
Does Black English
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black students and success
in math and science?

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Eleanor Wilson Orr

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"This book is not naive about the Black English Vernacular and it is untainted by racism. It is a deeply thoughtful discussion of the *possibility* that subtle nonstandard understandings, or a simple lack of experience with standard understandings, of prepositions, conjunctions, and relative pronouns can impede comprehension of basic concepts in mathematics and science. Eleanor Wilson Orr has filled her book with *evidence* and so put the reader in a position to judge what conclusions are justified. This very original and possibly very consequential work deserves the close dispassionate study of sociolinguists, psycholinguists, educators, and everyone who cares about the advancement of Black Americans."

—Roger Brown, Harvard University

"Invites compelling speculation on how . . . to unleash the scientific potential of disadvantaged black students."

—*Publishers Weekly*

"Original; controversial; immensely important."

—*American Mathematical Monthly*

"Mrs. Orr and her colleagues are on to something that could be of immeasurable significance to this country."

—*New York Times*

"A major contribution. . . . Developing ways to help black students overcome these barriers and participate fully in the fields of mathematics and science is critical to the future of our country. Ms. Orr's book is a fine, sensitive, and insightful pedagogical tool to aid in this effort."

—John B. Slaughter, chancellor, University of Maryland

Eleanor Wilson Orr has been a teacher for thirty-five years. In 1956, she and her husband founded the Hawthorne School, where they established the program on which this book is based.

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Twice As Less

*Black English and the Performance of
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ELEANOR WILSON ORR

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Twice As Less

W · W · N O R T O N & C O M P A N Y

N E W Y O R K · L O N D O N

*To my mother,
to my husband,
and to my children—
Douglas,
Leslie and Tom,
Meghan,
and Duncan*

Foreword

I AM a high school teacher—a teacher of mathematics and science. What I say in this book comes from my classroom and from the classrooms of my colleagues. My data are collected from the daily work of our students—nine years of classwork and homework. Through these data I trace how certain differences between black English vernacular (BEV)¹ and standard English can affect a BEV speaker's concept of certain quantitative relations.

Nothing of what I say is the outgrowth of any theoretical position on black English vernacular. In fact, I didn't even know there was something called Black English when I began to realize that many of the difficulties my students were having were rooted in language. It was the incongruence of the obvious intelligence and determination of these students with the unusual kinds of misunderstanding that persisted in their work that drove me to find answers. What I arrived at is an acute awareness of the function in English of prepositions, conjunctions, and relative pronouns in the identification of quantitative ideas. In this book I show how the misunderstandings that had puzzled me relate to the students' nonstandard uses of certain prepositions and conjunctions that in standard English distinguish certain quantitative ideas, and I show why there is reason to believe that these nonstandard uses are rooted in the grammar of BEV. I emphasize, however, that it is the many similarities between BEV and standard English that make the differences a problem—more of a problem than they would be if the vocabularies and grammars of the languages were totally distinct.

For students whose first language is BEV, then, language can be a barrier to success in mathematics and science. But it doesn't have to be. If we teachers know where the difficulties can arise—which concepts can be misunderstood and in what ways—and if we know what features of BEV can play a part in these misunderstandings, the potential problems can be averted. Avoiding the problems, however, also depends upon our realizing that BEV, like any other language, is rule-governed—it is *not*

just “bad” English. As Howard Mims, an associate professor of speech and hearing at Cleveland State University, put it: “A teacher has to understand [that] it isn’t just a matter of a child’s leaving *s*’s off words when he conjugates a verb. It’s programmed in his head like a computer: third person singular doesn’t have an *s*.”²

Unfortunately, even though linguists have for twenty years been documenting the phonological, lexical, and syntactic features that distinguish BEV from standard English and have written extensively about the effect these differences can have on a black child’s learning to read, there are still many—black and white—who resist the possibility that BEV is anything but badly learned English.³ This resistance is often compounded with the assumption that anyone who talks about BEV is going to maintain that speakers of the language should be taught in the language. On the other side, there are those who, recognizing BEV as a language, view the use of it as a civil right—so much so that any study of the relationship between it and learning is seen as questioning the integrity of the language. As a result of these positions, investigation into the ways that the language may be interfering with the academic performance of black students is often shunted aside.

I firmly believe that as long as such resistance continues many young people are going to miss out on much that could otherwise be available to them. Just recently an associate superintendent in the public schools of the District of Columbia was quoted as saying, “My position is just what it was 15 years ago. I’m not going to deal with Black English any more than I’m going to deal with Governor Wallace’s English or with President Kennedy’s English. . . . I’m not going to waste my time with that.” And the principal of a D.C. elementary school recently expressed a view still typical of many educators when he said, “They don’t speak ‘Black English.’ They use ‘bad grammar.’”⁴

In 1979, when a federal judge ruled that elementary school teachers in Ann Arbor could do a better job teaching BEV speakers to master standard English if the teachers knew more about the features of the language the children brought to school, emotions boiled over in the press. Whereas the plaintiffs’ case and the judge’s decision focused on strengthening instruction in standard English, many assumed that requirements in the mastery of standard English were to be weakened, that by court order black children were to be taught in BEV.⁵

In the sixties some of those who did recognize black English vernacular as a language claimed it to be deficient in the means necessary for learning concepts and for carrying out logical thought; black children

were thus seen as verbally deprived. The response was vehement, especially on the part of linguists and anthropologists, with the Linguistic Society of America endorsing a resolution “stating that no natural language has been shown to be superior to another for the expression of logical thought” (Labov 1982, 186).⁶ But the sensitivity remains.

Roger Brown, of Harvard University, identified this problem in a letter (26 August 1981) to Denis Prager, then associate director of the president’s Office of Science and Technology Policy (OSTP). Commenting on a research report on BEV and science education that Sara Nerlove, then of Carnegie Mellon University, and I had prepared for the OSTP (Nerlove and Orr 1981), Brown wrote:

For some scholars it has become almost axiomatic that one language cannot be said to be in any way “better” than any other and, in particular, that Black English must not be thought in any way inferior to Standard English. In many dimensions this is probably true; perhaps all. The motives of those holding this view are generally admirable. Still, it is sometimes championed as a kind of dogma forbidding any empirical inquiry and that is wrong.

When I first sought help from linguists, it was immediately assumed that my quest stemmed from a view of BEV as an inferior language. At that point I didn’t even know enough to realize what was blocking our exchange. Not until two years later, when I was able to spell out some of my data, did I begin to get the help I needed.

In his letter, Roger Brown identified a further controversy that my work has led me into—the controversy over the Sapir-Whorf hypothesis that the language one speaks may shape the way one thinks:

The report should be taken very seriously. . . . Some linguists and psycholinguists reading this report might dismiss it out-of-hand because it involves a version of what is called the Sapir-Whorf Hypothesis which some believe has been shown to be incorrect. In fact, it has not been shown to be incorrect and, indeed, has scarcely been studied in any adequate way.⁷

Although it is clearly not my purpose to involve myself in the debate over the relationship between language and thought, I am very aware that what I document suggests that language may indeed play a part in shaping conceptual thinking. My data suggest that language may shape the way one perceives quantitative relations—specifically, that the way a BEV speaker may understand certain standard English expressions of quantitative relations can affect his or her understanding of those relations. That language may affect the way one thinks in mathematics and science is significant. As Alfred Bloom of Swarthmore College put it:

I see the process of learning to manipulate words and grammatical structures as instrumental to the development of many of the schemas in which we think, *especially in highly abstract realms of cognition where non-linguistic experience cannot substitute for linguistic experience in providing direction to cognitive development.* (Letter to the author, 17 December 1981; italics added)

I can only hope that the problematic, sometimes volatile, issues that surround what I have to say in this book will not get in the way of what might otherwise be accomplished.

Tragically, as the debate over such issues goes on, disproportionate numbers of young blacks continue to be labeled “handicapped,” “learning disabled,” or “behavior problems.” And many educators, instead of paying attention to documented language *differences* that may be interfering with the performance of these students in school, continue to think in terms of cultural deprivation and compensatory education. In 1984 the *Washington Post* reported that although black students accounted for only 14 percent of the total school enrollment in Montgomery County, Maryland, they accounted for 20.2 percent of those in programs for the “mentally retarded,” 23.5 percent of those in programs for the “emotionally impaired,” and 27 percent of those with “specific learning disabilities.”⁸ In the same year, a report prepared by the Department of Instructional Services of Fairfax County, Virginia, stated that while black students accounted for only 7.7 percent of the total school population, they accounted for 12.4 percent of those in programs for the “emotionally disturbed,” 29.2 percent of those in programs for the “mildly retarded,” 11.3 percent of those in programs for the “moderately retarded,” and 17.4 percent of those in programs for the “learning disabled.”⁹

As everyone well knows, such disproportionate distribution is justified by some with the claim that blacks are genetically less intelligent than whites, and is explained by others as reflecting a raft of supposed deficiencies in the home environment of black children. The focus is still on *deficiencies*, rarely simply on *differences* that may be interfering with performance.¹⁰

As Walt Wolfram, one of the early researchers into BEV, observes: “Popular notions about language are so thoroughly entrenched that they’re not going to be overcome overnight. We’re still confronting the same thinking we encountered 20 years ago. I guess that doesn’t say much for the rate of social change.”¹¹ And Orlando Taylor, acting dean of Howard University’s School of Communications, identifies the challenge that must be faced:

All you have to do is look at the national statistics on school achievement in language arts for minority children to see the traditional approaches don't work. . . . Children who come to school speaking nonstandard English score at or near the bottom. When that happens, you either have to assume there's something innate in blacks that prevents their learning standard English, or something inadequate in teachers, or—the one I argue for—that teachers have in their hands an approach that is inappropriate.¹²

In chapter 1, I outline the circumstances that led me to what I describe in this book, and I introduce the reader to some of the kinds of misunderstanding that my colleagues and I encountered. In chapters 2 through 5, I trace the function in standard English of certain prepositions in the expression of certain quantitative relations and show how the students' misunderstandings of these relations are connected to their nonstandard uses of these prepositions. In chapter 6, I show reason to believe that the students' nonstandard uses of prepositions are related to the grammar of black English vernacular. In chapter 7, I introduce the reader to a kind of nonstandard construction in which the students combine in single statements parts of different ways of expressing ideas in standard English. In chapter 8, I show how the students combine the standard English *as* and *than* modes of expressing comparisons and how the resulting combinations are related to a lack of distinction between addition and multiplication and between subtraction and division and thus to a confusion between *twice* and *half*. In chapters 9 and 10, I show how the students' nonstandard ways of expressing partitive comparisons are related to their nonstandard perceptions of division, and I explore some speculations about the roots of the students' nonstandard *as* and *than* expressions. In the Afterword, I consider the problem of what can be done.

In selecting examples, my primary concern has been to choose those which I heard the writers explain in class or which are very much like those I heard discussed. Thus the source of my explanations is the students themselves. My second concern has been to choose as often as possible those examples that demonstrate misunderstandings that are somewhat isolated as opposed to those that are clearly the products of several misunderstandings embedded in one another. It has therefore not been possible to follow representative students through all the types of misunderstanding I discuss.

I want to thank those who have been essential to the gradual working out of the understanding that I present in this book. The process began

in our faculty meetings at the Hawthorne School; together we hammered out the germs of what I understand today. Without the dedication, keenness of mind, and perseverance of my colleagues, my thinking could never have developed to the point where it was clear enough for me to take my questions to professional researchers. Sara Nerlove of the National Science Foundation understood my questions and valued them. It was she who moved me from a still somewhat involuted understanding to one that reflected current knowledge and could be communicated to others. I am especially grateful to her for alerting me to the significance of markedness in adjectives. Special thanks go to Rae Alexander-Minter: when my ideas were still clumsy she had a sense of what I was trying to do and brought these ideas to the attention of the president's Office of Science and Technology Policy. Headed at that time by Frank Press, science adviser to President Carter, this office was concerned about the disproportionately small number of minority men and women entering the fields of science and engineering. A subsequent research contract with this office led to the OSTP report on BEV and science education (Nerlove and Orr, 1981); this report has served as the first stage of this book. As linguistic consultant for the research made possible by this contract, Walt Wolfram, of the University of the District of Columbia and the Center for Applied Linguistics, provided me with my first knowledge of BEV grammar and of linguistics in general. I thank him in particular for bringing to my attention the conjunctive use of *which*, the deletion of subject relative pronouns, and the nonstandard blend of two standard modes of relative-clause formation. To Alfred Bloom of Swarthmore College, I am indebted for his dogged and perceptive pursuit of the possible meanings of *twice as small as* and *twice as less*. My thanks go also to Marcia Linebarger, of Swarthmore College and System Development Corporation, for our long discussions about *any* and *some*; inevitably her penetrating responses to my many questions sent me back to think again. And finally, I will always be grateful to William A. Stewart, of the City University of New York, for freeing me from the last traces of ethnocentrism and for making available to me unstintingly his keen insights into the linguistic world of a BEV speaker. In particular I am indebted to him for encouraging me to pursue my ideas about the role of negation in the production of the students' nonstandard *as* and *than* expressions and especially for the clarity and thoughtfulness with which he considered the details of my understanding as it emerged.

Twice As Less

