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## ORAL OR WRITTEN LANGUAGE: THE CONSEQUENCES FOR COGNITIVE DEVELOPMENT IN AFRICA, THE UNITED STATES AND ENGLAND\*

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The distinction between speaking an oral language and speaking a written language is applied to different cultural groups in the United States and Africa. It is shown that these two patterns of language use systematically related to different educational methods and to different courses of cognitive development.

I should like to utilize some cross-cultural research carried out by myself and others in African countries to elucidate the nature of sub-cultural language differences noted in the United States and England and their relation to cognitive development. A major reason for doing this is to place current work related to sub-cultural variations in development in a more general perspective. My central thesis 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 black 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 *in the same manner* from strictly "written speech."

Speakers of an oral language rely more on context for the communication of their verbal messages. This appears to be the main difference in language use, a difference which has important educational correlates as well as implications for cognitive processes. In fact, my hypothesis is 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, there-

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fore, 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.

One kind of evidence concerning these two patterns of language use is 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 indigenous education. A third description of traditional African education—Cole and Gay's (Gay, 1965) work on the Kpelle of Liberia—concur with Fortes and Knapen and discusses the obvious speech correlates of such instructional methods. We are told that Kpelle education is largely non-verbal 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. Thus, in the appropriate real-life situation he learns concrete activities, not abstract generalizations. The implications of this description are 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 the United States and England where there is universal formal schooling, how can these notions of context-bound education and speech possibly apply, even to a sub-culture? First, it now appears that intellectual potential is pretty much determined before a child ever enters school. Thus, the culture of the parents must be exerting a decisive influence; it is the way parents teach their children that is crucial. Hess and Shipman's (1965) data on maternal teaching styles are relevant here. One hundred and sixty black American mothers from four socio-economic 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 colour sorting task, including statements like:

The things that are all the same colour you put in one section, in the second section you put another group of colours, and in the third section you put the last group of colours:

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 here.

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 are 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 in 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 some of the most successful educational programmes for lower-class children focus on developing context-independent communication. Blank (1967), in an individual tutorial programme for pre-school children, put heavy emphasis on teaching the child to comprehend and produce speech that goes beyond the concrete situation in which it is formulated. In England, the Gahagans' (in press) curriculum includes communication games in which a child must send messages about a visible set of stimuli to another child from whom he is physically separated. Self-contained explicit messages are necessary for effective communication in this situation.

The English sociolinguist, Basil Bernstein (1961), who was the source of inspiration for Hess and Shipman's work, as well as that of the Gahagans, 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, and 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 cosmopolitan 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 kind 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. More recently, Lawton (1964) and Turner and Pickvance (1971) have further documented parallel class differences in expression of uncertainty among English boys. These researchers do not themselves have evidence relating the use of verbal forms such as "I think" to cognitive flexibility in solving problems. Bereiter and his associates, however, document the absence of such flexibility in lower-class children who enter their academically oriented pre-school, 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 colour, for example, or of form, but not of both. This finding parallels my results with unschooled Wolof children, as well as some of Gay and Cole's findings with the Kpelle (1967). Thus the absence of self-consciousness and the resulting presence of an ego-centrally unified perspective seem to be associated with an inability to shift perspective in concept formation problems.

There are still other 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 from 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 be verbally expressed by a holophrase (one word) or by linguistic predication. In my experiments, a holophrastic superordinate 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 to supply a reason for the grouping. In contrast, a superordinate grouping explained by linguistic predication involved an explicit statement of the connection between attribute and group members. Compare the grouping reason "red" with the reason "This—red; this—red" or "They are red." The communication value of the former is more dependent upon the situational context. In the first case (red) we are not told *what* 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 only at superordinates expressed through linguistic predication, however, Wolof schoolchildren, like American schoolchildren (Oliver and Hornsby, 1966) formed more and more with age; the unschooled children did not. While the unschooled children became increasingly systematic with age in their object groupings, they continued to express the attribute basis for their groupings in a single word. Note that this holophrastic expression of superordination demands greater knowledge of the concrete situation—in this case, the experimental stimuli—to have communication value for a listener.

When groupings are explained through linguistic predication, the utterance can take one of two forms in Wolof: a complete sentence with copula (this *is* round) or an incomplete sentence without copula (this—round). A superordinate grouping in which it is explicitly stated that all members share a single attribute was, however, much more likely when linguistic predicates were framed as complete sentences with copula than as incomplete sentences without. For a school child the probability was increased threefold; for an unschooled child, it was increased sixfold.

Verbal expression of a superordinate grouping can be either general (for example, "They—round") or itemized (for example, "This—round; this—round; this—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 as a complete sentence with copula. 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 lead to the hypothesis that school is 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. Thus, the embedding of a label in a total sentence structure

(complete linguistic predication) 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 sub-set 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. Essentially, it is a matter of linguistic rather than situational predication. 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.

These facts about the role of the copula can perhaps shed light on the observation made by Bereiter's group (Osborn, 1967) that disadvantaged children entering pre-school 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 black 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) grammatically but not functionally equivalent, or (3) neither grammatically nor functionally equivalent. By functionally equivalent, I mean as a tool for forming abstract conceptual structures. Functional equivalence is called into question by the empirical relation between use of a *Wolof* copula and the formation of semantically explicit superordinate conceptual structures. Grammatical equivalence is also questionable if it can be demonstrated that both Standard English and black dialect are part of the competence of dialect speakers. Why have two forms if they are both really the same? Evidence from Eisenberg and his associates indicates the possibility of such dual competence. In their study, lower-class black children find the speech of an educated white female more intelligible than that of either educated or uneducated black females (Berlin and Dill, 1967). One could conclude from this that both Standard English and dialect are part of the linguistic competence of lower-class blacks, but only the dialect is used in speech production. Labov's recent work (1969) indicates that this is the pattern for many structural discrepancies between Standard English and Northern Negro English. If it is true that "This is a ball" and "Dis ball" are neither grammatically nor functionally equivalent, then one would conclude that the copula is part of the linguistic competence of both dialect and Standard English speakers, as it is for all *Wolof* speakers; but, as in the case of the unschooled *Wolof* children, it would go relatively unused by the dialect speakers and therefore be of little help as a tool for conceptual thought.

Cole, Gay and Glick (1969) have evidence that in the absence of concrete situational support, members of cultures with a written language can communicate more effectively



with one another than can members of purely oral cultures. They compared two Liberian cultures, the Kpelle and the Vai, on tasks where a verbal description of stimuli has to communicate across a visual barrier. The Vai, who have an indigenous written language, were uniformly better communicators than were the Kpelle; and Vai who knew the Vai script were consistently more effective than those who did not know how to read and write it. Thus members of a culture which possesses a written language are likely to be able to use language in a relatively context-free way where appropriate; and the effect is not dependent on the influence of a Western European language or school.

There is another kind of evidence concerning the context-dependence of black dialect in comparison with Standard English on the phonological level. It appears from the work of Labov (Labov *et al.*, 1965), Pederson (1964), and others, that the repertoire of phonemes is precisely the same for Standard English and black 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 black 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 less informational value in black dialect than in Standard English. Without final consonants, the number of potential homonyms in English becomes much greater, and the sentential or situational 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.

Children's language 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 or context-free 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 context-free ones. This means that the habits of speech and thought associated with an oral culture exist along with context-independent ones and, ideally, can be used interchangeably as situational demands require. While highly industrialized, literate societies tend to dry abstraction, meaningful human communication depends upon maintaining this flexibility of language use, just as economic survival in such a society depends upon the development of abstract, context-free skills.

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