constructions in their native language and to fill all the slots in their constructions from a smaller set of words.

Sometimes a single utterance can be categorized in several ways. Take the case of verb usage and, specifically, this example heard from a five-year-old in a day-care center: *My Mommy help me.* It can be considered as con-

taining an error at the morphological level of linguistic structure in the failure to observe subject-verb agreement in the third person singular. Such errors are common in nonstandard dialects, as has been seen above. But the same utterance can be considered evidence of impoverishment, in failing to encode a particular meaning in a unique way by taking advantage of the rich possibilities afforded by English verb auxiliaries. The weakness of *My Mommy help me* as a communication lies in the use of an unmodified lexical verb instead of one of many alternatives, such as *My Mommy did help me* or *My Mommy would have helped me.* (However, see Stewart, 1965, for evidence that nonstandard dialects make different, not simply fewer distinctions.) Further, since the use of unmodified lexical verbs like *help* precedes developmentally the emergence of more complex constructions, the same utterance can be considered an example of retardation. I will suggest later that such ambiguity in interpretation poses a serious problem in the attempts to establish dialect-free scales of language development.

The question of whether nonstandard dialects are deficient or just different is sometimes glossed over by the statement "you can say anything in any language." It may be true that any language has the resources available, in words and grammatical constructions, to encode any meaning in some way (although Hymes, 1961, offers an opposing view). What is meant by such "resources" is the contents of a complete dictionary. In this sense English is as good as, but not better than, French or Russian. However, when we shift from the difference between English and French to that between the speech of a middle-class child and a lower-class child, we aren't looking at the total of what is available in language as a set of symbols but only at what is actually used by certain individuals at the moment of framing an utterance. This is one distinction between language and speech, and it's a sign of confusion between the two to inject the idea that "one language is as good as another" into the controversy over the verbal inadequacies of children in some subcultural groups.

In general, then, it is probably true, to quote Loban (1963, p. 85), "Subjects who are rated as most proficient in language are also those who manifest the most sensitivity to the conventions of language. The subject who, despite unconventional usage, exhibits verbal linguistic skill is the exception." But while a correlation between deviation from Standard English and impoverishment exists, it can't be explained on any intrinsic grounds. The causes must therefore lie in historical and sociological factors —such as isolation, discrimination, or distance from foreign-language background—and the degree of correlation will therefore vary from one subcultural group to another.

Stages on a Developmental Continuum

The findings of those studies of language development that make sub-

cultural comparisons have become rather widely known. Therefore, I will devote less space here to a summary of that work than to two related topics: an outline of the mediators by which such gross environmental variables as social class may affect language development, and an exploration of the problems which dialectal differences pose for the establishment of developmental scales.

Studies of Language Development

In addition to the work of Templin (1957), D. R. Thomas (1962), and Loban (1963) already touched on, the studies by Irwin (1948a, 1948b) and Lesser, Fifer, and Clark (1965) should be mentioned. Research by various members of the Institute for Developmental Studies (e.g., Deutsch, 1963; John, 1963; Keller, 1963; Cherry, 1965; Deutsch and B. Brown, 1964; John and Goldstein, 1964) is cited elsewhere in this review. Except for the work by Lesser, et al., these studies divide their subjects by social class only. They deal with three aspects of language development: phonology, vocabulary, and sentence structure (today more often termed grammar). The findings can be quickly summarized. On all the measures, in all the studies, children of upper socio-economic status, however defined, are more advanced than those of lower socio-economic status. Nevertheless, some points merit additional comment.

Phonology. Irwin's (1948a, 1948b) work is striking in that it pinpoints the early age at which environmental differences impinge on phonological development. Comparing the number of sound types and tokens produced by infants from birth to 30 months, he found that the infants from higher-status families had significantly higher scores for the last year of the period than did those from lower-status families. In other words, the developmental curves separated at 18 months of age.

Vocabulary. The study by Lesser, et al. (1965) is included here because language development was measured with a vocabulary test, but the import of this research extends beyond that to intellectual development as a whole. The purpose was to examine the pattern of four mental abilities (verbal, reasoning, numerical, and space) among first-grade children in New York City from middle and lower social-class groups and four ethnic backgrounds—Chinese, Jewish, Negro, and Puerto Rican. Care was taken in preparing the test materials and in obtaining examiners from the child's own subcultural group to insure that "observed differences . . . reside in the respondents and not in the test materials themselves" (p. 13). Verbal ability was measured by a 60-item vocabulary test, one-half pictures and one-half words, administered in the child's native language, or English, or a combination of both.

Probably the most important finding is that ethnic background and social class have different effects. Ethnic background affects the pattern of mental abilities, while social-class status affects the level of scores across

the mental-ability scales. Specifically, on *verbal ability* Jewish children ranked first (being significantly better than all other ethnic groups), Negroes second and Chinese third (both being significantly better than the Puerto Ricans), and Puerto Ricans fourth. On *space*, by contrast, the rank order was Chinese, Jewish, Puerto Rican, and Negro children. But in all four ethnic groups, on all scales and subtests, the middle-class children were significantly superior to the lower-class children. As Lesser and his co-workers (1965, p. 83) observe:

> Apparently, different mediators are associated with social-class and ethnic-group conditions. . . . The importance of the mediators associated with ethnicity is to provide differential impacts upon the development of mental abilities, while the importance of mediators associated with social class is to provide pervasive (and not differential) effects upon the various mental abilities. This conclusion allows selection among several explanations offered to interpret cultural influences upon intellectual activity.

The same investigators also found that social-class position has more effect on mental abilities for the Negro children than for other groups, and that on each mental-ability test the scores of the middle-class children from the four ethnic groups resemble each other more than do the scores of the lower-class children. All the findings are discussed in the light of previous studies. For instance, the superior verbal ability of the Jewish children appears in many other studies. On the other hand, the verbal inferiority of the Puerto Rican children has been contradicted by other evidence (e.g., see Anastasi and de Jesús, 1953).Lesser, et al. discount the possible effects of bilingualism.

Although measures of vocabulary consistently yield social-class differences in the scores, significant questions relevant to the difference-deficiency issue remain unanswered. Tyler says that "lower-class children use a great many words, and a number of them use these words with a high degree of precision; but facility with words commonly used by the lower classes is not correlated with success in school" (Eells, Davis, Havighurst, Herrick, and Tyler, 1951, p. 40). Does Tyler mean that children from different status groups know and use different words? If so, how can this be reconciled with Templin's (1957) results on the Seashore-Eckerson Test in which the sampling of words from an unabridged dictionary results in a bias in the direction of common, easier words (Lorge and Chall, 1963)? Or how can it be reconciled with the results obtained by Lesser, et al. on the tests described above? Or does Tyler mean that lower-class children use "slang" from a different "dictionary"? How does this relate to Nida's (1958, p. 283) suggestion that "subcultures have proportionately more extensive vocabularies in the area of their distinctiveness"? Can one speak of the vocabulary of an idiolect or a dialect as structured? Is Tyler implying that, even for vocabularies similar in size, children from different groups may know fewer words in common than children from the same group? Conceivably, quan-

titative measures may conceal wide variation in overlap.

It has also been remarked that the language of the lower-class child is rich in something called "expressiveness." Cohn (1959, p. 439) speaks of "the great power of lower-class language to express emotions, a power ordinarily exploited with a clear conscience only by novelists." Is this just a romantic view in which the clichés of one subculture are perceived as creative expression by the listener from a different culture? Or does it mean that lower-class children use a small vocabulary in varied and novel ways, compensating by inventive encoding for what they lack in availability of single words? Or does it refer not to language as a code but to what it is used to say?

Sentence Structure. The most common measure of development in sentence structure, or grammar, is mean length of response (MLR), usually in words although it should be in morphemes. The validity of such a global and summary kind of measure rests on the widespread finding that it increases with age, and on more recent discoveries by Brown and Fraser (1964) and Bellugi (in press) of a close correspondence between mean length and the emergence of specific grammatical features in the speech of children under 4 years of age. We should not assume, however, that the correlation between length and complexity remains high at older ages. An average can include very short and very long. Thus, even if the MLR for two status groups were similar, the lower-status children might be speaking either in short sentences or connecting simple strings of words with "and" while the upper-status children utilize more complex syntactical patterns.

In a frequency distribution of the written sentences from Standard English and Vulgar English samples, Fries (1952, pp. 291-292) found that even though average lengths were similar, 23.46 and 23.16 respectively, the mode (most frequent length) in Standard English was 21 words, while Vulgar English had a mode of only 11 words but included more very long sentences. The same phenomenon can explain Templin's (1953, p. 79) finding in her study of children 3-8 years old, that while the MLR is the same or higher for upper-status children at all ages, the standard deviation of length-of-response scores is the same or higher for lower-status children above the age of 4 years.

Mediating Variables

In measuring aspects of the environment which correlate with the growth of intelligence and academic achievement, Wolf (1964) and Davé (1963) distinguish between *status* and *process* variables. Examples of status variables are the income of the family and educational level of the parents; examples of process variables are the nature of intellectual aspirations for the child and the academic guidance provided in the home. In short, the contrast is between what parents are and what they do. In a sample of all the fifth-grade children in a Midwestern community, Wolf

obtained a multiple correlation of +.76 between the process variables and intelligence; Davé obtained a multiple correlation of +.80 between the process variables and achievement. These contrast with usual correlations of +.40 to +.50 between intelligence or achievement and usual measures of socio-economic status. (See Bloom, 1964, pp. 24 and 79, for summaries of these two studies.)

In this sense, the widespread finding of a significant positive correlation between social class (a cluster of status characteristics) and the rate of language development begs the important question of what mediating process variables may be operating. I have therefore adapted the categories used by Gray and Klaus (1964) and will outline the features of the environment that may be critical under three headings: context, or the non-verbal setting in which the language occurs; stimulation; and responses to the child's speech. Some of these may have a "differential" impact on language development, while others may have a more "pervasive" impact on cognitive development in general (Lesser, et al., 1965). Unfortunately, we are not yet able to separate these two sets of variables.

Context. Five features of the non-verbal context may be important: the affective quality, whether the child talks to adults or other children, how varied the contexts are, the prevailing signal-to-noise ratio, and conversation versus television. These will be discussed in order.

Affective Quality—There is widespread emphasis on the key role in language development of the mother-child relationship. It is difficult to test the specific influence of that relationship, however, because warm feeling and lots of talk tend to occur together. This confounding is present when home care is contrasted with institutional care (e.g., Provence and Lipton, 1962). It is also present when the home environments of high and low scorers on reading readiness tests are compared (Milner, 1951).

Adults versus Children—Children talk with adults and other children, and the relative amounts of such talk vary greatly among subcultural groups. Which has the greater influence on language development is still an unresolved question. On one side of the issue are those linguists who argue that children speak more like their peers than like their parents. This is the view of Jespersen (1922) and Hockett (1950). And more recently, Stewart (1964, p. 14n.) has observed:

> It is easy to find cases involving second- or third-generation Washington [D.C.] Negro families in which the parents are speakers of a quite standard variety of English, but where the children's speech is much closer to that of the newer immigrants [from the South]. . . . This phenomenon, incidentally, seems to support the theory that children learn more language behavior from members of their own peer group than from their parents, and suggests that educator concern over the quality of "language in the home" may be misplaced.

On the other side are those psychologists who offer convincing evidence

that the speech of children without siblings, who presumably have more opportunity for conversation with parents, is generally superior. Examples can be found in the studies of Koch (1954), Nisbet (1961), and most recently in Vera John's finding [4] of a birth-order effect on language development within a sample of lower-class Negro children.

No doubt, studies of conversation among children could help resolve this issue, but such studies are rare. One example is Smith's (1935) analysis of the mean length of utterance of 220 children, from 18 to 70 months in age, in two situations—at play with other children and at home with adults. The children used longer sentences in conversation with adults, probably because they answered fewer questions, gave fewer imperatives, and generally engaged in more connected discourse with less active play and fewer interruptions.

Only a possible direction for resolution of these seemingly conflicting claims can be suggested. Extrapolating far beyond the present evidence, and using a computer analogy, I wonder if the opportunity to talk with adults may largely determine the complexity of the "programs" for constructing and understanding utterances which a child can handle, while conversation with peers has more effect on specific details of those "programs" such as features of phonology and morphology.

CONTEXTUAL VARIETY—A child's language develops within contexts of greater or less variety. Deutsch and Brown (1964) suggest that variety in family activities increases verbal interaction. Ausubel (1964) writes of the desirability of a wide range of objects which can serve as referents for speech. John and Goldstein (1964) report that a group of lower-class Negro four-year-olds had trouble on the Peabody Picture Vocabulary Test with such action words as *digging* and *tying*. They suggest that a word like *digging* differs from one like *Coca Cola* in the stability of the word-referent relationship: "Gerunds such as *tying* were failed, not because the children were deficient in experience with the referent, but rather because they had difficulty in fitting the label to the varying forms of action observed and experienced" (p. 269). They argue that the process of generalization and discrimination involved in learning the meanings of more abstract words does not come about simply through "receptive exposure" to many examples but through "active participation with a more verbally mature individual (p. 273). The benefits of variety in non-verbal experience may depend on the availability of help in encoding that experience in words.

Varied surroundings can stimulate and reinforce different functions of language. Bernstein (1962a, p. 32) contrasts "restricted" and "elaborated" codes, and asserts that working-class speech is characterized by a restricted code which "is played out against a background of communal, self-consciously held interests which remove the need to verbalize subjective in-

[4] Personal communication from Vera P. John, 1965.

tent and make it explicit." It may be that during the period of language learning those children who are confronted with a narrow range of close personal contacts learn only the economical mode of communication that suffices within that small circle. A related hypothesis is suggested in Frake's (1961) study of folk taxonomies: ". . . the greater the number of distinct social contexts in which information about a particular phenomenon [e.g., skin disease] must be communicated, the greater the number of different levels of contrast into which that phenomenon is categorized" (p. 121).

SIGNAL-TO-NOISE RATIO—Deutsch (1963) discusses the relevance to language learning of the overall signal-to-noise ratio prevailing in the daily environment. One characteristic of slum living which may contribute to language retardation is the high noise level, not only in the literal sense of noise but in the minimum of non-instructional conversation directed toward the child. This situation is ideal for inducing habitual inattention. The child may learn to "tune out" both meaningless noise and the occasional meaningful stimuli, with the result of an absolute decrease in effective stimulation.

CONVERSATION VERSUS TELEVISION—Lastly, what about television? Children from lower-status groups watch as much TV as high-status groups, if not more (Keller, 1963; Wortis, et al., 1963). Why isn't this extra language stimulation more beneficial? Is the critical difference passive listening to a monologue versus active participation in a dialogue? If so, then what of the supposed benefit of listening to stories? Is attention to language reduced when it is embedded in the context of constantly changing visual stimuli. There is evidence that TV has some positive effect on vocabulary (Schramm, Lyle, and Parker, 1961), but research is needed on what children attend to while watching TV and how they process the language heard in this context.

Stimulation. Language stimulation can vary both in quality and in quantity. The quality of the stimulus in turn can vary along lines of conformity to Standard English, variety, and sequence.

CONFORMITY TO STANDARD ENGLISH—Ervin (1964, p. 163) states: "Children's grammar converges on the norm for the community in which they live." If that norm is not Standard English some of the effects may resemble retarded speech, as we have seen, and may be unfortunate from other standpoints. But when we study the rate of language development as such, a child's progress should be judged in terms of his approach toward the norm for his particular language community. Whether the nature of that norm can itself affect development is an open empirical question.

In the studies cited earlier, Wolf (1964) and Davé (1963) found that a rating of opportunities provided in the home for enlarging vocabulary and using a variety of sentence patterns correlated highly with both intelligence and achievement, while a judgment by the interviewer of the

quality of language usage of the mother did not. Davé (1963, p. 114) was thus led to observe, "This may imply that the quality of language usage of the parents, and the extent of verbal interaction among family members, are quite independent characteristics."

LINGUISTIC VARIETY—Variety in the non-verbal setting in which language occurs has already been discussed; here we are dealing with the variety in the words and grammatical patterns which the child hears. Razran (1961, p. 126) reports a Soviet experiment on the role of both kinds of variety in the development of lexical meanings. A group of nine children, 19 months old, were given 20 simultaneous exposures to a book and a sentence about a book. Three children reecived a single book and a single sentence; three received a single book and 20 different sentences; and three received 20 different books and a single sentence. Learning, as measured by the child's ability to select a book from a group of objects, was greatest for the varied language group, next best for the varied referent group, and practically nonexistent for the first group.

Another approach uses the "type-token" ratio. Briefly, the number of tokens—e.g., the total number of instances of plural nouns that a child hears—is an indication of the sheer quantity of language stimulation. The number of types—e.g., the number of different nouns which the child hears pluralized—is a measure of variety. Miller and Ervin (1964) have asked whether greater variety, as measured by the type-token ratio, plays a role in the development of grammatical meanings, specifically in the child's developing use of the plural inflection. Starting from non-contrast (e.g., using *boy* for both singular and plural), the child occasionally uses contrasted forms, then correctly contrasts all familiar words, and finally generalizes to irregular nouns (*foots*) and, in an experimental situation, to nonsense words (*biks*). Contrast with familiar forms always precedes generalization to nonsense forms, but the time lapse between the two stages varies. Miller and Ervin (1964, p. 33) therefore point out, "We do not know whether it is the variety of types or the frequency of tokens showing contrast which is crucial in determining the length of time before generalization occurs." The question at issue is whether increased variety, often termed "richness", adds anything to increased quantity alone. It is at least a hypothesis to be explored that variety does aid the child, in and of itself; and, conversely, that language that is impoverished is harder to learn, not easier.

Three arguments can be suggested for this hypothesis. First, if as Cofer has commented, "learning of inflectional and syntactical skills is akin to concept formation" (Cofer and Musgrave, 1963, p. 198), then variation in irrelevant features (e.g., particular count nouns) may aid learning of the concept of inflectional marking of plurality. Second, increased variety of language stimulation may enhance attentional processes in the child (Fiske and Maddi, 1961). Third and purely theoretical, if the process of first

language acquisition is akin to scientific theory construction in which hypotheses are tested against available data, as the transformational grammarians argue, then a meagre set of data could be a hindrance. Fodor (MS.) makes this argument explicit:

> If parents do simplify the syntax of their speech when they address children they may make it *harder* for the child to learn the correct syntactic analysis of his language. Rules that hold for selected sets of simple sentences may have to be abandoned in the light of examples of sentences of more complicated types.

In contrast to variety are well-learned routines. These may include sentences such as *I don't know;* they may also include bits of nursery rhymes and songs and, perhaps most important of all, phrases from books read to the child many times. It has been a long time since Carroll (1939, p. 222) suggested, "An interesting investigation could be set upon the hypothesis that learning of rote material is an important factor in speech development." That investigation still remains to be done.

SEQUENCE—In analyzing the detrimental effects of the slum environment, Deutsch (1963, p. 168) suggests that "in addition to the restriction in variety . . . it might be postulated that the segments made available to these children tend to have poorer and less systematic ordering of stimulation sequences, and would thereby be less useful to the growth and motivation of cognitive potential." Variety can be described in absolute terms, e.g., by the type-token ratio, but sequence cannot. For while an optimal sequence may incorporate some absolute dimension of complexity, there remains as a relative component the "match" between the stimuli the child encounters in his environment and the cognitive structures which determine his readiness to respond to them (Hunt, 1961).

This match can be improved in two ways. The adult might provide a rich and varied supply of stimuli and let the child find what he needs. This was the principle involved in the self-selection feeding practices of some years ago; it is also the principle recommended by the Montessori method (Hunt, 1964). Applied to language development, this principle would predict that if a child has the chance to hear a sufficiently varied and large sample of well-formed sentences, he will take from it what he needs for the acquisition of his own language system. Alternatively, the adult might preselect certain stimuli for the child. Such preselection could be either purposeful or fortuitous. For first language learning it would have to be fortuitous, since no one knows enough about what the child is doing to plan his curriculum.

QUANTITY—Finally, the language stimulation available to a child can and does vary in quantity. It seems intuitively obvious that differences in quantity should affect language development, although frequency of exposure may matter only up to some threshold, beyond which no additional benefits may accrue. But severe problems face any attempt to separate

the effects of frequency of stimulation from the effects of responses to the child's speech.

Response to the Child's Speech. It is still an open question whether some category of response, such as reinforcement or feedback, is necessary or at least very helpful to language development, or whether rich stimulation or exposure is sufficient. For the most part, the theoretical controversy is carried on between experimental psychologists who attempt to substantiate their theories of human learning by fitting them to the child's strikingly successful acquisition of language (e.g., Staats and Staats, 1963), and linguists and their cognitive psychology associates who derive implications for the process of acquisition from the transformational model of language structure (e.g., Fodor, MS.; Lenneberg, 1964; Katz, in press; McNeill, in press). A review of the arguments is outside the scope of this paper. I will only suggest one way in which reinforcement may apply, then review several empirical studies.

Whether reinforcement applies to any of the actual content of the language learning process—to any aspect of phonology, vocabulary, or grammar—it may apply to the child's interest in, valuing of, and motivation toward language. It may affect his attentiveness, regardless of what is happening while he is attending. It seems to me that some global effect such as this, ill-defined as it is, is necessary to explain the role of the Jewish tradition in consistently producing an impact in the direction of superiority in verbal development. (See Lee, 1960, for a description of this subculture.) At the opposite extreme is the isolated and hopeless situation of many mothers on Aid to Dependent Children, where "the reduction of absolute power undercuts the motivation for protracted verbal exploration of action possibilities" (Strodtbeck, 1965, p. 108).

Studies of infant vocal behavior have been widely cited in support of reinforcement theories of language learning. Detailed comparisons have been made of caretaking activities of parents in homes and of adults in institutions (Rheingold, 1960, 1961; Provence and Lipton, 1962). There is notably more talking to the infants at home—five to nine times as much, according to Rheingold's time-sampling data. There is likewise more vocalizing by the infants themselves. Experimental studies with infants—such as those of Rheingold, Gewirtz, and Ross (1959) and Weissberg's (1963) carefully controlled follow-up study—offer convincing evidence that reinforcement rather than stimulation is operating. But it is questionable whether any results should be generalized across the discontinuity which separates pre-linguistic babbling from true verbal behavior.

Irwin's (1960) experimental study with slightly older children has been widely cited in support of the value of added stimulation. He induced working-class mothers to read to their children for 20 minutes a day from the time the children were 13 months until they were 30 months old. The result was a significant increase in production of speech sounds, both in

tokens and in types. Irwin interpreted this result as a response to the systematic increase in the "speech sound stimulation" (1960, p. 189). While reading could indeed have provided an increased quantity of stimulation alone, it is possible and even likely that in the course of reading the mothers also responded to the vocalizations of the child which the reading may have prompted. Moreover, we do not know how this induced attention to the behavior of her child may have affected the mother's response to him during all the non-reading parts of the day. Once a child has started to speak, it is not feasible to withhold response even for experimental purposes. Consequently, the effects of exposing a child to language and of responding to his language become confounded.

It is commonly assumed (e.g., Ausubel, 1964; Bloom, Davis, and Hess, 1965) that where language has developed well something termed "corrective feedback" has been in ample supply. For this to exist, the child must make errors and the adults must recognize those errors. Parents do seem to correct errors in naming, e.g., of *cat* for *dog*, and feedback may be very important for the learning of vocabulary. But errors of a non-referential nature seem to be largely ignored.

Miller and Ervin (1964, p. 26) give this summary of errors in the speech of two-year-old and three-year-old children:

> Most of the mistakes or deviations from the model can be classified as omissions (*I'll turn water off* for *I'll turn the water off*), overgeneralization of morphophonemic combinations (*foots* for *feet*, *a owl* for *an owl*, *breaked* for *broke*), the incorrect use of a function word with a subclass of a lexical class (using *a* with mass nouns and proper nouns), or doubly marked forms (adding the possessive suffix to a possessive pronoun, *mine's*).

While no frequency counts are yet available, it is safe to say that except for the category of omissions the proportion of errors in the young child's speech is remarkably small. Furthermore, it is my impression that adults without special training do not "hear" such errors even when they are made. Persons trained to be attentive often cannot catch them except under special conditions, such as repeating tape recordings at half-speed. Ordinarily, we hear what we expect to hear—normal English speech. Not surprisingly, R. Brown and his colleagues (conference discussion in Cofer and Musgrave, 1963, p. 203) found "little correction of children's speech by their parents." Furthermore, there is no evidence that the non-verbal responses of adults match in any way the degree of the child's approximation to the adult model.

Sentences containing errors of omission are one exception to the generalization that errors of a non-referential nature are largely ignored. Such sentences constitute the typical "telegraphic speech" of the young child (Brown and Bellugi, 1964; Brown and Fraser, 1964), and a gradual filling in of the omitted morphemes is the most prominent change characteriz-

ing the child's acquisition of grammar. From transcriptions of the speech of two children with their respective graduate student parents, Brown and his colleagues discovered that to the child's telegraphic utterance, e.g., *Mommy lunch*, the parent often responds with the nearest complete sentence appropriate to the particular situation, e.g., *Mommy is having her lunch*. To the content words of nouns, verbs or adjectives in the child's speech, the parent adds mainly the functors: auxiliaries, prepositions, articles, pronouns, and inflections.

Expansions seem to constitute perfect examples of feedback. In fact, they constitute the one category of adult responses where the nature of the assistance to the child can be specified. Again, to quote Brown and Bellugi (1964, p. 143):

> By adding something to the words the child has just produced one confirms his response insofar as it is appropriate. In addition, one takes him somewhat beyond that response but not greatly beyond it. One encodes additional meanings at a moment when he is most likely to be attending to the cues that can teach that meaning.

In discussing the optimal sequencing of stimuli, I suggested that if it does occur in the language learning process it must occur fortuitously. Expansions, by their very nature, provide such sequencing. No one has suggested that parents expand with any conscious tutorial intention. It seems simply to be one spontaneous way of keeping the conversation with a young child going.

Discovery of the category of expansions made possible a new attempt to separate the effects of exposure and contingent response. At first it seemed this might be possible even in natural observations, and that it would therefore be informative to compare the emergence in the child of grammatical constructions heard in the adult's non-expanding speech with those appearing in the adult's expansion of the child's telegraphic utterances. Brown [5] found that for his two subjects the order of emergence of some 40 different grammatical constructions can be well predicted (rank order correlation near .80) by the frequency with which the same constructions are used by the mothers. But the constructions more often used in the parents' non-expanding speech were also the ones more often expanded. The confounding of the two variables was still present.

Part of the present writer's own research (Cazden, 1965) was an experiment designed to separate adult expansions from adult modeling of well-formed sentences. The subjects were 12 Negro children, 28-38 months old, attending an urban day-care center. One group (expansion) received 40 minutes a day of intensive and deliberate expansions; another group (modeling) received 30 minutes a day of exposure to an equal number of well-formed sentences which deliberately were not expansions. One of two

[5] R. Brown, unpublished memorandum, 1964.

tutors, trained for the research, talked with each child in these two groups in an individual play session every school day for three months. A third group (control) received no special treatment. Six measures of language development were used, one being a structured sentence imitation test. The other five were measures of spontanous speech—mean length of utterance, complexity measures of noun and verb phrases, percentage of copulas supplied, and percentage of sentences which included both subject and predicate.

Contrary to predictions, the children who received the non-expanding language stimulation gained the most. One possible explanation is that as the concentration of expansions goes up, in this case far above that occurring in natural conversation, the richness of the verbal stimulation goes down. By definition, expansions are contingent on the child's speech, in content as well as in timing. To the extent that they are pure expansions, just filling in the child's telegraphic utterance to make it a complete one, they will have less variety of vocabulary and grammatical patterns than the adult's non-expanding speech normally contains.

In summary, a tentative resolution of the stimulation-reinforcement controversy can be suggested. Reinforcement, in the classical sense, probably operates to increase vocalizations at the babbling stage of infancy. But once true language begins to develop there is no clear evidence that any specific kind of adult response, verbal or non-verbal, aids the child's progress. Natural observations and the few existing manipulative studies are consistent with the hypothesis that it is the amount and richness of language stimulation available in the context of face-to-face interaction which is most important. Differential access to such stimulation by children from different subcultural groups can be explained by differences in the conditions of their lives, as outlined above under "Context."

Developmental Scales

There is general hope that current research on the acquisition of language [6] will eventually make possible developmental scales which will be more valid measures than mean sentence length (Carroll, 1961). Little consideration has thus far been given to problems which dialect differences pose in establishing such scales. Ervin and Miller (1963, p. 126) recognize the problem: "Adult usage differs in the various subcultures of any community. A good developmental measure for general use should include only those features common to all adult speech in the presence of children." The author faced this problem in the research reported above (Cazden, 1965). I needed to measure the grammatical development of working-class Negro children, but had to devise scales from data on the language of two children from graduate-student families. Because that experience suggests that the problems posed by dialect differences will not be easily solved, it

[6] See Bellugi and Brown (1964) for a report on current research in this area.

will be recounted in some detail.

The grammatical structure of child speech can be scaled along at least three dimensions—developmental sequence, structural complexity, and conformity to Standard English. Complexity undoubtedly influences the sequence of emergence but is not in any one-to-one correspondence with it.

Two examples may clarify this point. Brown and Bellugi (1964) have studied the development of the noun phrase. They found that in the first stage any modifier was used with any noun. When the differentiation process began, articles were separated out of the class of modifiers. The children said *A blue flower* but not *Blue a flower.* Only later did they use two modifiers other than articles before a noun (*My blue flower*). Therefore, on a weighted index, *Flower, Nice flower, A blue flower,* and *My blue flower* may be scored from 1 to 4, respectively. There is no objective difference in complexity which dictates this separation of articles from other modifiers. *A blue flower* and *My blue flower* each contain three units in a common pattern. Yet the developmental sequence is clear.

Verb forms present a contrasting case. The sequence of *I drop, I dropping,* and *I'm dropping* represents both increasing complexity and sequence of emergence, and the forms may be accordingly scored 1, 2 and 3, respectively. But what of the past tense *dropped*? On the basis of complexity it should be grouped with *dropping,* as a verb plus one additional element, but its period of emergence is definitely later. If we knew exactly when it appeared in relation to other forms, it could be scored accordingly. Since we don't know, the decision has to be made on grounds of complexity: *dropped* thus receives 2 points.

Conformity to Standard English is another possible criterion—one I deliberately did not apply. Thus *a trees* and *à coffee* were each given full credit on the noun-phrase index. But conformity did intrude. Sometimes deviations from Standard English left the meaning ambiguous. If the child said *Her go upstairs,* clearly *her* was being used in the subject position. But if the child said *He wet him bed,* it was not equally clear whether *him* was being used as a possessive pronoun. Sometimes non-standard forms raised problems in scoring even when the meaning was clear. The children in my sample often used an auxiliary with an unmodified verb, such as *He's go* or *I'm put.* These patterns hadn't been anticipated, since they had not appeared in Brown and Bellugi's data. Strictly on a criterion of complexity, *I'm put* would be counted as two verb elements, along with the more familiar *He going* or *I putting.* Dialect differences also made it impossible to measure the use of negation. Basis for such an analysis had been provided by Bellugi's (in press) study of the sequence of emergence of particular negative forms, but many of the utterances of the subjects in my study could not be placed on Bellugi's scale. First, the frequent use of *got* and *ain't got* produced a construction where the negation appeared after the verb, as in *I got no crayons.* Second, multiple negatives (*I not*

kiss no people) were more frequent and seemed to appear at earlier stages than in Bellugi's data. In the end, I gave up the attempt to do this analysis.

I have already suggested that, ideally, a child's language development should be evaluated in terms of his progress toward the norms for his particular speech community. My reliance on complexity more than on developmental sequence as a criterion for evaluation helped make possible the transfer from one dialect to another. A scale which accepts alternate forms of the complexity on which it is based can be applied cross-culturally more appropriately than one based on sequence of emergence. Though the latter is otherwise the superior criterion, it is more likely to penalize departures from a preconceived norm. This issue of "dialect-fair" scales of language development may become as significant in the future as that of "culture-fair" tests of intelligence has been in the past.

Different Modes of Communication

To view the language of subcultural groups as different modes of communication, it is necessary to go beyond the structured system of symbols and the rate at which parts of that system are learned to the functions the language serves in actual verbal behavior. This requirement is one version of the contrast between language and speech, which is at once so important and subject to many interpretations.

The two main categories of language functions are, as Carroll (1964, p. 4) has stated them, "(1) as a system of responses by which individuals communicate with each other (inter-individual communication); and (2) as a system of responses that facilitates thinking and action for the individual (intra-individual communication)." In this paper I use the term "mode of communication" to refer to both subsystems of language functioning, which are somehow intimately related. I say "somehow related" because we do not know how overt speech becomes internalized into covert thought, particularly in the case of the growing child (John, 1964). Of great importance for the study of subcultural differences in child language, we don't know how variation in the use of language for inter-individual communication affects its use as an intra-individual cognitive tool. For reasons that have to do with the intellectual history of the behavioral sciences,[7] the two functions of language have been studied in separation. One reason for subsuming my discussion under one term, "different modes of communication," is to emphasize the importance of their relationship.

Inter-individual Communication

A statement by Hymes (1961, p. 57) is immediately pertinent here:

> In a society, speech as an activity is not a simple function of the structure and meanings of the language or languages involved. Nor is speech activity

[7] In this regard, see Hymes (1963) for the viewpoint of those in the field of linguistics, and Cronbach (1957) for those in psychology.

> random. Like the languages, it is patterned, governed by rules; and this patterning also must be learned by linguistically normal participants in the society. Moreover, the patterning of speech activity is not the same from society to society, or from group to group within societies such as our own.

How speech activity is patterned is the focus of a new inter-disciplinary study, the ethnography of communication. More recent publications by Hymes offer both an overview of the field (Hymes, 1964b) and a provocative discussion of the inadequacies of the description given by the transformational linguists of the capabilities of language users (Hymes, 1964a). Overlapping with an ethnography of communication, but not confined to naturalistic observations, is another inter-disciplinary field, socio-linguistics (see Ervin-Tripp, 1964). Both deal with the questions of who says what to whom, how, and in what situations.

Studies of subcultural differences in inter-individual communication have been carried out by Bossard (1954), Schatzman and Strauss (1955), Bernstein (1959, 1960, 1961, 1962a, 1962b), Loban (1963), and Lawton (1964). (The work of Hess and his colleagues will be considered in the next section.) These studies are quite different, and the story of their work will not be a connected one. But each raises interesting issues for further exploration.

Bossard (1954) was a pioneer in what used to be called "the sociology of language." He analyzed the mealtime conversations of 35 families and found differences in amount of talk per unit of time, in range of vocabulary, in the use of imagery, in the extent to which children were interrupted, and in whether the talk was child- or adult-centered—with social class "the most important line of cleavage in our language records" (pp. 190-191). Studies by Milner (1951) and Keller (1963), previously cited, found that lower-class children are more apt to eat alone or with siblings, and less apt to eat with adults, than middle-class children. What Bossard's work indicates is that children not only participate in different speech situations, but that even where the situation is a common one, family mealtime conversations, the patterns of speech activity vary along social-class lines.

The study by Schatzman and Strauss (1955) is included here even though the subjects were adults, because it raised important questions about inter-group versus intra-group communication. Twenty subjects, 10 upper-status and 10 lower-status individuals selected from the extremes of income and education, were interviewed in a small Arkansas town after a tornado. The authors summarize the difference in the resulting narratives of members of the two groups:

> The difference is a considerable disparity in (a) the number and kinds of perspectives utilized in communication; (b) the ability to take the listener's role; (c) the handling of classification; and (d) the framework and stylistic devices which order and implement the communication (p. 329).

In analyzing these differences, Schatzman and Strauss express two different ideas. On the one hand, they say that the upper-status subject is better able to make his meaning explicit because he has been more often in situations where this is necessary, whereas the lower-status subject is accustomed to talking about his experiences only with people with whom he shares a great deal of previous experience and symbolism. By this view, the experience of the upper-status speaker has taught him how to encode more information. Yet, on the other hand, the authors also seem to assert that the important variable is not how much information the speaker has encoded, but the extent to which communication of it from speaker to listener may be impeded by "differential rules for the ordering of speech and thought" (p. 329). These rules, describing the structure of speech, are independent of those describing the structure of language, referred to earlier in the discussion of dialects. Subcultural differences in both kinds of rules may have been tapped in Cherry's (1965) study of communication in the classroom.

Bernstein's work in Great Britain is cited in virtually every discussion of the influence of subcultural differences—in this case, social class—on language and cognition. It is cited, but rarely is it subjected to the analysis it deserves. He set out "to find a way of analyzing some of the interrelationships between social structure, language use, and subsequent behavior" (Bernstein, 1962a, p. 31). He postulated the existence of two codes, restricted and elaborated. These are defined in terms "of the probability of predicting which structural elements will be selected for the organization of meaning"—highly predictable in the first case, much less so in the second. Further, the first is considered to facilitate "verbal elaboration of intent," the second to limit "verbal explication of intent" (Bernstein, 1962b, p. 233).

So far, he has reported one experiment testing three hypotheses related to these codes: that they can be distinguished, that their use is associated with social class, and that their use is independent of measured intelligence. For a non-linguistic measure of the verbal planning functions associated with speech, he drew on Goldman-Eisler's (1958) research on the nature of hesitation phenomena. Goldman-Eisler differentiates between two kinds of gaps in the continuity of speech-production: breathing, related to the motor dimension; and hesitations or pauses, related to the symbolic dimension. Measuring the frequency and duration of pauses, she found that they anticipated a sudden increase in information as measured by transitional probabilities:

> Fluent speech was shown to consist of habitual combinations of words such as were shared by the language community and such as had become more or less automatic. Where a sequence ceased to be a matter of common conditioning or learning, where a speaker's choice was highly individual and unexpected, on the other hand, speech was hesitant (1958, p. 67).

Using Goldman-Eisler's procedures, Bernstein analyzed the verbal behavior of a group of 16-year-old boys. From 61 lower-status messenger boys and 45 (British) "public school" boys he selected five subgroups of 4 or 5 boys each, arranged so that their speech patterns could be compared while holding social class or verbal and non-verbal intelligence constant. An unstructured discussion of capital punishment was held with each subgroup, with only one special provision: "It was thought the working-class group would find the test situation threatening and that this would interfere with the speech and consequently all working-class groups had two practice sessions (one a week) before the test discussion" (1962a, p. 37). Analysis of the recorded group discussions confirmed all three of his hypotheses in regard to the "codes."

Bernstein (1962b) acknowledges the limitations of a small sample and a discussion topic which may not have had the same significance for the two social-class groups. But he has not raised the question of the possible effect of the two practice sessions on the fluency of the working-class speech. Fluency, as measured by the hesitation phenomena, was taken as the operational definition of predictability, and that in turn was the defining attribute of the restricted code. Any influence of the practice sessions would have been in the direction of greater fluency. But sound research procedures requires that bias, if unavoidable, should work against one's hypothesis, not for it. The experiment has since been replicated by Lawton (1964)—but the analysis of the hesitation phenomena is not yet available and he does not indicate whether he repeated the practice sessions for the working-class group.

Of greater importance is that Bernstein's theory reaches beyond verbal behavior to cognitive functioning in general. He believes that differences in the habitual modes of speech arise out of "a different way of organizing and responding to experience" (1959, p. 312), and that they accordingly "create and reinforce in the user different dimensions of significance" (1960, p. 276). In other words, speech is seen as both effect and cause: "In some way the form of the social relationship acts selectively on the speech possibilities of the individual, and again in some way these possibilities constrain behavior" (1962a, p. 31). Further, he believes that the nature of the restricted code has far-reaching implications for the behavior of its speakers: a low level of conceptualization, a disinterest in process, a preference for inclusive social relationships and group solidarity, and socially induced conservatism and acceptance of authority (1961, pp. 300-303).

With these last assertions we are right in the middle of the well-argued contraversy over the Whorf hypothesis that language conditions our perceptions of and responses to the environment. Bernstein's version of that hypothesis may be a particularly interesting one. Whorf was interested in the influence of the structure of language, whereas Bernstein is interested in the influence of the structure of speech activity. Hymes (1964b, p. 20)

suggests that the latter is the more fundamental question: "What chance the language has to make an impress upon individuals and behavior will depend upon the degree and pattern of its admission into communicative events." But Bernstein's formulation is a hypothesis, nonetheless.

It is not possible to review here the arguments for and against the strong ("language determines") and the weak ("language predisposes") versions of the Whorf hypothesis. It is sufficient to report the widespread agreement that evidence of differences in language, no matter how extreme, cannot be used both to suggest and to prove differences in feeling, thought, or other non-verbal behavior. The claimed effects of language or speech differences on ways of perceiving or responding must be demonstrated and not merely assumed, and their proof must involve independent measures of linguistic and non-linguistic behavior (Carroll, 1958). Since all of Bernstein's data deal with speech, there is so far no supporting evidence for the broader implications of the differences he reports.

Bernstein is dealing with a topic of great interest today, and he has engaged in theory construction in a field where theory is sorely needed. The danger is that those reading the widespread references to his work may take his assertions as proven fact, rather than as hypotheses to be tested. The result could be a stereotype of working-class children and adults as unfortunate as the now-discredited stereotype of limited genetic potential. Schorr (1964, p. 911) retells a poignant admission by sociologists that, "according to all that they knew of it, the [civil rights] sit-in movement should never have happened." At least sociologists were in no position to make their erroneous prediction come true. But educators are among the readers of the frequent references to Bernstein's work, and through them the danger of a self-fulfilling prophecy is a real one.

One other point merits examination before leaving Bernstein's work. Earlier, I mentioned that he found a social-class difference in the use of what he calls "egocentric" and "sociocentric" sequences. The former refers to the sequence *I think*, which is more used by middle-class speakers. The latter refers to terminal sequences such as *isn't it, you know, ain't it, wouldn't he*—"sympathy circularity sequences" (1962b, p. 223)—used more by lower-class speakers. Bernstein considers both egocentric and sociocentric sequences to be ways of dealing with uncertainty, with quite different results. For example, he has stated (1962b, p. 237):

> Inasmuch as the S.C. [sociocentric] sequences . . . invite implicit affirmation of the previous sequence, then they tend to close communication in a particular area rather than to facilitate its development and elaboration. . . . The "I think" sequence, on the other hand, allows the listener far more degrees of freedom and may be regarded as an invitation . . . to develop the communication on his own terms.

His interpretation of the function of these two modes of communication

contrasts with one of Loban's findings. Loban (1963, pp. 53-54) has reported:

> Those subjects who proved to have the greatest power over language by every measure that could be applied . . . were *the subjects who most frequently used language to express tentativeness.* . . . These most capable speakers often use such expressions as the following:
>
> It might be a gopher, but I'm not sure.
> That, I think, is in Africa.
> I'm not exactly sure where that is.
>
> The child with less power over language appears to be less flexible in his thinking, is not often capable of seeing more than one alternative, and apparently summons up all his linguistic resources merely to make a flat dogmatic statement.

Remembering that his high language group was also higher in socio-economic status, we see that Loban, in a study of elementary school children in California, and Bernstein, in a study of adolescents in England, both found that higher-status subjects say *I think* more than lower-status subjects do. What is striking is the ease with which two interpretations are placed on the common finding. Bernstein contrasts *I think* with *ain't it,* and finds an egocentric-sociocentric contrast. Loban groups *I think* with *I'm not exactly sure* as examples of cognitive flexibility.

Intra-individual Communication

The use of language as a cognitive tool for intra-individual communication places its own demands on some special set of inner resources. Jensen (in press) sees it as depending on the existence within the individual of a hierarchical verbal network "which environmental stimuli, both verbal and non-verbal, enter [into] and ramify. . . . A great deal of what we think of as intelligence, or as verbal ability, or learning ability, can be thought of in terms of the extensiveness and complexity of this verbal network and of the strength of the interconnections between its elements." There are at least two variables here: the number of elements and the quality (which could be further subdivided at least into complexity and strength) of their connections. In discussing measures of vocabulary, I reported studies which found subcultural differences in the repertoire of words or grammatical patterns available or used. A repertoire can be defined by a list and is synonymous with the number of elements in the network. But network has a second attribute which repertoire does not—the structure or relations of its parts. We know little about subcultural differences in the use of this verbal network in purely mediational, covert ways, because few experimental psychologists have been interested in individual differences, much less group differences, among their subjects.

The work of Jensen (1963a, 1963b, in press) indicates important di-

rections for such research. He reports an experiment (Jensen, 1963a) in which gifted, average, and retarded junior high school students, predominantly middle-class, were presented with a multiple stimulus-response problem. On the first presentation of 200 trials, only students in the gifted and average groups gave evidence of learning. Students in the retarded group were given additional trials on subsequent days until their performance also rose above the chance level of correct response. Each day a new procedure was used: first verbal reinforcement by the experimenter, then stimulus naming by subject prior to responding, stimulus naming while learning, and last, enforced delay of response following reinforcement. All three groups were then tested on a similar but harder task. Here the groups still differed significantly, but the retarded group showed marked improvement. An unusual feature of the data was that the retarded group, while as homogeneous in I.Q. as the other two groups, was far more heterogneous in learning ability. The Mexican-American children, who constituted one-third of the retarded group, were significantly lower than the rest of that group on the first test but then improved markedly.

In discussing these results, Jensen (1963a, p. 138) suggests:

> The normal and fast learners in the retarded group are not really retarded in a primary sense, but are children who, at some crucial period in their development, have failed to learn the kinds of behavior which are necessary as a basis for school learning. . . . The habit of making verbal responses, either overtly or covertly, to events in the environment seems to be one of the major ingredients of the kind of intelligence that shows itself in school achievement and on performance on intelligence tests. Without this habit, even a child with a perfectly normal nervous system in terms of fundamental learning ability will appear to be retarded, and indeed is retarded so long as he does not use verbal mediators in learning. Some of the fastest learners among our retarded group, for example, were those who showed no appreciable learning until they were required to make verbal responses to the stimuli.

Jensen (1963b) also reports an experiment by Jacqueline Rapier in which Mexican-American children who were taught verbal mediating links spontaneously used them to form new associations. He suggests that comparisons of the amount of gain in learning ability from such instruction can be used to separate retardation due to neurological causes from retardation due to a verbally impoverished environment. In addition, he gives (Jensen, in press) extensive proposals for further research.

We do, however, know something about group differences in characteristics of the verbal network. Three studies are available on subcultural differences in word-association responses. In one dating back almost half a century, Mitchell, Rosanoff, and Rosanoff (1919) found that Negro children, ages 4-15, from New York City were less apt to give a common specific reaction (e.g., *chair* to the stimulus *table*) than white children of the same age, and correspondingly more apt to give idiosyncratic reactions.

Since commonality of response increases with age, the authors concluded that the Negro children were developmentally immature. The other two studies, both current, deal with another trend in word-association responses. This developmental trend, related to increasing commonality, is the shift from syntagmatic responses (*deep . . . hole*) to paradigmatic responses (*deep . . . shallow*). In an all-Negro sample of first- and fifth-grade children, John (1963) found significant social-class differences only in the first-grade latency scores. Entwisle (1966) also found very slight social-class differences between high-status and low-status urban Maryland elementary school children, matched for I.Q., but some retardation for rural Maryland children at the lower I.Q. levels, and further retardation in an Amish group. Recent evidence thus shows that status differences are less dramatic for word-association measures than for other measures of verbal ability, and that those differences decrease, rather than increase, with age. The tendency to give common and paradigmatic responses reaches an asymptote during the age range being studied, and the initially retarded children do catch up.

Vocabulary tests indicate whether certain items are part of a person's verbal network and thereby provide estimates of its total size. They can, if the definitions are scaled, provide additional information on network structure. Carson and Rabin (1960) matched three groups of fourth- to sixth-graders—Northern White, Northern Negro, and Southern Negro (recent in-migrants)—on the Full Range Picture Vocabulary Test. They then administered the same test as a word vocabulary test and grouped the definition into six levels. For example, the six levels for *wagon* could be: (1) *a vehicle*—categorization; (2) *a cart*—synonym; (3) *a wooden thing with four wheels*—essential description; (4) *you ride in it out West*—essential function; (5) *it bumps into people*—vague description or function; and (6) complete error. Even though the groups were matched when the task required only finding a picture to match a word, the Northern White children gave significantly more definitions from levels 1-3 and the Southern Negro children least.

Spain (1962) analyzed definitions given by "deprived" and "non-deprived" elementary school children in central Tennessee. Ten stimulus words were carefully selected to insure that both the word and its superordinate (e.g., *bread* and *food*) were of high frequency and familiar to local first-graders. Definitions were categorized as generic (superordinate), descriptive, and functional. He found that functional definitions remained the predominant response for the deprived children at all age levels; descriptive definitions increased with age at a rate similar for both groups; and that generic definitions increased most sharply for the non-deprived, while the deprived group showed a 4-year lag in this mode of response by the end of elementary school.

The use of language in relation to cognition can also be tapped by

categorizing tasks. In general, status differences on such measures increase with age (e.g., see John, 1963). But here the line between studies of language and studies of concept formation disappears, and the limitations of this paper preclude a proper review of such research.

Nevertheless, mention must be made of the large-scale project of Hess and his associates at the University of Chicago, reports of which are now beginning to appear in the published literature (Hess and Shipman, 1965a, 1965b). This is a particularly important study because it relates intra-individual and inter-individual modes of communication. It has been planned as a test of the Bernstein hypothesis of a relation between the child's cognitive development and the mother's verbal ability, maternal teaching style, and characteristic mode of family control. In all, 160 Negro mothers from four socio-economic levels were interviewed, tested, and brought to the university for a structured session of mother-child interaction. Each mother was taught three tasks—two sorting tasks and the use of an Etch-a-Sketch board—and then asked to teach those tasks to her four-year-old child. Her maternal teaching style was monitored and analyzed. The children were subsequently tested by being asked to sort new material and give a verbal explanation. (See Bing, 1963, for similar use of an experimental teaching situation to study mother-child interaction.)

Preliminary results indicate that, while there were no social-class differences in affective elements of the interaction or in persistence of the mothers or in cooperation of the children, on at least some of the performance measures social-class differences were in the direction expected. Hess and Shipman (1965a, p. 192) have reported:

> Children from middle-class homes ranked above children from the lower socio-economic levels in performance on these sorting tasks, particularly in offering verbal explanations as to the basis of sorting. These differences clearly paralleled the relative abilities and teaching skills of the mothers from the different groups.

Additional information on a subset of this sample is available in Stodolsky's (1965) doctoral research. One year after the original data had been collected, she administered the Peabody Picture Vocabulary Test and Kohlberg's Concept Sorting Test to 56 of the original 160 children from three of the four socio-economic groups. The children's scores were then correlated with a selected set of maternal variables from the previous year to find the best predictors. She found that there were significant social-class differences in the vocabulary scores of the children, and that a set of maternal variables predicted those scores with a multiple correlation of .68. The best single pair of maternal variables, in this respect, proved to be the mother's score on the vocabulary part of the W.A.I.S. and one of the indices of teaching style. The latter was the "discrimination index" that measures the extent to which the mother isolates task-specific qualities of the environment. While scores on the W.A.I.S. differentiated among the

mothers on social-class lines, scores on the discrimination index did not. In other words, there is an interaction between characteristics that are class-linked and those that are not.

The entire Hess project is planned to continue until the children have completed four grades of school, with further data being collected on both the mothers and children. Hopefully, analysis of all the data will proceed beyond a test of the Bernstein hypothesis to provide a differentiated picture of how the maternal variables interact in affecting the verbal and cognitive behaviors of the child.

Summing Up

In conclusion, the relative space devoted to the three main divisions of this paper is a rough guide to the extent of our present knowledge. We know little about dialect differences as yet; but we should learn much, about urban Negro speech in particular, from the contrastive studies in progress. Relatively, we know the most about language development. Here the evidence of retardation among lower-class children is extensive, and future work will probably concentrate on more precise analysis of the process variables that mediate this relationship. We know very little about differences in language function. Basic research is needed in this area on ways of categorizing the functions that language serves in natural speech communities, and on ways of analyzing the mediational use of language as well.

At the present time, we cannot completely resolve the difference-deficiency issue on which this review has focused. Children who are socially disadvantaged on such objective criteria as income and educational level of their parents do tend to be deficient on many measures of verbal skills. But the concept of subcultural relativity is nevertheless relevant. We must be sure that developmental scales of language development do not distort our assessment of children who speak a nonstandard dialect. We must be equally sure that studies of language function do not simply reflect the predilection of the investigators. In short, subcultural relativity provides an essential perspective for objective analysis and for any program of planned change. Unfortunately, when pressure for change is great, the danger exists that such perspective may be discarded just when we need it most.

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