R E P O R T R E S U M E S

ED 018 279 PS 000 902

ORAL OR WRITTEN LANGUAGE--THE CONSEQUENCES FOR COGNITIVE DEVELOPMENT IN AFRICA AND THE UNITED STATES.

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PUB DATE 9 FEB 68

EDRS PRICE MF-$0.25 HC-$0.72 16P.

DESCRIPTORS- LANGUAGE RESEARCH, *WOLOF, ORAL COMMUNICATION, VERBAL COMMUNICATION, *LANGUAGE PATTERNS, *LANGUAGE USAGE, WRITTEN LANGUAGE, UNWRITTEN LANGUAGE, COGNITIVE DEVELOPMENT, *CONCEPT FORMATION, SPEECH SKILLS, CONTEXT CLUES, *NEGRO DIALECTS, THOUGHT PROCESSES, LEARNING PROCESSES, SUBCULTURAL, SENEGAL,

SPEAKING AN ORAL LANGUAGE AND SPEAKING A WRITTEN LANGUAGE INVOLVE DIFFERENT PATTERNS OF LANGUAGE USE WHICH ARE IN TURN RELATED TO DIFFERENT EDUCATIONAL METHODS AND DIFFERENT COURSES OF COGNITIVE DEVELOPMENT. BECAUSE ORAL SPEECH RELIES ON CONTEXT FOR COMMUNICATION, A COMMON CONTEXT AND POINT OF VIEW IS ASSUMED BY THE SPEAKER TO EXIST BETWEEN THE LISTENER AND HIMSELF, AND HIS SPEECH IS ATTACHED TO CONTEXT-DEPENDENT THOUGHT. IN ORAL CULTURES, EDUCATION IS ACCOMPLISHED BY THE CHILD'S LEARNING TO IMITATE, USING CONCRETE OBJECTS IN CONCRETE ACTIVITIES. IN A WRITTEN LANGUAGE CULTURE, WHERE KNOWLEDGE EXCEEDS THE AMOUNT WHICH ANY 1 INDIVIDUAL CAN KNOW, ABSTRACT THINKING IS ENCOURAGED, WITH EMPHASIS ON THE ABILITY TO GENERALIZE AND TO MANIPULATE SYMBOLS. IN EXPERIMENTS CONDUCTED WITH THE WOLOF CHILDREN IN SENEGAL IT WAS DEMONSTRATED THAT LANGUAGE USE RATHER THAN LANGUAGE STRUCTURE DETERMINES COGNITIVE DEVELOPMENT. IT WAS FOUND THAT WOLOF SCHOOL CHILDREN TAUGHT IN FRENCH NONETHELESS CHANGED THEIR USE OF WOLOF IN A CONCEPT-FORMATION SITUATION SO THAT IN FUNCTIONAL TERMS WOLOF BECAME MORE "WRITTEN." UNITED STATES NEGRO LOWER CLASS CHILDREN HAVE BEEN FOUND TO HAVE THE SAME OBJECT-CONTEXT ORIENTATION FOUND IN ORAL CULTURES AND HAVE SIMILARLY IMPROVED IN ABSTRACT THINKING ABILITY WHEN GIVEN TRAINING. INCREASED STUDY OF AFRICAN SUBCULTURES MAY LEND DIRECTION TO AMERICAN SUBCULTURAL DEVELOPMENT. THIS PAPER WAS PRESENTED AT THE SYMPOSIUM ON CROSS-CULTURAL COGNITIVE STUDIES, AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (CHICAGO, FEBRUARY 9, 1968). (MS)

ORAL OR WRITTEN LANGUAGE:

THE CONSEQUENCES FOR COGNITIVE DEVELOPMENT IN AFRICA AND THE UNITED STATES

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Symposium on Cross-Cultural Cognitive Studies

American Educational Research Association

Chicago

9 February 1968

I should like to utilize some cross-cultural research carried out in African countries by myself and others to elucidate the nature of subcultural language differences noted in this country and their relation to cognitive development. A major reason for doing this is to place the current rash of work - both experimental and remedial - in a more general perspective, thereby promoting greater awareness of what we are trying to accomplish in this area.

The central thesis with which I shall try to unify a diverse body of cross-cultural and cross-subcultural material revolves around the distinction between speaking an oral language and speaking a written language. The notion is twofold: first, oral and written speech involve differing patterns of language use, although not necessarily of language structure; second, these two patterns of language use are related to different educational methods and different courses of cognitive development. By written speech, I mean talking a language that also appears in writing. This definition allows me to include as oral languages not only African languages but also dialect deviations from Standard English, such as those spoken by lower-class Negro and White Americans. With respect to these latter, the linguist Bloomfield (1927) tells us that Standard English is, in fact, the closest spoken approximation to Written English and that dialect variations are therefore deviations away from the written language. I do not mean to imply that African languages and dialect variations of English are "oral" to the same extent - there are obvious differences of degree - but only that both deviate <u>in the same manner</u> from strictly "written speech."

Speakers of an oral language rely more on context for the communication of their verbal messages. As I see it, this is the main difference in language use, a difference which has important educational correlates as well as implications for cognitive processes. In fact, I should like to hypothesize that context-dependent speech is tied up with context-dependent thought, which in turn is the opposite of abstract thought.

I am using abstraction in a sense close to the literal one: a separation from. Abstraction is, therefore, the mental separation of an element from the situation or context in which it is embedded. When I say that oral speech is context-dependent, I mean it is necessary to utilize a higher order unit in order to understand a lower order linguistic component. For example, a sentence framed in "telegraphic" grammatical structure may demand knowledge of the situational context in which it is made before its meaning can be fully grasped.

If the speaker of an oral language depends upon the surrounding context to communicate his message, then effective communication presupposes a common context and common point of view for both listener and speaker. The speaker, moreover, must assume that this is the case. He is, therefore, egocentric; that is, he takes for granted, without being aware of doing so, that his point of view and frame of reference are the only possible ones. At times this assumption may be valid, at other times, not so.

Why should contextuality characterize the use of oral languages more so than that of written? First, in an oral culture communication is invariably face to face. Consequently the assumption of a common physical context is a valid one. Second, oral languages generally do not spread as far as written languages and are therefore shared by smaller groups. For this reason, the assumption of a common psychological point of view is a realistic one. In consequence, context-dependent speech works.

Speech based on a written language, in contrast, must be relatively independent of context for a number of reasons. An important one is that written cultures usually cover larger geographic areas and therefore encompass more heterogeneous people. Consequently, the assumption of a common frame of reference will often be invalid even where contact is face to face.

Let me begin giving evidence concerning these two patterns of language use by showing that, in oral cultures, education itself has a contextual nature. That is, it works through the situation in which it is to be used. An example would be learning patterns of basket weaving by demonstration rather than by first studying diagrams. Two monographs on traditional African education - one on the Tallensi, of the former Gold Coast (Fortes, 1937), the other on the Mukongo of the Congo (Knapen, 1962) - stress this situation-bound quality of the indiginous education. A third description of traditional African education - Cole and Gay's (Gay, 1965) work on the Kpelle of Liberia - concurs with these two and discusses the obvious speech correlates of such instructional methods. We are told that Kpelle education is largely nonverbal and that,where it does use words, it avoids the classificatory and analytic, isolating functions which words have in Western culture. Typically, a Kpelle child watches others perform the task he is to learn and learns by imitation. This, in the appropriate real-life situation he learns concrete activities not abstract generalizations. The implication of this description is that situational instruction demands a particular type of language use and conceptualization.

In contrast, technical societies, possessing written languages, tend to develop systems of formal schooling, perhaps because school is needed to teach reading and writing and because the presence of written culture means that knowledge exceeds the bounds of what any one individual can know. Consequently, there develops, as Bruner (1965) puts it, " an economical technique of instructing the young based heavily on telling out of context rather than showing in context (p.10), "for what one talks about in school for the most part are things not immediately present. In other words, school is isolated from life.

The pupil must therefore acquire abstract habits of thought if he is to follow the teacher's oral lessons. In addition, a certain minimum of abstraction is demanded to master the basic skills of reading and writing. Malinowski (1930) long ago observed that written material is necessarily more abstract than oral speech by virtue of its self-containment. Vygotsky (1961) noted a different sort of intrinsic abstractness in the written word, another sort of separation from context. He pointed out that the spoken word stands for something, while the written word stands for something that stands for something. Thus, ipso facto it presents a new and higher level of abstraction.

But, in this country where we have universal formal schooling, how can these notions of context-bound education and speech possibly apply, even to a subculture? First, as current thinking has it, the intellectual potential of children is pretty much determined by the age of five. If so, then this formation is not taking place at school, but at home. The culture of the parents is exerting its decisive influence -- it is the way in which parents teach their children that is crucial. Let us now look at Hess and Shipman's (1965) data on maternal teaching styles. One-hundred-sixty Negro American mothers from four socioeconomic levels were taught two classificatory tasks and then observed as they taught these tasks to their four-year-old children. A presumably typical middle-class mother gave explicit instructions for the color sorting task, including statements like:

> The things that are all the same color you put in one section, in the second section you put another group of colors, and in the third section you put the last group of colors.

Contrast now a lower-class mother's explanation:

> All right, just put them right here; put the other one right here; all right, put the other one there.

She is explaining by demonstration. What is important for the present discussion is that the meaning of her verbalization is totally dependent on the concrete physical situation. Taken out of context, the sentences are devoid of meaning for any audience. The child can imitate his mother; but unless he can abstract on his own the attributes to which his mother is responding, he will not know why he is doing what he is doing or even what the task is. Thus, her situation-embedded communication turns out to be egocentric as well; for in assuming the child understands why she is acting the way she is, she is failing to satisfy his informational needs. And, as we would expect, the lower-class children do not learn as much from their mothers as do their middle-class counterparts. Here is an illustration of the relation between context-dependent communication and egocentrism: in general, the more elements in a situation that are abstracted from it and made verbally explicit, the more likely it is that the listener's informational needs will be satisfied. As John and Goldstein (1964) point out, moreover, the gap between the speaker's verbal skill and the listener's potential for comprehension is greatest in adult-child interactions. The result of egocentrism im this situation will consequently be of the gravest sort in terms of adult-child communication. The younger the child, the more serious the problem and the more radical the possible consequences.

Looking more closely at the children's performance in Hess and Shipman's study, we see that the lower-class children did about as well as the middle-class children when they sorted on the basis of the total identity of objects (for example, cars together, spoons together); but when they had to abstract an attribute or attributes from the total object, they had more difficulty both in carrying out the task and in saying what they had done. Thus, a context-dependent teaching style on the part of the mothers is associated with a lesser development of an ability to form conceptual and linguistic abstractions on the part of the children.

It is not surprising, then, that one of the most successful preschool enrichment programs in terms of intelligence test score changes, that of Blank (1967), puts heavy emphasis on teaching the child to comprehend and produce speech that goes beyond, is independent of the concrete situation in which it is formulated.

The English sociolinguist Basil Bernstein (1961), who was one of the sources of inspiration for Hess and Shipman's work, has described class speech differences in terms of two different linguistic codes. The restricted code belongs to the working class, the elaborated code to the middle class. Hess and Shipman's data confirm several aspects of Bernstein's theory. For example, he states that speakers of the restricted code fail to perceive the informational needs of the listener as being different from their own. Most pertinent at this point, he traces this failure to a lack of conscious differentiation of self from others; and he predicts that it will be reflected in the structure of communication, as, for example, in failing to make one's point of view known.

Bernstein's theory is meant to describe class differences in a technological society. I was, therefore, most struck by how well it also describes many differences I found in Senegal between Wolof children attending school and those who were unschooled (Greenfield, 1966; Greenfield, Reich, & Olver, 1966). Let me briefly describe the children I studied. There were nine groups of Wolof children - three degrees of urbanization and education, with three age levels within each.

The cultural milieu of the first group, rural unschooled children and adults, had neither schools nor urban influence. Although their traditional Wolof village had an elementary school, they had never attended it. The three age groups were: six-and seven-year-olds, eight-and nine-year-olds, and eleven-to thirteen-year-olds. There was also a group of adults.

The second major group -- the bush school children -- attended school in the same village or in a nearby village. This group was partitioned among first graders, third graders, and sixth graders, corresponding as closely as possible to the three age levels of the unschooled groups.

The third major group comprised city school children. These children lived in Dakar, Senegal's cosmpoloitan capital and, like the second group, included first, third, and sixth graders. All the children were interrogated in Wolof, although French was the official language of instruction.

One focal area of my experiments was the development of concept formation. The tasks were of the same ilk as Hess and Shipman's categorization problems. Each child was asked to put together the pictures or objects in an array that were most alike. He was then asked to give a reason for his choice. With both American and European children this type of question has usually been put something like this, "Why do you say (or think) that these are alike?" But this type of question met with uncomprehending silence when addressed to the unschooled children. If, however, the same question were changed in form to "Why are these alike?" it could often be answered quite easily. It seemed that the unschooled Wolof children lacked Western self-consciousness: they did not distinguish between their own thought or statement about something and the thing itself. The concept of a personal point of view thus appeared to be absent. Correlatively, the relativistic notion of multiple points of view was also absent to a greater degree than in Western culture; for the unschooled children could group a given set of objects or pictures according to only one attribute, although there were several other possible bases of classification. The Wolof schoolchildren, in contrast, did not differ essentially from Western children in this respect.

It appeared that school was giving both urban and rural children something akin to Western self-consciousness for they could answer questions implying a personal point of view; and, as they advanced in school they became increasingly capable of categorizing the same stimuli according to several different criteria or "points of view."

A connection between using forms like "I think" and the ability to conceptualize alternatives has also been hypothesized by Loban (1963), this time on the basis of American evidence. He and Bernstein (1962) have independently gathered data from California and England showing that middle-class speakers use "I think" and related forms more than lower-class speakers. Loban does not himself have evidence relating the us of " I think" to cognitive flexibility in solving problems. Bereiter and his associates, however, document the absence of flexibility in lower-class children who enter their academically oriented preschool, for they state that these children cannot conceive of a single object having two attributes (Osborn, 1967). In other words, the children can assess an object from the point of view of color, for example, or of form, but not both. This finding parallels my results with unschooled Wolof children, as well as some of Cole and Gay's findings with the Kpelle (1967). Thus the absence of self-consciousness and the resulting presence of an egocentrically unified prespective are associated with an inability to shift perspective in concept formation problems.

Stepping away for a moment from the egocentric basis of context-dependent speech, I should like to look at some more relations between situation-dependent verbal communication and concept formation. One of my most interesting results in Senegal involved a relation between grammatical and conceptual structures. In the categorization or grouping task, structure is the logic of the grouping, the pattern of connections among the elements belonging to the category.

It is distinct fron content, which relates to the type of attribute upon which a grouping is based. The most developmentally advanced conceptual structure, originally defined by Vygotsky (1961), is the superordinate, in which all the objects in a grouping share a single common attribute. Superordination may take a more or less verbal form. In my experiments the less verbal, more situation-dependent criterion of superordination involved selecting all the items in an array that shared a particular attribute and naming the attribute; for example, selecting all the red objects and saying "red" when asked why. The criterion for verbal superordination involved an explicit statement of the connection between attribute and group members. Contrast the grouping reason "red" with the reason "This - red; this - red" or "They are red." The former can be part of a context-dependent superordinate; the latter are verbal superordinates In the first case - "red" - we are not told <u>what</u> is red, although we are told the defining property of the category - redness. In the latter two reasons, pronouns -"this" or "they" - symbolize what concrete objects belong to the category.

In terms of the development of conceptual structure, superordination became more frequent with age in all three cultural milieus. If we look at verbal superordinates alone, however, Wolof schoolchildren, like American schoolchildren (Olver & Hornsby, 1966) formed more and more with age; the unschooled children did not. Note that their sort of superordinate - the context-dependent one - demands greater knowledge of the concrete situation - in this case, the experimental stimuli - to be interpreted.

What is the relation between verbal superordination, a semantically defined variable, and grammatical structure? Two stages of symbolic reference beyond mere pointing can be distinguished: <u>labeling</u>, in which a verbal tag replaces the pointing operation, and <u>sentential placement</u>, in which a label or labels are embedded in a complete sentence.

Both verbal superordinate and nonsuperordinate structures can be expressed either as labels or as sentences. It is therefore valid to ask whether the use of a particular grammatical mode is associated with a particular conceptual structure. The answer is a strong affirmative for both schooled and unschooled Wolof children. When a school child framed a reason in the sentential mode, the probability that he would form a superordinate structure of either the itemized or general type was on the average three times as great as when he used simple labeling. For an unschooled child, this same probability of a superordinate structure was almost six times as great when his reasons were sentences rather than labels.

Verbal superordinates could be either general (for example, "They are round") or itemized (for example, "This one is round; this one is round; this one is round"). The general superordinate is more abstract than the itemized in that it is farther removed from individual members of the grouping. For a school child, the probability that a superordinate structure would be in general rather than itemized form was more than four times as great when a grouping reason was expressed in the sentential mode. The same relationship held for unschooled groups.

In this analysis, schooling and age were held constant while the effect of grammatical structure was assessed. The results led to the hypothesis that school was operating on grouping operations at least partly through the training embodied in the written language. Writing is practice in the use of linguistic contexts as independent of immediate reference. This, the embedding of a label in a sentence structure indicates that it is less tied to its situational context and more related to its linguistic context. The implications of this fact for manipulability are great: linguistic contexts can be turned upside down more easily than real ones. Once thought is freed from the concrete situation, the way is clear for symbolic manipulation and for Piaget's stage of formal operations, in which the real becomes but a subset of the possible (Inhelder and Piaget, 1958).

Note that it is language use not structure that is at issue here. The school children learn in French; yet their use of Wolof in the concept formation situation also changes as a result, although the linguistic structure remains the same. Perhaps it would be fair to say that Wolof for them is becoming less an oral language and more a written language, as these have been defined in functional terms.

This fact can perhaps shed light on the observation made by Bereiter's group (Osborn, 1967) that entering disadvantaged children say "Dis ball" instead of "This is a ball" and that this is a generally applied sentence frame. A number of linguists, notably Stewart (1966), Labov (Labov, Cohen, and Robins, 1965), and Bailey (1968) have documented the fact that in lower-class Negro dialect the copula (i.e., some form of the verb "to be") is usually omitted and that the rule prescribing this form is as regular and stringent as the Standard English rule prescribing the presence of the copula. The question is whether "Dis ball" is (1) grammatically and functionally equivalent to "This is a ball", (2) gramatically but not functionally equivalent or (3) neither grammatically nor functionally equivalent. By functionally equivalent, I mean as a tool for forming abstract conceptual structures. The third possibility - lack of either grammatical or functional equivalence - requires that dialect speakers understand Standard English, including the copula, but do not or cannot use it. In other words, the copula would be part of their linguistic competence, as it is for all Wolof speakers; but, as in the case of the unschooled Wolof children, it would be a relatively unused form and therefore of little help as a tool for conceptual thought. I do not pretend to have the answer to this complex question - it certainly demands experimental investigation - but I would like to note in favor of the third possibility that there is some evidence from Eisenberg and his associates that lower-class Negro children find the speech of an educated White female more intelligible than that of either educated or uneducated Negro females (Berlin & Dill, 1967). One could conclude from this that both Standard English and dialect are part of the linguistic competence of lower-class Negroes, but only the dialect is used in speech production.

Before closing I should like to give a piece of evidence concerning the context-dependence of lower-class Negro dialect in comparison with Standard English - this time on the phonological level. As far as I can see, from the work of Labov (Labov, et. al. 1965), Pederson (1964), and others, the repertoire of phonemes is precisely the same for Standard English and Negro dialect, but some phonemes are not always utilized in the dialect. I have been studying the development of speech comprehension on the phonemic level with three-and four-year-old children. Briefly, the task used to assess phonemic discrimination goes like this. The child sees two pictures; both are named for him. The one syllable names differ by a single phoneme - initial consonant, medial vowel, or final consonant. He is then asked to point to one of the pictures. Theoretically, he must be able to discriminate the two phonemes in order to do this correctly. A preliminary study indicates that the biggest developmental difference between Negro and White children (matched for class) is that, between three and four years of age, the latter improve in their ability to distinguish words on the basis of final consonants, while the former do not. This finding suggests that the final consonant holds little informational value in Negro dialect. Without final consonants the number of potential homonyms in English becomes much greater, and the sentential context must be relied on more for disambiguation of individual word meanings. Here is an example of contextual dependence on a lower level of linguistic organization.

Finally I would like to add a seemingly obvious, although probably controversial, point. Children's langauge in all cultures has many of the context-dependent attributes I have been discussing - for example, a large number of homonyms. Adults, in contrast, may be able to utilize both context-dependent and relatively abstract forms. Similarly, all languages are spoken, but only some are also written. Therefore, context-dependent forms of speech and thought are more primitive or basic than abstract ones. This means that the habits of speech and thought associated with an oral culture can exist alone, whereas the abstract modes associated with a written culture exist along with context-dependent ones and, ideally, can be used interchangeably as situational demands require.

Paul Goodman (1968) proposes that we base reading instruction on the solid ground of context-related experience. He suggests teaching children to read as they learn to speak - in the midst of relevant, real-life situations; for example, a teacher would use the label on a can of soup as an opportunity for reading instruction. This approach would, in principle, turn the obstacle of context-dependent modes of thought and language into a scholastic asset for lower-class children, while presumably keeping their middle-class cohorts in contact with concrete reality. Whether or not such a method would also help lower-class children deal with the intrinsic abstractness of reading seems a bit problematical. Still, perhaps Goodman's paradoxical suggestion offers a way of reinforcing areas of experience that written cultures, with their tendency to dry abstraction, often neglect. But whatever the means employed, the development of abstract skills seems a pragmatic necessity for those who would survive in a technological society.

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