ED 108 234   95   CS 202 121

AUTHOR	Kligman, Donna; Cronnell, Bruce
TITLE	Black English and Spelling.
INSTITUTION	Southwest Regional Laboratory for Educational Research and Development, Los Alamitos, Calif.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
REPORT NO	SWRL-TR-50
PUB DATE	Mar 74
NOTE	85p.; Appendixes B, C, D, E, F, were removed because type size was too small for reproduction
EDRS PRICE	MF-$0.76 HC-$4.43 PLUS POSTAGE
DESCRIPTORS	*American English; *Negro Dialects; Nonstandard Dialects; *Pronunciation; Regional Dialects; *Relationship; Secondary Education; *Spelling; Standard Spoken Usage
IDENTIFIERS	*Black English

ABSTRACT

Three studies of the relationship of Black English (BE) pronunciation to spelling performance are reported in this document. The first study explored a large number of BE pronunciation features. The second included control features that do not have differing pronunciations in BE and standard English (SE). The third examined final consonant clusters only. The studies indicate that differences exist in the degree to which various features of BE pronunciation are associated with BE-related spelling errors. Moreover, feature difficulty in terms of BE-related errors is not what might be expected on the basis of speech data. BE-related errors are more frequently made on grammatical than on nongrammatical features, and SE speakers make many of the same BE-related errors that BE speakers make, but less frequently. Appendixes containing materials and tables related to the three studies are included. (Author/JM)

SWRL

SWRL EDUCATIONAL RESEARCH AND DEVELOPMENT

TECHNICAL REPORT 50

MARCH 1974

BLACK ENGLISH AND SPELLING

Donna Kligman and Bruce Cronnell

ABSTRACT

Three studies of the relationship of Black English (BE) pronuncia-
tion to spelling performance are reported. The first explored a large
number of BE pronunciation features. The second included control features
that do not have differing pronunciations in BE and Standard English (SE).
The third examined final consonant clusters only. The studies indicate
differences in the degree to which various features of BE pronunciation
are associated with BE-related spelling errors. Moreover, feature
difficulty in terms of BE-related errors is not what might be expected
on the basis of speech data. BE-related errors are more frequently
made on grammatical than on non-grammatical features and SE speakers
make many of the same BE-related errors that BE speakers make, but less
frequently.

CONTENTS

4

BLACK ENGLISH AND SPELLING

Donna Kligman and Bruce Cronnell

INTRODUCTION

Recent research has indicated that English spelling is based on English pronunciation (Hanna, Hanna, Hodges & Rudorf, 1966) and has added impetus to the trend toward teaching spelling on the basis of sound-letter correspondences. In correspondence-based spelling instruction, the stimulus for spelling is a pronunciation, usually made by the teacher. Typically, the language system which the teacher uses and on which reading and spelling materials are based is Standard English (SE). While Black English (BE) is a systematic dialect of English with its own rules and standards, uniform from one geographical region to another and closely related to SE in its underlying structure, it has two aspects which may have important implications for spelling instruction. First, the surface realizations of BE often differ from SE and are, in most cases, not as closely reflective of the written language as are the pronunciations of SE. Secondly, the features of BE pronunciation do not occur without variation even for a single speaker of the dialect. BE speakers may switch styles to conform to varying cultural and social contexts. In formal situations, BE may incorporate many more of the features of SE. While this variability could be considered a problem in teaching sound-to-spelling correspondences, it could also be an asset. A BE speaker who used an SE pronunciation in formal situations might have the form at his disposal as an aid in understanding the relationship between spoken and written English.

A review of the literature on dialect and spelling indicates that, in fact, there are some spelling difficulties which can be related to dialect differences. The first studies of dialect and spelling were concerned with regional dialects. Boiarsky (1969) gave spelling tests to two groups of tenth-graders of similar IQ range, race, and socioeconomic background. One group was from rural West Virginia, the other from Philadelphia. While the Philadelphians used SE pronunciations, the West Virginians used different pronunciations for some vowels. The Philadelphia students made very few errors on the spelling test and those made could rarely be connected with their speech. The West Virginia students made more errors and most of their errors could be attributed to dialect differences; for example, "still" (SE /stɪl/)[1] was pronounced /stil/ and commonly spelled _steel_ or _steal_. Boiarsky concluded that "the Appalachian dialect, as compared with standard dialect, is associated with spelling performance."

---

[1] See Appendix A for explanation of symbols used in this report.

Graham and Rudorf (1970) studied speech and spelling in three dialect areas: Ohio, Massachusetts, and Georgia. Their subjects were natives of these areas and exhibited local dialect characteristics. Words were selected to test for the effects of vowel differences known to exist among the three areas. Words with consonants were used for controls, since consonant pronunciations were known not to vary among the areas. The test results showed no significant differences among areas for the proportion of phoneme spelling errors to word errors for consonants, with one expected exception: students from a dialect area with /hw/ distinct from /w/ (e.g., "whine" distinct from "wine") made fewer errors spelling wh than students without this distinction. The results for vowels were much less clear. The phonemic system employed for vowels (that used in Hanna et al., 1966) did not adequately describe actual vowel use in any of the three dialect areas; post hoc analysis of the vowels did not result in an adequate description either. However, significant differences between areas were found for the proportion of phoneme spelling errors to word errors for some vowels; primarily low and low-back vowels (/a/ and /ɔ/), which are particularly variable among (and even within) dialects. However, Graham and Rudorf were led to conclude:

> While the evidence is not overwhelming, significant
> differences in the proportions of phoneme-error to
> word-error between the various dialects...are most
> easily explained as due to the influence of the
> dialect on spelling.

While the Boiarsky and the Graham and Rudorf studies investigated regional dialects, more recent studies have investigated the relationship of Black English to spelling. Studies of Black students' compositions suggest that pronunciation may result in misspellings.

Briggs (1968) reported on essays written by 30 Black high school students from Alabama. While primarily concerned with syntactic deviations in these essays, Briggs listed misspellings which do not reflect syntactic deviations. Analysis of these misspellings (excluding misuse of apostrophe and incorrect word separation) suggests that about half can be attributed to pronunciation. For example, when a final consonant is not pronounced, it may be omitted in spelling, as in "and," "bald," "then," "for" spelled an, ball, the, fo. In addition, many syntactic deviations are reported (particularly omission of the suffixes -s and -ed) which can also be termed misspellings.

Wolfram and Whiteman (1971) studied 19 compositions written by tenth grade Black students in Maryland. They, too, noted the omission of the suffixes -s and -ed, as well as other syntactic features of BE which were reflected in the students' writing. However, they found few misspellings unrelated to syntax which were reflections of BE pronunciation.

Ross (1971) studied the compositions of 138 Black students in grades 4-6 in Los Angeles. The study was concerned with syntax; however, the reported omission of the suffix -s, while reflecting syntax, is also a case of misspelling.

Sullivan (1971) compared speech and spelling of 72 White and 62 Black second graders in Texas. Speech was assessed by a repetition task which used 40 sentences from an oral English test, accompanied by pictures and spoken by an SE-speaking female. Fifteen words from this test were employed for the spelling test. These words were chosen on the basis of two criteria: (1) 10 percent or more of the children attempting the word did not use an SE pronunciation, and (2) the word contained a feature known to be pronounced differently by Blacks and Whites in the region. Twenty-five phoneme-grapheme correspondences (primarily those for which 10 percent of the children used a non-SE pronunciation) were analyzed.

Black children made significantly fewer SE pronunciations and fewer correct spellings than White children. Speech and spelling scores were correlated for both groups (r = .36-.39). Moreover, in spelling, Blacks omitted more words and had more "irrational" errors than Whites. ("Irrational" was defined as: "An attempt was made but no grapheme was correct by position. For example, rgat for helps.")

For the 25 phoneme-grapheme correspondences studied, 237 comparisons were made, between and within groups and modes. Of these comparisons, 156 were not significant; the others presented no consistent pattern. The two groups differed less in speech than in spelling, and generally both produced more correct (SE) responses in speech than in spelling. Patterns of correct and incorrect spellings differed between groups on different words. While some speech differences were reflected in the spelling (e.g., omission of final sibilants, /l/ before /d/, /r/ following /d/), others were not (e.g., omission of /t/ after /s/, substitution of /f/ for final /θ/ and /d/ for medial /ð/).

Although Sullivan's study suggests a relationship between dialect and spelling, it was not based on an analysis of the differences between SE and BE, which would permit systematic study of dialect differences in spelling. The three studies reported here were based on a linguistic analysis of BE features which could be expected to affect spelling performance. The studies were designed to investigate more fully the relationship between BE and spelling.

STUDY I:

A PILOT INVESTIGATION INTO BLACK ENGLISH AND SPELLING

The purpose of Study I was to explore a large number of Black
English features which differ from Standard English to determine their
effect on spelling performance. The specific research questions inves-
tigated were as follows:

1. Do BE-speaking children make more spelling errors[1]
   than comparable non-BE speakers on words which differ
   in pronunciation between BE and SE?

2. Do BE-speaking children make more spelling errors
   related to BE pronunciations than non-BE speakers?
   On words which differ in pronunciation between BE and
   SE, how comparable is spelling performance for the two
   groups if BE-related errors are discounted?

3. Which features of BE cause the greatest number of BE-
   related errors?

4. Do BE-speaking children make more or fewer BE-related
   errors on features which affect grammatical markers?

5. Do spelling errors made by BE-speaking children conform
   to those expected to occur in light of past studies of
   BE?

FEATURES OF BLACK ENGLISH

Preparatory to the conduct of Study I, the phonology and selected
morphological structures of BE were contrasted with SE.[2] Three previ-
ously completed studies of BE were consulted (Legum, Pfaff, Tinnie, &
Nicholas, 1971; Labov, Cohen, Robins, & Lewis, 1968; Shuy, Wolfram, &
Riley, 1967). The features of BE phonology which differ from those of
SE and which were therefore considered potential sources of spelling
problems are described below. In addition, BE features which affect
grammatical markers are discussed. Although such features may repre-
sent underlying structural features, this study considered them to be
phonological.

---

[1]A spelling error--for the three studies reported here--was not
a whole-word error, but a misspelling of a particular sound-to-spelling
correspondence.

[2]Stanley Legum provided valuable assistance in the preparation of
this analysis.

A. SINGLE FINAL CONSONANTS

Many BE features that differ from SE occur word-finally. In Briggs' study (1968), over half of the dialect-related spelling errors were so located. A single consonant at the end of a word may be reduced, deleted, or replaced by another in BE (in relation, of course, to SE). This occurs especially frequently if the following word begins with another consonant sound. The several categories of final consonant reduction or loss are discussed below.

Single Final Stops

Single final stops may be deleted, devoiced, or replaced by glottal stops in BE.

1.[3] SE: /d/ /V__#/; BE: /∅/ or /d̮/ (a devoiced consonant which may be interpreted as /t/). (e.g., "bread" may be pronounced /brɛ/ or /brɛd̮/ and spelled breh or breat.)

2. SE: /b/ /V__#/; BE: /∅/ or /b̮/ (a devoiced consonant which may be interpreted as /p/). (e.g., "rob" may be pronounced /ra/ or /rab̮/ and spelled rah or rop.)

3. SE: /t/ /V__#/; BE: /∅/ or /ʔ/ (a glottal stop, which could be interpreted as the surface realization of an underlying /d/ since both /t/ and /d/ may reduce to the same sound in BE). (e.g., "flat" may be pronounced /flæ/ or /flæʔ/ and spelled flah or flad.)

In accordance with the findings of Legum et al. (1971), it was expected that a voiceless final stop (e.g., /t/) would be deleted more often than a voiced final stop (e.g., /d/).

Single Final Sibilants

Although the tendency is not as strong as for stops, final sibilants may be deleted or become glottal stops in BE. It was also suspected that voiced sibilants might devoice as do final voiced stops.

4. SE: /s/ /V__#/; BE: /∅/ (or /ʔ/, which may be interpreted as /∅/). (e.g., "cross" may be pronounced /krɔ/ and spelled craw.)

_____

[3] The features in Study I are often referred to by the numbering system used here.

5. SE: /z/ /V__#; BE: /Ø/ or /s/ (e.g., "prize" may be pronounced /pra/ or /prays/ and spelled prie or price.)

Single final liquids

Final liquids (i.e., /r/ and /l/) may have reduced consonantal quality (i.e., become vocalized) or may not be pronounced at all in BE. /r/ can become a central glide on or a lengthening of the preceding vowel or it may be reduced further to become virtually imperceptible. /l/ may reduce to a back, unrounded glide on the preceding vowel or may disappear entirely.

6. SE: /r/ /V__#; BE: /Ø/ (or /ə/, which may be interpreted as /Ø/). (e.g., "jar" may be pronounced /ja/ and spelled jah.)

7. SE: /l/ /V__#; BE: /Ø/ (or /l̩/, which may be interpreted as /Ø/). (e.g., "pool" may be pronounced /pu/ and spelled poo.)

Single final nasals

When final single consonants are nasals (i.e., /n/, /m/, or /ŋ/) BE speakers may reduce them to the naturally occurring nasalization on the preceding vowel. This may result in spelling deletions or in mis-perceptions of the underlying nasal since all could be reduced to the surface realization /Ṽ/.

8. SE: /ṼN/ /__#; BE: /Ṽ/ (which could be interpreted as another nasal). (e.g., "game" may be pronounced /gẽ/ and spelled gae or, substituting the wrong nasal, gane).

9. SE: /ɪŋ/ ("-ing" suffix); BE: /ɪŋ/ (e.g., "reading" may be pronounced /rɪdɪn/ and spelled readin.)

It was recognized that problems of interpretation could arise due to the written similarity of m and n. Also, many SE-speaking children, in connected speech, may pronounce "reading" as /rɪdɪn/ and spell it correspondingly.

Single final interdental fricatives

The final interdental fricatives, /ð/ and /θ/, are often replaced by their labio-dental counterparts, /v/ and /f/, in BE. Only the latter was investigated.

10. SE: /θ/ /__#; BE: /f/ or /t/ (e.g., "mouth" may be pronounced /mawf/ or /mawt/ and spelled <u>mouf</u> or <u>mout</u>.)

Although /f/ is more common, /t/ was also investigated, as occasionally it occurs for /θ/ in initial position.

B. FINAL CONSONANT CLUSTERS

The frequent reduction or loss of final consonant clusters in BE pronunciation was expected to be a common source of spelling errors. Reduction of the second member of a two member final consonant cluster occurs frequently in BE pronunciation (especially before another consonant). In general, this occurs only when both members of the cluster are voiced or both members are unvoiced.

This final cluster reduction is not merely a phenomenon of BE but, as Wolfram points out (1969), it occurs frequently even in the speech of middle-class SE speakers in rather formal situations. Metcalf (1971) noted that deletion of the final member of consonant clusters before words beginning with other consonants is a common feature of Southern California SE. Therefore, it was expected that misspellings related to reduction or loss of final consonant clusters in speech would occur not only for BE speakers but for SE speakers as well.

11. SE: /st/ /__#; BE: /s/ or /∅/ (e.g., "post" may be pronounced /pos/ or /po/ and spelled <u>poas</u> or <u>poe</u>.)

Labov et al. (1968) noted that although there is a slight tendency for unvoiced pairs to be simplified less often than voiced pairs, /st/ is probably a special case in which simplification is more common than for other voiceless pairs.

Labov et al. stated that the only final clusters in which the first element may disappear and the second be retained are those in which the first member is a liquid or nasal consonant. Therefore, Features 12-14 were intended to investigate how spelling may be affected by the vocalization of liquids and nasals before dental stops. It was also decided to investigate misspellings caused by the tendency to retain the first member and drop the second in such cases. Legum et al. (1971) noted a preponderance of the latter.

12. SE: /nt/ /__#; BE: /t/ or /n/ (or some discernible reduction of /n/). (e.g., "hunt" may be pronounced /hət/ or /hən/ and spelled <u>hut</u> or <u>hun</u>.)

13. SE: /ld/ /__#; BE: /d/ or /l/ (or some discernible reduction of /l/). (e.g., "wild" may be pronounced /wayd/ or /wayl/ and spelled <u>wide</u> or <u>wile</u>.)

14. SE: /rd/ /__#; BE: /d/ or /r/ (or some discernible reduction or /r/). (e.g., "card" may be pronounced /kad/ or /kar/ and spelled cod or car.)

In order to determine the spelling effects of the BE pronunciation on liquids before any consonant rather than exclusively before dental stops, it was decided to investigate the following features. Pre-consonantal liquids in BE behave, in general, like final single liquid consonants; they may vocalize and not be recognized as consonants.

15. SE: /r/ /V__C; BE: /∅/ (or /ə/, which may be interpreted as /∅/). (e.g., "warm" may be pronounced /wɔm/ and spelled wam.)

16. SE: /l/ /V__C; BE: /∅/ (or /ḷ/, which may be interpreted as /∅/). (e.g., "bulb" may be pronounced /bəb/ and spelled bub.)

Although Labov et al. noted a weaker tendency for clusters ending in a sibilant to reduce, it was decided to invesitgate one monomorphemic situation.

17. SE: /ks/ /__#; BE: /sk/ or /s/ (e.g., "mix" may be pronounced /mɪsk/ or /mɪs/ and spelled misk or mis.)

In most cases such clusters in monomorphemic forms would reduce to /k/ but Legum et al. (1971) found /baskɪn/ and /basn/ for the word "boxing" (SE /baksɪŋ/) in their study of BE.

C. INITIAL CONSONANTS

One of the features most popularly assumed to be characteristic of Black English is the replacement of the initial /ð/ and /θ/ of such words as "these" and "threw" with the stop equivalents of the fricatives (/d/ and /t/, respectively). The work of Labov et al. (1968) and of Legum et al. (1971) indicates that the stop realization of interdental fricatives is not nearly as frequent as might be thought. However, especially in the case of /ð/ being realized as /d/, some misspellings were expected as a result of BE pronunciations.

18. SE: /ð/ /#__; BE: /d/ (e.g., "these" may be pronounced /dɪz/ and spelled dese.)

19. SE: /θr/ /#__; BE /θ/ or /tr/ (e.g., "throat" may be pronounced /θot/ or /trot/ and spelled thoat or troat.)

Feature 19 also investigeted the effects on spelling of post-consonantal /r/ in BE, which is often reduced.

D. VOWELS

Although much is still unknown about the BE vowel system, it has commonly been noted that the vowel sounds /ɪ/ and /ɛ/ merge before nasal

consonants. The resulting vowel is somewhere in between the two but generally closer to /ɪ/. Briggs (1968) noted the spelling fince for "fence." A similar spelling problem might exist for BE speakers in Los Angeles, especially because the /ɛ/ - /ɪ/ contrast is now commonly lost before nasals for Southern California SE speakers, as well (Metcalf, 1971). Misspellings due to this pronunciation could be expected by White as well as Black children in Los Angeles.

   20. SE: /ɛ/ /__/n/; BE: /i/ (e.g., "den" may be pronounced /dɪn/ and spelled din.)

Although it was not clear how frequently, if at all, the vowel merger between /ɪ/ and /ɛ/ might occur before consonants other than nasals, it was decided to investigate the possibility. ‚ ‚s merger is beginning to appear in the speech of Southern C   n‚a SE speakers (Metcalf, 1971), there was some suspicion that it might also occur in BE speech and thereby affect spelling.

   21. SE: /ɛ/ /__/C≠N/; BE: /ɪ/ (e.g., "wet" may be pronounced /wɪt/ and spelled wit.)

Another vowel feature of BE is the merger of /e/ and /i/ before /r/. Labov et al. (1968) indicated that the merger to the higher vowel /i/ (such that the words "chair" and "cheer" become homophonous) is "distributed unevenly among the [BE] population and exists for some as an absolute fact and for others as a slight tendency."

   22. SE: /e/ /__/r/; BE: /i/ (e.g., "chair" may be pronounced /čir/ and spelled cheer.)

Labov et al. noted an even stronger tendency for the back vowels /u/ and /o/ (as in "tour" and "tore") to merge before /r/ in BE, resulting in a sound closer to /o/.

   23. SE: /u/ /__/r/; BE: /o/ (e.g., "tour" may be pronounced /tor/ and spelled tore.)

There was some indication that a BE-speaking child might spell the /ɪ/ of SE as ee or ea, before /l/, at least. Briggs (1968) noted "still" spelled steal. It is not clear whether such a spelling is a result of an actual vowel shift from /ɪ/ to /i/ or merely a result of the speaker's hearing the lengthening of /ɪ:/ which occurs in BE before voiced consonants (Fasold, 1969) and equating it with the glided vowel, /i/.

   24. SE: /ɪ/ /__/l/; BE: /i/ (e.g., "fill" may be pronounced /fil/ and spelled feel.)

The dipthong /ay/ as in "fight" has been noted to lose its glide and to occur as /æ/ or /a:/ in BE (Labov, 1967).

25. SE: /ay/ /C__C; BE: /æ/ or /a:/ (e.g., "bite" may be pronounced /bæt/ or /ba:t/ and spelled bat or bot.)

It was decided to investigate the spelling of two other vowel pronunciations, neither of which had been well substantiated by dialect studies but which seemed to occur in scattered personal observations.

26. SE: /ɪ/ /__/ŋ/; BE: /æ/ (e.g., "thing" may be pronounced /θæŋk/ and spelled thank.)

In the BE pronunciation of words such as "think" there appears to be a lowering of the vowel from /ɪ/ to what is presumably /æ/ although the lowering may not go that far. While it was recognized that the vowel might be /ε/, the decision was made to consider a spelling such as pank for "pink" the BE-related error.

It has been briefly noted by Labov (1967) that medial /ɔy/ may lose its glide and become /ɔ/ in some BE pronunciations.

27. SE: /ɔy/ /C__C; BE: /ɔ/ (e.g., "noise" may be pronounced /nɔz/ and spelled nause.)

E. FEATURES AFFECTING GRAMMATICAL MARKERS

As has been described above, many phonological rules of BE cause information at the ends of words (as pronounced in SE) to be reduced or deleted. Thus, it was suspected that many spelling errors would occur in that position. Unfortunately, several grammatical markers are attached to the ends of words in English. Final consonant simplification or loss in BE pronunciation often neutralizes these markers. Whether or not the phonological differences also indicate underlying structural or grammatical differences is still not clear. For the purposes of a spelling study, however, it seemed appropriate to ignore that distinction.

Past tense suffix

In SE, past tenses are formed by the addition of /t/, /d/, or /ɪd/ to verb stems. In BE, the resulting clusters with /t/ and /d/ tend to reduce as described above. The final cluster /vd/ in the word "moved" or the final cluster /st/ in the word "kissed," for example, may reduce to /v/ and /s/ respectively. Although Legum et al. (1971) noted that cluster reduction in the past tense occurs only about half as often as in monomorphemic forms (e.g., "passed" would be pronounced /pæs/ less often than would the homophonous word "past"), it was expected that considerable spelling confusion might result from the deletion in pronunciation of the past tense suffix. Briggs' study (1968) showed many such misspellings which appear to be grammatical errors (e.g., "One night my mother talk to me.").

Since the /ɪd/ realization of the past tense morpheme does not create a final consonant cluster when it is added to a verb, less reduction was expected than of the /t/ and /d/ past tense forms. Some reduction was expected, however, as Labov et al. (1968) noted that the /ɪd/ suffix is "lost as a whole" in some cases.

28. SE: /t/ (past tense); BE: /∅/ (e.g., "cooked" may be pronounced /kuk/ and spelled cook.)

29. SE: /d/ (past tense) /C__#/; BE: /∅/ (e.g., "moved" may be pronounced /muv/ and spelled move.)

30. SE: /ɪd/ (past tense); BE: /∅/ (e.g., "started" may be pronounced /start/ and spelled start.)

In accordance with the Legum et al. (1971) findings that voiced clusters reduce more frequently than unvoiced clusters, Feature 29 was expected to have a stronger effect on spelling output than Feature 28.

Third person singluar verb suffix

Third person singular present tense forms of verbs are marked with final /s/, /z/, or /ɪz/.[4] These occur variably in BE just as do the past tense endings. Both Labov et al. (1968) and Legum et al. (1971) noted the frequency with which these verb suffixes are deleted in BE, especially when part of a final consonant cluster. The third person singular verb suffix was found to be absent so often, in fact, that Labov suspected it to be nonexistent in BE morphology. Therefore, third person singular forms were investigated with strong expectation that they would lead to many misspellings.

31. SE: /s/ (third person singular); BE: /∅/ (e.g., "meets" may be pronounced /mit/ and spelled meet.)

32. SE: /Cz/ (third person singular); BE: /C/ or /z/ (e.g., "drives" may be pronounced /drayv/ or /drayz/ and spelled drive or drize.)

Since Legum et al. (1971) reported little tendency for BE speakers to delete only the first member of such final clusters, (e.g., "drives" pronounced /drayz/) it was decided to investigate the possibility with voiced clusters (Feature 32) only.

---

[4]Regardless of grammatical function, /s/, /z/, and /ɪz/ are referred to as a group as "Z".

Plural suffix

Like the third person singular suffix, the form of the plural suffix is phonologically determined by the preceding sound. Both Labov et al. (1968) and Legum et al. (1971) noted that, although "Z" is lost less often as a plural marker than as a third person singular verb marker, considerable deletion occurs.

33. SE: /Cs/ (plural); BE: /C/ or /s/ (e.g., "streets" may be pronounced /strit/ or /stris/ and spelled <u>street</u> or <u>strees</u>.)

34. SE: /Cz/ (plural); BE: /C/ or /z/ (e.g., "fires" may be pronounced /fayr/ or /fayz/ and spelled <u>fire</u> or <u>fize</u>.)

35. SE: /ɪz/ (plural); BE: /Ø/ (e.g., "dresses" may be pronounced /drɛs/ and spelled <u>dress</u>.)

It was expected that Feature 35 would cause fewer misspellings than the others as it does not involve consonant clusters, which seem much more likely to reduce or delete than single final consonants in BE. Although Legum et al. (1971) noted no tendency for clusters containing "Z" plural markers to drop their first members, it was decided to test for such pronunciations being reflected in spelling. The second alternatives in Features 33 and 34 are results of that decision. It was thought that such losses might especially occur in words in which the first member of the final cluster was a sonorant.

Special difficulty arises with plurals or third person singulars of words ending in /s/ and a stop. Labov et al. (1968) noted the resulting final three-member consonants /sts/, /sks/, and /sps/ to be "literally unpronounceable for most [BE] individuals." As the stop is lost, the regular /ɪz/ suffix may be added to the resulting word in BE. Thus, the progression /st/ → /s/ + /ɪz/ → /sɪz/ can cause the plural of a word such as "test" to become /tɛsɪz/, which might be spelled <u>tesses</u>. The evidence of such an effect on spelling output was investigated. It was also decided to test for spelling evidence of any pronunciation tendency to simply drop the final /s/ as would normally occur in two member clusters. It might have been wiser, in retrospect, however, to test for the more likely possibility that the stop between two sibilants would be lost (as it often is in SE) and that a pronuciation such as /tes:/ for "tests" would occur.

36. SE: /s$_k^t$s/ (plural or third person singular); BE: /s$_k^t$/ or /sɪz/ (e.g., "desks" may be pronounced /dɛsk/ or /dɛsɪz/ and spelled <u>desk</u> or <u>desses</u>.)

In general, deletion of plural suffixes was expected to cause fewer misspellings than deletion of third person singular verb suffixes, simply because in pronunciation deletion of the former occurs less frequently.

Possessive suffix

A third grammatical function of the "Z" inflection is as an indicator of the possessive. This suffix is deleted by BE speakers about 50% of the time (Labov et al., 1968).

37. SE: /Cs/ (possessive); BE: /C/ or /s/ (e.g., "Pat's" may be pronounced /pæt/ or /pæs/ and spelled <u>Pat's</u> or <u>Pah's</u>.)

38. SE: /Cz/ (possessive); BE: /C/ or /z/ (e.g., "king's" may be pronounced /kɪŋ/ or /kɪz/ and spelled <u>king'</u> or <u>kih's</u>.)

The second alternatives in Features 37 and 38 were not expected to have strong effects on spelling as they would not occur frequently in BE pronunciation unless the first member of the final cluster were a sonorant.

Possessive pronouns are also affected by the reduction of final clusters in BE and by vocalization of final /r/. Labov et al. noted the tendency for the BE pronunciation of "their" to approximate "they," for example, because of complete loss of the final /r/. When the final cluster /rz/ is involved, as in such forms as "ours" and "theirs," the possibility is strong either that the final /z/ will be deleted (as noted by Legum et al., 1971) or that the first member of the cluster will be vocalized and thus lost.

39. SE: /rz/ (possessive pronoun); BE: /r/ or /z/ (e.g., "theirs" may be pronounced /ðer/ or /ðez/ and spelled <u>their</u> or <u>theys</u>.)

40. SE: /r/ (possessive pronoun); BE: /∅/ (or /ə/, which may be interpreted as /∅/) (e.g., "their" may be pronounced /ðe/ and spelled <u>they</u>.)

Contractions

Contractions of "is," "are," and "will" are often reduced or deleted in BE. The loss of final /s/ or /z/ in contractions is less frequent than in third person singular verbs (Legum et al., 1971) but more frequent than in the possessive or plural morpheme.

41. SE: /s/ or /z/ (contraction of "is"); BE: /∅/ (e.g., "she's" may be pronounced /ši/ and spelled <u>she</u>.)

The above feature was tested in sentences in which the contraction preceded a predicate nominative, since deletion of the copula in BE occurs frequently in this position (Legum et al., 1971). Actually, it may have been better to test the voiced and voiceless contractions separately as /s/ occurs only after /t/ in such words as "that's" and "it's." It is more likely that the BE pronunciation of such words

would be /ðæs/ and /ɪs/ and that the spellings thas and is would have been attractive.

Because of the tendency for BE speakers to vocalize or lose final liquids (see Features 6 and 7), such contractions as "we're" and "we'll" are likely to fall together with the simple pronoun form.

42. SE: /l/ (future contraction); BE: /∅/ (or /l̩/, which may be interpreted as /∅/). (e.g., "we'll" may be pronounced /wi/ and spelled we.)

43. SE: /r/ (contraction of "are"); BE: /∅/ (or /ə/, which may be interpreted as /∅/). (e.g., "they're" may be pronounced /ðe/ and spelled they.)

Each of the above 43 features of BE was expected to interfere with the spelling output of children in whose speech, to a greater or lesser degree, they were found. Unless otherwise stated, SE speakers were not expected to experience the same interference.

METHOD

Participants

Participants were from four second-grade classrooms in each of two schools in lower-income neighborhoods in the Los Angeles area. School A was predominately Black and School B predominantly White. All non-Black children in School A (primarily Mexican-Americans) were excluded from the study. Black children in School B were also excluded, as were students who were not born in the United States, or whose parents were not born in the United States, or in whose homes English was not spoken. To balance the number of subjects, test results from 10 Black children were randomly discarded, leaving 61 subjects in each group. The distribution of children in schools by sex is shown below.

	School A (Black)	School B (White)	Total
Boys	24	34	58
Girls	37	27	64
Total	61	61	122

Scores from Form 12A of the Cooperative Primary Reading Test, administered the previous year, were available for nearly three-fourths of the subjects. The mean scores indicated that both schools were below the national mean and that School A's performance (1.65) differed only slightly from School B's performance (1.72). The ages of the children in both schools were approximately the same: School A, mean = 93.9 months; School B, 94.1.

Before conducting the study, the senior author visited classrooms in both schools to determine the dialect of the children. The children in School A appeared to speak BE and are thus referred to as "BE speakers."[5] The children at School B appeared to speak SE and are thus referred to as "SE speakers."

Materials

Each of the 43 features described above was tested three times, each time with a different exemplar. In order to minimize spelling by memory rather than by knowledge of sound-to-spelling correspondences, test words were chosen which were not found in Books 1 or 2 of the California state-mandated spelling series (Kottmeyer & Claus, 1968). In only a few cases, when no other words were available, were words chosen from these texts. Each word had a comprehension level of 70% or more at the third-grade level on a nationwide survey (Gates, 1937). In addition, 60% of the test words were found in the vocabulary of K-3 Black children in the Los Angeles area (Legum et al., 1971). Most of the words not found in that vocabulary are so common that familiarity with them can hardly be doubted (e.g., "warm," "sheet," "tub").

In order to control spelling responses, and to minimize the testing of auditory and writing skills, a multiple-choice format was chosen for the testing procedure. It has often been noted that the multiple-choice or recognition type spelling test is easier for children than the dictated word test (e.g., Brody, 1944), but this was not of concern as some words chosen were particularly difficult to spell for the age group tested. The average correct spellings for the words chosen on dictated word tests given nationally to third graders was 37% (Greene, 1954).

Three separate test forms, A, B, and C, were constructed. Each test form contained 43 words, one exemplar of each of the 43 features. Thus, a total of 129 words were tested. Words were randomly ordered

---

[5]Studies II and III, reported in this paper, were conducted a year later at School A. It was clearly determined at that time that the children in those studies, a year younger than those in Study I, were BE speakers.

on each test with the provision that those testing similar features
(e.g., Features 1 and 2 for final /d/ and /b/, respectively) were
not placed adjacent to one another.

For each test word, one or two errors (depending on the feature)
were constructed which would reflect BE pronunciation. For example,
Feature 10 (SE: /θ/ /__#; BE: /f/ or /t/) suggests that a BE-speaking
child might spell the final sound as either f or t; thus the BE-related
errors constructed for "mouth" were mouf and mout. For each test word
an equal number of non-BE-related errors were used (e.g., letter reversals,
consonant or vowel misspellings, intrusive letters). These errors were
constructed so as to be neither related to possible dialect differences
nor phonologically possible misspellings (e.g., bred was not used as
an error for "bread"). When possible, Gates' (1937) commonly found
misspellings were used.

A context sentence was constructed for each test word. In order
to minimize the testing of reading skills instead of spelling skills,
each sentence (including the test word) was read to the children by the
examiner. While the sentences were not definitional, they attempted to
give a clear context for the test words and not to obscure their meaning.
Sentences constructed to test past tense endings, for example, had clear
indications of time, such as "yesterday," or "last year." All sentences
were devised such that the test word was followed by a word beginning
with a consonant, since this is the most favorable environment for the
occurrence of many BE features; therefore, if BE-related misspellings
were to occur, they would be most likely in such an environment. All
test words, along with their BE-related error(s) and non-BE-related error(s),
were randomly ordered to neutralize any position bias in the subjects'
performance. Each type of response occurred in each position an equal
number of times. See Appendix B for a list of test words, context
sentences, and response choices.

Procedure

Testing was conducted on three consecutive days (using, in order,
test forms A, B, and C) in the classrooms. An SE-speaking White female
administered all tests. Each test sentence was read twice, with no
special emphasis given to the test word. Each day's testing session
was 20 to 30 minutes long.

Student responses were coded and processed by computer.[6] If a
spelling was written out, it was coded as the equivalent circled res-
ponse. The category "Omissions" was used where no spelling response
was circled, where a written-out spelling did not correspond to a
response printed in the test booklet, or where two or more responses
were circled.

---

[6]Used was "A Fortran IV Program for Subgroup Analysis of
Questionnaire Data" by David M. Shoemaker.

RESULTS AND DISCUSSION[7]

General Results

Because omissions were infrequent (less than 1% of the responses) and approximately the same across groups, they were not included in the analysis. Likewise, as there was no evident difference in performance depending on the test form, all analyses were performed with subject responses collapsed across test forms.

Proportion correct was treated in a Dialect x Sex x Feature (2 x 2 x 43) analysis of variance for unequal cell frequencies; see Table I. Results showed that the difference due to dialect was significant, $F (1,118) = 6.09$, $p < .05$. Likewise, the difference due to sex and the effect of features were both significant, $F (1.118) = 10.08$, $p < .01$ and $F (42,4956) = 25.62$, $p < .01$, respectively. Only one

Table 1

ANOVA Results: Dialect x Sex x Feature
Proportion Correct

Source	df	SS	MS	F
Between				
D	1	11.335	11.335	6.09*
S	1	18.764	18.764	10.08**
D x S	1	2.302	2.302	1.24
Error	118	219.452	1.860	
Within				
F	42	83.346	1.984	25.62**
D x F	42	4.817	0.115	1.48*
S x F	42	3.860	0.092	1.19
D x S x F	42	3.916	0.093	1.20
Error	4956	383.858	0.077	
Total	5245	731.650		

*$p < .05$
**$p < .01$

---

[7]Gary Verna performed the statistical analyses and provided valuable assistance in interpreting the results.

interaction, Dialect x Feature, was significant, $F(42,4956) = 1.48$, $p < .05$. SE speakers made a significantly greater proportion of correct responses (.64) than did BE speakers (.56), and, regardless of dialect, girls performed significantly better (.65) than boys (.54). Appendix C reports results for individual features.

A second analysis of variance was performed: Dialect x Sex x Error Type (BE-related vs. non-BE-related); see Table 2. Again the effects due to dialect and sex were significant, $F(1,118) = 8.52$, $p < .01$ and $F(1,118) = 11.43$, $p < .01$, respectively. Also significant was the effect of error type, $F(1,118) = 44.22$, $p < .01$, and the dialect by error type interaction (Fig. 1), $F(1,118) = 6.83$, $p < .01$. The other interactions were not significant, $p > .05$.

Table 2

ANOVA Results: Dialect x Sex x Error Type
Number of Errors

Source	df	SS	MS	F
Between				
D	1	2847.921	2847.921	8.52**
S	1	3822.934	3822.934	11.43**
D x S	1	758.112	758.112	2.27
Error	118	39451.227	334.332	
Within				
ET	1	4522.773	4522.773	44.22**
D x ET	1	698.684	698.684	6.83**
S x ET	1	3.006	3.006	0.03
D x S x ET	1	224.878	224.878	2.20
Error	118	12070.285	102.291	
Total	243	64399.820		

**$p < .01$

The mean number of errors are reported in Table 3. Regardless of speaker group, more non-BE-related than BE-related errors were made. Also, BE speakers made significantly more total errors than SE speakers, as well as significantly more BE-related errors.

Since the interaction between dialect and error type was significant, four one-way analyses of variance were performed to test directly the effects of features for each error type; see Table 4. For BE speakers the effect of features was significant for both BE-related and non-BE-related errors, $F(42,2520) = 58.40$, $p < .01$ and $F(42,2520) = 96.33$, $p < .01$, respectively. Likewise, for SE speakers the effects of features

Fig. 1. Dialect x Error Type Interaction.
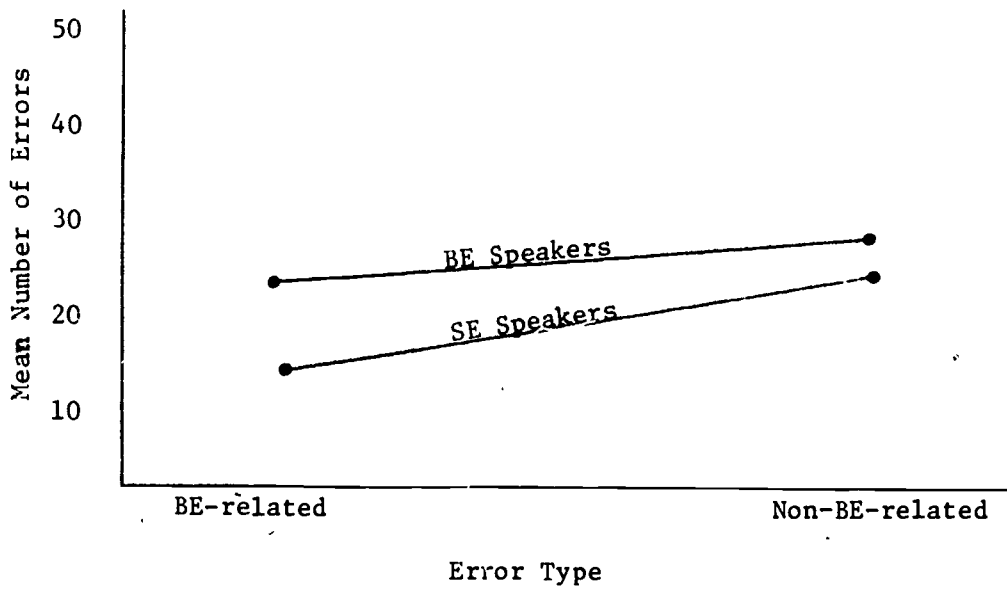
Table 3

Mean Number of Errors

	Error Type		
	BE-related	Non-BE-related	Total
BE speakers			
Boys	32.95	36.54	67.49
Girls	19.62	26.64	46.26
Total	24.87	30.54	55.41
SE speakers			
Boys	17.00	31.47	48.47
Girls	14.77	25.88	40.65
Total	16.02	28.50	44.52

Table 4

Analysis Of Variance Results: Features

a. BE speakers, BE-related errors

Source	df	SS	MS	F
Treatment	42	645.0919	15.3593	58.40**
Subjects	60	347.5570	5.7926	
Error	2520	663.0012	0.2630	
Total	2622	1655.6501		

b. BE speakers, non-BE-related errors

Source	df	SS	MS	F
Treatment	42	949.6081	22.6097	96.33**
Subjects	60	338.5383	5.6423	
Error	2520	591.6478	0.2347	
Total	2622	1879.7942		

c. SE speakers, BE-related errors

Source	df	SS	MS	F
Treatment	42	296.3485	7.0559	32.89**
Subjects	60	272.0229	4.5337	
Error	2520	540.7213	0.2145	
Total	2622	1109.0927		

d. SE speakers, non-BE-related errors

Source	df	SS	MS	F
Treatment	42	781.5173	18.6075	78.61**
Subjects	60	345.8894	5.7648	
Error	2520	596.6688	0.2367	
Total	2622	1724.0755		

**$p < .01$

was significant for both error types, $F (42,2520) = 32.89$, $p < .01$ for BE-related errors and $F (42,2520) = 78.61$, $p < .01$ for non-BE-related errors.

General Discussion

The results of this study indicate that BE affects spelling performance. In addition, as often found in studies of school achievement, girls perform consistently better than boys. Furthermore, performance was found to be related to the particular features underlying the test items.

It was expected that BE speakers would make significantly more BE-related spelling responses than would children who did not speak BE. That is, for BE speakers there would be dialect pronunciation interference. Table 3 reports the mean number of BE-related and non-BE-related errors made by BE and SE speakers. Not only did BE speakers choose significantly more incorrect responses, but they also chose significantly more BE-related alternatives than SE speakers. Twenty percent of the total responses (45% of the total erros) for BE speakers were BE-related errors, whereas for SE speakers only 12% of the responses (36% of the errors) were BE-related errors.

Analysis of the performance on individual features indicates not only that BE-speaking children were making both BE- and non-BE-related errors but also that SE-speaking children were encountering similar spelling difficulties. All of the one-way analyses of variance were significant; thus, for both speaker groups, performance on some features was better than on others. In addition, eight out of ten of the features on which the most BE-related errors were made as well as eight out of ten on which the least were made were the same for both speaker groups; no comparable results were found for non-BE-related errors. The similarity between groups in performance for BE-related errors is not surprising for at least three reasons: (1) possible similarities between BE and the dialect(s) of low-income Whites (Garvey & McFarlane, 1970); (2) since BE is a dialect of English, its features are ones possible for other dialects of English and are related to the nature of English; (3) certain features of BE are similar to features of child language, which is still operating among second-graders.

Results and Discussion by Features

Results for the 43 individual features, summed across the three test forms, are presented in Appendix C. The following comments on results for individual features are organized in the same fashion as the description of the features and are suggestive of the effects of dialect on particular spellings.

A. Single Final Consonants

Single final consonants (Features 1-10) were not major sources of BE-related errors, which rarely accounted for more than 20% of the responses or over 50% of the errors. The exceptions were Feature 1 (BE: /d/ /V__#; BE: /∅/ or /ḏ/) and Feature 10 (SE: /θ/ /__#; BE:/f/ or /t/) for BE speakers and Feature 5 (SE: /z/ /V__#; BE: /∅/ or /s/) for BE and SE speakers. Features 1 and 5 both involve voiced aveolar consonants, although this was not expected to affect spelling performance in any special fashion. The most common BE-related error for Features 1-5 reflected a change in voicing; however, for d (Feature 1) deletion was more common for BE speakers. This was contrary to the prediction that t would be deleted more often than d. The infrequent occurrence of BE-related errors on Feature 6 (SE: /r̄/ /V__#; BE: /∅/) was surprising in light of the number of such misspellings in Briggs' (1968) study.

While BE-related errors accounted for half of BE speakers' errors on Feature 9 (SE: /ɪŋ/; BE: /ɪn/), they were only 14% of total responses and even less frequent for SE speakers, indicating that the common informal pronunciation (for both BE and SE) of the suffix "-ing" is not a serious influence on spelling.

BE-related errors for BE speakers on final th (Feature 10) were rather high, accounting for 34% of the responses and 67% of the errors. As predicted, the most favored response was f.

B. Final Consonant Clusters

Reduction of final consonant clusters (Features 11-17) was, in general, even less of a problem than loss of single final consonants. This was surprising in that such reductions are common even in SE. (However, it is a quite different matter when the clusters involve grammatical inflections; see below F.) The BE-related error rate is generally so low that there is little to comment on except that for BE speakers there is a tendency on Features 12-14 to delete the final member of the cluster more often than the first.

C. Initial Consonants

The initial consonants tested were the interdental fricatives. Feature 18 (SE: /ð/ /#__; BE: /d/) had a low error rate, which, however, may in part be explained by the test words. They were all of high-frequency and thus perhaps too familiar to cause spelling difficulties. For Feature 19 (SE: /θr/ /#__; BE: /θ/ or /tr/) BE-related errors were more common for both BE and SE speakers, with the second spelling (tr) the more frequent choice, although by a smaller margin for SE speakers. While this may reflect a dialect feature of both groups, it may also

result from language development. Templin (1957) indicates that this initial consonant cluster is one which children master relatively late.

D. Vowels

With a few exceptions, vowels (Features 20-27) did not notably cause BE-related errors. Since the vowel system of BE is yet inadequately characterized, such results are not very surprising. Moreover, since children seem to have greatest difficulty with vowel spellings, often using unexplicable vowels for common sound-to-spelling correspondences, the data are difficult to interpret accurately.

The major effect of dialect was in Feature 20, where e (/ɛ/) was commonly spelled i (/ɪ/) before n. This spelling accounted for about a quarter of the responses and half of the errors for both BE and SE speakers. Such a high error rate is undoubtedly due to the common merger of /ɛ/ and /ɪ/ before /n/ in Southern California speech.

Feature 21 (SE: /ɛ/ /__/C≠N/; BE: /ɪ/) produced quite unusual results: SE speakers had twice as many BE-related errors as BE speakers. While unusual, this higher error rate for SE is not too surprising since it has been noted that this merger of /ɛ/ and /ɪ/ before non-nasal consonants is beginning to appear in the speech of Southern California SE speakers, although it may not have spread so far in BE.

Feature 22 (SE: /e/ /__/r/; BE: /i/) caused few errors for either group of speakers and errors for both groups were equally split between dialect and nondialect errors. The merger of /u/ and /o/ before /r/ (Feature 23) did not create many BE-related errors, although both BE and SE speakers chose the correct spelling less than 50% of the time. However, the merger of /ɪ/ and /l/ before /l/ (Feature 24) resulted in BE-related errors as a quarter of BE speakers' responses and over half of the errors.

The remaining three vowel features (25-27) did not have many BE-related errors. As noted above, in Feature 26 the lowering of /ɪ/ before /ŋ/ may be to either /ɛ/ or /æ/, although the latter was considered the BE-related error. However, for both groups, and particularly for BE speakers, the spelling e (←/ɛ/) was predominant.

E. BE Features Affecting Grammatical Markers

Features 28-43 affected grammatical markers: past tense, plural, third person singular, present tense, possessives, possessive pronouns, and contractions. BE-related errors on these features all involved the loss of final consonants resulting in an uninflected form. The results, in terms of correct responses and BE-related errors, are shown in Table 5.

Table 5

Features Not Affecting Grammatical Markers and
Features Affecting Grammatical Markers

	Features not affecting grammatical markers	Features affecting grammatical markers
BE speakers		
Mean correct per feature	103.85	102.31
Mean BE-related errors per feature	29.78	43.50
BE-related errors as % of errors	37.6%	53.9%
SE speakers		
Mean correct per feature	115.26	120.81
Mean BE-related errors per feature	20.52	26.69
BE-related errors as % of errors	30.3%	42.9%

General spelling ability did not much differ between the two sets of features. However, BE-related errors showed a difference: they were more frequent for both speaker groups on features affecting grammatical markers. The frequency of these errors increased by nearly 50% for BE speakers, and showed an increase for SE speakers even though their overall error rate decreased. For BE speakers, BE-related errors accounted for over half of the incorrect responses on features which affect grammatical markers.

There are several possible reasons for this increase in BE-related errors:

1. BE pronunciations may be more common with features which affect grammatical markers;

2. Features affecting grammatical markers all cause deletion at the ends of words, which may be a more favorable position for dialect effects to occur;

3. Second grade children may not have mastered all grammatical inflections (cf, Berko, 1958; Bellamy & Bellamy, 1970; Dever & Gardner, 1970);

4. Spelling may be more difficult at the ends of words;

5. BE-related errors for grammatical features are always real words (e.g., lips → lip, your → you), which may be particularly attractive responses, especially when a multiple-choice test is used.

Studies II and III also investigated features which affect grammatical markers and provided more information on their spelling difficulty.

Past tense suffix

The past tense suffix was tested in Features 28-30. As predicted, loss of the suffix was much less common when it was a separate syllable /ɪd/ (Feature 30) than when it resulted in a consonant cluster. However, it was not possible to determine whether voicing of clusters had any effect on spelling since Features 28 and 29 both had quite high BE-related error rates. These error rates (for both BE and SE speakers) were higher than those for BE-related errors in monomorphemic forms ending in clusters with final /t/ or /d/ (Features 11-14). This is precisely the opposite of what would have been predicted on the basis of the Legum et al. (1971) data, which indicate that in the speech of Black children reduction of final clusters is more common in monomorphemic forms.

Third person singular verbs, plurals, and possessives

Features 31-39 all involved "Z," that is, the s spelling of /s/ or /z/ and the es spelling of /ɪz/ for third person singular verbs, for plurals, and for possessives. In general, BE-related errors accounted for less than 25% of the responses and less than 50% of the errors. They were more common for both BE and SE speakers when /z/, rather than /s/, was being spelled (Features 32, 34, and 38 vs. Features 31, 33,

and 37). However, BE-related errors were especially high for Feature 36 (SE: /s$_k^t$s/; BE: /s^t/ or /sɪz/); this is not surprising since such three-member consonant clusters are particularly hard to pronounce. It was generally found that the first type of dialect-related error (omission of the -s) was more common than the second type (omission of the final consonant on the base form). Occurrence of the second type did not appear to be more frequent when the consonant was a sonorant.

On the basis of observational data (Legum et al. 1971; Labov et al. 1968), it was predicted that BE-related errors would be more common with third person singular verbs (Features 31-32) than with plurals (Features 33-35). However, there was a tendency for the opposite to be true for BE speakers, although the data are not clear-cut. As with past tenses, it was expected that the syllabic plural inflection /ɪz/ (Feature 35) would be deleted much less often than in cases where a consonant cluster was formed (Features 33 and 34). However, the trend for both BE and SE speakers was in the opposite direction. This may reflect child language development, since the /ɪz/ form is learned later than the other forms (Berko, 1958).

Possessive pronouns not ending in s (Feature 40) were not difficult, although deletion of the final r was more common than in monomorphemic forms (Feature 6).

Contractions

Although contractions (Features 41-43) are not covered in Books 1 and 2 of the state-mandated spelling series (Kottmeyer & Claus, 1968), they resulted in a less than average number of errors. Nonetheless, BE-related errors were more common than non-BE-related errors for BE speakers. The contractions, as compared with the same final consonant sounds in monomorphemic forms, show the effect of grammatical markers on BE-related errors; see Table 6.

Table 6

Monomorphemic Forms and Contractions: BE-Related
Errors as Percent of Errors

	BE speakers	SE speakers
/l/ → 1 or 11 (Feature 7)	31	15
→ '11 (Feature 42)	67	52
/r/ → r (Feature 6)	32	17
→ 're (Feature 43)	61	35

CONCLUSION

In order to determine whether there are differences between Black English and Standard English which affect spelling performance, multiple-choice spelling tests were administered to BE-speaking and SE-speaking second grade children. Response choices were correct answers, misspellings related to what is known of BE pronunciation, and misspellings unrelated to BE pronunciations.

If there were no differences, there would be no significant interaction between dialect and error type. Regardless of the magnitude of difference in total errors, no differential performance with regard to other variables would occur. This was not the case. BE-speaking children chose a significantly greater number of BE-related errors than did SE-speaking children, but the number of non-BE-related responses made by the groups was approximately equal. It can be concluded that, if the children tested were, in fact, typical BE-speakers, there are dialect differences alone between BE-speaking and SE-speaking children that affect spelling performance.

Regardless of dialect group, there was a significant difference among the effects of the BE features on spelling performance. Some features were the sources of a great number of BE-related errors and some the source of only a few. However, the study was limited in scope, and definite statements can not be made concerning the precise effect of different features. While Study I indicated the effects of dialect on spelling performance and suggested the BE features which most affect spelling, further study was necessary to obtain more precise information concerning these effects.

Study II

BLACK ENGLISH AND SELECTED SOUND-TO-SPELLING CORRESPONDENCES

Study I indicated that dialect and spelling performance were related for a group of second grade children in Los Angeles. A second study was conducted with children of the same age and from the same geographical location in order to examine in more detail the relationship of the children's dialect to their performance on a more limited set of sound-to-spellinᵤ correspondences. Study II was intended to improve upon Study I by formally classifying the dialects of the participants and by examining performance on dictated word tests as opposed to performance on multiple-choice tests, for which it is difficult to construct appropriate BE-related spellings.

RESEARCH QUESTIONS

1. Is there a difference in the number of spelling errors made by BE speakers and by SE speakers?

Hypothesis: BE speakers would make more spelling errors than SE speakers. Because Standard English is the speech of educated, middle-income groups and Black English is generally associated with less educated, low-income urban populations, the performance of the two groups could be expected to differ.

2. Is there a difference in the number of spelling errors made on those features which are pronounced differently in the two dialects (hereafter called features of interest or FI) and on those features which are pronounced the same in the two dialects of English (hereafter called control features or CF)?

Hypothesis: There was little information on which to base a hypothesis. In Study I, BE speakers made significantly more BE-related errors. Thiᵗ suggested that BE speakers would make fewer errors where speech-related errors were impossible to make (i.e., on control features) than on features where such a possibility existed (i.e., on features of interest).

3. Is there a difference in the number of spelling errors made on features which are grammatical markers and features which have no grammatical status? Does the same relative difficulty hold for features of interest and control features?

Hypothesis: There would be a difference in the spelling difficulty of grammatical and nongrammatical features, with the latter being easier to spell for both speaker groups. The hypothesis was based on the results of Study I. It was assumed that it would be true for both control features and features of interest.

4. a. <u>Is there a difference in the number of BE-related spelling errors made by the two speaker groups?</u>
    b. <u>Is there a difference in the number of BE-related spelling errors made on grammatical and non-grammatical features?</u>

Hypothesis: There would be a difference in the number of BE-related errors, with BE speakers making more such responses, as was found in Study I. It was assumed that BE-related errors, like overall error , would occur more frequently on grammatical features.

5. a. <u>Is there a difference in the number of non-BE-related spelling errors made by the two speaker groups?</u>
    b. <u>Is there a difference in the number of non-BE-related errors made on control features and features of interest?</u>
    c. <u>Is there a difference in the number of non-BE-related errors made on grammatical and nongrammatical features?</u>

Hypothesis: There would be a difference in the number of non-BE-related spelling errors, with BE speakers making more such responses. The difference was not, however, expected to be as great as for BE-related errors. While it was expected that the closeness of a child's pronunciation to standard written English would help to determine the number of spelling errors he might make, it was recognized that other factors would be operating to differentiate the spelling problems of a group of SE speakers and a group of BE speakers. Especially because of the social class differences of the two speaker groups, it was not expected that the two groups would make the same numbers of non-BE-related spelling errors. Only with speaker groups of comparable socio-economic status, as in Study I, might comparable numbers of non-BE-related errors be expected. The hypotheses concerning performance on control features and features of interest as well as on grammatical and non-grammatical features were the same as for total errors.

6. <u>Are there differences in the number of total spelling errors and of BE-related errors among features of interest?</u>

Hypothesis: As in Study I, individual features would have a differential effect. No hypothesis was made on the relative difficulty of the features of interest in the study.

7. <u>Are there differences in the number of BE pronunciations given for the various features of interest on the dialect classification test?</u>

Hypothesis: While it was presumed on the basis of such studies as Labov et al. (1968) that there would be differences in the number of BE pronunciations given for the features of interest, the exact rank order of the features was not predicted.

8. <u>Is the type of misspelling made on features of interest independent of the spoken dialect of the speller?</u>

Hypothesis: Dialect and type of misspelling would not be independent. In Study I, the frequencies of non-BE-related misspellings were similar for BE and SE speakers, but the frequence of BE-related misspellings was much greater for BE speakers.

9. To determine whether spelling performance can be predicted on the basis of speech, the following questions of correlation were asked.

    a. <u>Is there a correlation between the number of non-SE pronunciations and the number of incorrect spellings?</u>

The Sullivan study (1971) suggested that there would be, but no specific hypothesis was projected.

    b. <u>Is there a correlation between the number of BE pronunciations and the number of BE-related misspellings made on features of interest?</u>

No hypothesis was projected.

    c. <u>Is there a correlation between the number of BE pronunciations and the number of BE-related misspellings for any individual feature of interest?</u>

No hypothesis was projected.

    d. <u>Is there a correlation between BE-related errors and non-BE-related errors?</u>

Again, no hypothesis was projected.

METHOD

Participants

To answer the research questions, spelling tests were given to BE-speaking and SE-speaking second-grade children. Only average children (no gifted or EMR) were included. Four classes of children were tested from an urban school in which nearly all children were Black and four classes of children were tested from two suburban schools in which nearly all children were White.

According to information obtained on teacher questionnaires, the children in the "Black" school were of lower-income background and their fathers, if they were present in the homes, were generally unskilled

laborers or unemployed. Most were from the immediate Southern California
area. Their teachers spent an average of 25 minutes a day on spelling,
using the state-mandated series and some extra materials. Three out of
four of the teachers emphasized to some degree the spellings of sounds.

The children from the "White" schools were generally of middle-
income background with fathers who were professionals or skilled workers.
Most were from the immediate Southern California area. Their teachers
spent an average of 20 minutes a day on spelling, using the state-
mandated series and some extra materials. Three out of four of the
teachers emphasized to some degree the spelling of sounds. Thus, the
children tested were apparently from different socio-economic groups,
but they could be considered native Californians with similar backgrounds
of formal spelling instruction.

In the "Black" school, 95 children were given dialect classification
tests and spelling tests. Forty-five children were removed from the study
for the following reasons:

   4   Mexican-Americans with Spanish influences in their speech;

   15 not clearly BE speakers according to the dialect classification
       test devised for the study;[1]

   5   absent during testing and make-up sessions;

   14 too many "unrelated" or "no response" answers on the spelling
       tests;[2]

   5   tapes for dialect classification test not recorded properly;

   1   EMR student;

   1   random removal to obtain an even number of 50 children.

In the "White" school, 89 children were given dialect classification
tests and spelling tests. Thirty-nine children were removed from the
study for the following reasons:

   1   Mexican-American with Spanish influences in his speech;

   15 not clearly SE speakers according to the dialect classification
       test;

---

[1]See the sections on "Materials" and on "Coding the Responses" for
and explanation of the test and of what constituted BE responses.

[2]Children were removed from the study for this reason so that
sufficient reasonable spellings would be available for analysis. See
the section on "Coding the Responses" for an explanation of the response
categories and of the cutoff for "too many" such responses.

> 5 absent during testing and make-up sessions;
>
> 13 stratified random removals to obtain an even number of fifty children.[3]

Thus, 50 BE speakers (28 girls and 22 boys) and 50 SE speakers (28 girls and 22 boys) participated in the study. The mean ages in months for the two groups (BE, 96.96; SE, 95.44) were similar. Scores from Form 12A of the Cooperative Primary Reading Test, administered the previous year, were available for most of the children (44 BE speakers and 42 SE speakers). The mean grade equivalent scores (1.50 for the BE speakers and 2.59 for the SE speakers) indicated that the SE speakers were significantly better readers than the BE speakers (t = 8.35, p < .001).

Materials

An oral dialect classification test was used to differentiate BE speakers from SE speakers. Children were asked to repeat 60 sentences, 30 of which contained word exemplars of features of interest (features known to be pronounced differently in the two dialects) and 30 of which contained control features (features pronounced alike in the two dialects). The exemplar words and context sentences were the same as those which appeared on the written tests. Although it is known that the realization of certain features of BE is not consistent for dialect speakers, and that SE speakers, at times, pronounce features in what may be considered a BE manner, differences in total scores for BE and SE pronunciations of the features of interest were used to identify the two speaker groups.

Four spelling tests were given in which children were required to fill in a blank with a dictated spelling word. In order to assure that the test administrator and the children pronounced the spelling words as they are pronounced in casual, connected speech, the words were embedded in context sentences. The sentences were printed, with the words to be spelled replaced by blanks.

So that the tests would yield information to answer the questions posed by the study, an equal number of features of interest and control features were chosen. Features of interest were chosen which were related to a high number of BE-related misspellings for BE speakers in Study I.

An equal number of grammatical features of interest and features of interest with no grammatical status were chosen: -ed (the past tense

---

[3]While the removal was random within sex groups, the same balance of boys and girls that had been obtained for the BE-speaking group was kept. Study I showed that the effects of sex upon spelling performance were quite significant.

morpheme pronounced /d/ in SE and often omitted, pronounced as a glottal stop or devoiced in BE), -s (the plural morpheme pronounced /s/ in SE and often omitted in BE), 's (the possessive morpheme pronounced /z/ in SE and often omitted in BE), final th# (pronounced /θ/ in SE and often /f/ or /t/ in BE), final d# (pronounced /d/ in SE and often omitted, pronounced as a glottal stop, or devoiced in BE), and l/__ C# (l in a final cluster as in "bald," hereafter referred to as -l-; pronounced /l/ in SE and often vocalized or omitted in BE).

The control features chosen were half grammatical and half nongrammatical and, as much as possible, had spelling difficulties comparable to those of the features of interest. Medial -d- was chosen as a control for d#, l/#C_ (l in an initial cluster as in "plate") was chosen as a control for -l-, and final sh# was chosen as a control for the final th# digraph. It was impossible to find grammatical features in word final position pronounced the same in both dialects that were comparable in difficulty to -s, 's, and -ed. As a result, -en, -y, and -ly were chosen with the expectation that they would be more difficult to spell than the grammatical features of interest.

Once the features were chosen, exemplary words and context sentences were chosen to be used in both the dialect classification test and the spelling tests. Five exemplars of each feature were used for both tests. Thus, 60 words were chosen. Only one and two-syllable words were used.

Because it was desirable that children spell as much as possible by sound rather than from the visual memory of words they had already learned, exemplar words were chosen from words the children had not been exposed to in Books 1 and 2 of the state-mandated spelling series (Kottmeyer & Claus, 1968). For the same reason, words were chosen which did not appear in the reading books the children were using (O'Donnel, 1969; Bank Street College of Education, 1965). Exceptions to this policy of word choice were made when suffixes were being tested. Then, it was desirable that children not be confused in spelling the base word. Insofar as possible, all suffixed words had bases which were taught in Books 1 and 2 of the state-mandated spelling series. To avoid further complication of the spelling task, no addition or deletion processes were required to suffix the base words used (e.g., no dropping of final silent e's or doubling of final consonants).

To assure that children were familiar with the meanings of the words chosen for testing, only those words were used which appeard in at least two out of five available studies of children's vocabulary (Kolson, 1960; Wepman & Hass, 1969; Legum et al., 1971; Murphy and others, 1957; Thomas, 1962).

When context sentences were constructed for the exemplar words, the following constraints were observed. All words in which the feature being tested occurred at the end were placed in sentence context

before a word beginning with a consonant. This was to assure maximum occurrence of BE pronunciations, since BE speakers most frequently delete or reduce word endings before a following consonant. So that undue pressure would not be put on children in both speaker groups to drop final consonants, it was arranged so that words following the test words did not begin with a consonant which also preceded the feature being tested (e.g., the test word "spelled," was not followed by a word beginning with 1 since the -ed would then surely be dropped by most speakers in casual pronunciation). The sentences were written to be as short as possible: 4-8 words long with an average length of 5.6 words. Insofar as possible, all words other than the words to be spelled were taken from readers the children had been using to help assure that they could read the sentences. In order to give as many clues as possible about the meanings of the words to be spelled, past tense spelling words had a time indicator somewhere in a sentence (e.g., "yesterday") and plural spelling words were preceded by numbers (e.g., "five"). The sentences used in both the dialect classification test and the spelling test are listed by feature tested in Table 1. The sentences were randomly ordered for each test. On the dialect classification test, the items were presented in two orders--backwards and forwards; half of the children in each group had each order. On the spelling test, the items were divided into four sets of 15 sentences to be administered to the children at different times. Half the children tested were given the tests in the order ABCD: the other half, in the order DCBA.

Procedures

Half the students tested received the dialect classification test first and half received the spelling tests first.

The dialect classification test was administered in one test session of about 10 minutes. Master tapes were made on cassette cartridges by a female SE-speaker. The test was administered by White, female SE-speakers in a mobile testing van which was parked on the school playgounds. Master tapes were played on a Micro-20 recorder and children's responses were recorded on a Sony TC40. Instructions on the master tape included two practice repetitions. In general, it appeared that children had more explanation and practice than they needed and they had no problem with the format of the task. It was somewhat longer than was comfortable for the children, but all those tested completed the task. Each child was awarded a "good work" badge upon completion of the dialect classification test.

The four spelling tests were given at separate times to each class inside the classrooms. A female, White SE-speaker administered the tests. Each session took 10 to 15 minutes. Children were given verbal and visual instructions and did one or two sample items together before testing began. Emphasis was placed on spelling the unfamiliar

Table 1

Test Words and Context Sentences

Nongrammatical Features

Features of Interest	Control Features
1/_C#(-1-); SE: /l/; BE /ə/ or /∅/	1/#C_; SE and BE: /l/

The <u>child</u> was happy.   <u>Close</u> the door when you go.

The old man is <u>bald</u>.   Mother wears <u>gloves</u> sometimes.

Put the books on the <u>shelf</u>.   I belong to a secret <u>club</u>.

She has a pretty <u>silk</u> dress.   Clean up your <u>plate</u>.

There is <u>film</u> in the camera.   We <u>slide</u> on the playground.

| th#; SE: /θ/; BE: /f/ or /t/ | sh#; SE and BE: /š/ |

He lives on the <u>north</u> side of town.   I use my tooth<u>brush</u> twice a day.

Take a deep <u>breath</u> now.   I like to <u>mash</u> potatoes for Mother.

It's <u>worth</u> six dollars.   <u>Fresh</u> bread tastes good.

The <u>earth</u> goes around the sun.   Take the <u>trash</u> downstairs.

Tell the <u>truth</u> now.   Don't <u>squash</u> my lunch.

| d#; SE: /d/; BE: /θ/, /ɡ/*or /?/ | -d-; SE and BE: /d/ |

A <u>crowd</u> came to see the fire.   We had <u>noodles</u> for dinner.

She's <u>proud</u> because she won.   Mother sews with a <u>needle</u>.

I <u>bleed</u> when I cut myself.   Milk will make your <u>body</u> strong.

The <u>bride</u> wore a white dress.   The baby is in a <u>cradle</u>.

I sit in the <u>shade</u> when it's hot.   John got a <u>medal</u> for good work.

---

*Because there is no phonemic /ɡ/ in any dialect of English, children would probably interpret this as /t/.

Table 1--continued

Grammatical Features

Features of Interest	Control Features
-ed; SE: /d/; BE: /∅/, /d̪/ or /ʔ/	**-en#**; SE and BE: /ən/
I climbed some trees yesterday	Go sharpen your pencil.
I cleaned my house yesterday.	Please shorten your answer.
I filled my pen with ink yesterday.	You can sweeten it with sugar.
	The glue will harden soon.
You spelled four words yesterday.	Please darken the room for the movie.
I trained my dog last week.	
's (possessive); SE: /z/; BE: /∅/	**-y#**; SE and BE: /ɪ/ or /i/
Ben's coat is brown.	It's handy to know how to sew.
Fred's car is old.	The beach is sandy but warm.
Bill's dog is bad.	I get sleepy when I stay up late.
Nan's dress is new.	Sticky paste is a mess.
Sam's books are lost.	Fish is smelly when it's cooking.
-s (plural); SE: /s/; BE: /∅/	**-ly#**; SE and BE: /lɪ/ or /li/
Use two sticks to play the drum.	The chair was badly broken.
It was cold two nights last week.	She walked sadly from the room.
Five goats lived on the hill.	Thinly sliced bread is good.
Take only three bites before dinner.	Lately she's been on time.
Five ships went out to sea.	It was a newly painted house.

words as they sounded. In order to avoid the testing of reading skills, the entire sentences were read to children by the test administrator, who did not isolate the test word.

Coding the Responses

As the children repeated sentences on the dialect classification test, the test administrator scored the child's response as an SE pronunciation, a deletion of the feature, or some other pronunciation. Later, a second staff member with linguistic training listened to the tapes to verify these codings. Where there were disagreements between the two, a third staff member with linguist training was consulted. There was some difficulty in interpreting final fricatives and other final consonants in the children's speech because of the quality of the tape recorder used, but unanimous agreement about the nature of most pronunciations was reached.

In order to define a group of Black, BE-speaking children and a group of White, SE-speaking children, a count was made of the number of BE responses made on the features of interest tested. Out of 30 possible BE pronunciations, Black children made from 7 to 25 BE responses and White children made from 1 to 11 BE responses. To obtain mutually exclusive speaker groups, all children who gave from 7 to 11 BE responses (15 Black children and 15 White children) were removed from the study.

The speaker groups performed significantly differently on the number of BE responses ($t = 24.94$, $p < .001$), the number of SE responses ($t = 24.91$, $p < .001$) and the number of other responses ($t = 3.60$, $p < .001$) given on the dialect classification test.

While coding the oral responses was a relatively straightforward task, coding the written responses required some rather subjective interpretations.

Correct responses. Spellings were considered "correct" if the particular feature under consideration was correctly spelled. Errors in other parts of the word were not taken into consideration. Reversals in the order of letters (e.g., "Bald" spelled badl) did not generally affect the status of correct or incorrect. However, if there was a reversal within a two-letter spelling (e.g., "squash" spelled squahs), it was considered incorrect.

In general, intrusive letters occurring before or after the spelling of a feature under consideration did not make the spelling incorrect. However, if the intrusive letter appeared at the end of a word after a feature under study and could not be interpreted as part of a preceding vowel, it was considered incorrect (e.g., "harden" spelled hardent). In addition, if a base word was spelled correctly and an intrusive

41

letter occurred in the suffix, that too, was considered incorrect (e.g., "sleepy" spelled <u>sleeply</u>). In two-letter spellings, intrusive letters constituted incorrect spellings (e.g., "badly" spelled <u>badley</u>).

In general, any omission of letters under study was considered an incorrect spelling. However, since an apostrophe is a mark of punctuation, such spellings as "Ben's" spelled <u>Bens</u> were considered correct.

<u>BE-related responses</u>. BE-related responses were possible only on features of interest as there were, by definition, no BE pronunciations possible for the control features. Omissions were categorized as BE-related responses when no letter was present to represent a sound that is reduced or omitted in BE pronunciation (e.g., "filled" spelled <u>fill</u>). If letters were present that represented some BE variant of a feature of interest, they were also considered BE-related errors (e.g., "worth" spelled <u>worf</u>). T⁺ ;e spellings which were considered BE-related errors are listed in Tabl. 2. All other letter substitutions were considered non-BE-related errors.

Table 2

BE-Related Errors fc Features of Interest

Feature of Interest	BE-Related Errors
-ed	∅, <u>t</u>, (or any letter combination with <u>t</u> such as <u>td</u>)
-s	∅
's	∅
th#	∅, <u>t</u>, <u>f</u>, (or any letter combination with <u>f</u> such as <u>fv</u>)
-l-	∅, any vowel
d#	∅, <u>t</u>, (or any letter combination with <u>t</u> such as <u>td</u>)

Non-BE-Related Errors. If a child wrote nothing in the blank at all, it was considered a non-BE-related error. Incomplete responses were also considered non-BE-related and were defined as responses in which the feature under study was not represented nor was the preceding sound in the word. The several subcategories of unrelated responses are listed below:

A. Illegible responses--words with wrongly formed letters, scribbles, or erasures. Also included was one word written over another.

B. Wrong word responses--words from another part of the sentence or other real words which were neither the stimulus word nor a reasonable misspelling (e.g., "lately" spelled tie).

C. Random responses--completely or nearly completely random groups of letters having little or nothing to do with the stimulus word (e.g., "darken" spelled lenip).

Other non-BE-related responses for features of interest were any letters or groups of letters which were incorrect and which did not correctly represent a known BE pronunciation (e.g., "bleed" spelled bledd or bleap when d# was of interest). For control features, any letter or group of letters which was incorrect was considered non-BE-related. Omissions of control features were categorized as non-BE-related errors; as these features are not normally omitted in BE speech, their omission in spelling could not be considered BE-related (e.g., "newly" spelled new).

Children whose responses were more than 50% "no response" and/or "unrelated responses" (14 BE speakers and no SE speakers) were removed from the study so that sufficient reasonable spellings would be available for analysis.

Analysis[4]

Analyses of variance were performed to answer the first eight research questions. Each analysis tested for the effects of dialect (BE vs. SE).

1. Is there a difference in the number of spelling errors made by BE speakers and by SE speakers?

2. Is there a difference in the number of spelling errors made on features of interest and control features?

3. Is there a difference in the number of spelling errors made on features which are grammatical markers and features which have no grammatical status?

> 2 x 2 x 2 ANOVA with total spelling errors as the dependent variable: Dialect x Feature Type (FI vs. CF) x Grammatical Status (Grammatical, or G, vs. Nongrammatical, or NG).

4. a. Is there a difference in the number of BE-related spelling errors made by the two speaker groups?
   b. Is there a difference in the number of BE-related spelling errors made on grammatical and non-grammatical features?

> 2 x 2 ANOVA with BE-related spelling errors as the dependent variable: Dialect x Grammatical Status.

5. a. Is there a difference in the number of non-BE-related spelling errors made by the two speaker groups?
   b. Is there a difference in the number of non-BE-related spelling errors made on CF and FI?
   c. Is there a difference in the number of non-BE-related spelling errors made on grammatical and non-grammatical features?

> 2 x 2 x 2 ANOVA with non-BE-related spelling errors as the dependent variable: Dialect x Feature Type x Grammatical Status.

6 Are there differences in the number of total spelling errors and of BE-related spelling errors among features of interest?

> 2 x 6 ANOVA's with total spelling errors and BE-related spelling errors as the dependent variables: Dialect x Individual Feature of Interest (-ed vs. 's vs. -s vs. -l- vs. th# vs. d#).

7. Are there differences in the number of BE pronunciations given for the various features of interest on the dialect classification test?

> 2 x 6 ANOVA with BE pronunciations as the dependent variable: Dialect x Individual Feature of Interest.

8. Is the type of misspelling made on features of interest independent of the spoken dialect of the speller?

> 2 x 2 ANOVA with number of errors as the dependent variable: Dialect x Error Type (BE-related vs. non-BE-related).

To answer the last question, Pearson Product Moment correlations were computed using the following variables:

9. a. number of non-SE pronunciations and number of incorrect spellings,

    b. & c. number of BE pronunciations and number of BE-related misspellings--(b) across features of interest and (c) for each feature of interest,

    d. number of BE-related errors and number of non-BE-related errors.

The first correlation was performed for speaker groups individually and combined; the others were performed for each speaker group.

RESULTS

The results of this study are organized around the research questions raised at the beginning of the section. All of the analysis of variance tables and their accompanying tables of means are found in Appendix D.

1. <u>Is there a difference in the number of spelling errors made by BE speakers and by SE speakers?</u>

The effect of dialect on total spelling errors made was significant, $F(1,98) = 126.66$ p < .01; see Table 1, App. D. The mean number of spelling errors made by BE-speaking children was much higher than the mean number made by SE-speaking children (37.42 and 12.72, respectively).
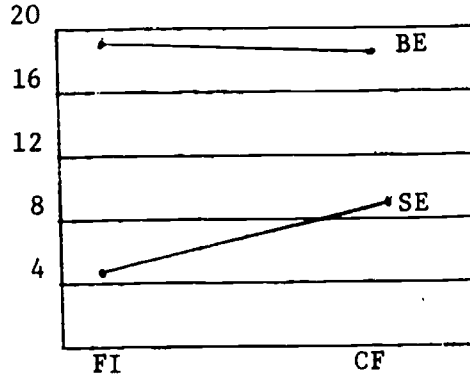
2. <u>Is there a difference in the number of spelling errors made on features of interest and control features?</u>

The effect of feature type upon total spelling errors made was not significant; see Table 1, App. D. Thus, the features which have variable pronunciations in the two dialects were no more difficult to spell than the features chosen as control features (12.16 and 12.91, respectively). The features of interest and the control features were chosen appropriately to be equally difficult.

There was a significant interaction between dialect and feature type, $F(1,98) = 24.70$, p < .01; see Figure 1a. Features of interest and control features were not of significantly different difficulty for BE speakers (19.34 and 18.08, respectively). However, for SE speakers, the control features were more difficult than the features of interest (7.74 and 4.98, respectively; t = 2.53, p < .02). Even though BE speakers generally had more spelling problems than SE speakers, the margin of difference was greater for features of interest than for control features.

Figure 1

a.   Interaction Between Dialect and Feature Type:
          Total Spelling Errors

b.   Interaction Between Feature Type and Grammatical Status:
          Total Spelling Errors
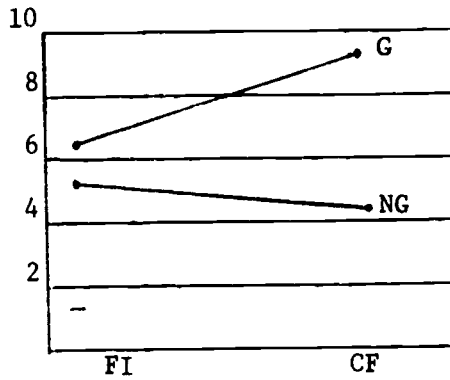
c.   Interaction of Dialect, Feature Type, and
          Grammatical Status: Total Spelling Errors
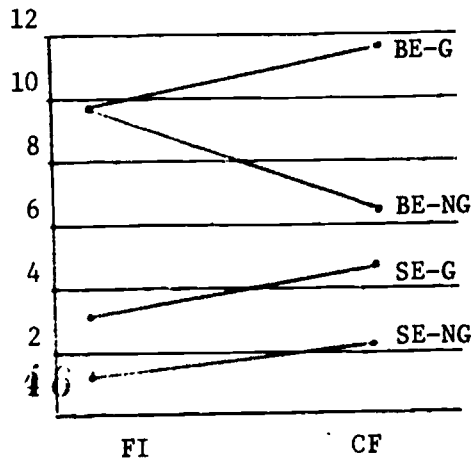
3. <u>Is there a difference in the number of spelling errors made on features which are grammatical markers and features which have no grammatical status?</u>

The effect of grammatical status on total spelling errors was significant for both groups, F (1,98) = 66.18, p < .01; see Table 1, App. D. The grammatical features caused more spelling problems than the features which had no grammatical status (14.86 and 10.21 errors, respectively). Since the interaction between dialect and grammatical status was not significant, the problem was no greater for one speaker group than for the other. It should be noted, however, that for SE speakers, errors made on nongrammatical features (4.20) were half those made on grammatical features (8.52) while for BE speakers, errors on nongrammatical features (16.22) were about 80% of those made on grammatical features (21.20).

The interaction between feature type and grammatical status was significant, F (1,98) = 62.03, p < .01, see Figure 1b. Grammatical control features (8.37) were more difficult to spell than nongrammatical control features (4.54), while for features of interest, grammatical and nongrammatical features did not differ significantly in difficulty (6.49 and 5.67, respectively). This was expected. When -<u>ly</u>, <u>en</u>, and -<u>y</u> were chosen as controls for -<u>s</u>, '<u>s</u>, and -<u>ed</u>, it was done in the absence of comparable simple grammatical features in word-final position.

The three-way interaction (see Figure 1c) was significant, F (1,98) = 19.55, p < .01. Although the difficulty of nongrammatical features of interest did not differ from that of grammatical features of interest when speaker groups were combined, this was true for BE speakers only, (9.60 and 9.74, respectively). For SE speakers, nongrammatical features of interest were easier than grammatical features of interest (1.74 and 3.24, respectively; t = 2.98, p < .01).

4. a. <u>Is there a difference in the number of BE-related spelling errors made by the two speaker groups?</u>

The effect of dialect upon BE-related errors was significant, F (1,98) = 183.05, p < .01; see Table 2, App. D. The mean number of BE-related spelling errors made by BE-speaking children (12.06) was much higher than the mean number made by SE-speaking children (1.72).

b. <u>Is there a difference in the number of BE-related spelling errors made on grammatical and nongrammatical features?</u>

The effect of grammatical status upon the number of BE-related errors was significant, F (1,98) = 45.66, p < .01; see Table 2, App D. More BE-related errors were made on grammatical than on nongrammatical features (4.21 and 2.68, respectively).

There was a significant interaction between dialect and grammatical status, $F (1,98) = 16.87$ p. $< .01$; see Figure 2. While both speaker groups made more BE-related errors on grammatical features than on nongrammatical features (BE: 7.26 and 4.80, respectively; SE: 1.16 and 0.56, respectively), the difference for the SE speakers was not significant. For BE speakers, it was significant ($t = 4.61$, $p < .001$). Thus, the relative difficulty of the grammatical features was much greater for the BE speakers.

Figure 2

Interaction of Dialect and Grammatical Status: BE-Related Errors
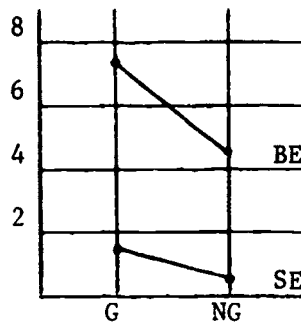
5. a. **Is there a difference in the number of non-BE-related spelling errors made by the two speaker groups?**

The effect of dialect upon non-BE-related errors was significant, $F (1.98) = 65.06$, $p < .01$; see Table 3, App D. BE speakers made more non-BE-related errors than SE speakers (25.36 and 11.00, respectively).

b. **Is there a difference in the number of non-BE-related spelling errors made on control features and features of interest?**

The effect of feature type was also significant, $F (1,98) = 207.82$, $p < .01$. Non-BE-related errors were more often made on control features (12.91) than on features of interest (5.27).

The interaction of dialect and feature type was significant, $F (1,98) = 35.55$, $p < .01$; see Table 3, App D. While control features were harder than the features of interest in terms of non-BE-related errors for both speaker groups, the difference was more pronounced for the BE speakers (see Figure 3a).

Figure 3

a. Interaction of Dialect and Feature Type: Non-BE-Related Errors
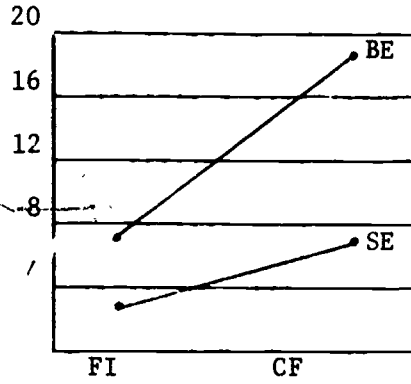
b. Interaction of Feature Type and Grammatical Status: Non-BE-Related Errors
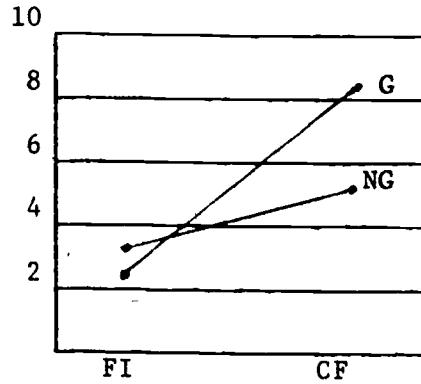
c. Interaction of Dialect, Feature Type and Grammatical Status: Non-BE-Related Errors
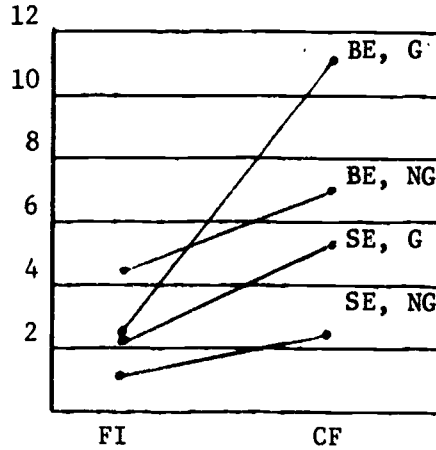
c. <u>Is there a difference in the number of non-BE-related
spelling errors made on grammatical and nongrammatical
features?</u>

Grammatical status had a significant effect on non-BE-related
errors, F (1,98) = 35.19, p < .01; see Table 3, App D. They were more
often made on grammatical than on nongrammatical features (10.65 and
7.53 errors, respectively.)

The interaction between grammatical status and feature type was
significant, F (1,98) = 124.66, p < .01. Figure 3b shows that the non-
grammatical features of interest were slightly more difficult in terms
of non-BE-related errors than were the grammatical features of interest
(2.99 and 2.28, respectively). The grammatical control features,
however, had far more spelling errors than the nongrammatical control
features (8.37 and 4.54 errors, respectively). The three-way inter-
action was also significant, F (1,98) = 41.52, p < .01; see Figure 3c.
For both speaker groups, both grammatical and nongrammatical control
features were more difficult than grammatical and nongrammatical
features of interest. The significance of the three-way interaction
probably comes from the relatively few non-BE-related errors made on
grammatical features of interest by the BE speakers, who made a con-
siderable number of BE-related errors on this set of features.

6. <u>Are there differences in the number of total spelling errors
and of BE-related spelling errors among the features of
interest?</u>

BE-speakers made significantly more total errors on features of
interest than SE-speakers made (19.34 and 4.98, respectively). Further-
more, the number of total errors made depended significantly upon the
feature of interest being tested, F (1,98) = 57.75, p < .01; see Table 4,
App. D. The rank order of difficulty (from easiest to most difficult)
was: d#, -s, 's, th#, -l-, -ed. To determine whether these differences
in rank order were significant, a Newman-Keuls test was performed on all
pairs of total errors; see Figure 4a. The -ed was significantly harder
to spell than all other features tested in terms of total errors.
-l- was significantly harder to spell than all features except -ed.
's and th# were of third order difficulty. d# and -s were the easiest
to spell.

The interaction of dialect and features of interest was also
significant, F (490,5) = 6.09, p < .01; see Table 4, App. D. For each
group, performance on the six features in terms of total errors differed
significantly, F (5,245) = 29.61, p < .01 for BE speakers and F (5,245) =
35.45 p < .01 for SE speakers; see Table 5, App D. When each dialect group
was considered separately, the rank order of difficulty of features of
interest in terms of total errors (from easiest to most difficult) was:
d#, -s, 's, th#, -l-, -ed for BE speakers and d#, th# and 's, -s, -l-,
-ed for SE speakers. The rank orders cannot be considered the same

Fig. 4. Results of Newman-Keuls tests on pairs of total spelling
errors per feature of interest, least to most (the numbers
of total spelling errors for any features with a common
line under them are not significantly different, p > .05).

---

a. All subjects

<u>d#   -s</u>   <u>'s   th#</u>   <u>-1-</u>   -ed

b. BE speakers

<u>d#   -s</u>   <u>'s   th#</u>   <u>-1-   -ed</u>

c. SE speakers

d#   's   -s   -1-   -ed
<u>   and th#</u>

(rho = .77) even though the two most difficult features and the one least
difficult feature are the same for both groups.

Newman-Keuls tests were performed to determine significantly dif-
ferent pairs of error rates made on individual features by each speaker
group (see Figures 4b and c). BE speakers had the most difficulty with
-<u>l</u>- and -<u>ed</u> and the least difficulty with <u>d#</u> and -<u>s</u>. The SE speakers
made fewer errors on <u>d#</u>, <u>th#</u>, '<u>s</u>, and -<u>s</u> than they did on -<u>ed</u> and -<u>l</u>-,
which were problems of first and second order for them.

As already reported, the effect of dialect upon the number of BE-
related errors made was significant; BE speakers made more BE-related
errors than SE speakers on all features of interest (12.06 and 1.72,
respectively). The effect of the individual feature of interest upon
the number of BE-related errors was also significant, F (1,98) = 25.21,
p < .01; see Table 6, App. D. The rank order of difficulty of the features
(from the easiest to the most difficult) was <u>d#</u>, <u>th#</u>, -<u>s</u>, -<u>l</u>-, '<u>s</u>, -<u>ed</u>.
To determine which differences among the six features of interest were
significant, a Newman-Keuls test was applied (see Figure 5a). For
both groups together, final <u>d#</u> caused significantly fewer BE-related
spelling problems and -<u>ed</u> caused more BE-related spelling problems than
any of the other features.

Fig. 5. Results of Newman-Keuls tests on pairs of BE-related spelling errors per feature of interest, least to most (the numbers. of BE-related errors for any features with a common line under them are not significantly different, p > .05).

a. All subjects

d# th# -s -1- 's ed

b. BE speakers

d# th# -s -1- 's -ed

c. SE speakers

th# d# 's 's -1- -ed

The interaction of feature of interest and dialect was significant, $F(1,98) = 13.00$, $p < .01$; see Table 6. For each speaker groups, performance on the six features of interest in terms of BE-related errors differed significantly, $F(5,245) = 23.14$, $p < .01$ for the BE speakers and $F(5,245) = 3.97$, $p < .01$ for the SE speakers; see Table 7. Newman-Keuls tests (see Figure 5b and c) showed that d# was easier than all other features for BE speakers and that for SE speakers only the easiest feature (th#) was less difficult than the most difficult feature (-ed) and the most difficult feature (-ed) was harder than the two easiest features (th# and d#). However, in general, feature difficulty was not significantly different for SE speakers; see Figure 5. When the two speaker groups were considered separately, the rank order of feature difficulty for the two groups was not the same (Spearman rho = .77).[5] It appears, however, that both groups had the most trouble with -ed in terms of BE-related errors.

_____

[5]It is interesting to note that while the rank order of feature difficulty was not the same for the two speaker groups on features of interest, it was on the control features. The Spearman rho correlation on control features was .943 (p < .02). The three most difficult control features were the same for both speaker groups (-en, y and -ly, respectively). Many of the common errors made by the two speaker groups were the same on control features.

7. <u>Are there differences in the number of BE pronunciations given for the various features of interest on the dialect classification test</u>?

For BE pronunciations, the effects of dialect, F (98,1) = 623.34 p < .01, and of individual feature of interest, F (490,5) = 127.21, p < .01, were significant; see Table 8. The significance of the effect of dialect was expected since the categories of BE speaker and SE speaker were in part determined by the number of Black English dialect responses the children gave on the features of interest examined. The rank order of number of BE pronunciations per feature (low to high) for both groups combined was: -s, 's, -1-, d#, th#, -ed. A Newman-Keuls test showed that -ed was more often pronounced in a Black English manner than any other feature. th# and d# had the next highest number of BE pronunciations. -1-, 's, and -s, respectively, had the fewest BE pronunciations; see Figure 6a.

Fig. 6. Results of Newman-Keuls tests on pairs of BE pronunciations per feature of interest, least to most (the numbers of BE pronunciations for any features with a common line under them are not significantly different, p > .05).

---

a. All subjects

    -s   's   -1-   <u>d#   th#</u>   -ed

b. BE speakers

    -s   's   -1-   <u>d#   th#</u>   -ed

c. SE speakers

    <u>'s   -s   -1-</u>   <u>d#   th#</u>   -ed

When the groups were considered separately, the two rank orders of pronunciations were much the same (BE: <u>-ed</u>, <u>th#</u>, <u>d#</u>, -1-, 's, -s; SE: -ed, th#, d#, -1-, -s, 's). The Spearman rho correlation was .943 (p < .02). For each group, the effect of feature was significant; F (5,245) = 88.06, p < .01 for the BE speakers and F (5,245) = 45.18, p < .01 for the SE speakers; see Table 9. The BE speakers gave more BE pronunciations of -ed, th# and d# than they gave for the other features. They gave fewest BE pronunciations of -s. SE speakers most often omitted the -ed in speech. They gave the lowest numbers of BE pronunciations for 's, -s and -1-; see Figure 6.

8. **Is the type of misspelling made on features of interest independent of the spoken dialect of the speller?**

The type of misspelling made on features of interest (BE-related or non-BE-related) was not independent of dialect, $F(98,1) = 36.66$, $p < .01$; see Table 10. BE speakers made more BE-related than non-BE-related errors (12.06 and 7.28, respectively) and SE speakers made more non-BE-related than BE-related errors (3.26 and 1.72, respectively); see Figure 7.

Fig. 7. Interaction of error types.
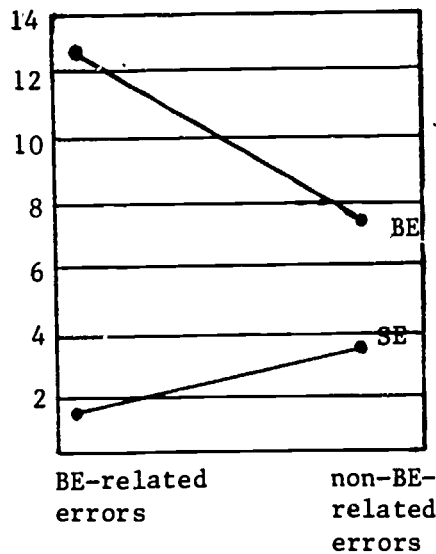
9. a. **Is there a correlation between the number of non-SE pronunciations and the number of incorrect spellings?**

Overall, there was a significant correlation for both speaker groups between number of deviations from the standard pronunciations and the number of total spelling errors. For BE speakers, the correlation was .39 ($p < .01$). For SE speakers, the correlation was .34 ($p < .01$). When the two speaker groups were combined, the correlation was even higher ($r = .78$, $p < .01$).

b. <u>Is there a correlation between the number of BE
pronunciations and the number of BE-related misspellings
made on the features of interest?</u>

The correlation for SE speakers was not significant (r = .08).
For BE speakers, it was r = .25, which approaches but does not reach
significance at the .05 level. Thus the number of BE pronunciations
a child uses will not directly predict the number of BE-related
spelling errors he will make.

c. <u>Is there a correlation between the number of BE
pronunciations and the number of BE-related misspellings
for any individual features of interest?</u>

For SE speakers, there was no significant correlation for any of
the features. For the BE speakers, the only significant correlations
were between written spoken 's and written and spoken -s; see
Table 3 (below).

Table 3

Correlations Between BE Pronunciations
and BE-Related Misspellings

Variables	BE Speakers	SE Speakers
-ed	-.07	.15
's	.37**	.12
-s	.28*	.24
-1-	.03	-.15
th#	.06	-.06
d#	.07	.08

*p < .05
**p < .01

d. Is the.e a correlation between BE-related errors and non-BE-related errors made on features of int·rest?

For SE speakers, there was a significant correlation (r = .39, p < .01). For BE speakers, r = .12, which was not significant.

DISCUSSION

Study II investigated the relationship of dialect (BE and SE) to the spellings of selected sound-to-spelling correspondences. Half of the features (features of interest) are pronounced alike and half (control features) are pronounced differently in the two dialects. Half are grammatical markers and half have no grammatical status. Nine questions were investigated.

1. Is there a difference in the number of total spelling errors made by BE-speakers and by SE-speakers?

BE-speaking children made about three times as many errors as SE speakers on selected sound-to-spelling correspondences in unfamiliar words on a dictated spelling test. This difference in overall errors was not unexpected as it has been so often noted that Black children from low-income urban families have considerable trouble with language arts subjects in school. In addition, because the first-grade reading scores of the two groups of children differed significantly, a difference in scores reflecting spelling ability was not surprising. While some of the difference in performance between the two groups may be due to the dialect spoken by the test administrator (SE), this probably reflects the situation regularly encountered in the classroom. It suggests that BE speakers, in general, need more spelling instruction than SE speakers.

2. Is there a difference in the number of spelling errors made on features of interest and control features?

When both speaker groups were combined, there was no difference in overall errors made on control features and on features of interest. However, the features of interest were significantly easier to spell than the control features for the SE speakers. The expectation that BE speakers would have more difficulty with features of interest than the SE speakers was confirmed. While SE speakers made about one and a half times as many errors on control features as on features of interest, BE speakers made about the same number of errors on each feature type. While BE speakers made two and a half times the number of total errors that SE speakers made on control features, they made four times the number of total errors that SE speakers made on features of interest. Thus, BE speakers need extra help on features which are pronounced differently in BE.

3. Is there a difference in the number of spelling errors made on features which are grammatical markers and features which have no grammatical status?

As hypothesized, grammatical features were generally more difficult to spell than features with no grammatical status. For SE speakers, they were twice as difficult and, for BE speakers, about one and a third times as difficult. This performance in relation to grammatical status of a feature was the same for SE speakers whether they were spelling control features or features of interest. For BE speakers, however, there was no difference in performance on grammatical and nongrammatical features of interest. They had more than the expected difficulty with the nongrammatical features of interest.

The general difficulty of grammatical features may be due to the age of the children. It has often been noted (e.g., Templin, 1957) that such grammatical markers as the plural or possessive -s and the past tense -ed are not always completely mastered or produced by such young children. Performance on grammatical and nongrammatical features indicates that children in both speaker groups generally need more work on grammatical features than on features with no grammatical status. BE speakers also need additional work, however, on nongrammatical features which are pronounced differently in BE and SE.

4. a. Is there a difference in the number of BE-related spelling errors made by the two speaker groups?

While BE speakers made about three times as many total errors as SE speakers, they made about seven times as many BE-related errors. This sounds rather high, but SE speakers made a mean of less than .50 BE-related errors per feature of interest. The proportion of total errors that were BE-related errors was much higher for BE speakers than for SE speakers. This was an expected difference. The general difficulty of the features of interest for BE speakers was caused by the BE-related errors they made on those features. Close to two-thirds of the errors made by BE speakers on features of interest were BE-related errors. For SE speakers, only one-third of their errors on features of interest were BE-related. This suggests that, for BE speakers, extra work should be heavily concentrated on reducing BE-related errors on features of interest.

b. Is there a difference in the number of BE-related spelling errors made on grammatical and nongrammatical features?

As hypothesized and as found in Study I, more BE-related errors were made on grammatical than on nongrammatical features. The numbers were low and the difference not significant for SE speakers. It was quite a significant difference for BE speakers. The high number of BE-related errors made on the nongrammatical features

made the features of interest as difficult as the control features for
the BE speakers. But then, for the SE speakers, the nongrammatical
features of interest were extremely easy, unambiguous consonant corre-
spondences learned early in any spelling program (/d/ → $\underline{d}$ as in
"proud," /l/ → $\underline{1}$ as in "film," and /θ/ → $\underline{th}$ as in "mouth"). For the
BE speakers, these can apparently be rather confusing correspondences,
probably because they are not always fully pronounced. Extra work in
reducing dialect-related errors on the nongrammatical as well as the
grammatical features of interest would probably be helpful for BE
speakers.

5. a. <u>Is there a difference in the number of non-BE-related
        spelling errors made by the two speaker groups</u>?

As hypothesized and as found in Study I, BE speakers made more
non-BE-related errors than the SE speakers but the margin of dif-
ference was not as great as for the BE-related errors. While the
BE speakers made about seven times as many BE-related errors, they
made only a little over twice the number of non-BE-related errors.
As with overall errors, this difference in performance may be
accounted for by the socio-economic differences of the two groups
tested.

    b. <u>Is there a difference in the number of non-BE-related
        spelling errors made on features of interest and control
        features</u>?

For both groups, control features were more difficult than
features of interest in terms of non-BE-related errors. The
difference was more pronounced for the BE speakers, who made so
many BE-related errors on the features of interest that there was
apparently a ceiling effect on the number of non-BE-related errors
made.

    c. <u>Is there a difference in the number of non-BE-related
        spelling errors made on grammatical and nongrammatical
        features</u>?

Non-BE-related errors were more often made on grammatical than
on nongrammatical features of interest. This held true for both
speaker groups. However, while BE speakers made twice as many
non-BE-related as the SE speakers on all features of interest and
across all grammatical features, there was an interesting difference
in relative difficulty of the grammatical and nongrammatical features
in terms of non-BE-related errors for the two speaker groups. The
grammatical features of interest were twice as difficult as the non-
grammatical features of interest for the SE speakers (most of their
non-BE-related errors were on the $-\underline{ed}$ suffix) but the difficulty was
reversed for the BE speakers (they made the most errors on $-\underline{1}$-, $\underline{th}$#,
and $\underline{d}$#). Furthermore, while BE speakers made four times the number

of non-BE-related errors that SE speakers made on nongrammatical
features of interest, they made about the same number of non-BE-
related errors on grammatical features of interest. Again, it
appears that the high number of BE-related errors made by BE-speakers
on those features had a ceiling effect on the number of non-BE-
related errors made. It is also clear that nongrammatical features
of interest were particularly difficult for BE speakers (in relation
to SE speakers) whether in terms of BE-related or non-BE-related
errors. Thus, while the BE speakers may not need more work than the
SE speakers to eradicate non-BE-related errors on grammatical features
of interest, they will probably need extra work to reduce non-BE-
related errors on nongrammatical features of interest.

6. <u>Are there differences in the number of total spelling errors
   and of BE-related spelling errors among the features of
   interest?</u>

Consistent with Study I, there were differences among the
individual features of interest for both speaker groups in terms
of both total errors and BE-related errors. In terms of total
spelling errors, -<u>ed</u> was the most difficult feature to spell for
both speaker groups. For SE speakers, it was significantly harder
than all other features of interest. For BE speakers, it was sig-
nificantly harder than all other features except -<u>l</u>-. For SE
speakers, most of the errors on that feature were non-BE-related
(common errors were <u>d</u> or <u>de</u>). For BE speakers, most errors were
BE-related (omissions or <u>t</u>). While SE speakers made more total
errors on -<u>ed</u> than on any other feature, they did not make
significantly more BE-related errors on that feature. In general,
the SE speakers did not make significantly more BE-related spelling
errors on any one feature of interest than on any other. BE-related
errors were simply not problems for them. While all children tested
apparently need to work on the spelling of the past tense morpheme,
BE speakers may need more work on the concept that -<u>ed</u> expresses the
meaning of past, whether the sound /d/ is heard or not.

In terms of total errors, -<u>l</u>- was as difficult a feature to spell
as -<u>ed</u> for the BE speakers. For SE speakers, it was second in rank
order of difficulty but significantly less difficult than -<u>ed</u>. Again,
over half the errors made by BE speakers were BE-related errors
(generally omissions) while for SE speakers, most errors were non-
BE-related.

For both speaker groups combined, <u>d</u>∥ was the easiest of the
features of interest to spell--significantly so for BE speakers in
terms of BE-related errors (but no less difficult than -<u>s</u> for BE
speakers or than -<u>s</u>, <u>th</u>∥, or '<u>s</u> for SE speakers, in terms of total
errors). While it was clearly reduced or omitted frequently by BE
speakers in pronunciation, it did not seem to be a BE-related spelling

problem. It is interesting to compare BE performance on this nongrammatical feature with their performance on the -ed morpheme. The radical difference suggests that it was the grammaticality rather than the particular pronunciation involved which caused the spelling problem. While the absence of final d# in pronunciation probably does not indicate its absence on a deeper level, the same cannot necessarily be said for -ed.

In terms of BE-related errors (omissions), the 's and -s morphemes were of equal difficulty for the SE speakers. For BE-speakers, 's was more frequently omitted than -s. For both groups, BE-related errors (omissions) in spelling outnumbered omissions in speech for both s morphemes. Children should perhaps receive more help in establishing the meaning-spelling connection for these features, since some fail to write the final -s whether they produce it or not.

th# was of medium difficulty for BE speakers and of low difficulty for SE speakers in terms of both total errors and BE-related errors. BE speakers frequently spelled it f or omitted it while SE speakers made no common error. For both speaker groups, it was more often pronounced in a BE manner than misspelled in a BE-related way. In fact, for BE speakers, it was second only to -ed in the number of BE pronunciations realized. Because one of the exemplars (north) was on the board during spelling testing in one of the BE classrooms, the full spelling difficulty of the feature for BE-speaking children may not be apparent.

7. **Are there differences in the number of BE pronunciations given for the various features of interest on the dialect classification test?**

As expected, because of the manner in which the dialect groups were defined, BE speakers gave more BE pronunciations than SE speakers on each feature of interest. The rank order of features was the same for both groups though it was not the same as for spelling errors. Where BE speakers moved away from the standard, so did the SE speakers. The similarity probably reflects the fact that both SE and BE are dialects of English and that general pronunciation tendencies (e.g., reducing final consonant clusters) are operating, though to differing degrees.

8. **Is the type of misspelling made on features of interest independent of the spoken dialect of the speller?**

As hypothesized, a dependency was confirmed. While SE speakers made about twice as many non-BE-related errors as BE-related errors on these features, the BE speakers made over one and a half times as many BE-related as non-BE-related errors. This appears to be even more striking support for the argument that BE pronunciation interferes with spelling performance than was found in Study I where BE

speakers also made more non-BE-related than BE-related errors. Of
course, the features of interest were chosen more carefully for the
present study.

9. a. Is there a correlation between the number of non-SE
        pronunciations and the number of incorrect spellings?

When all features were considered and when total errors made on
those features were correlated with total non-SE pronunciations,
positive, but low, results were obtained for each speaker group.
Thus, the degree to which a child's speech deviates from the standard
may be a useful partial predictor of the difficulty he may have
with spelling.

    b. Is there a correlation between the number of BE
        pronunciations and the number of BE-related misspellings
        made on features of interest?

It was noted earlier that there was no significant rank order
correlation between the tendency of a feature of interest to diverge
from the standard in pronunciation and the spelling difficulty of
that feature. When correlations were computed between BE pronun-
ciations and BE-related spelling errors, the same conclusion was
reached. The degree to which a child uses BE pronunciations will
not directly predict the number of BE-related spelling errors he
will make.

    c. Is there a correlation between the number of BE pronur-
        ciations and the number of BE-related misspellings for
        any individual feature of interest?

Even when performance on each individual feature of interest was
considered separately, there was no significant correlation of BE
pronunciations and BE-related errors for SE speakers. For BE speakers,
BE pronunciations and BE-related errors on the two final s morphemes
were significantly correlated. Other features were not. Thus, for
any one child, individual spelling problems cannot be predicted from
his speech. It can only be said that, if a child speaks BE, he will
probably make more BE-related spelling errors than a child who speaks
SE. The inability to predict exactly what his problems will be
probably stems from the well-known variability of BE.

    d. Is there a correlation between BE-related errors and non-
        BE-related errors?

There was no correlation for BE speakers between the number of
BE-related errors made and the number of non-BE-related errors made
on the features of interest. For SE speakers there was a significant
but low correlation between the two. Those SE-speaking children
who made errors made both kinds and most of their errors were on

two features (-_ed_ and -_l_-). BE speakers, on the other hand, had high BE-related error rates on every feature but _d_#; Study II thus replicated many of the findings of Study I and, along with findings from Study III, led to several conclusions and teaching suggestions found at the end of this report.

STUDY III

BLACK ENGLISH AND THE SPELLING OF FINAL CONSONANT CLUSTERS[1]

Study III investigated the spelling of final consonant clusters, in both monomorphemic (i.e., nonaffixed) words and in words with inflectional suffixes, which Studies I and II had suggested caused particular spelling problems for BE speakers. The suffixes investigated were "-ed" (past tense forms) and "-s" (third person singular, present tense forms and plural forms), which are very commonly used and are thus of great importance in writing.

RESEARCH QUESTIONS

1. How is the spelling of final consonant clusters affected by whether the following word begins with a consonant or a vowel?

Hypothesis: Final consonant clusters would be reduced more frequently when the following word began with a consonant (/__C) than when it began with a vowel (/__V); e.g., "passed" would be more commonly spelled pass in a sentence like "I passed my test" than in a sentence like "I passed a test."

2. How is the spelling of final consonant clusters with "-s" affected by whether the suffix is a third person singular form or a plural form?

Hypothesis: Final consonant clusters with "-s" would be reduced more frequently in third person singular forms than in plural forms; e.g., "cooks" would be more commonly spelled cook in a sentence like "Mother cooks dinner" than in a sentence like "The cooks made a cake." However, Study I indicated that despite the difference in speech, exactly the opposite happened in spelling; i.e., that the "-s" was omitted more frequently in plurals than in third person singular forms. In Study III this was investigated by using the same words as both plurals and third person singulars.

3. How is the spelling of final consonant clusters affected by whether the words are suffixed or monomorphemic forms?

Hypothesis: Final consonant clusters would be reduced more frequently in monomorphemic forms than in suffixed forms. For example, the spelling pass would be more common for "past" than for "passed". However, while this hypothesis was reasonable on the basis of speech performance, there was evidence that it did not hold up in actual spelling performance. Wolfram & Whiteman (1971) reported that, while

---

[1]This study is more fully reported in Cronnell (1973).

past tense -ed was often omitted in compositions by tenth-grade BE speakers, monomorphemic final consonant clusters were infrequently reduced. In Studies I and II, spellings reflecting BE pronunciations were more frequent for suffixes than for features without syntactic status. The present study investigated this question by using suffixed and monomorphemic forms with final consonant clusters which were pronounced the same.

Reduction of final consonant clusters in the spelling of suffixed words may be related to the fact that the resulting spelling is a real word (the base word). In Study I, use of a multiple-choice test form may have made unsuffixed forms attractive choices since they were spellings of real words. To investigate this possible relationship without using suffixes, the following question was raised for mono-morphemic words.

4. How is the spelling of final consonant clusters in monomorphemes affected by the nature of the resulting forms if the clusters are reduced?

    a. What happens when the resulting forms are homophonous with other words? For example, when /pæst/ ("past") becomes /pæs/ ("pass").

    b. What happens when the resulting forms are not homophonous with other words (i.e., are nonwords in SE)? For example, when /tost/ ("toast") becomes /tos/ ("toas").

There were two possible hypotheses, for neither of which was there evidence. First, real words would be more familiar and thus more likely to occur as responses than nonword forms; e.g., pass would be more likely than toas. On the other hand, real words would create homographs (e.g., pass as a spelling for both "pass" and "past") and thus would be less likely than nonword forms.

It is possible that any spellings by BE speakers which seem to reflect their dialect may only be a function of English orthography or of school instruct on and may not be different from the spellings of SE speakers. For this reason, both BE and SE speakers were used in the study and the following research question was asked:

5. Is the type of misspelling independent of the spoken dialect of the speller?

In Study I, it was found that the frequencies of misspelling not related to BE were similar for BE and SE speakers, but that the frequencies of misspellings related to BE were much greater for BE speakers. In Study II, using a methodology and subjects similar to those of the present study, it was found that while the frequencies of both types of misspellings were higher for BE speakers than for

SE speakers, the frequency of dialect-related errors was much higher for BE speakers.

The final research question investigated was:

6. <u>What is the nature of the correlation between BE pronunciations and misspellings reflecting BE pronunciations</u>?

It might be hypothesized that the number of misspellings reflecting BE pronunciations would be positively correlated with the number of BE pronunciations. However, because of the great variability found in BE, even within speakers, this relationship required empirical study. While Sullivan (1971) found that non-SE pronunciations were positively correlated with incorrect spellings, he did not look specifically at BE pronunciations and spellings reflecting such pronunciations. In Study II, there was a correlation between non-SE pronunciations and incorrect spellings, but not between BE pronunciations and BE-related spelling errors, except for possessive and plural "s." The present study attempted to find more information about the correlation between BE pronunciations and spellings reflecting those BE pronunciations.

METHOD

The methodology for Study III was similar to that for Study II. Therefore, only important differences will be noted.

Materials

Only 18 different test words were used, but each of the six "-s" words was used four times (Third person singular /__C, Third person singular /__V, Plural /__C, Plural /__V) and each of the six Past tense words and each of the six monomorphemic words were used twice (/__C and /__V), resulting in 48 test items. All the words were one syllable long. To help ensure that the words would be known by the children participating in the study, the test words were chosen only if they occurred in at least two of the following studies of children's vocabularies: Kolson (1960), Murphy and others (1957), Legum et al. (1971), and Thomas (1962), the latter two studies being of low-income Black children. The Monomorphemic words were ones which had not been introduced in the children's spelling instruction, as determined by their grade placement in the California state-adopted text (Kottmeyer & Claus, 1968), or in their reading instruction, as determined by their grade placement in the California state-adopted reading series (O'Donnel, 1969; Bank Street College of Education, 1965). For testing Past and "-s," since the spelling of the suffix was of primary interest, the base forms--but not the suffixed forms--were generally found in the state-adopted spelling and/or reading series, at or below the second-grade level.

The test words were also chosen on the basis of their phonological shape. When the second member of a final consonant cluster is held constant, it is possible that the particular first member may have a differential effect on reduction of the cluster (cf. Sobin, 1971). To avoid such differential effects, for Past and Monomorphemic the cluster /st/, preceded by a vowel, was used for all words. The choice of this particular cluster was determined by the number of available words which also met the previously defined criteria for familiarit,. For the "-s" condition, it was not possible to use only one form of cluster while meeting the criteria for familiarity and also using words which, insofar as possible, were equally likely as verbs and as nouns. Thus half of the base forms for the "-s" words ended with /t/ and half ended with /k/; in both cases, the consonant was preceded by a vowel.

Each test word was embedded in a context sentence. The sentences testing Past tense forms included adverbials expressing past time; the sentences testing Third person singular "-s" included adverbials expressing repeated activity; in sentences testings Plural "-s," the test word was modified by a number.[2] The sentences were minimally different between the /__C and /__V conditions. For sentences in the /__C condition, the first consonant of the word following the test word was different from either the SE or BE realization[3] and was not one which is often reduced or deleted (e.g., not /h/). The non-test words in the sentences were ones commonly used by children and, insofar as possible, ones used in their spelling and/or reading series. See Table 1 for the list of test words and sentences.

---

[2]There is some evidence that plural "-s" is more commonly deleted when it is preceded by a plural determiner (Bailey, 1969; Light, 1971). However, Sobin (1971), using a repetition task as in the present study, found that presence or absence of determiners did not affect plural deletion. Nor was deletion affected by whether the determiner was a cardinal number or a non-numeral (e.g., "many," "these"). In a pilot study using 13 BE speakers and 13 SE speakers from the present study, neither repetition nor spelling of plurals was affected by whether the plural was preceded by a number or by "some."

[3]It was not realized until after study completion that in the sentence "There is a ghost downstairs," the /d/ of "downstairs" con-flicted with the /t/ of "ghost" (both have the same point of articu-lation and differ only in voicing), making the latter very difficult to pronounce. This appears, however, not to have affected any of the results, since all such consonant clusters were commonly reduced in the repetition task.

Table 1

Test Sentences

"-s"

Third Person Singular	Plural
The dog <u>bites</u> me every day.	Take two <u>bites</u> from the cake.
The dog <u>bites</u> us every day.	Take two <u>bites</u> of cake.
He <u>pets</u> my dog every day.	The two <u>pets</u> don't fight.
He <u>pets</u> our dog every day.	The two <u>pets</u> are fighting.
My mother <u>shouts</u> for me every day.	He gave three <u>shouts</u> for joy.
My mother <u>shouts</u> at me every day.	He gave three <u>shouts</u> of joy.
Gum always <u>sticks</u> to my fingers.	He broke two <u>sticks</u> last night.
Gum always <u>sticks</u> on my fingers.	He broke two <u>sticks</u> in the house.
Mother <u>cooks</u> dinner every night.	The two <u>cooks</u> made a cake.
Mother <u>cooks</u> our dinner every night.	The two <u>cooks</u> ate the cake.
He <u>locks</u> both doors every morning.	There are two <u>locks</u> for the door.
He <u>locks</u> all the doors every morning.	There are two <u>locks</u> on the door.

/st/

Past Tense	Monomorphemic
	Word
A dog <u>chased</u> my cat yesterday.	It's half <u>past</u> four.
A dog <u>chased</u> a cat yesterday.	It's half <u>past</u> eleven.
He <u>crossed</u> Main Street yesterday.	We had a <u>guest</u> for dinner.
He <u>crossed</u> East Street yesterday.	We had a <u>guest</u> at home.
She <u>guessed</u> my name last week.	Don't <u>bust</u> my balloon.
She <u>guessed</u> our names last week.	Don't <u>bust</u> our balloon.
The boy <u>kissed</u> my sister last night.	**Nonword**
The boy <u>kissed</u> a girl last night.	
	I like <u>toast</u> for breakfast.
I <u>missed</u> my bus yesterday.	I like <u>toast</u> at breakfast.
I <u>missed</u> a bus yesterday.	
	I want to <u>taste</u> my candy.
I <u>passed</u> my test last week.	I want to <u>taste</u> our candy.
I <u>passed</u> a test last week.	
	There is a <u>ghost</u> downstairs.
	There is a <u>ghost</u> upstairs.

Note: In the first sentence of each pair, the test word is followed by a word beginning with a consonant; in the second sentence, by a word beginning with a vowel.

For the oral repetition task, all 48 sentences were randomly ordered, with the provision that sentences containing the same test word were separated by at least four other sentences. Half of the subjects in each dialect group received the sentences in forward order; half received them in reverse order.

The spelling test was divided into three parts; each 16-item part took 15 to 20 minutes testing time. The test sentences were printed on the test sheets, with a blank replacing the test word. The sentences were randomly arranged, subject to various conditions to balance items (see Cronnell, 1973). Half of the subjects received the three spelling test forms in the order A, B, C; the other half in the order C, B, A.

Participants

The same participant populatio was used as in Study II, with deletions on the following grounds (in parentheses are numbers of those deleted in "White" and "Black" schools, respectively):

1. non-native speakers of English (2, 4);

2. absent for all or part of the testing (4, 4);

3. poor or lost tape which could not be reviewed (8, 1);

4. more than half of the spelling responses were "no response" and/or "unrelated response" (3, 15);

5. obvious copying on the spelling test (2, 8);

6. having a lisp which made it difficult to analyze the consonant clusters, all of which contained /s/ (1, 1);

7. in the "Black" classes, being an "SE speaker," determined as follows (-, 11):

   a. more than 34 clusters classified as SE responses on the oral repetition task, or,

   b. using fewer than four of the following BE features elsewhere in the sentences on the repetition task:

      i. deletion or vocalization of postvocalic /r/,

      ii. deletion or vocalization of postvocalic /l/,

      iii. deletion of single final consonant,

      iv. deletion of final "-s" (/s/ or /z/),

v.   addition of final "-s" (/s/ or /z/),

vi.   /d/ for /ð/ or /t/ for /θ/,

vii. /f/ or /t/ for final /θ/

viii. /a:/ for /ay/,

ix.   /ɪs/ or /ɪz/ for /ɪts/ ("it's");

,. in the "White" classes, being a "BE speaker," determined as
    follows (8, -):

    a. fewer than 36 clusters classified as SE responses on the
        oral repetition task, or,

    b. using more than two of the BE features listed in 7 above
        elsewhere in the sentences ⹁a the repetition task;

9. stratified random deletion to achiev⹁ balance on the following
    factors: number of children in each ⹁⹁alect group, number of
    boys and girls, number of children administered forward and
    reverse forms of the oral repetition task, and number of
    children administered th⹁ oral task before the written and
    vice versa (11, 0).

After the deletions, analyses were performed with 50 BE speakers
and 50 SE speakers. The two dialect groups were of approximately the
same age: mean age for BE-speakers was 96.9 months and for SE-speakers,
95.75 months. As expected, the two groups differed considerably in
reading ability: mean scores on the Cooperative Primary Reading Test
(Form 12A), administered the previous year, were 1.55 for BE-speakers
and 3.12 for SE-speakers ($t = 8.82$, $p > .001$).

Procedures

Procedures for the oral repetition task and for the spelling test
were the same as in Study II.

Categorization and Analysis of Data

Data was categorized as in Study II. In the oral repetition task
a BE response was the omission of either or both of the final conso-
nants, e.g., "toast" repeated as /tos/, /tot/, or /to/. In the
spelling test, a BE-related error was the omission of the orthographic
representation of either or both of the final consonants, e.g.,
"toast" spelled <u>toas</u>, <u>toat</u>, <u>toa</u>.

Analyses of variance were performed to answer the first four re-
search questions in this study. Each analysis tested for the effects
of dialect (BE vs. SE).

1. <u>How is the spelling of final consonant clusters affected by whether the following word begins with a consonant or a vowel?</u>

    a. Dialect x Phonological type ("-s" vs. /st/) x Environment (/__C vs. /__V)

    b. Dialect x "-s" Grammatical type (Third person singular vs. Plural) x Environment

    c. Dialect x /st/ Grammatical type (Past vs. Monomorphemic) x Environment

2. <u>How is the spelling of final consonant clusters with "-s" affected by whether the suffix is a third person singular form or a plural form?</u>

    Dialect x "-s" Grammatical type (included in 1b)

3. <u>How is the spelling of final consonant clusters affected by whether the words are suffixed or monomorphemic?</u>

    Dialect x /st/ Grammatical type (included in 1c)

4. <u>How is the spelling of final consonant clusters in monomorphemes affected by the nature of the resulting forms if the clusters are reduced?</u>

    Dialect x Reduction type (Word vs. Nonword).

Each of the four ANOVA's was perfo d using BE-related spelling errors as the dependent variable. However, the number of total spelling errors for the Past tense was exceptionally high for both speaker groups. It was suspected that these high error rates might influence the relative effects of consonant cluster reduction. To control for absolute difficulty of this feature, the ANOVA's involving Past tense (1a and 1c) were also performed using, as the dependent variable, the proportion of BE-related spelling errors to total spelling rors. In addition, each ANOVA was performed using oral BE i ponses as the dependent variable; these analyses were performed to ensure that the speech of the children tested was, in fact, what was described in the literature upon which the research questions were based.

    To answer the fifth question--<u>Is the type of misspelling independent of the dialect of the speaker?</u>--the following analysis of variance was performed, using number of responses as the dependent variable:

    Dialect x Error type (BE-related errors vs. non-BE-related errors).

To answer the sixth research question--What is the nature of the correlation between BE pronunciations and misspellings reflecting BE pronunciations?--correlations were made between the number of oral BE responses and the number of BE-related spelling errors. These correlations were performed for each dialect group separately and for both groups combined. Correlations were performed for total scores, as well as for each of the ten stimulus categories: Third person singular, Plural, "-s," Past, Word, Nonword, Monomorphemic, /st/, /__C, /__V.

All analyses were performed by computer. The ANOVA's were performed using BMD02V; the correlations were performed using BMD02D.[4]

RESULTS

The results are organized according to the six research questions. All of the analysis of variance tables and their accompanying tables of means are found in Appendix E; figures showing interactions are found in Appendix F. For all analyses of variance performed, there were significant differences due to dialect (p < .01), with BE speakers making more BE responses than SE speakers.

1. How is the spelling of final consonant clusters affected by whether the following word begins with a consonant or a vowel?

Oral. Overall, there was a significant effect due to environment, $F(1,98) = 383.36$, p < .01; see Table 1a. BE responses occurred over twice as frequently before consonants (mean = 10.60) as before vowels (4.34). Environment did not significantly interact with dialect. There was a significant difference due to phonological type, $F(1,98) = 545.66$, p < .01, with nearly four times as many BE responses for /st/ (11.98) as for "-s" (2.96). Moreover, there was a significant interaction between environment and phonological type, $F(1,98) = 235.20$, p < .01. Environment had a smaller effect on "-s" forms than on /st/ forms, where there were nearly three times as many BE responses before consonants as before vowels; see Figure 1.

For "-s" forms (see Table 2a), there was a significant difference due to environment, $F(1,98) = 16.79$, p <.01. Moreover, environment interacted significantly with dialect, $F(1,98) = 9.24$, p <.01; SE speakers made no BE responses before vowels and very few before consonants; see Figure 2. Environment did not interact significantly with "-s" grammatical type.

---

[4]James Mineo, Alfred Tsai, and Nancy Flournoy provided valuable assistance in the analyses.

For /st/ forms (see Table 3a), there was a significant effect due to environment, F (1,98) = 388.85, p < .01, but again no interaction between environment and dialect. There was a significant effect due to grammatical type, F (1,98) = 22.39, p < .01, with more BE responses for Monomorphemic (6.41) than for Past (5.57). The interaction between environment and /st/ Grammatical type was significant, F (1,98) = 14.09, p < .01. While Monomorphemic forms had more BE responses than Past tense forms, the difference was greater before vowels; see Figure 3. Finally, there was a significant three-way interaction: Dialect x /st/ Grammatical type x Environment, F (1,98) = 27.12, p < .01. While there were more BE responses overall for Monomorphemic than for Past, this only held for BE speakers; for SE speakers the two types were equal (/__C) or reversed (/__V); see Figure 4.

Written. There were no significant differences due to environment and no significant interactions with environment, whether measured by BE-related errors or by the proportion of BE-related errors to total errors; see Tables 1b, 2b, 3b, 1c, 3c.

2. How is the spelling of final consonant clusters with "-s" affected by whether the suffix is a third person singular form or a plural form?

Oral. There was a significant difference between "-s" grammatical types, F (1,98) = 10.96, p < .01. Consonant clusters were reduced more frequently for Third person singulars (1.73) than for Plurals (1.27); see Table 2a. In addition, there was a significant interaction between "-s" grammatical type and dialect, F (1,98) = 9.14, p < .01; see Figure 5. The difference between "-s" grammatical types was primarily due to BE speakers (Third person singulars = 3.36; Plurals = 2.48): there was very little difference for SE speakers, who made very few reductions of clusters with "-s" (Third person singulars = 0.10; Plurals = 0.06).

Written. There was no significant difference between "-s" grammatical types; see Table 2b. This appears to be due to the interaction between dialect and "-s" grammatical types, F (1,98) = 4.90, p < .05. BE speakers had more cluster reductions for Plurals (5.06 to 4.68), while SE speakers had more for Third person singulars (1.48 to 1.20); see Figure 6.

3. How is the spelling of final consonant clusters affected by whether the words are suffixed or monomorphemic?

Oral. There was a significant difference between suffixed and monomorphemic forms, F (1,98) = 22.39, p < .01. /st/ consonant clusters were more commonly reduced in Monomorphemic (6.41) than in Past tense (5.57) forms; see Table 3a. In addition, grammatical type significantly interacted with dialect, F (1,98) = 37.02, p < .01. The greater reduction for Monomorphemic was only true for BE speakers (Monomorphemic =

9.62; Past = 7.70); for SE speakers, reduction was similar for both
types, with slightly less reduction for Monomorphemic (3.20) than
for Past (3.44); see Figure 7.

Written. There was a significant difference in number of BE-
related errors depending on whether the /st/ cluster was in suffixed
or monomorphemic forms, F (1,98) = 9.05, p < .01. However, as opposed
to the oral results, there was more reduction for Past tense (3.20)
than for Monomorphemic (2.65); see Table 3b. In addition, grammatical
type significantly interacted with dialect, F (1,98) = 4.55, p < .05.
The greater reduction for Past was primarily true for BE speakers
(Past = 5.82; Monomorphemic = 4.88); for SE speakers, reduction was
similar for both types, with only slightly more for Past (0.58) than
for Monomorphemic (0.42); see Figure 8.

When the results were reanalyzed using the proportion of BE-related
errors to total errors (see Table 3c), there was still a significant
difference between /st/ grammatical types, F (1,98) = 7.23, p < .01,
but this analysis showed proportionately more reduction for Monomor-
phemic (0.340) than for Past (0.275). There were no significant
interactions.

4. How is the spelling of final consonant clusters in monomorphemes
   affected by the nature of the resulting forms if the clusters are
   reduced?

Oral. There was a significant difference between reduction types,
F (1,98) = 13.79, p < .01. There were more BE responses for Nonword
(3.40) than for Word (3.01) forms; see Table 4a. Reduction type did
not interact with dialect.

Written. There was no difference between reduction types and no
interaction between reduction type and dialect; see Table 4b. However,
BE speakers had slightly but nonsignificantly (t = 0.72, p < .25) more
reduction for Word than for Nonword forms--the opposite of the oral
results.

5. Is the type of misspelling independent of the spoken dialect of
   the speller?

There was a s   .ficant difference between speaker groups in the
number of spelling rrors, F (1,98) = 81.24, p < .01; BE speakers made
more spelling errors than SE speakers. However, there was no signif-
icant difference between error types; BE-related errors and non-BE-
related errors were equivalent. There was a significant interaction
between dialect and error type; see Figure 9. BE speakers made more
BE-related errors than non-BE-related errors (20.46 to 13.22), while

SE speakers made more non-BE-related errors than BE-related errors
(12.68 to 3.66). The number of non-BE-related errors was similar
for both groups (BE = 13.22, SE = 12.68).

6. **What is the nature of the correlation between BE pronunciations
and spellings reflecting BE pronunciations?**

The correlation coefficients for the correlations made are shown
in Table 2 (p.73). For BE speakers, the only significant correlation
was for "-s," and that was very low (r = .29, p < .05). For SE speakers,
all correlations except for Nonword and /__V were significant, but
even the highest was only .42. When both speaker groups were combined,
all correlations were significant (r = .48 - .70, p < .01).

DISCUSSION

Oral repetition task

In general, the results of the oral repetition task confirmed
previous research. The clusters were reduced by both speaker groups,
but over three times as often by BE speakers as by SE speakers. BE
speakers reduced nearly half the clusters; SE speakers reduced about
a seventh of the clusters. The clusters were reduced more frequently
when the following word began with a consonant than when the following
word began with a vowel: for BE speakers, nearly twice as often; for
SE speakers, over ten times as often, since they rarely reduced the
clusters before a word beginning with a vowel. All of this confirmed
previous studies.

In the oral repetition task, /st/ clusters were reduced much more
frequently than "-s" clusters: for BE speakers, three times as often;
for SE speakers, over 40 times as often. BE speakers reduced about
three-quarters of the /st/ clusters and about a quarter of the "-s"
clusters; SE speakers reduced over a quarter of the /st/ clusters, but
hardly ever reduced "-s" clusters. These results also conform to
previous research.

For "-s" clusters in the oral repetition task, Third person
singular forms were more frequently reduced than Plural forms. While
this was expected on the basis of previous research, the difference
between forms was not very great; the means for BE speakers were:
Third person singulars = 3.36, Plurals = 2.48; t = 1.97, p < .05.
This does not provide much support for the claim of Labov et al. (1968)
that BE does not have a third person singular form in its grammar.

For /st/ clusters in the oral repetition task, Monomorphemic forms
were more frequently reduced than Past tense forms, when both dialect
groups were combined. This pattern was true--and not by a great deal--
only for BE speakers. The opposite pattern was found, also with only a
small difference, for SE speakers. However, BE speakers reduced more
than half of both /st/ cluster types and SE speakers reduced more than a

Table 2

Correlations between oral BE responses
and BE—related spelling errors

Variables	BE Speakers	SE Speakers	All Subjects
Third person singular	.26	.35*	.48**
Plural	.16	.29*	.48**
"-s"	.29*	.40**	.54**
Past	.09	.38**	.64**
Word	.07	.33*	.61**
Nonword	.11	.16	.57**
Monomorphemic	.10	.30*	.65**
/st/	.11	.42**	.70**
/__C	.10	.33*	.67**
/__V	.18	.04	.65**
Total	.16	.33*	.70**

*p < .05
**p < .01

quarter of both types. That SE speakers reduced Past tense clusters so often is surprising; previous studies (e.g., Berko, 1958; Denver & Gardner, 1970; Newfield & Schlanger, 1968) do not suggest such poor performance and indicate that middle-income SE-speaking children have mastered the past tense by around the age of six. However, differences in testing procedures (the present repetition task vs. word-formation tasks) may account for differences in performance. It is not clearly known what actual performance on the past tense is like in the ordinary speech of young children; further research could be used in this area.

Reduction of "-s" clusters and of past tense forms in speech often produces another word--the base form. In monomorphemic forms, whether another word can be formed depends on the particular word being reduced. The Monomorphemic forms tested were more frequently reduced in the oral repetition task when the resulting form was not homophonous with another word. This may suggest a tendency to avoid creating homophones; such a tendency would not be surprising, since an increase in the number of homophones would be likely to decrease ease of comprehension. However, the difference between the two forms was small (less than 10%) and the results were based on a small number of words--only three of each type (although each word was used twice). Further study is needed to determine the validity of these results.

Spelling test

While previous research results were confirmed by the oral repetition task, the spelling test results did not generally match speech performance. In fact, spelling results were sometimes the opposite of speech performance, and, whether results did or did not match speech, the differences were generally not great.

1. How is the spelling of final consonant clusters affected by whether the following word begins with a consonant or a vowel?

Whether the following word began with a consonant or a vowel did not affect the spelling of final consonant clusters. For SE speakers, reduction was equal in both environments; for BE speakers, there was even slightly more reduction before vowels. While the words were presented in context by the test administrator, the children undoubtedly isolated them to spell them, thus possibly obliterating any difference for environment. Thus, in testing the spelling of individual words, phonological environment probably does not need to be considered.

2. How is the spelling of final consonant clusters with "-s" affected by whether the suffix is a third person singular form or a plural form?

There was no difference in the spelling of "-s" clusters depending on the meaning of the suffix. SE speakers maintained their speech pattern by reducing Third person singular forms slightly more often

than Plural forms. BE speakers actually reversed their speech pattern, although not significantly (t = 0.64, p > .25). This reversal has been found in Study I and in Ross (1971) and Wolfram & Whiteman (1971). None of these studies can give clear evidence concerning the relative diffi-culty of spelling the two kinds of "-s" suffixes, but they do tend to suggest that the third person singular -s is not so difficult to spell as research in oral performance would indicate. It is possible that this result is a case of hypercorrection: BE speakers may be aware that they do not always use /s/ where it is found in SE and try to overcome this by adding -s; in the present case they produce a correct spelling. Further research (e.g., investigating forms not requiring -s) is needed.

3. <u>How is the spelling of final consonant clusters affected by whether the words are suffixed or monomorphemic?</u>

When raw scores for the spelling of /st/ forms were examined, there was more reduction of Past tense forms than of Monomorphemic forms--exactly the opposite of speech performance for BE speakers. This is the same as the findings of Studies I and II and of Wolfram & Whiteman (1971). This predominance of reduction of Past forms may, in part, be related to the greater difficulty for both groups of spelling the Past tense forms of words. The California state-adopted spelling series (Kottmeyer & Claus, 1968) devotes only three sentences (including two words to be written by students) to the past tense -ed near the end of Book 2, so it is doubtful whether the second graders in this study had been formally taught it. However, lack of instruction does not explain Wolfram & Whiteman's (1971) similar findings with tenth-grade BE speakers. One possible explanation is that there is a response bias for visually familiar forms: a reduced past tense (i.e., the base form) is recognized as a spelling seen before, while a reduced monomorpheme is an unrecognizable form. While raw scores gave spelling results contrary to oral results, the patterns for the two modes matched when BE-related errors were examined as a proportion of total errors: they were relatively more frequent for Monomorphemic than for Past tense forms. It is clear from this study, as well as from Studies I and II, that young children need considerable instruction on the spelling of past tense forms.

4. <u>How is the spelling of final consonant clusters in monomorphemes affected by the nature of the resulting forms if the clusters are reduced?</u>

Whether or not the reduced forms of monomorphemes were homophonous with other words had no effect on spelling. Reduction of both kinds of Monomorphemic forms was essentially equal. In fact, BE speakers reversed their oral performance, reducing Word forms somewhat (but not significantly) more often than Nonword forms. Since the status of these forms in speech is not established, it is premature to offer

any explanation for this result. However, as with the past tense, there may be a response bias for visually familiar forms.

5. **Is the type of misspelling independent of the spoken dialect of the speller?**

While the features investigated in questions 1-4 had little influence on spelling performance, dialect did have a significant and notable effect on the spelling of final consonant clusters. BE speakers reduced clusters over six times as often as SE speakers; the BE speakers reduced over 40% of the clusters, while the SE speakers reduced less than 10%. For BE speakers, 61% of their spelling errors were BE-related, while such responses were only 22% of the errors of SE speakers. However, for non-BE-related errors, both groups were equivalent (although BE speakers made slightly, but nonsignificantly, more such errors than SE speakers).

In the present study (as in Study I), the difference between the two groups in spelling performance resulted from BE speakers making more BE-related errors. For the features investigated, it could be hypothesized that, if low-income innercity Black children were not also speakers of BE, their spelling performance would be equal to that of middle-income suburban White children. This hypothesis, while suggesting the effects of dialect, is clearly too strong. Because selection procedures involved the deletion of all children for whom more than half of the responses were "no response" and/or "unrelated response," the 50 BE speakers used in the study were somewhat better spellers than the total population of second-graders in the school. Moreover, while in Study II, using practically the same subjects and procedures as this study, clear dialect effects were also found, BE speakers made more non-BE-related errors than SE speakers. Dialect does appear to have a strong influence on the spelling of low-income Black children, but their performance is undoubtedly negatively affected by numerous other factors (e.g., culture, diet, poverty, poor teaching).

6. **What is the nature of the correlation between BE pronunciations and misspellings reflecting BE pronunciations?**

While dialect clearly affects spelling performance, the number of BE pronunciations used by BE speakers was not correlated with the number of BE-related errors. For SE speakers, there was some low correlation; for both speaker groups combined, the correlations were much higher. However, this latter result for all subjects is probably spurious, since the groups were differentiated on one of the variables: number of BE pronunciations. These results are not necessarily surprising, given the well-known variability found among and within BE speakers (Labov et al., 1968; Legum et al., 1971). Moreover, the repetition task may not accurately measure degree of use of BE features. On the other hand, it was found elsewhere in this study that spelling

did not precisely reflect speech, and such lack of correlation may be
another case of the same phenomenon. However, Study II, as well as
Sullivan (1971), did find that number of pronunciations which deviated
from Standard English (in Study II, this was nearly equivalent to
number of BE pronunciations) was correlated with total number of
spelling errors. Perhaps the relationships between speech and spelling
are more complex than a study of sound-to-spelling relations can deter-
mine. Labov et al. (1968) noted that use of BE was related to alienation
from school and from other main-stream institutions, whether BE was
either cause or effect of or unrelated to such alienation. This may
be the case of the relations between speech and spelling. Such
relations are probably complex, and no present studies provide data
which fully explain them.

CONCLUSION.

As the result of these three studies, there are five conclusions which can be drawn about the relation between Black English and spelling performance.

1. BE speakers do not spell as well as SE speakers.

2. While BE pronunciations are related to spelling in some cases, that relationship does not account for all of the difference in spelling performance between the groups of BE speakers and SE speakers studied.

3. When a BE feature is involved, BE-related errors are a primary source of differences in spelling performance between BE and SE speakers.

4. While BE pronunciations are related to BE spellings, they are apparently not correlated in any simple way for individual speakers.

5. Not all features of BE equally affect spelling performance. And the degree to which they do affect spelling is not necessarily what would be expected on the basis of speech data.

6. BE pronunciations affecting grammatical markers may cause more spelling problems than pronunciations not involving grammatical markers.

Based on these conclusions, four suggestions can be made for teaching spelling to BE speakers. These suggestions are tentative and need further study, especially in the classroom.

1. BE speakers need considerable assistance with spelling.

2. Special instruction for BE speakers should be given on features corresponding to BE pronunciations which differ from SE, particularly those features which research has shown to be especially influential on spelling. This instruction should focus on reducing BE-related errors.

3. Spelling instruction for BE speakers should particularly focus on grammatical markers.

4. Teachers of BE speakers should be aware of their students' dialect and learn to relate their students' speech to the English spelling system.

-79-

This last point deserves special attention. An opposite but obvious
solution to the spelling problems of BE speakers would be to teach
them SE. However, teaching a second dialect is difficult and probably
not feasible with young children. Furthermore, it is not reasonable
to postpone spelling instruction until children learn SE, if, in fact,
such is desirable. Rather, it appears more important for the schools
to work with and build on what the children already have.

It should be noted that most BE pronunciations that interfere with
spelling performance are omissions in relation to SE. All spellers of
English must learn to use to so-called "silent" letters; BE speakers
may have to learn to use more of them. However, such omissions--and
in fact other BE features--are not categorical; instead, they occur
at various relative frequencies. It appears, then, that BE speakers
do generally have the SE forms available to them, even if they do not
always use them in speech. The role of spelling instruction is to
utilize such underlying knowledge to improve the spelling performance
of Black English speakers.

APPENDIX A

EXPLANATION OF SYMBOLS

#	word boundary	"at"	the word "at"
∅	no sound	/æt/	the pronunciation of the word "at"
/__	"in the environment of"	at	the spelling of the word "at"

Vowels

/æ/	as in "bat"
/ɛ/	as in "bet"
/ɪ/	as in "bit"
/a/	as in "cot"
/ə/	as in "but"
/e/	as in "bait"
/i/	as in "beet"
/ay/	as in "bite"
/o/	as in "boat"
/u/	as in "boot"
/ʊ/	as in "put"
/ɔ/	as in "bought"
/ɔy/	as in "boy"
/aw/	as in "bout"
/ə/	a central glide resulting from reduction of /r/
/ḷ/	an l-like back unrounded glide resulting from the reduction of /l/
/V/	any vowel
/Ṽ/	any vowel with nazalization
/:/	any sound longer than normal duration

Consonants

/b/	the initial sound in "bat"
/č/	the initial sound in "chat"
/d/	the initial sound in "dot"
/f/	the initial sound in "fat"
/g/	the initial sound in "gap"
/h/	the initial sound in "hat"
/j/	the initial sound in "jet"
/k/	the initial sound in "cat"
/l/	the initial sound in "lap"
/m/	the initial sound in "mat"
/n/	the initial sound in "nap"
/ŋ/	the final sound in "thing"
/p/	the initial sound in "pat"
/r/	the initial sound in "rat"
/s/	the initial sound in "sat"
/š/	the initial sound in "shut"
/t/	the initial sound in "tap"
/θ/	the initial sound in "thing"
/ð/	the initial sound in "that"
/v/	the intiial sound in "vat"
/w/	the initial sound in "wet"
/hw/	the initial sound in "whip"
/z/	the initial sound in "zip"
/ʔ/	a glottal stop or closure of the epiglottis
/C/	any consonant
/N/	any nasal (/m/, /n/, or /ŋ/)
/b̥/ /g̥/	devoiced consonants

Appendixes B, C, D, E, F, removed because type size too small for reproduction.

REFERENCES

Bailey, B. L. Language and communicative styles of Afro-American children in the United States. Florida FL Reporter, 196ᶜ, 7, 46, 153.

Bank Street College of Education. Bank Street readers. New York: Macmillan, 1965.

Bellamy, M. M., & Bellaᵣ S. E. The acquisition of morphological inflections by .ᵣ. eu four to ten. Language Learning, 1970, 20, 199-212.

Berko, J. The child's learning of English morphology. Word, 1958, 14, 150-177.

Briggs, D. G. Deviations from Standard English in papers of selected Alabama Negro high school students. (Doctoral dissertation, University of Alabama) Ann Arbor, Michigan: University Microfilms, 1969. No. 69-6528.

Boiarsky, C. Consistency of spelling and pronunciation deviations of Appalachian students. Modern Language Journal, 1969, 53, 347-350.

Brody, D. A comparative study of different forms of spelling tests. Journal of Educational Psychology, 1944, 35, 129-145.

Cronnell, B. A. Black English and the spelling of final consonant clusters. Unpublished doctoral dissertation, University f California at Los Angeles, 1973.

Dever, R. B. & Gardner, W. I. Performance of normal and retarded boys on Berko's test of morphology. Language and Speech, 1970, 13, 162-181.

Fasold, R. Orthography in reading materials for Black English speaking children. In Baratz, J. & Shuy, R. (Eds.), Teaching black children to read. Washington, D.C., 1969. Pp. 68-91.

Garvey, C., & McFarlane, P. A measure of standard English proficiency of inner-city children. American Educational Research Journal, 1970, 7, 29-40.

Gates, A. I. A list of .iling difficulties in 3876 words. New York: Teachers College, Columbia University, 1937.

Graham, R., & Rudorf, E. H. Dialect and spelling. Elementary English, 1970, 47, 363-376.

Greene, H. A. The new Iowa spelling scale. Iowa City, Iowa: State University of Iowa, Bureau of Educational Research and Service, 1954.

Hanna, P., Hanna, J., Hodges, R., & Rudorf, E. H. Phoneme-grapheme correspondences as cues to spelling improvement. Washington, D.C.: U. S. Government Printing Office, 1966.

Kolson, C. J. The vocabulary of kindergarten children. (Doctoral dissertation, University of Pittsburgh) Ann Arbor, Michigan: University Microfilms, 1960. No. 60-6184.

Kottmeyer, W., & Claus, A. Basic goals in spelling. St. Louis: McGraw-Hill, 1968.

Labov, W. Some sources of reading problems for Negro speakers of non-standard English. In New directions in elementary English. Champaign, Illinois: NCTE, 1967.

Labov, W., & Cohen, P. Some suggestions for teaching standard English to speakers of non-standard dialects, 1967. ERIC ED 016 948.

Labov, W., Cohen, P., Robins, C., & Lewis, J. A study of the non-standard English of Negro and Puerto Rican speakers in New York City. Cooperative Research Project No. 3288, 1968, Columbia University.

Legum, S., Pfaff, C., Tinnie, G., & Nicholas, M. The speech of young Black children in Los Angeles. Technical Report 33, 1971, SWRL Educational Research and Development, Los Alamitos, California.

Light, R. L. Some observations concerning Black children's conversations. The English Record, 1971, 21 (Monograph Supplement 14), 155-167.

Metcalf, A. A. Riverside English. Riverside: University of California, 1971.

Murphy, H. A., and others. The spontaneous speaking vocabulary of children in primary grades. Journal of Education, 1957, 140, 1-105.

Newfield, M. U. & Schlanger, B. B. The acquisition of English morphology by normal and educable mentally retarded children. Journal of Speech and Hearing Research, 1968, 11, 693-706.

O'Donnel, M. Harper & Row basic reading program. New York: Harper & Row, 1969.

Ross, S. B. On the syntax of written Black English. TESOL Quarterly, 1971, 5, 115-122.

Shuy, R., Wolfram, W. A., & Riley, W. K. Linguistic correlates of social structure in Detroit speech. Final Report, Cooperative Research Project No. 6-1347, U. S. Office of Education, 1967.

Sobin, L. S. Noun plural marker deletion in the speech of Black children. Penn-Texas Working Papers in Sociolinguistics, No, 4, 1971, University of Texas at Austin.

Sullivan, R. E. A comparison of certa: relationships among selected phonological differences and sr- .ing deviations for a group of Negro and a group of White second grade children. (Doctoral dissertation, University of Texas at Austin) USOE Project No. 1F038, 1971, University of Texas at Austin.

Templin, M. C. Certain language skills in children. Minneapolis: University of Minnesota Press, 1957.

Thomas, D. R. Oral language sentence structure and vocabulary of kindergarten children living in low socioeconomic urban areas. (Doctoral dissertation, Wayne State University) Ann Arbor, Michigan: University Microfilms, 1962. No. 62-3918.

Wepman, J. M., & Hass, W. A spoken word count (children--ages 5, 6, and 7). Chicago: Language Research Associates, 1969.

Wolfram, W. A sociolinguistic description of Detroit Negro speech. Washington, D.C.: Center for Applied Linguistics, 1969.

Wolfram, W., & Whiteman, M. The role of dialect interference in composition. Florida FL Reporter, 1971, 9, 34-38, 59.