

The Unexpurgated Text of “IQ, Orality, and Literacy”

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In his deeply polemical new book *Political Literacy in Composition and Rhetoric: Defending Academic Discourse against Postmodern Pluralism* (Southern Illinois University Press, 2015, pages 197-201 and 223), Donald Lazere discusses my controversial article “IQ and Standard English,” which was published in the professional journal *College Composition and Communication*, volume 34 (1983): pages 470-484.

But my controversial 1983 article was a radically shortened version of a far lengthier essay that I had been working on for years titled “IQ, Orality, and Literacy.” Why the switch of the title for the published version? I switched the title for the published version so that I could highlight as one target the official 1974 position paper known as *The Students’ Right to Their Own Language*. This was the official 1974 position paper of the professional organization known as the Conference on College Composition and Communication, the organization that sponsors the professional journal known as *College Composition and Communication*. For a recent discussion of the issues involved in that 1974 official position paper, see David Mulroy’s book *The War against Grammar*, with a foreword by Charles I. Schuster (Boyton/Cook Publishers/Heinemann, 2003).

Because Lazere in his new book revisits the controversy over my 1983 article “IQ and Standard English,” I have decided that the time has come for me to publish the unexpurgated lengthy text of “IQ, Orality, and Literacy” so that interested people may see it and, if they wish, compare it to the shortened published version titled “IQ and Standard English” (1983). My file copy has no date on it. But my guess is that the file copy is a draft of the essay that was typed in in 1978 or 1979.

In an unprecedented spurt of creativity, I wrote the first draft of that essay in late December 1973, I think, or perhaps in early January 1974, along with two other essays. Eventually, all three were published. My former teacher at Saint Louis University, Walter J. Ong, S.J. (1912-2003), read all three of those essays in the spring semester of 1974. He helped arrange to have one of them published in 1974, and he encouraged me to publish the other two, which I eventually did (1975 and 1983). My 1974 article attracted the attention of Mina P. Shaughnessy and others associated with the City College of the City University of New York, where CUNY’s experiment with open admissions was underway. In the spring of 1975, Shaughnessy attended the national meeting of the Conference of College Composition and Communication in St. Louis. I myself did not attend that national conference. But she had asked me to meet her at that conference hotel, which was a short drive from the open-admissions community college in the City of St. Louis where I taught. If you’ve seen Judy Garland in the movie *Meet Me in St. Louis*, then you know that the World’s Fair was in St. Louis in 1904. The grounds of the 1904 World’s Fair are known now as Forest Park. The hotel complex where the national conference was held is across the street from Forest Park on its eastern perimeter. The

open-admissions community college where I taught is across the street, so to speak (two streets actually, one a major highway), from its southern perimeter. When I met with Shaughnessy at the conference hotel, she asked me if I would come to teach at City College/CUNY. I said yes. She single-handedly arranged for me to be invited to teach at City College in 1975-1976. By that time, Shaughnessy herself was no longer teaching at City College, because she had taken a position as a CUNY administrator at the central administration of CUNY.

I was born in a hospital on the banks of the Hudson River in Ossining, New York, my father's hometown, about 30 miles north of New York City. We had visited my father's family in Ossining more than once. On at least one of those trips, we had visited Manhattan. As a teenager I was actually a fan of the New York Yankees; I followed their games by reading newspaper accounts of them when we lived in Kansas City, Kansas, my mother's hometown. Figuratively speaking, I kind of thought of living in Manhattan in 1975-1976 as going home. I felt thoroughly at home in Manhattan in 1975-1976. For Frank Sinatra, Chicago was his kind of town -- but he left his heart in San Francisco. For me, Manhattan was my kind of town. I became an expert in using the subway system to get around. Incidentally, speaking of Chicago, I saw the Broadway musical by that name. The male lead in that musical lived in a brownstone directly across the street from my apartment. Yes, I did talk with him once in front of my apartment building. The title of my article "Literacy, the Basics, and All That Jazz" includes the title of one of the clever songs from that musical. I also enjoyed zipping up to watch Suzanne Farrell (no relation) dance at the New York City Ballet, which was a short subway trip from my apartment. Nevertheless, I have enjoyed the tranquility and natural beauty of living in Duluth (from 1987 to the present) -- on the shore of Lake Superior. Henry Wadsworth Longfellow (1807-1882) writes about Lake Superior in his widely known epic poem *The Song of Hiawatha* (1855).

Now, in the book *Hopkins, the Self, and God* (University of Toronto Press, 1986), the amplified version of Ong's 1981 Alexander Lectures at the University of Toronto, Ong says, "Like all human beings, Gerard Manley Hopkins was a product of his times" (page 7). Like all human beings, I am a product of my times, and so are my publications regarding open-admissions students, including the unexpurgated text of "IQ, Orality, and Literacy" below. But I would not be willing to revise the text below or any of my other texts about open-admissions students. At the time of their publication, my publications about open-admissions students served a constructive purpose by presenting a conceptual framework in which to locate the discussion of open-admissions students. My publications are listed at my UMD homepage: <http://www.d.umn.edu/~tfarrell>.

However, my controversial 1983 article and its 1986 sequel address the still crucial issue of IQ. Has it been settled yet? Not quite. See Richard J. Herrnstein and Charles M. Murray's controversial book *The Bell Curve: Intelligence and Class Structure in American Life* (Free Press, 1994); Richard E. Nisbet's book *Intelligence and How to Get It: Why Schools and Cultures Count* (Norton, 2009); and James R. Flynn's book *Are We Getting Smarter? Rising IQ in the Twenty-First Century* (Cambridge University Press, 2012).

In all honesty and humility, I still think that I formulated an intelligent hypothesis about IQ. Of course my hypothesis may not be correct. That's why it might be worth testing my hypothesis. However, I regret that I did not know anything in the 1970s or the 1980 about Gary

Simpkins' work on readers for reading instruction in elementary education. Had I known about his work, I would surely have mentioned it, and I may have even urged the use of the readers that he and his co-authors developed, instead of the *McGuffey Readers*. John Rockford, in linguistics at Stanford University, has published some articles about Simpkins' research and his co-authored series of readers.

Now, in ancient Greek the word "polemos" means war, struggle. The word "agon" means contest, struggle. In the book *The Presence of the Word: Some Prolegomena for Cultural and Religious History* (Yale University Press, 1967), the expanded version of Ong's 1964 Terry Lectures at Yale's Divinity School, Ong discusses polemical structures. However, in his later book *Fighting for Life: Contest, Sexuality, and Consciousness* (Cornell University Press, 1981), the published version of Ong's 1979 Messenger Lectures at Cornell University, he switches from using the term polemical structures to using the term agonistic structures. In real life, when our intensity reaches the point where we are not civil toward somebody with whom we happen to disagree, then our tone and perhaps our words may express our incivility in no uncertain terms. Figuratively speaking, we act and sound so uncivil that our behavior may strike us and others as war-like. Mulroy's book is aptly, but of course figuratively, titled *The War against Grammar* (2003).

In his book *Hopkins, the Self, and God* (1986), Ong says, "Hopkins, like [John Henry] Newman, had very little if any of the defensiveness which betrays intellectual insecurity and freezes the mind" (page 92). Of course Ong may be wrong about that – defensiveness may not manifest intellectual insecurity that freezes the mind. But what if he's right? What if it is the case that defensiveness manifests intellectual insecurity that does indeed freeze the mind? Wouldn't it have been wonderful if he had explained how people might overcome their intellectual insecurity so that they would no longer be subject to manifesting defensiveness?

Now, in the unexpurgated text below, scanning glitches and typos in the scanned text have been cleaned up. Because the text below is basically a historical document, I am publishing it here for interested readers to look over if they want to. To this day, I contend that I have formulated a testable hypothesis – that is, a hypothesis that can be tested through an experimental research design. As I now say, Simpkins' approach to reading instruction could be used to test my hypothesis, but the testing of my hypothesis would have to involve a multi-year longitudinal study.

Abstract

This report on the how and why of IQ shows that differences in the mean IQ scores between black and white children can be accounted for -- probably totally -- on a cultural basis. The genetic hypothesis of IQ differences can be assuredly rejected on the basis of Paul D. McLean's research on the brain. Scholarly research generated from this country, primarily by Eric A. Havelock and Walter J. Ong, S.J., showed that historically abstract reasoning developed as oral cultures were transformed by the interiorization of the non-acoustic arithmetical and alphabetical symbol systems, and those differences in mean IQ scores are concerned precisely with abstract reasoning. Tests of mental measurement measure the knowledge and abstract reasoning processes of the literate culture of Western civilization, and black Americans who live in ghetto conditions live in a residual form of a primary oral culture. Consequently they have not fully interiorized the non-acoustic arithmetical and alphabetical symbol systems that are integral to the development of higher cognitive functions, and empirical statistical research produced in this country, by Arthur R. Jensen and Richard A. Figueroa, confirmed this. Moreover, the pioneering field work carried out at open admission colleges confirmed that black inner-city youth can move from orality to literacy. However, two conditions seem to be necessary for this to happen. First of all, an orally/aurally/visually integrated pedagogy must be employed. Secondly, the instruction must proceed in a logical step-by-step (or programmed) sequence. Curricular recommendations and recommendations for government action are made at the end of this report.

IQ, Orality, and Literacy

Thomas James Farrell (1973, pp. 30-119) reviewed the extensive but inconclusive research findings about educating disadvantaged youth who come from a heavily oral culture, and Farrell has reported on his field work (1972, 1974, 1975, 1977a, 1978a, 1978b, 1979) with heavily oral youth in the United States of America (USA) who are black and culturally disadvantaged. In the present work cognitive development of heavily oral youth is the subject of concern, with specific reference to the work of Arthur R. Jensen (1969, 1973, 1977, 1978, 1979a, 1979b, and Jensen and Figueroa, 1975) on the mean IQ difference between black and white youth. The author contends that the difference in the mean IQ scores with respect to abstract reasoning between black and white youth can be attributed to culturally acquired, as distinct from genetic, cognitive differences. The author herein describes in detail the historical movement from primary oral culture (innocent of reading and writing) to literate culture and discusses in particular how literacy is related to the development of abstract thinking -- the kind of thinking measured by the IQ tests of which Jensen wrote. Since our black youth in urban ghettos come from a functionally oral culture, it is not surprising that they receive relatively low scores on measures of abstract reasoning, for this is the very type of reasoning that developed historically as a concomitant of literate cultures. Before proceeding to the main argument, a definition of the population about which this paper is concerned would be helpful, and Walter J. Ong, S.J., wrote a useful definition for our present purposes and offered some assessments of the author's early work that are worth including here:

The highly oral culture of our black urban ghettos as well as of certain isolated black and white rural areas is basically a primary oral culture in many ways, although it is more or less modified by contact with secondary orality today. The orality of non-ghetto urban populations generally and of suburbia generally, white and black, is basically secondary orality. As Farrell [1977a] has made clear ... , the problems of moving students out of the two kinds of orality are not the same. ... Thomas Farrell isolates nicely two of the basic problems a person has to face in moving from orality into the world of writing. ... students make assertions which are totally unsupported by reasons, or they make a series of statements which lack connection. Farrell notes that such performance is

not necessarily an intellectual deficiency but only a chirographic deficiency. (Ong, 1978, pp. 4, 3)

As a matter of fact, overcoming the "chirographic deficiency" transforms one's cognitive abilities and opens the door to further growth in abstract reasoning. By and large, youth in secondary oral culture have experienced and interiorized this development at a comparatively early age (Jerome Bruner [1978] without seeming to be aware of it described just how early children begin to be inculcated into the visualist habits of literacy in our secondary oral culture, which Ong noted is characterized by "literate orality.")

In the spirit of fair play, the author wishes to here call the reader's attention to Sylvia Scribner and Michael Cole's (1978) critique of Farrell (1977a), Ong (1958, 1971), and Eric A. Havelock (1963), whose work also figures largely in the present paper. While Scribner and Cole declare their dislike forthrightly, the reader should carefully note that 1) they cite only two of the many works by Ong that are cited in this paper; 2) they do not mention Ong's (1967b) major work on orality and literacy, which is available in Italian (1970) and French (1971) as well as in paperback in English; 3) they cited only one of the seven works by Havelock that are cited in this paper (for an earlier expression of their animus against Havelock [1963], see Cole and Scribner [1974]); 4) they do not manifest familiarity with the work of Parry (1971), Lord (1960), Rosenberg (1970), Opland (1975), Yates (1966), and the many other works here cited. Their apparent lack of first-hand familiarity with the work of Francis A. Yates on memory is especially revealing because Cole and Scribner (1975) have attempted to scientifically investigate memory among primary oral people. While their honest and forthright acknowledgement of the limits of their attempted investigation is commendable, the author wonders if such a misguided attempt at research would have been undertaken if they had been familiar with Yates (1966). However, while it is beyond the scope of the present paper to discuss cross-cultural research in cognitive psychology, the author wishes to acknowledge that Cole and Scribner (1974) have provided a useful introductory survey of that research and a helpful bibliography. Some studies worthy of mention here are Heron and Dowel (1974), Kellaghan (1968), Price-Williams (1970), Lloyd and Easton (1977), Greenfield and Bruner (1966), Ross and Millsom (1970), Scribner (1974), Cole and others (1971), Scribner and Cole (1973), Luria (1928), Vygotsky (1929), Luria (1971), Luria (1974), Gurova (1971), Sokolov (1971), Sokolov (1972), Luria and Yudovich (1959), and the Vygotsky Memorial

Issue (1967) of Soviet Psychology as well as the one hundred seventy works discussed by Farrell (1973). However, while these studies are worthy of mention as sensitive and thoughtful explorations, cognitive psychology will not come into its full maturity until researchers in the field have digested the works cited throughout the remainder of this paper. Specific support of that generalization is explicitly spelled out below in italics. However, let it be said here that Cole (1978) surely argued rightly that while education does change the mind, that is not a sufficient reason to justify extended schooling for everybody (also see Gross, 1980).

Jensen's Argument

Although Professor Jensen (1973) acknowledged the possibility of as-yet-unformulated-and-untested environmental explanations of the mean IQ differences between black and white youngsters, he (1969) rightly rejected the various environmental explanations that have been tested, and he then proposed instead that the genetic or hereditary explanation of mean IQ differences be reconsidered, which proposal was not unreasonable under the circumstances, and which proposal served as a catalyst to generate some excellent research (e.g., Jensen and Figueroa, 1975; Jensen, 1979). In presenting his case, Jensen noted that "the Binet-Simon test was commissioned by the Minister of Public Instruction in Paris for the explicit purpose of identifying children who were likely to fail in school" (1969, p. 6). In other words, the Metrical Scale of Intelligence devised in 1905 was to measure "intelligence" as defined by twentieth-century Western schooling, and this seems to be the general orientation of all subsequent IQ tests. Jensen recognized as much when he approvingly quoted O. D. Duncan as saying, "Had the first IQ tests been devised in a hunting culture, 'general intelligence' might well have turned out to involve visual acuity and running speed, rather than vocabulary and symbol manipulation" (1969, p. 14). Twentieth-century Western schooling certainly does involve vocabulary expansion and symbol manipulation, and it fosters a concept of intelligence that might be defined, as Jensen defined it, as "a capacity for abstract reasoning and problem solving" (1969, p. 19). The problem is that the mean scores of black children on measures of conceptual and abstract reasoning are substantially lower than the mean scores of white children. It appears therefore that black children are not developing the very cognitive abilities that schooling presumably fosters. Jensen himself offered a sound summary of some of the reasons why schooling might not have the effect of inculcating its unique form of abstract intelligence in some youngsters:

Satisfactory learning occurs under these conditions [of schooling] only when children come to school with certain prerequisite abilities and skills: an attention span long enough to encompass the teachers' utterances and demonstrations, the ability voluntarily to focus one's attention where it is called for, the ability to comprehend verbal utterances and to grasp relationships between things and their symbolic representations, the ability to inhibit large-muscle activity and engage in covert "mental" activity, to repeat instruction to oneself, to persist in a task until a self-determined standard is attained -- in short, the ability to engage in what might be called self-instructional activities, without which group instruction alone remains ineffectual. (1969, p. 7)

But some of those inner-directed verbal and mental abilities are more complex than Jensen may have imagined, and those very complexities mean that a greater percentage of black than white children apparently do not meet Jensen's pre-conditions for effective schooling and as a consequence do not develop the abstract reasoning that schooling teaches as well as some of their white counterparts do. Jensen's somewhat inner-directed pre-conditions are more likely to be present in children from the relatively literate backgrounds of secondary oral culture and not so likely to be present in children from the more oral background of primary oral culture, for literacy even in secondary orality inculcates inner-directed behavior, whereas primary orality encourages outer-directed behavior that needs to be structured to some degree externally.

Jensen (1977, 1978) has also maintained that the study of intelligence should be evolutionary, and the evolutionary stages of the brain, the seat of intelligence, have been studied in recent neurophysiological research, revealing some information that is pertinent to the present consideration of intelligence. Paul D. MacLean is Chief, Laboratory of Brain Evolution and Behavior, USA National Institute of Mental Health, and MacLean (1969, 1970, 1973a, 1973b, 1976a, 1976b, 1977, 1978) described the brain of the higher mammals as being composed of three types of brain which developed through evolutionary processes: 1) the reptilian brain (the matrix of the upper brain stem, comprising much of the reticular system, midbrain, and basal ganglia); 2) the paleomammalian brain (the limbic system, into which all the sensory systems feed into the hippocampal formation); and 3) the neomammalian brain (the neocortex). He noted that each type of brain has its own structure and chemistry. Moreover, each type

of brain has its own special form of subjectivity and intelligence, which suggests that perhaps each of the three types of intelligence should be discussed and measured separately. (Intelligence does precede thinking and behavior, but tests can measure only that which has been developed.) MacLean described the neomammalian brain as the brain of reading, writing, and arithmetic -- the brain of abstract reasoning. The neomammalian brain is characterized by its nice differentiating ability and its propensity to subdivide things into smaller and smaller entities. Of course, the "brain potential" (and concomitant intelligence) for abstract reasoning can be present in people today without being developed to a very great extent, just as the potential for abstract reasoning was apparently present in humans for thousands of years before it was actively developed.

MacLean's work on the structure of the human brain is important in the present context for several reasons. First of all, if differences in developed (as distinct from potential) intelligence were due to genetic differences, the brain would be the organic locus of those differences. In effect that would mean that the brain structure in blacks is different from the brain structure in whites, but the research findings on the structure of the human brain do not warrant such a hypothesis (in addition to MacLean, see Lenneberg, 1967). Secondly, Jensen (1973; Jensen and Figueroa, 1975) conceded finding no significant differences between blacks and whites on lower cognitive abilities (Level I in Jensen's two-level theory of mental abilities). The IQ differences that Jensen is specifically concerned with involve abstract reasoning. MacLean usefully isolated the specific area of the brain that is the seat of abstract reasoning, and we know for sure that that part of the brain, the neocortex, is present in all human brains. Given this basic biological data, we can assuredly reject Jensen's genetic hypothesis. But the measured differences in intelligence between black and white children do beg for explanation, and the explanation is in the difference between an essentially oral culture, on the one hand, and a fundamentally literate culture, on the other hand (see Scarr and Weinberg, 1976). But let us try to define the issue at hand even more clearly.

The author here understands intelligence to mean actual or developed intelligence, not potential. Potential intelligence is genetically transmitted (Starr and Weinberg, 1978) and distributed in accord with the dictates of the normal distribution curve, and potential intelligence develops

interactively within one's culture into actual or developed intelligence. The author accepts the validity and reliability of IQ tests as measures of developed intelligence. IQ tests in this sense can be regarded as truly valid (Jensen, 1979b, pp. 169-258 and 297-365) and reliable (Jensen, 1979b, pp. 259-295), and as Jensen (1978, 1979a) suggested, when drawn from various measures of mental ability "g" is probably a valid and reliable measure of actual intelligence. Jensen's findings of differences in mean IQ scores between black and white youth do truly represent real differences in developed intelligence, but those differences are not attributable to genetic differences in brain structure. Those differences can be explained entirely in terms of culture, and through the proper pedagogy those differences can be eliminated probably within a generation.

Level I in Jensen's two-level theory of mental development (Jensen and Figueroa, 1975) corresponds to what herein is described as primary oral thinking, while Level II corresponds to what herein is called literate thinking. In addition, these two levels of cognitive development flow from the more dominant (oral?) and less dominant (literate?) lobes of the brain (for an excellent review of the literature on the two lobes of the brain and an excellent discussion of the function of those two lobes with reference to writing, see Winterowd, 1979; also see Lenneberg, 1967). Moreover, what herein is described as the interactive development of cognitive ability proceeds through bicameral interplay of the two lobes of the brain (Jaynes, 1976), but this bicameral interplay of necessity requires the interiorization of a concretely visualizable but abstract symbol system, as distinct from an acoustic symbol system. Furthermore, as Havelock (1963) presciently maintained, this visualizable symbol system is the intervening variable or what Vygotsky (1962, 1978) styled the "mediating" factor in cognitive development. That is, the visualizable symbol system catalyzes the interplay between the two lobes of the brain. Nevertheless, Jaynes aptly suggested a dialogically-based metaphor -- bicameral -- for the interaction of the two lobes of the brain, for this interaction seems to be rooted in an aural-oral deep structure in the sensorium of the brain (discussed below). The working of this deep structure can be called the law of responion (Havelock, 1978, p. 338), which deep structure is the key to understanding the mnemonic propensity of the brain conditioned by a primary or residually oral culture (Yates, 1966).

Piaget (1968) and others have suggested that innate cognitive capacities develop through interaction with the

environment, and we might expect this to be true for the cognitive capacities associated with the intelligence of each of the three types of brain. Ostensibly the capacity for abstract reasoning is developed through the interactive processes of learning the language of abstract reasoning (as distinct from the language of oral-formulaic thinking) and most explicitly through formal education (from educare, to lead out). The problem is that many black Americans and other folks from heavily oral cultures have not had appropriate opportunities to a sufficient degree yet to have developed their capacities for abstract reasoning to a very great extent. In effect some individuals have simply gotten ahead of other individuals in developing their capacities for abstract reasoning, but over the generations these differences can be made up through appropriate education. With time and effort, the normal distribution curves for all groups on measures of abstract reasoning can come to have comparable means, rather than having means that are a standard deviation or so apart.

The study of manifested intelligence should be evolutionary both in terms of biological and historical evolution. Cultures have evolved from using oral-aural communication primarily to adding literate communication, and abstract reasoning specifically is related to the development of literate communication. The relative lack of success of functionally oral persons in twentieth-century Western schools probably indicates simply that the pedagogy of contemporary literate culture is not particularly effective for teaching literate thinking to children from a heavily oral culture. But an effective pedagogy can be implemented to overcome those differences, as is described below.

Orality and Thinking

Human cognitive structures develop in a particular manner as persons learn to read and write, and cognitive capacities are transformed to the extent that persons interiorize the processes involved in reading and writing. The consequent literate modes of thinking are characteristically more abstract and conceptual than the exclusively oral modes of thinking that they assimilate and supersede. But some children are better prepared than others by their specific backgrounds to acquire reading and writing and literate modes of thinking at an early age. On the other hand, many black American children specifically come from a background that is largely oral in tradition. Arthur L. Smith (1972) observed that Afro-American leaders have quite literally been spokesmen -- and the author would add, spokeswomen -- and he

noted that black Americans are essentially an oral people much like their African ancestors. Pascual Gisbert, S.J., (1967) rightly characterizes African people as Preliterate man, although if one wishes not to put the cart before the horse, it would be more accurate to speak of primary oral man. Ruth Finnegan's (1970) work has recently accentuated the oral traditions in Africa, and Jeff Opland (1975) has brilliantly called attention to the oral composing processes of African poets in one tribal tradition (also see Farrell's [1976b, p. 13] discussion of Opland). In a similar manner, Bruce Jackson (1974) has called attention to the oral traditions of black Americans by recording and transcribing instances of oral narrative poetry, and in a more specialized vein, Bruce A. Rosenberg (1970) has brilliantly demonstrated that many black folk preachers compose their sermons formulaically, in accord with the description of oral composing developed by Parry (1971) and Lord (1960) in the 1930's. (For related studies of orality, see Stolz & Shannon, 1976; Watts, 1969; Nagler, 1974; Peabody, 1975; Zwettler, 1978.) Moreover, black youth in ghettos in the USA have oral culture singing in their ears, ringing in their heads, as they jive, rap, shuck, testify, toast, and play the dozens. Most white youth, by comparison, come from a cultural background that is much more literate -- and deprived of those various verbal games that accentuate sound effects.

While some people might be inclined to look on a primary oral culture in Africa or elsewhere as being limited, it is usually self-sufficient, and primary oral people are not aware of their so-called limitations. As Farrell (1977a, p. 449) noted, Janheinz Jahn (1961, p. 122) reported that some contemporary Africans who have recently encountered European culture make the distinction between "the intelligence of books" and their concept of intelligence which means the wisdom of life. He mentioned the story of an old Ruandese woman who cannot read and write. In conversation she will say with the most complete conviction:

"White men are really disarmingly naive! They have no intelligence." Dare to reply: "How can you say something so stupid? Have you been able, like them, to invent so many marvels that exceed our imagination?"; and she will reply with a pitying smile: "Listen, my child! They have learned all that, but they have no intelligence! They understand nothing!" (pp. 122-123)

The Africans about whom Jahn wrote clearly had an awareness of general intelligence, just as the ancient Greeks did (remember

"wily Odysseus" and "wise Nestor"). However, "the intelligence of books" does seem to represent a mode of thinking that is not characteristic of primary oral persons. To get a good taste of primary oral wisdom, see Patrick Paul Essien's (1978) study of the formulary expressions of the Annang tribe of the South-East State in Nigeria. To get a good sense of the good sense of the proverbs of the Ibo in Nigeria, see Chinua Achebe's Things Fall Apart and No Longer at Ease as well as his later novels. (Farrell [1978a, pp. 45-46] described how fascinated disadvantaged black -- and white -- students were in discussing the meaning of the proverbs in the two Achebe novels. For a somewhat different but not incompatible approach to the pedagogical use of proverbs, see D'Angelo [1977b]). There is much to be learned from the wise ways of primary oral Africans, as Thomas Adeoye Lambo (1978) suggested (for a related historical study, see Lain Entralgo, 1970), and from the wise humor of other oral peoples, as Idries Shah (1978) suggested. Even so, there is also much to be learned from the rich treasury of thought in the literate tradition of Western civilization.

The Africans brought to this country as slaves were taken from a primary oral culture, and in this country they were excluded at times by law and at other times by custom from the literate culture fostered by reading and writing. The tradition of literacy among blacks in this country is therefore only a relatively recent phenomenon, especially in terms of broad-based literacy, and Smith's observations suggest that the literate tradition may not yet be the dominant tradition in black American culture. Most rural and lower-class urban blacks live in what might aptly be regarded as a residual form of a primary oral culture (or subculture). While many of them have mastered the rudiments of reading and writing, they have not interiorized literate modes of thinking to the extent that most middle-class whites have; they are heavily oral people still, and orality works against interiorizing literate modes of thinking, as described below. Children brought up in a residually oral culture probably will get lower IQ scores than children brought up in a more literate milieu, because the conceptual and abstract reasoning being tested in IQ tests that concern Jensen (and others) are concomitants of literacy and the interiorization of literate modes of thinking. Since a much larger percentage of black than white children grow up in a residually oral culture, it appears reasonable to expect the mean IQ scores of blacks to be lower than the mean IQ scores of whites. The bulk of this paper is devoted to explaining how and why that would be a reasonable expectation.

Symbolic Interaction

It appears that thinking processes unfold as innate cognitive structures interact with learned structures. As Chomsky (1972) and others have suggested, the human brain may be innately predisposed to acquiring language, a major structuring system, and what they call the "deep structures" of language may also be innate. Even the limited number of phonemes in any given language may be related to some innate structuring. But the particular language acquired is learned, and each language offers a unique opening to reality, as Sapir (1921) and Whorf (1956) suggested. As James Britton (1970) noted, "languages differ from each other in the way they divide objects into categories," and it is largely through language categories that we interiorize our experiences. The general function of language is to give people various ways of organizing and coping with the reality they encounter, and language thereby increases human control over self, others, and the surrounding world. Children grow in the variety of ways they can relate to the world around them as they acquire and develop language (Piaget, 1959). "Language enables us to interpret and organize the world we experience through our senses, and in that way it provides structure and meaning to what would otherwise be a jumble of impressions" (Miller & Swift, 1976, p. 137). When children learn reading and writing and arithmetic in school, they add further abstracting/structuring processes already acquired through learning language. Oral language is a learned symbolizing structure that enables certain thinking processes to unfold, and the more abstract symbolizing involved in literacy adds yet another dimension to the interactive unfolding of thinking capacities within human beings.

Farrell (1977a, pp. 444-445) described the complex interactive process of interiorizing and exteriorizing symbols in detail, and it is worth quoting at length here:

To begin to understand how language works, it is important to acknowledge the obvious first of all: we do not have the real world, the physical environment, in our heads. We have only images of the world in our heads. Because they are not the real thing, these images are called symbols; they only stand for the real thing. We get these images through sensing, and fundamentally this is an abstracting process. In order to stay alive all animals must interact with the physical environment, and we use our images, our symbols, to guide our interaction with the world and

to enable us to gain some control over our environment.

But humans have gone further than other animals in developing symbols to control the world. As mentioned, the human brain seems to have an innate predisposition to acquire spoken language. The spoken words are sound symbols; they stand for sensory impressions we have of the world around us. There is no necessary connection between these impressions (or images) and the sound symbols -- that is why we get different sounds for the same thing in the various languages. Spoken words, then, are symbols of symbols, the product of a complex abstracting process. Communication through talk is a symbolic interaction, a back and forth exchange of symbolic utterances, and these symbolic representations mark the coordinates of life in society (Berger & Luckmann, 1966).

We do not know exactly when people started talking, but we do know it has been going on for thousands of years. The point of talk is to help continue life. By talking we can gain greater control of our lives by manipulating symbols and then acting upon the world. We frequently talk before we act, and that talk is intended to move us, to persuade us to act in a certain way, to restructure our symbolic awareness of the world at the moment to get us to interact with that world so we can control it, can manipulate it better for our purposes.

Words can also be used to entertain. We extend our play impulses beyond physical contests and dancing to singing and storytelling partly because we like the sounds. We also play around with sound effects -- such as rhythm, rhyme, alliteration -- to make our communication more enchanting to listen to and thus more effective.

The language situation started to take on a new complexity around 3,500 B.C. when humans developed script, picture writing. These scratches or markings were intended to be pictures of the images people had in their heads of things in the world. I say "intended to be" to stress that these markings were symbols. They were imagistic visual symbols: They were visual symbols of images which were symbols of reality. Script enabled humans to manipulate reality a little more. They could interact with these symbolic markings, and that eventually gave them more to talk about. Then around 1,500 B.C. humans came up with the

phonetic alphabet. This was a series of markings or letters that were not pictures, although they may have evolved from pictures. These new abstract visual symbols had no necessary connection with whatever sound symbols they represented. People used the letters to stand for spoken words, which in turn stood for images. Written words then are symbols of symbols of symbols, the product of an ever more complex abstracting process.

People could manipulate the new alphabetic symbols and do more than they had been able to do with the old picture symbols. The new letters were more versatile, but because they were such abstractions -- three times removed (abstracted) from the real world -- they required a gradual major change in cognitive processes, a change that was more pronounced than the previous change involved in learning picture-writing. The difference involved the kind and degree of abstracting necessitated by the letters that had not been necessitated by the imagistic pictures. Moreover, writing requires another form of abstracting inasmuch as we select or extract precisely what we want to say from a myriad of possibilities and arrange our selections in some intelligible order. [For empirical research in support of this, see Jensen and Figueroa (1975). Level II of cognitive development in Jensen's two-level theory of mental development is ineluctably connected with symbol manipulation.] The degree to which people become really good at manipulating alphabetic symbols Marshall McLuhan (1962) refers to as interiorization, taking in and making the symbols part of themselves. The process of interiorizing takes place over time, and it involves the ongoing interplay of all these symbolizing processes on and over and against and within one another.

Reading and writing are based on cumulative abstracting processes and the cognitive restructurings that reading and writing enable develop the higher reasoning processes involved in extended abstract thinking, the very processes with which Professor Jensen is concerned.

Ong (1967b, 1971) characterized cultures on the basis of the arrangement of communications media which predominate in them. When a culture moves from primary orality (with no reading and writing whatsoever) to literacy, it goes through an extended period that Ong characterized as residually oral before literate

modes of thinking are fully interiorized. When the author in this paper refers to persons as residually oral, the author means that they come from a cultural background in which literacy and literate (i.e., analytic, abstract, detached, detailed, scientific) modes of thinking do not predominate. Thus, while the rudiments of reading and writing are present in most people from such a cultural background within the USA, oral forms of communication and the habits of thinking fostered by orality predominate in them. (When previously available modes of thinking are adapted gradually to new contexts, the author refers to this adaptation as a transformation, and such transformations represent what the author then refers to as new modes of thinking because they are different from the old modes.)

Persons in a residually oral culture think differently from persons in a literate culture but not in an antithetical way (for specific examples, see Luria, 1976). That is, the characteristics of each type of thinking are not direct opposites. For instance, while the thinking of heavily oral persons is generally more concrete than abstract, abstractions occur in their talking and writing both in the form of generalized statements and in the form of a certain number of abstract concepts, such as love, justice, etc. Persons who grow up in a more literate milieu, on the other hand, have generally already mastered at a fairly early age the detached, analytic form of thinking that is characteristic of literacy. They may have a lot to learn yet to be effective writers and efficient readers, but they have already developed literate modes of thinking fairly well compared to their peers from residually oral backgrounds.

Historical Development

Ong (1958, 1962, 1967a, 1967b, 1971, 1977, 1978) concluded that the modes of thinking fostered by reading and writing affect how people communicate, what they communicate, what they think is involved in communicating, and what they think is involved in thinking. These subtle shifts in modes of thinking constitute modifications of the basic modes of thinking originally unfolded in oral-aural communication. (Olson's [1977] consideration of the different senses of meaning in "utterances" and in "texts" is pertinent to some of the distinctions made by Ong and others between oral and literate thinking.) Ong's findings can help us understand the effects of the shift from orality to literacy in youth today and can perhaps shed some light on why black children do not score as highly as white

children on measures of abstract reasoning that are built into the IQ tests of which Jensen wrote. The relationship of historical developments and personal development today, however, is not a matter of one-to-one correspondences but, rather, of similarities.

Oral communication unfolds through the uttering or outerizing of something from within ourselves. The terms interior, interiorizing, and interiority are fundamental to Ong's analysis. He defined interiority as "precisely the opposite of surface, that which does not have surface at all, and can never have" (1962, p. 29). But only persons with some form of language ever become fully aware of their interiority. Persons who do not (in one way or another) learn some symbolic, expressive language remain imbeciles, according to Ong, because they are unable to enter fully into themselves. It is through symbolic language that persons discover and renew their discovery that they are persons, that they have interiority. All verbalization (oral and written) is a cry, according to Ong -- a cry testifying to the presence of an interior reality. "True interiority," Ong concluded, "makes it possible to address others: only insofar as a person has interior resources, insofar as he [or she] experiences his [or her] full self, can he [or she] also relate to others, for addressing or relating to them involves him [or her] precisely in interiority, too, since they are interiors" (1967b, p. 124). Humans are interiors exteriorizing themselves through symbolic expression, without ceasing to be interiors. Moreover, humans interiorize -- take in and make their own -- sensory data from the real world as symbolic images, in addition to assimilating the overtly symbolic expressions exteriorized by other human beings. Thus symbolic interaction can enhance one's interior resources. But one's symbolic interaction with another person's interiority is mediated by exterior phenomena which can facilitate or limit interaction between persons depending on the participants' ability to tune into and properly understand the symbol systems that each person is using. The human voice is the most obvious mediator in symbolic interaction, although body language or writing or print, among other exterior phenomena, can and do serve this mediating function to varying degrees at various times in different forms of symbolic interaction (concerning "mediation," see Vygotsky, 1978). Moreover, to formulate anything interiorly is to process it for symbolic exteriorizing, and this unavoidably involves abstracting and structuring in some form.

The kind of structure produced by the interior varies, most notably between oral and literate cultures but also within each

culture. Ong attributed this variance to the shifting organization of the human sensorium. "By sensorium we mean here the entire sensory apparatus as an operational complex ... the organization of which is in part determined by culture while at the same time it makes culture" (1967b, p. 6). The sensorium of infants is relatively undeveloped, undifferentiated, but infants gradually learn to attend to certain types of perception more than others. This learning is shaped by other persons and by the culture at large. The acoustic, rhythmic qualities of speech which were highly valued in oral culture would be an example of the result of the selective learning encouraged by a particular type of culture. As a consequence of the acoustic-rhythmic orientation of the oral-aural sensorium, information was structured so as to capitalize on sound effects, as described below. By comparison, the sensorium of persons in a literate culture is not as tuned-in to sound symbols as to visual symbols. This fundamentally different sensorial orientation is related to the substantially different personality structures and interior resources of persons in heavily oral as distinct from highly literate cultures. (MacLean suggested that all the sensory systems feed into the hippocampal formation in the limbic system of the brain. If that is true, then the hippocampal formation functions as what Ong called the sensorium.)

Some of Ong's general observations about primary orality help establish a context for describing the historical development of communications media:

The psyche in a culture innocent of writing knows by a kind of empathetic identification of knower and known, in which the object of knowledge and the total being of the knower enter into a kind of fusion, in a way which literate cultures would typically find unsatisfyingly vague and garbled and somehow too intense and participatory. To personalities shaped by literacy, oral folk often appear curiously unprogrammed, not set off against their physical environment, given simply to soaking up existence, unresponsive to abstract demands such as a 'job' that entails commitment to routines organized in accordance with abstract clock time (as against human, or lived, 'felt,' duration). (1977, p. 18)

Using a term from Levi-Strauss (1966), Ong (1977, p. 18) noted that primary oral persons "totalize" experience, which the very young also do (Bettelheim, 1976). But more to our present

purpose, Ong succinctly summarized the historical transformation of verbal performance from oral to written forms, as follows:

Speaker and audience and subject matter are raveled together in a kind of whole [in oral performance]. ... [Then] the first age of writing is the age of scribes, writers of more or less orally conceived discourse. The author addresses himself [or herself] to imagined listeners at an imagined oral performance of his [or hers], which is simply transcribed onto a writing surface. The next age, arrived at gradually of course, is the age of true authors, in today's ordinary sense of author, a person who composes in writing and, later, for print. ... As compared to the scribe, the author no longer imagines recitation or direct oral address at all, but only the transaction with the paper and the putative, always absent, reader in whatever role this reader can be cast. Although oral residue persists in patterns of thought and expression not only for millennia after writing but also for centuries even after the invention of letter-press alphabetic print, the new literary, authorial patterns would pretty definitively have won out by the end of the eighteenth century. (1977, p. 282)

Developing from scribes to true authors on a personal level is more demanding psychologically for residually oral persons as they grow older than it was for children who grew up in a more literate environment, and Ong commented sensitively on this situation:

Those reared in a highly literate culture, where literate habits of thought are acquired shortly after infancy, commonly have little if any memory of entry into writing as a cutting loose from oral thought processes, as a kind of death. For those dominated through adolescence by the functional orality of subcultures in our American cities or some of our rural districts, the situation is quite different. They feel writing as a threat, a destruction of their psychic world, however desirable writing may be. Without proper encouragement to enter into this death, persons from such subcultures grow into adulthood without entering into, much less mastering, the analytic thinking processes which can be interiorized only by grappling with the written word. (1977, pp. 257-258)

To understand how oral or literate backgrounds may be influencing children's performance on IQ tests, it is important to note here that Ong said that children who grow up in a highly literate milieu acquire literate habits of thinking shortly after infancy (for seemingly unwitting documentation of this, see Bruner, 1978). However, as mentioned, there seems to be an affinity in the initial thinking of the very young and primary oral persons, irrespective of whether the children's milieu is oral or literate. The initial acquiring of literate habits of thinking seems to be the result of growing up around literate persons: it begins before one begins to learn to read and write. Of course, learning to read and write -- and especially becoming efficient readers and effective writers, eventually -- involves a greater and gradual interiorizing of literate habits of thinking.

The Greek Experience

The ancient Greek experience of moving from orality to literacy is pertinent to Ong's observations. Professor Havelock (1963, 1966a, 1966b, 1971, 1976, 1977) analyzed the oral transmission of culture and the beginning of literacy in ancient Greece. In a primary oral culture, he noted, information is stored through preserved speech and retrieved through recall or memory. Preserved speech is rhythmic and metrical, thus facilitating memory. Assonance, alliteration and the like, parallelism, antithesis, repetition, and the simpler figures of speech, all contribute to the acoustic effect and hence the memorability of preserved speech. Moreover, this speech of memorialization is concerned with happenings, doings, behaviors, actions, graphic images of concrete situations, not with abstract ideas. The memorable also becomes the predictable, the expected, the familiar. This form of speech is used for didactic purposes, as in "sayings" or more notably in epic tales. The epics are composed orally by singers of tales, like Homer. These men have huge stores of metrical formulas in their memories, and they use these formulas to spontaneously compose narratives on the traditional themes that they and everyone else have heard many times before. In Havelock's view, the Homeric poems served as tribal encyclopedias, from which everyone in the culture learned the ways of the culture as they listened to and remembered portions of the stories or refreshed their memories of them. Moreover, the language of preserved speech of pre-literate Greek culture did not allow, Havelock discovered, the development of abstract ideas. (Yates [1966] has documented how mnemonic aids were used to develop the "art" of memory from Greek and Latin antiquity through the seventeenth century.)

Around 700 B.C., the Greek alphabet was invented, and according to Havelock it encouraged the production of unfamiliar statements and stimulated the possibility of novel thinking, and particularly the capacity for abstract analysis. He detected in the pre-Socratics (specifically, Xenophanes, Heraclitus, and Parmenides) the subtle but purposeful changes in the language, from the heavily concretized language of preserved speech to something more novel and flexible and potentially more abstract. But the unfolding of the new abstracting processes of literacy came slowly. Literacy fostered the detached manipulation of symbols and the impersonal use of symbols in reasoning processes. Havelock noted that the manipulation of numerals in arithmetical processes advanced faster than the manipulation of letters because the numerals stood for something visual, whereas the Greek letters stood for something more elusive, something acoustic. The Greeks went through a period of craft literacy, as he characterized it, before achieving social literacy, wherein a large number of the people could read. Jensen and Figueroa's (1975) research clearly demonstrated that the ability to manipulate symbolic representations is linked with the development of higher cognitive skills (Level II in Jensen's two level theory of intelligence), and Jensen's empirical findings therefore confirm Havelock's inferences based on the analysis of historical philological phenomena (for related data, see Luria, 1978). In addition Judith A. Hall and others (1978) reported that a visualizable and interpretable symbol system is related to IQ (for a related study, see Birdwhistell, 1952), although they were not referring to the kind of abstract symbol system referred to by Havelock and Jensen and Figueroa.

Havelock claimed that the oral cast of mind constituted the chief obstacle to the abstract classification of experience, to the arrangement of cause and effect, to the use of analysis, and to scientific rationalism. The oral person was involved and committed to a given (perhaps "received" would be more accurate) position on matters, whereas the fully literate person, precisely because of being literate, was capable of being detached and looking at matters from different points of view. Highly literate persons can examine experience and rearrange it, can separate themselves from their experiences instead of just empathetically identifying with them, can stand apart from the "object" and reconsider it and analyze it and evaluate it. A. R. Luria's (1976) recently published study of cognitive development in oral and minimally literate persons in Uzbekistan and Kirghizia (conducted in 1931 and 1932, before the Soviet

literacy program had fully encompassed those remote areas) supported Havelock's claims.

The oral tradition according to Havelock did not analyze history in terms of cause and effect, of factors and forces, of objectives and influences and the like because these analytical processes were not amenable to the psychodynamics of the memorizing processes upon which oral composing is based. Moreover, oral discourse in a predominantly oral culture did not engage in abstraction because totally oral people could not see or hear or taste categories, classes, relationships, principles, or axioms. Oral discourse was attentive to the sensual (the concrete) and was more disposed to describing actions than to creating abstractions.

James A. Notopoulos (1949) characterized oral composing in archaic Greek literature as paratactic, inorganic, flexible, responsive to the live audience, digressive, and more concerned with the parts than with the whole. By comparison, written composing was hypotactic, organic, logical, and concerned with relating parts to one another to achieve a unified whole. Moreover, Notopoulos' observations coincide with those of M. L. West (1966). In commenting on the "somewhat illogical" sequence of thought in lines 94-97 of Hesiod's Theogony, West noted that "a series of thoughts ABC, where A and B or B and C make a coherent sequence, but ABC taken as a whole seems to lack all cohesion, is characteristic of archaic Greek literature" (p. 186). This aspect of parataxis is also characteristic of the writing of residually oral persons today.

"Parataxis," Notopoulos (1949) said, "is first of all a state of mind" (p. 11), the primary oral state of mind as manifested in Homer and others, and he noted that it is "the regular form of thought and expression before the classical period in Greek culture" (p. 13), before the middle of the fifth century B.C. (The classical period corresponds with what Havelock called the period of social literacy, and it was during the pre-classical period that what Havelock called craft literacy developed.) In general parataxis is characteristic of orality, whereas hypotaxis characterizes literacy. However, Notopoulos detected the paratactic-inorganic tradition in the writings of the pre-Socratics. But he noted that the pre-Socratics were instrumental in formulating concepts that were basic to the later development of ideas about organic unity, and Havelock's observations about the changes in language which the pre-Socratics gradually made can be interpreted as changes away from paratactic structures and toward hypotactic structures,

even though Havelock did not put it in those terms. The pre-Socratics, then, represent a transitional stage between primary orality and full literacy, which stage corresponds to what Ong calls residual orality and the age of the scribes. Residually oral persons today, like the pre-Socratics, are somewhere between paratactic and hypotactic language structures. (This summary of Havelock's work is only slightly adapted from the summary published by Farrell, 1978a, pp. 31-34.)

The movement from parataxis to hypotaxis is, on the one hand, the movement from orality to literacy (Farrell, 1978a, 1979a, 1979b) and, on the other hand, the movement from Level I to Level II in Jensen's two-level theory of cognitive development (Jensen and, Figueroa, 1975). Moreover, understanding the movement from parataxis to hypotaxis is essential to understanding what Chomsky (1972) and others called the "deep structure" of the brain. Parataxis is characterized by formulaic expressions (Parry, 1971; Lord, 1960; Rosenberg, 1970; Opland, 1975), and formulaic expressions are "kernel sentences" (Farrell, 1978a, pp. 47-50; 1979, pp. 12-14; implicitly, Essien, 1978). Transforming, self-contained, (end-jambed) formulaic expressions from paratactic arrays of lines (one-liners, so to speak) into compound sentences (in effect) joined by coordinating conjunctions is a comparatively low-grade transformation, and it is well within the range of primary oral or Level I thinking to do this. The linguistic transformation of formulaic kernels (typically subject and verb, but with epithetic modifiers possible) into complex sentences with embedded subordination is what is meant here by hypotactic (sometimes more accurately referred to as syntactic) structure, and this sophisticated transformation is the mark of literate and Level II thinking. Moreover, the difference between the oral thinking of Level I and the literate thinking of Level II is the difference between appositional and propositional statements (Winterowd, 1979), which in turn are related to the two lobes of the brain. Cognitive psychologists and structuralists in linguistics and anthropology have yet to investigate these inter-relationships in detail. The structuralists start with exteriorized behavior and then infer the presence of certain deep structures in the brain, whereas this present paper starts with the brain (i.e., MacLean's work) and then describes on the basis of other work how the brain structures develop. The present work has two other sources of investigation under consideration concurrently. On the one hand, works by Parry (1971), Lord (1960), Rosenberg, (1970), Opland (1971), and other scholars like Havelock and Ong who have been leading the avant garde in scholarly investigation are strong sources of

information. On the other hand, perceptive field investigations by Hawkes (1967), Zoellner (1969), Radcliffe (1972), Minkoff (1974), Shaughnessy (1976, 1977), D'Eloia (1975, 1977), Gray (1975), Gray and Trillin, (1977), Laurence (1975), Krishna (1975), Halsted (1975), Desy (1976), Campbell and Meier (1976), Mills (1976), Petrie (1976), Pierog (1976), Samuels (1978), Nauer (1975), Collignon (1978), Rozek (1972), Farrell (1972, 1978a), and many others provide the matrix for situating, applying, and amplifying the seminal research into orality and literacy.

Sound Effects

While memorized formulary expressions are the bedrock of communication in an oral culture, sound effects are instrumental in producing effective oral-aural communication. Gorgias (c.483-c.376 B.C.) developed his famous symmetrical style of rhetoric in the predominantly oral culture of ancient Greece. He used the schemata verborum to make himself intelligible and enchanting to his oral-aural audience. The similar sounds, the symmetrical constructions, and the periodic rhythm all made it easier for the audience to feel and follow what was said. The parallelisms of the Psalms and the prophetic books of the Old Testament seem to have been motivated by the same necessity to be comprehensible by the oral-aural people in the audience. The school of Gorgias spread, and Isocrates (436-338 B.C.) seems to have been the most famous and influential practitioner of Gorgian style, even though he modified it. George Williamson (1951) detected a Gorgian-Isocratean influence in Cicero, Seneca, the Church Fathers, and practically everyone else who wrote educated Latin, even though most of the latter number of those people were clearly writing for literate readers rather than composing orally for a live audience of non-readers. (And John Lyly demonstrated his virtuosity with the schemata verborum in English in his highly popular Euphues and its sequel, which works were probably so popular because the oral reading of them in parlors would enable Renaissance women to inductively learn the verbal games in their mother tongue that educated men had learned as boys in studying Latin grammar and rhetoric.) Obviously the schemata had a compelling appeal to be able to attract so many Latin writers to use them over the centuries, and that appeal was probably based on the fact that they succeeded in enhancing communication even when they were not being used in a totally oral context. And this continued use of sound effects would be an instance of a scribal approach to writing.

In addition, Morris W. Croll (1966) reported that the schemata verborum were used in medieval and Renaissance popular sermons in the vernacular languages. The schematic style need not be attributed to a direct Gorgian-Isocratean influence, but it is reasonable to say that the preachers, like Gorgias and others before him no doubt, probably employed these techniques to better enable their audiences to feel and follow what was said. In a similar manner the metrical sound effects of the formulas studied by Parry (1971), Lord (1960), Rosenberg (1970), and Opland (1975) not only made the formulas easier for the performer to remember but also helped the audience follow along (and remember). The goal was to produce intelligible and enchanting communication that the audience would remember and would be moved by, and clever sound arrangements were essential for reaching this goal. When black children today use clever sound and word effects as they jive, rap, shuck, testify, toast, and play the dozens (some of which were described by Kochman, 1972), they are continuing techniques of oral composing not unlike the schemata verborum. (The alternating exchange of bantering lines in the dozens is akin in style to stichomythia in drama, although the content of the lines exchanged in the dozens is much more stylized than in stichomythia because the dozens is clearly a game with relatively set rules.) (The last two paragraphs have been appropriated and slightly adapted from Farrell, 1977a, pp. 448-449.)

Formulary Expressions

In discussing the historical development of the verbal symbolic arts, Ong noted that they unfold in the sequence of narrative, rhetoric, and then logic. While he acknowledged that oral epic narratives are organized with consummate skill and a lot of conscious control, he nevertheless maintained that the oral epic tradition which produced Homer is largely not conscious of the organizational structures used in the oral narratives. (Bruno Bettelheim [1976, p. 216] also noted that "when a story exists only in oral tradition, it is largely the teller's unconscious that determines what story he [or she] relates, and what of it he [or she] remembers.") Conscious control comes with writing, but it grows out of the formulary tradition of oral composing. The formulary sayings of an oral culture -- such as, proverbs -- make it possible to conceptualize and manipulate sizable bodies of knowledge, and Ong claims that abstract thinking grows out of fixed formulary thinking by a process of liberation made possible through writing, which coincides with what Havelock said. It is rhetoric, however, not narrative, which schematizes what would

otherwise be too fantastic into identifiable figures of style and thus enables a movement away from the inductive learning of the "encyclopedic" oral epics to something more abstract and more consciously controlled. The process of abstracting some manageable "figures" of style, as they were called, from the myriad of impressions registering in human consciousness can be regarded as an extension and refinement of a process already underway in fairy tales and myths, as Bettelheim (1976, p. 75) described: "As he [or she] listens to the fairy tale, the child gets ideas about how he [or she] may create order out of the chaos which is his [or her] inner life. The fairy tale suggests not only isolating and separating the disparate and confusing aspects of the child's experience into opposites, but projecting these onto different figures." Rhetoric also commonly employed and projected polarities.

Rhetoric is built on formulary expressions or commonplaces, which one stocks up in one's memory in order to insure copia, a fluent abundance, when one speaks. Ong distinguished between analytic and cumulative commonplaces as they were taught in Western rhetorical education for centuries. The analytic commonplaces include definition, genus, species, wholes, parts, adjacents, relatives, comparisons, opposites, and witnesses, and "for a person, one might, by a kind of analytic process, consider his [or her] family, descent, sex, age, education, and the like" (1977, p. 149). Ong characterized these as "concrete conceptualizations" (1958, p. 104), but they were certainly an advance over the structures used unconsciously to organize the oral narratives. The cumulative commonplaces or formulary expressions on the other hand, include the metrical formulas described by Parry (1971), Lord (1960), Rosenberg (1970), Nagler (1974), Opland (1975), Peabody (1975), Stolz & Shannon (1976), Zwettler (1978), as well as the non-metrical gnomic expressions known as proverbs, adages, maxims, apophthegms, sententiae, egigrams, even epithets, exempla, emblems, kennings, set phrases, and standard parallelisms and oppositions (e.g., Essien, 1978; also see the proverbs in Achebe's novels). Moreover, "primary oral cultures use [the cumulative commonplaces] as units somewhat as writing cultures use words as units," Ong notes. "This is one reason why such oral cultures are less 'analytic': their thought has to be kept in larger chunks to survive and to flourish" (Ong, 1977, p. 104). These sayings, however, transmit the wisdom of the ages, and one brings them to bear on present problems in order to determine the proper course of action. Of course, one must choose sagaciously from among the available store of commonplaces, and the consummate rhetorician is the one whose use of formulary

expressions warrants the praise that Alexander Pope succinctly formulated in the expression: "What oft was thought, but ne'er so well expressed."

Of course, the highly literate person today regards these heavily formulary expressions negatively and labels them cliches, conveniently overlooking the fact that all of us make statements that are formulary to some degree. However, the systematic, self-conscious cultivation of both kinds of commonplaces in rhetoric historically represented a movement toward greater abstraction and control in the oral composing of narratives, and the prevalence of formulary or stock expressions in the talking and writing of residually oral persons today probably represents an analogous growth process for them. Moreover, once you formulate something and write it down, then you can modify it and add to it -- that's the kind of interactive process through which the abstract control of knowledge grows. Ong puts it this way: "What is distinctive of the visualist development leading to our modern technological culture is that it learns to vocalize visual observation far more accurately and elaborately than primitive [people], by vocalizing it manages to intellectualize it, and by intellectualizing it comes to generate further specific visual observation, and so on" (1977, p. 129). But the graphic, imagistic language of formulary expressions tends nevertheless to be more typical (typed) and generalized than empirical and particularized, with reference to both historical examples and the thinking of residually oral persons today.

Since rhetoric was regarded as the exercise of reason about probable causes and effects (as opposed to certainties), it is significant to note that this reasoning was built on commonplaces or heavily formulary expressions. Due to the nature of these expressions, reasoning in an oral culture is much more additive -- and hence somewhat repetitive -- than either inductive or deductive, and although abstractions in the form of generalizations exist, concrete images and action words are much more common than abstract terms, but the concreteness is frequently more rhetorical than empirical. Nevertheless Ong maintained that rhetoric was intermediate in the historical development of consciousness out of a magical-mythical state. (Even the thinking of modern youth is largely animistic until puberty.) The fluent, extended, and ordered use of language in rhetoric historically seems to have expanded thinking capacities and interior resources, and when the rhetoric was later written, the language was selected and mulled over in an even more deliberate manner that further enhances thinking and

consciousness. So copia or fluency was instrumental in the historical development of rhetoric, and rhetoric was central to the emergence of consciousness from a magical-mythical state.

The practice of rhetoric existed historically before the "art" or study of rhetoric, which happened only after the invention of writing. And just as analysis and systematic organization of the practice of rhetoric depended on writing, so too did the analysis and systematic organization of reasoning. Ong noted that Aristotle generated logic, or the study of, or science of, reasoning, and this could not have been done without writing. Logic moves toward greater and greater explication, as typified by its stress on definition. Since definition usually proceeds negatively, by making clear what a thing is not, logic generally proceeds by setting up greater and greater antitheses. But rhetoric also proceeds by antithesis, by differentiating opposites, by accentuating the boundary between self (or group) and other (people and things). However, the antitheses in rhetoric are frequently general or global compared to the sharper, more specific antitheses employed in logic. (For instance, the dichotomies of the logic developed by Peter Ramus [1515-1572] are probably the most notable example of stress on division and distinctions in the history of logic. [Concerning Ramism, see Ong, 1958.] Therefore, Ramist logic is probably an instance of the new medium -- print -- reinforcing and strengthening something from the old -- orality -- for bipolar thinking or thinking in antitheses goes back ultimately to primary orality. Of course, bipolar thinking is also a stage in the cognitive development of children today, thus suggesting another link in our theory of recapitulation.) Logic thus represents a historical movement toward greater abstraction and analysis and more conscious control of knowledge.

Although Ramist logic or method was developed during the Renaissance, Ong regarded the Renaissance as a residually oral culture because the educational practices of the day were those of old for training an orator, and the actual written composing processes as a result still strongly echoed the paratactic practices of oral composing processes, especially with reference to thematic (episodic) construction and the use of formulary expressions. Although the fifteenth century invention of the movable printing press laid the groundwork for the movement toward universal literacy within a given population and therefore also laid the groundwork for the widespread use of literate modes of thinking, it still took several generations to produce a consistent (written) prose style free of formulary expressions and other signs of oral residue.

According to Ong, literate people came to rely on writing and printed books to store their knowledge, not just on human memory of formulary expressions. In this way literate people freed the human mind for other things. Ong (1971) maintained that both romanticism and technology resulted from human noetic control over nature, a degree of control not possible in an oral situation. When vast supplies of knowledge are stored in readily retrievable form in a literate culture, then people are freed to use their minds to develop new technologies without fear of forgetting the old ones. (Oral people who relied on the living human memory could not allow the risk of continued experimentation for fear of losing what was known.) Literate people are also freed to celebrate what is romantically mysterious, different, original, strange, ineffable, inaccessible, and unknown because what is commonly known is safely stored in books. As individual persons today increase their noetic control they in a sense go through the stages of consciousness represented by the development of modern technology and romanticism, with its sundry variations. Moreover, these advanced stages of literate consciousness signify ever-increasing abstracting capabilities as manifested in noetic control, control wrought largely through symbolic interaction with the real world.

Individual Development

The sensory register of primitive hunters was acute -- it had to be for them to survive. But they could not vocalize very thoroughly what all they were registering through their sensory awareness. To begin to vocalize what one is sensing, one needs to abstract certain details out from the whole gestalt. One can begin to do this through the use of somewhat generalized formulary expressions, but eventually these need to be supplemented by more discreetly selected words that more fully approximate what one senses. Hearing and reading examples of how others achieve this difficult process of abstracting is a sound way to begin to develop one's own abstracting. Children thus learn adult thinking from sources in their cultural milieu, and the pedagogy for an oral approach to teaching literacy that William Craig Forrest of LeMoyné College has formulated is imminently attuned to this reality.

In the late twenties and early thirties, Lev S. Vygotsky (1962), Luria's friend and mentor who prompted his (1976) study of literacy, was concerned with what happened when children learned to write. Vygotsky observed that a child's "linguistic

age" in writing always appeared to be several years behind the child's "linguistic age" in talking. He formulated his explanation of this phenomenon in terms of what he called the development of social speech, inner speech, and written speech. In social speech, Vygotsky noted that the meanings of words evolve historically from relatively concrete referents to gradually more abstract terms (a review of etymologies will bear him out on this), and he claimed (pp. 73 and 124) that word meanings in the thinking of children change as they develop, just as they changed historically. The young child grasps the word-object relationship so that the word is regarded more as a property of the object than as a symbol of it, and it is only with time that the young person eventually learns to abstract the word from the concrete referent and use it in a more generalized manner to refer to a class of objects. Because the adult's words function as more generalized abstractions, Vygotsky concluded, "the child's and the adult's words coincide in their referents but not in their meanings" (p. 73). Thus with reference to learning the more abstract meanings of words, children appear to go through something analogous to the history of those words in the respective languages. In other words, one seems to go through a period wherein one's language usage is characterized by "concrete conceptualizations" before one's language usage is transformed as one gradually develops more abstract concepts out of one's language through interacting with other language users. In a monumental philological study, Havelock (1978) traced the historical development of The Greek concept of justice from its shadow in Homer to its substance in Plato, and what Vygotsky discerned as the movement from concrete conceptualization to abstract thinking in children is but a telescoped and transformed recapitulation of the kind of movement described by Havelock as a gradual and incremental transformation over centuries from an oral and concrete sense of things to an abstract concept. Vygotsky (1962, 1978) referred to this learning through interacting as mediated learning and Havelock (1966a, 1977, 1978) has provided ample evidence that writing, as Vygotsky suspected, is the mediating factor in this complex process of cognitive development (also see Luria, 1976 and 1978; and Jensen and Figueroa, 1975).

In addition, Vygotsky claimed that "grammar develops before logic" in the child (p. 46). This is pertinent to the previous discussion of paratactic/hypotactic language structures and to the development of abstract thinking. Vygotsky said, "The child may operate with subordinate clauses, with words like because, if, when, and but, long before he [or she] really grasps causal, conditional, or temporal relations. He [or she] masters syntax

of speech before syntax of thought" (p. 46, his emphasis). He is in effect acknowledging that the "syntax of thought" involved in using hypotactic language structures is learned, and the previous discussion of the Greek experience of moving from parataxis to hypotaxis suggested that it is learned through learning to read and write. This in turn is in accord with Vygotsky's own observations concerning the abstracting involved in writing and the conceptual development that follows. Moreover, Vygotsky's observations suggest that logical relations are implied in the grammatical constructions but that they are used unconsciously for a period of time; only gradually does one learn to consciously use one's language to control the logical relationships implied by certain grammatical constructions that are possible in the language that one learns.

In learning to write, Vygotsky noted, children must disengage themselves -- that is, abstract themselves -- from the sensory aspects of social (oral) speech and replace the auditory-kinesthetic aspects of words with visually apprehended images (symbols) of words. Vygotsky noted that it is the abstract quality of writing that makes it somewhat difficult to learn. In addition, he anticipated several observations that Ong (1977, pp. 53-81) later delineated in "The writer's audience is always a fiction." Here's how Vygotsky described the situation:

Dialogue always presupposes in the partners sufficient knowledge of the subject to permit abbreviated speech and, under certain conditions, purely predicative sentences. It also presupposes that each person can see his [or her] partners, their facial expressions and gestures, and hear the tones of their voices. ... Communication in writing relies on the formal meanings of words and requires a much greater number of words than oral speech to convey the same idea. It is addressed to an absent person who rarely has in mind the same subject as the writer. Therefore it must be fully deployed; syntactic differentiation is at a maximum; and expressions are used that would seem unnatural in conversation. (pp. 142-143)

Writing is also speech without an interlocutor, addressed to an absent or imaginary person or to no one in particular -- a situation new and strange to the child. ... In written speech, we are obliged to create the situation, to represent it to ourselves. This requires detachment [a form of abstracting] from the actual situation. (p. 99)

Moreover, Vygotsky described the children's oral composing in terms anticipating Ong's description of unconsciously structured oral narratives:

Writing also requires deliberate analytical action on the part of the child. In speaking, he [or she] is hardly conscious of the sounds he [or she] pronounces and quite unconscious of the mental operations he [or she] performs. In writing, he [or she] must take cognizance of the sound structure of each word, dissect it, and reproduce it in alphabetical symbols, which he [or she] must have studied and memorized before. In the same deliberate way, he [or she] must put words in a certain sequence to form a sentence. Written language demands conscious work. (p. 99)

As we have discussed, conscious work with language yields greater control of language and seems to produce a more selected and abstract use of language than what occurs in the purely spontaneous oral use of language.

Vygotsky regarded puberty as the significant turning point in the development of the children's thinking, for at puberty children develop what he called genuine concepts, concepts free of animistic thinking (which corresponds roughly with Piaget's stage IV). Of course, puberty marks a turning inward of the self that is at least metaphorically related to the turning inward fostered by literacy. But, more significantly, children in Western schools have been interiorizing the symbols of literacy and literate thinking for several years by the time that they reach puberty. Puberty may very well mark a significant shift in the thinking of children in primary oral cultures as well as those in literate cultures, but it seems reasonable to expect that the degree to which persons have interiorized literacy will influence the development of their thinking, particularly with respect to abstracting. Although Vygotsky himself did not explicitly consider this, his observations concerning written speech as distinct from social (oral) speech suggest this possibility. Moreover, as Ong noted, the process of interiorizing literate modes of thinking actually begins in the pre-school years for children who grow up in a literate milieu. Thus the effects of growing up in a functionally oral or literate culture influence one's abstracting abilities from an early age onward.

Vygotsky's observations about individual development suggest a rough parallel with the historical development of

abstract thinking, although he did not explicitly consider the variable of growing up in an oral or literate culture. However, he seems to have sensed the importance of such a cultural variable, as was suggested in the research he prompted Luria (1976) to undertake. As mentioned above, Luria's findings largely corroborated Havelock's observations, and the work of Vygotsky connects with Ong's observations as this summary has indicated.

Conclusion and Curricular Recommendations

The distinctions made here between oral and literate thinking probably account entirely for the difference in the mean IQ scores reported by Jensen and others, even though the magnitude of the difference in the mean scores of black and white children is great. The fact that a greater percentage of black than white children grow up in a functionally oral culture probably accounts entirely for their lower mean scores on measures of abstract and conceptual reasoning, but those differences can probably be overcome within a generation with the proper pedagogy in primary schools. The proper pedagogy is that which Professor Forrest has formulated, which he describes as an oral approach to teaching literacy (also see Brooks, 1973). While the author thankfully acknowledges the influence of Professor Forrest on his thinking about pedagogy (see Farrell, 1978a, pp. 45-47), he would like to here make a few general observations that could be of service to the readers in situating Professor Forrest's ideas in a larger context.

In recent years some people in the USA have decried the teaching of standard English. To teach standard English as a matter of course is, they say, a violation of the students' right to their own language. When the students in question have been black, charges of racism have been bandied about, but all that sound and fury has signified nothing sensible. Unless it can be demonstrated that certain students are intellectually incapable of mastering the syntax of standard English, standard English is the only sensible standard for schools to establish for all students. For either we have one standard for all or we have a double standard.

The goal of social integration will be best served by having one standard for all -- standard English. Mastering the syntax of standard English will enhance students' economic and social potentialities for the rest of their lives in our culture. Those students who speak/write a non-standard dialect need to be given the opportunity to become bidialectical through

instruction, for they are unlikely to become bidialectical as readily through their own uninstructed efforts. Therefore, all students in American schools should be instructed in the syntax of standard English as a matter of course in English courses (D'Eloia, 1975).

People in this country who use non-standard forms of grammar are frequently judged to be uninstructed, and students need to be aware that such judgments are made at times by people in the real world. Moreover, they need to be told that such judgments can stand in one's way in terms of job opportunities and social mobility. While students are technically free to allow themselves to be judged as uncultured and uneducated because of their use of non-standard forms of English, they are also free to protect themselves from such judgments by learning the standard forms of grammar to the best of their ability. Of course, learning the standard grammar does not necessarily mean dispensing completely with one's native dialect, but it does mean becoming bidialectical. Moreover, there is nothing particularly unusual about being bidialectical, as Ong noted:

Many Europeans, including highly educated Europeans, do not speak at home the way they speak in the schoolroom or on television. The dialect they speak at home is not a written language -- there is no fixed way even to spell it. Such dialects are like ghetto languages in the United States, which aren't normally written, although there is some attempt to write them now. There are signs that dialects in Europe and elsewhere are disappearing, largely under the influence of the mass media. This is too bad, but there is not much you can do about it, because people tend to standardize. What will happen of course is that many of the features of these smaller languages, especially vocabulary, will be incorporated into the larger languages. And you can make taped recordings of the disappearing dialects for later study. (Ong, 1973, p. 30)

There is evidence that some of the vocabulary of non-standard dialects has been assimilated into standard English in recent years. However, the grammatical forms of standard English have remained largely unchanged despite recent attention to the grammatical forms of non-standard English.

Students are students so that they can become educated and acculturated (Skurnick, 1977). One of the important functions of

education is to transmit the accepted customs of the culture. If the ability to talk and write in the grammar of standard English is a minimum criterion that one must meet in order to avoid being regarded as an uncultured, uneducated person, then students had better learn the grammar of standard English. Thus, bidialectalism comes down to this: when in Rome, do as the Romans do; when at home, do as others at home do. If, as Ong says, this is what many Europeans do, then it is not a particularly extraordinary practice. As a matter of fact, a good number of people in the world have to be bilingual or even multilingual, not just bidialectical, in order to successfully negotiate the demands of their societies. Moreover, expanding one's facility with language has long been regarded as a very humanizing process, for the more conscious use of language enhances one's awareness.

Of course, becoming bidialectical or bilingual is hard, but as Ong sagaciously points out, "You shouldn't study a subject just because it is hard, but on the other hand you shouldn't not study something just because it is hard" (p. 30).

If expanding one's facility with language is hard, teaching language is also hard. Teaching the grammar of standard English to speakers of non-standard English is fraught with difficulty. A "crash course" in grammar usually does not do the trick. Learning the grammar of standard English is a matter of acculturation that simply requires time, but as Vygotsky (1962, p. 46) said, "grammar develops before logic." Children must learn the grammar of the schools before they will be in a position to master the logic of the school subjects. Moreover, the school subjects are the repository of the best thought that has been developed in Western culture. Opening students to the logic of the school subjects is tantamount to opening them to the cultural heritage of Western civilization. Furthermore, this opening up process is literally the development of potential intelligence into actual intelligence. (For a solid study of some of the problems connected with teaching grammar, punctuation, and spelling, see Shaughnessy, 1977.)

To achieve this acculturation, teachers of English first of all have to engage the students in the process of reading and writing. The students need to read regularly so that they will get used to seeing the grammar of standard English. Oral reading can help them become more conscious yet of the grammar of standard English. Once the students are used to seeing the grammar of standard English in print, they are then in a position to recognize when the grammar of their own writing does

not conform to that of standard English. (For a closely related defense of teaching the other conventions of writing -- spelling and punctuation -- see Farrell, 1978b.)

Of course, the students need to write regularly, and they also need to get in the habit of reading over their own writing carefully. Having them read their papers aloud occasionally is a good strategy for encouraging them to read their own writing carefully. Marking grammatical errors in papers is one way to call their attention to those errors, but what the students who write in non-standard grammar need to learn is how to "edit in" corrections. Although it is time-consuming, the only effective way that the author knows of to teach those students how to do that type of editing is to have tutors go over their papers in conferences. Even then, there seems to be an element of readiness in play which determines whether or not they will catch on. Once those students learn to "edit in" standard forms of grammar in their writing, they are then in a good position to proceed to consciously altering their speech so that they use the grammar of standard English when they talk. However, there are limits as to how far post-pubertal students who speak/write non-standard English seem to be able to carry this process of acculturation, and that is why it is imperative for the process to begin in the primary grades. (Concerning the limits of post-pubertal language development, see Lenneberg [1967, p. 158] but also remember that Luria [1976] studied a post-pubertal population; also see Farrell 1977b.)

Acculturating speakers of non-standard English to the grammar of standard English is a complex, time-consuming, hard process. While this process needs to be engaged in with certain college-age students, it probably should be begun early in primary school. However, the process needs to be engaged in sensitively with students of any age. The goal is bidialectalism. That is, the goal is to get the students to learn the prestige dialect and to learn when it is appropriate to use that dialect, without giving them the sense that they should be embarrassed by their native dialect -- which would still be appropriate for them to use in certain contexts outside the worlds of school and work.

Since it is frequently difficult for young children to understand and accept correction of their spontaneous speech patterns, pedagogical strategies for acculturating children to the grammar of standard English need to be sensitively employed to be effective. Two strategies recommend themselves: 1) memorizing and reciting written verse -- an old pedagogical

practice which can appeal to the young because of the rhythm and rhyme of verse; and 2) prepared (rehearsed) oral reading of prose texts which are suitable for primary school students. In both of these approaches, the presence of the written text would probably make it easier for the students to accept the authority of the teacher in correcting them. Moreover, both of these pedagogical practices would probably enhance the students' reading, which in turn would help them become better educated persons. However, these oral techniques would reach optimum efficacy only if proper enunciation were duly stressed in the primary grades, as Professor Havelock suggested in a letter to the author (personal correspondence dated December 7, 1978). Using English 2600 and English 3200 (Blumenthal, 1973; 1972) with the aid of cassette tapes of those texts would probably be the best way to teach enunciation, grammar, and usage to students who had already learned the rudiments of reading and writing.

While the students do have a right to their own dialect, they also have a right to learn the dialect of educated speakers/writers of the language. The schools have been set up to transmit to students the best knowledge, thinking, and customs of the culture. To deny students the right to learn the dialect of the dominant culture is to abridge a basic function of the schools. Schools in the United States were instituted to expand people's freedom, not to restrict it. The way to expand people's freedom through instruction in English is to teach them to master the syntax of standard English in the primary grades.

Despite the fact that acculturating students to standard English is hard work, it is, in part, the work that society is paying English teachers to do. Furthermore, as Vygotsky discerned, it is the key to developing potential intelligence into actual intelligence. A concerted effort to teach black children standard English coupled with a concerted effort to implement Professor Forrest's oral approach to teaching writing in the primary grades could be sufficient to close the IQ "gap" between black and white children that has been a concern of Professor Jensen and others for many years.

While it is necessary first to get our bearings straight on our basic orientation in teaching literacy, it is also necessary to construct our pedagogy for literacy on solid empirical research. However, the people who allocate research money are for some inexplicable reason supporting work like Cole and Scribner (1975) rather than investing money in basic research that could make a big difference in whether or not the USA ever

realizes the goal of Jeffersonian democracy. And yet there may be hope for turning the situation around, for without fully realizing the implications of the truth of what he said, Rexford Brown (1978, p. 3) accurately noted that IQ tests are tests of reading, proofreading, editing, logic, and skills of prudential decision-making based on inferences drawn from what is given, drawn by asking and answering the reality-disclosing questions of what, why, how, who, when, and where. Nevertheless, there are already an abundance of fine, albeit usually low-budget, research studies available. Many formal empirical research studies reported in Research in the Teaching of English are pertinent to the concerns of the present paper. Some recent entries in Dissertation Abstracts International pertinent to the concerns of the present paper include Kemp (1979), Tang (1979), Baghban (1979), Heller (1979), North (1979), Cowardin (1978), Perl (1978), and Rinderer (1978).

Some descriptive studies that the author found helpful in formulating this paper are Hawkes (1967), Zoellner (1969), Radcliffe (1972), which is an outline for an empirical test of Zoellner's ideas, Minkoff (1974), Nauer (1975), and Collignon (1978). Theoretical works of interest here would include Lunsford (1978) and D'Angelo (1978). D'Angelo (1977a) has compiled a very useful thematically organized bibliography of descriptive or theoretical works on various topics relevant to the pedagogy of writing (also see the bibliographic essays edited by Tate, 1976). Evaluation of that which is being tested is essential to any sound research design, and Arthur M. Cohen's (1969) trenchant directives on the evaluation of writing offer sound guidance for a valid and reliable research design (also see Miller, 1979). Of course, once the basics of how to evaluate the product per se have been worked out, then all the standard apparatus of research design and methodology are brought into play, which is the kind of thing that Jensen excels at. Unfortunately that kind of dazzling know-how has not been brought to bear yet on research in the teaching of reading and writing. But since cognitive development proceeds interactively with the development and interiorization of literacy, perhaps that kind of sophisticated research will be the new frontier of the eighties. (But remember intelligence-potential is distributed along the lines of the normal curve, and consequently so is intelligence-actual. With the proper pedagogy the mean IQ scores of black and white children can become isomorphic, probably within a generation, but there will be outside limits to each person's development [Cole, 1978; Cross, 1980]. Nevertheless, it is reasonable to assume that over time the distribution curve, and hence the mean score, of

intelligence-actual has moved forward, especially during the historical shift from orality to literacy within the given culture, and it is reasonable to assume that the distribution curve will continue to move forward incrementally over a period of generations, especially as we develop more and more effective pedagogy in reading and writing.)

The outlines of a sound pedagogy can be briefly sketched here, but with sufficient references to enable the reader to find what he or she needs to know. Farrell (1977a) noted that black orality is primary orality and white orality is secondary orality, and he said with reference to college-age students that different pedagogical strategies would be needed, and Ong (1978, p. 4) agreed. But that was with reference to college-age youth. However, a single pedagogy for both black and white children of a young age could be extremely effective if it were tailor-made to fit the needs of primary oral students. (The converse is not true: an effective pedagogy for secondary oral students would not be particularly effective for the primary oral students, as the school system in the USA has manifestly demonstrated in its comparatively inefficacious teaching of primary oral students.) Following the principle of doing the greatest good for the greatest number, it would make sense then to institute a pedagogy that would be effective for both primary and secondary oral students to initiate them into literate ways of thinking. Of course, learning the rudiments of manipulating numerical and alphabetical symbol systems comes first in the pedagogy of literacy. Bruner (1978) has unwittingly shown how early the initiation to literacy begins for pre-school children in a secondary oral culture, whereas this is not the case for children in a primary oral culture. Nevertheless, pedagogy attuned to the learning styles of primary oral students would also be sound pedagogy for secondary oral students. Dr. Jean Houston, Director of The Foundation for Mind Research in Pomona, New York, has done excellent investigative explorations of the pedagogical use of rhythmic patterns to facilitate the learning of the rudiments of numerical and alphabetical symbol manipulation (personal correspondence dated July 2, 1977), and her pedagogical techniques should be emulated in early primary schooling. Havelock (1973, 1976) noted that historically the manipulation of numerical symbols in arithmetical processes advanced faster than the manipulation of alphabetical symbols because the numerals were concretely visualizable symbols, whereas the alphabetical symbols stood for something more elusive, something acoustic. Music (rhythm) and math are alike because we "count" in both of them, and there is rhythm in both counting systems. That is probably why the manipulation of

numerical symbols advanced faster than the manipulation of the letters of alphabetic symbols. However, rhythm is involved in the initial memorizing of the alphabet, but the subsequent manipulation of alphabetical symbols in making words does not involve rhythm as noticeably as the manipulation of numerical symbols in the memorization of the multiplication tables by rote. (And yet for primary oral students rhythm remains a large part of their interior composing process, and Farrell [1978a, pp. 49-50; 1979b, pp. 13-14] noted that they must eventually move away from such composing habits in order to go on to master hypotactic language structures. Nevertheless, it is prudent to exploit rhythm in teaching both primary and secondary oral students the rudiments of mathematical and alphabetical symbol manipulation.)

Beyond the rudiments, Farrell (1979b) described four developmental groupings of students: the Homeric, Spenserian, Shakespearean, and Miltonic groups; he sketched pedagogical concerns for each group. (Although it is beyond the scope of the present paper to discuss in detail, it can be noted that what Farrell [1979a, 1980; also see 1979c] described as the female mode of rhetoric is something that the more sophisticated students might attempt once they have proven their stuff in the Miltonic group.)

Recommendations for Government Action

The President should introduce legislation to fund systematic efforts to implement through the Department of Education the insights offered by this report.

Pre-school programs for ghetto black children should be instituted. The professional staff for these should be trained in the techniques of rhythmic pedagogy pioneered by Dr. Jean Houston. Those techniques should be employed to inculcate black children in arithmetical and alphabetical abstract symbol system manipulation.

Primary and secondary school teachers in racially integrated or predominantly black ghetto schools should be trained to use orally/aurally/visually integrated pedagogy to teach all subjects that involve reading and writing, and money should be available to hire tutors. Farrell (1975, pp. 45-46) concluded that the students' measured reading level and the readability level of the texts are not significant factors, if the teachers effectively read the texts orally to the students and properly explicate what the texts say. Professors Alan Kraus

(1968; 1971) and Sol Rabushka confirmed Farrell's research-based analysis by using an oral-aural pedagogy to present texts like the Harvard report on general education and other sophisticated material to academically disadvantaged students, (i.e., the Homeric group) in the General Curriculum Division at Forest Park Community College. But this is only recent work. As Ong (1978, p. 1) pointed out, William Holmes McGuffey's Eclectic Readers were a big success in the nineteenth century even though the adroitly selected passages were probably beyond the readability level or the presumed reading-level of the prospective readers. Those Readers succeeded because they were oriented toward oral reading. They offered an orally/aurally/visually integrated pedagogy in literacy, and they would still be quite useful for the Homeric and Spenserian groups of students.

Since language instruction in virtually all Western languages entails interiorization and manipulation of an alphabet descended from the Greek alphabet, non-native language programs probably should be instituted in primary schools. This should be done in primary schools because after puberty the capacity of the brain to absorb new language skills diminishes somewhat (Lenneberg, 1967, p. 158). Professor Rosemary Thomas of Forest Park designed an efficacious programmed sequence of instruction in French using cassette tapes. The design she worked out for teaching French could be replicated with Greek, Latin, Spanish, Italian, German, and Russian for use in primary schools. (That design could also be adapted to teach enunciation, grammar, and usage in English to the Homeric and Spenserian groups by putting English 2600 and English 3200 [Blumenthal, 1973; 1972] on cassette tapes.)

The production and marketing of instructional materials should rightly be reserved for private enterprise. However, the government can make monies available for 1) purchasing instructional materials, 2) hiring the professional staff, including tutors, necessary to implement an efficacious educational system, and 3) instituting training programs for teachers and tutors. The government should financially aid school districts so that they can test out the pedagogy suggested here on a pilot basis, and the government should subsidize the research to properly measure and report the results of pilot projects. Perhaps a National Center for Literacy should be instituted along the lines described by Theodore L. Gross (1980, pp. 235-236) to coordinate the various pedagogical and research efforts that are needed.

The author helped Professor Thomas and a group of teachers in English, Spanish, speech, and reading plan the highly effective Language Insight Program at Forest Park, a twelve credit hour interdisciplinary team-taught package of language-oriented courses for students generally in the Spenserian group. A comparably integrated approach to instruction in speech, reading, and writing in both English and a foreign language should be instituted in primary schools throughout the USA for students in the Homeric and Spenserian groups, especially in ghetto areas. However, it would require a nationally organized, federally supported effort to institute programs that integrated language instruction on the scale here envisioned. Perhaps a National Center for Language Instruction and Literacy, rather than just a National Center for Literacy, could be established as part of the Department of Education, with close ties with the National Institute for Education. A specific agency does seem to be called for to direct efforts to implement and test out and refine the various recommendations that have been made in this report. The preliminary tests carried out at Forest Park and other open admission colleges throughout the country provided sound indications to believe that much progress can be made in eliminating the mean IQ differences between black and white children within a generation, if an orally/aurally/visually integrated pedagogy is employed in language instruction, especially, and in all other areas of instruction where reading and writing are involved.

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