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Coming of age in African American English: A longitudinal study[1]

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This study examines trajectories of development in the use of African American English (AAE) for 32 speakers through the first 17 years of their lives based on a unique, longitudinal database. Temporal data points in the analysis include 48 months, Grade 1 (about age 6), Grade 4 (about age 9), Grade 6 (about age 11), Grade 8 (about age 13), and Grade 10 (about age 15). Complementary methods of analysis for assessing AAE include a token-based Dialect Density Measure (DDM), a type-based vernacular diversity index, and frequency-based variation analysis. The study reveals different trajectories and peak periods for the use of AAE, including a 'roller coaster' and a curvilinear trajectory; at the same time, there is a common dip among speakers in the overall use of vernacular AAE from Grade 1 through Grade 4. Examination of a selective set of demographic and self-regard measures shows no significant differences for gender, school racial density, racial peer contacts, and measures of Afro-centrality, but does show a significant correlation between mothers' and child use of AAE as well as age/grade.

KEYWORDS: African American English, age-grading, language lifespan, language development, language change

INTRODUCTION

Although the vernacular structures of African American English (AAE) have been scrutinized in great detail over the last half-century, there remain a number of questions about the development and use of these structures during the lifespan of AAE speakers. Is there a period in the life cycle when the vernacular structures are most likely to be evidenced, and if so, when? How much variation in vernacular usage may be demonstrated from childhood through adolescence, and do children show similar or different trajectories of vernacular dialect development and change over time? What social and structural linguistic factors influence these trajectories? Although many of the canonical studies of AAE (e.g. Labov, Cohen, Robins and Lewis 1968; Wolfram 1969; Fasold 1972; Rickford 1999) have considered the correlation of age with vernacular dialect variables, these questions have persisted since the early descriptive studies almost a half-century ago.

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In some of the earliest descriptions of AAE, Stewart (1965, 1968) and Dillard (1972) maintained that the optimal period for vernacular use was the preschool, post-developmental childhood years, before the contamination of vernacular forms from exposure to prescriptive school norms. Stewart (1968: 4) observed that:

> the older non-standard (and sometimes even creole-like) dialect features remained in use principally by younger children in Negro speech communities – being learned from other young children, to be given up later in life when 'small-boy' talk was no longer appropriate.

Both Stewart (1968: 3) and Dillard (1972: 237) have offered a number of examples of basilectal, or optimally vernacular, features in AAE that are age-graded traits largely restricted to younger AAE speakers, observing that these traits are authentic basilectal traits rather than developmental remnants of language acquisition. Illustrative structures include undifferentiated pronouns – such as *he book, me help you*, or *he a nice little girl* – and other features that seem to show an archaic affinity with a presumed creole predecessor of AAE.

Stewart (1965: 16–17) notes that 'the consistent use of basilect patterns, even in predominantly lower-class neighborhoods, is largely restricted to young children', and Dillard (1972: 236) observes that '[t]he comparatively archaic character of the speech of the younger children – always those who are beyond the stage of language acquisition, of "learning to talk" – is sociolinguistically perhaps the most exciting factor in Black English.' The early-childhood basilectal hypothesis set forth by Stewart and Dillard, interpreted as a developmental view of the creole-origin hypothesis of AAE, was based largely on firsthand ethnographic, anecdotal observation rather than a systematic longitudinal study or cross-sectional study of children and adolescents at different age levels.

The position of Craig and Washington (2006) four decades later, based on a cross-sectional survey of school children from preschool (ages 3–4) through Grade 5 (about age 10), similarly concludes that vernacular AAE use is optimal in the preschool, post-developmental stage, though it is not linked to a creole remnant as in the case of Stewart's and Dillard's hypothesis. With the onset of schooling, speakers progressively reduce their vernacular feature use in Kindergarten (about age 5) through Grade 5. The first stage in vernacular recession takes place during Grade 1 (about age 6), followed by a reduction in vernacular language features in Grades 3 (about age 8) and 4 (about age 9). Craig and Washington (2006: 51) note that:

> Production rates for AAE features decrease with increases in grade. With longer systematic exposure to SAE [Standard American English], on average students reduce the frequency with which they use AAE features in school contexts. This is manifested as a dialect shift at first grade for spoken discourse and at third grade for reading aloud.

Craig and Washington focus on language in school, finding that moderating effects such as discourse type (e.g. narrative description, spontaneous speech) and

demographic variables (community, socio-economic status, gender) correlate with the vernacular-reduction trajectory from Kindergarten through Grade 5. While both Stewart and Dillard, and Craig and Washington indicate that younger speakers at the onset of formal schooling tend to use a higher incidence of vernacular structures than their older cohorts, there are important differences in language context, methods of data collection, assumptions about language development, and the implications of their respective studies for interpreting language change during the childhood-adolescent lifespan of the AAE speaker. Craig and Washington (2006) rely, for the most part, on a canonical set of adult vernacular AAE features culled from the expansive descriptions of adult AAE that have been compiled over the last half century (e.g. Labov et al. 1968; Wolfram 1969; Fasold 1972; Baugh 1983; Rickford 1999), with a recognition of limited traits that might be endemic to childhood AAE (Washington and Craig 2002; Craig, Thompson, Washington and Potter 2003), whereas Stewart (1965, 1968) and Dillard (1972) tend to focus on more divergent, disputably creole-like features of AAE associated with childhood AAE. Furthermore, as noted, Washington and Craig focus on vernacular language use in the context of school whereas Stewart and Dillard focus on naturalistic language use at home or in the neighborhood. And Washington and Craig rely on systematically-recorded language data for a large number of subjects whereas Stewart and Dillard are content with informal observations of language use in the natural context of home or neighborhood.[2] Notwithstanding these different types of studies conducted almost a half-century apart, they converge in their conclusion that early childhood is the optimal period for vernacular AAE use.

An alternative hypothesis for optimal vernacular AAE use is offered by Labov (1965), who notes that there is an accelerating trend in the development of vernacular features during adolescence that reaches a plateau during the teenaged years. Labov (1965: 91) asserts that 'in the pre-adolescent years, from roughly ages five to twelve, the child learns the use of the local dialect in a form consistent with that of his [sic] immediate group of friends and associates.' According to Labov, this is a stage when the influence of parents is submerged under the influence of the peer group. With respect to vernacular AAE, Labov et al. (1968: 4) note that 'there is a sub-system of English used by pre-adolescent and adolescent Negro speakers in Northern ghetto areas which is remarkably uniform over the age range 8–17, especially for those who participate fully in the vernacular culture.'

Apparent-time research that compares AAE features across different ages tends to show some support for the hypothesis that adolescence correlates with greater vernacular dialect use (Wolfram 1969; Fasold 1972), though there is not always a straightforward correlation. For example, Rowe (2005) and D'Andrea (2005) show that older, rural speakers as a group may show a higher incidence of some diagnostic vernacular dialect structures while younger speakers show a bimodal distribution in which one subset of younger speakers shows intensified vernacular feature use while another shows reduced

vernacular use. Furthermore, the correlation with age may be sensitive to the linguistic variable, so that older speakers may show a high frequency of *-s* plural absence (Rowe 2005) whereas younger speakers show a much higher use of invariant *be* (Labov et al. 1968; Wolfram 1969; Fasold 1972; Cukor-Avila 2001). Studies focused on vernacular speech among African American speakers, such as Labov et al. (1968), Baugh (1983), and Rickford (1991, 1999), tend to focus on the teenaged and early-adult age period for their descriptions based on an implicit assumption that this is the primary period for vernacular dialect development.

Answers to the question of optimal vernacular use during the lifespan have been elusive for several reasons.[3] First of all, the age distribution in different studies of AAE tends to be complementary rather than comparative. For example, in the traditional sociolinguistic descriptions of AAE (e.g. Labov et al. 1968; Wolfram 1969; Fasold 1972) the lowest age for participants tends to be in the 10–12 year age range, so that no comparison with speakers at earlier ages can be undertaken. While this minimal-age threshold may be understandable in terms of the goals of particular sociolinguistic studies, it does not allow these studies to address the early-childhood vernacularity hypothesis empirically. By the same token, studies focused on vernacular use in childhood and pre-adolescence typically do not extend their comparisons to later adolescence and the early adult years, so that Craig's and Washington's research studies (Craig and Washington 2006) extend from preschool (ages 3–4) or Kindergarten (about age 5) through Grade 5 (about age 10), thereby precluding the possibility of comparison with subjects during later adolescence.

There are also differences in terms of the types of interviews used to make up the data for comparative analysis. Though there are notable exceptions (for example, Stockman and Vaughn-Cook 1989), many of the studies of younger children have been conducted in laboratory or school settings whereas sociolinguistic studies strive to collect more naturalistic data from sociolinguistic interviews in the field. Typically, the 'language sample' acquired in early-childhood interviews in laboratory contexts is shorter and somewhat more constrained in topic, and it is often combined with a battery of formal tests that provide insight in relation to the developmental goals of early-childhood studies.

Perhaps most critically, the practical logistics of following a sample of speakers from birth through secondary school is an imposing operational and organizational challenge in sampling and in data collection. Unfortunately, the end result is a paucity of longitudinal studies that follow speakers progressively from early childhood through adolescence. Most longitudinal studies have a limited-time focus on the earlier stages of language development (e.g. Stockman and Vaughn-Cook 1989; Seymour and Roeper 1999) or examine change during early childhood through the lens of apparent time (Craig and Washington 2006). And the relatively rare, longitudinal sociolinguistic study of adolescent AAE (Cukor-Avila 1997) tends to follow speakers from later adolescence through early adulthood rather than from early childhood through adolescence.

Consequentially, there are no long-term, longitudinal sociolinguistic studies of African American speakers from early childhood through the teenaged years, making it difficult to evaluate hypotheses about the development of vernacularity over this period. In this study, we begin to address some of the fundamental questions about the trajectory of vernacularity during the early lifespan of African American speakers based on a unique, longitudinal study of African American cohorts who have been followed progressively from birth through age 17.

THE DATABASE

The original project, conducted under the aegis of the Frank Porter Graham Child Development Institute in Chapel Hill, North Carolina, started in 1990 with a cohort of 88 African American children who were recruited into the study at a mean age of 8.1 months (range of 6 to 12 months). Within the first year of the study, the cohort was reduced to 70 children, and 67 of those children currently remain a part of the study after 17 years. The rate of retention for the sample population is exceptional – particularly given the background demographics of the cohort group – thanks to a proactive, engaged staff of researchers who have maintained regular social contact with participants during the entire period of the study in order to ensure their continuation in the project.

Criteria for recruitment of children into the study were the following:

a. African American;
b. no genetic disorder or other serious complications at birth;
c. birth weight above 2,500 grams; and
d. attendance in one of nine selected community-childcare centers.

Upon study entry in infancy, 71 percent of the children were from families living below the poverty level, according to the federally-defined guidelines. Youth in the study were administered standardized and non-standardized language tests annually between one year of age and Grade 9 (about age 14), and standardized early literacy skills assessments were administered annually from four years of age through Grade 9. Measurements were also made of the youths' home and childcare/school environments annually from one year of age through Grade 9.

In addition to the battery of standardized tests and background information collected for each child, conversationally-based language samples were collected from the children at one or two-year increments over 17 years. Interviews were also conducted with the children's mothers when the children were 48 months old and again when they were in Grade 4 (about age nine). When the children were in Grade 6 (about age 11), a supplemental sample of cohort participants was recruited that included a friend for each adolescent. This increased the number of participants followed longitudinally from Grade 6 through Grade 8 (about age 13); 61 study youth from this supplemental sample remain in the study in addition to the 67 subjects from the primary longitudinal study. The

progressive data on language development and change during adolescence, data on family, peer, and school environment, and data on metalanguage, literacy, and academic-achievement measures collected by the research team since infancy (Roberts et al. 1995; Burchinal, Roberts, Hooper and Zeisel 2000; Burchinal et al. 2000; Roberts, Burchinal and Zeisel 2002; Burchinal et al. 2006; Burchinal et al. 2008) have resulted in a unique, longitudinal database on the adolescent development of AAE and constitutes one of the most comprehensive longitudinal datasets on language and school achievement ever compiled, with more than 2,500 CDs of language data.

The goals of this initial phase of description are modest; we have selected a subsample of 32 children, 19 females and 13 males, from the corpus to examine in terms of their progressive use of AAE. Subjects were selected on the basis of completeness of data at the six different temporal data points compared in this study: 48 months, Grade 1, Grade 4, Grade, 6, Grade 8, and Grade 10. While the subsample selected for analysis is only part of the larger sample, it offers the potential for understanding and formulating hypotheses about trajectories of AAE use over the first 17 years of life.

Temporal data points (except for at 48 months) have been labeled in terms of the children's grade in school, instead of their ages in years. While the sequence of grades in the American school system may not be readily comprehensible for an international readership, this labeling system is used here for two reasons. First, the primary goal of this longitudinal project at its outset has been to assess the relationship between AAE use and school performance. Hence, the longitudinal fieldwork was conducted with each child on the basis of his/her year in school, not his/her age at the time. Thus, discussing the temporal data points in terms of age is not in keeping with the original focus of the study. Second, using age labels for the temporal data points is imprecise, due to the fact that (for various reasons) some of the children were made to repeat a grade in school. Therefore, there is a range of absolute ages for children who otherwise share the same data point in terms of their school year. For the sake of simplicity and consistency, this study will use grade labels for temporal data points. These American grades correspond roughly to the following ages:

- Grade 1 (about six years old);
- Grade 4 (about nine years old);
- Grade 6 (about 11 years old);
- Grade 8 (about 13 years old);
- Grade 10 (about 15 years old).

THE ASSESSMENT OF VERNACULARITY

Linguists and sociolinguists are justifiably cautious about reducing the assessment of language proficiency in a variety of English to a simple score on a vernacularity index. Linguistic analysis focuses, for the most part, on describing

structural systems or subsystems rather than isolated inventories of unrelated features. In fact, one of the recurring criticisms of studies of vernacular dialects (e.g. Labov 1998; Terry 2004) is the reduction of vernacular varieties of English to a simple inventory of unrelated features. Furthermore, in the construction of vernacular varieties, there is differential social marking of structural features, so that one linguistic variable might be much more heavily weighted than another as a vernacular dialect marker. For example, the use of a form like habitual *be* (e.g. *My ears be itching*) or completive *done* (e.g. *They done messed up again*) might be much more significant than a case of syllable-coda cluster reduction (e.g. *wes' en'*) or unstressed nasal *-ing* fronting (e.g. *swimmin'*) in marking a vernacular language variety. All features are not equal in marking vernacularity; accordingly, unweighted tabulations of the simple incidence of features may not be an adequate representation of a particular vernacular variety. Finally, there is the issue of variability in determining vernacular status. The hallmark of quantitative variation studies, in fact, is the recognition that vernacular status is often determined not by the use or non-use of a variant but by the relative frequency with which particular variants are used (e.g. Labov 1966). Thus, all varieties of English may exhibit nasal fronting in unstressed syllables but the degree to which it is actually used in cases where it might potentially occur differentiates social varieties of English. Sociolinguists, thus, have valid reservations about any attempt to reduce the assessment of vernacular dialect to a unitary score on a vernacularity index.

At the same time, scalar indices of language proficiency are commonly used in allied fields of language acquisition and language learning where it is expedient to assess speakers in terms of language norms. For example, the reduction of foreign or second-language proficiency to scalar indices is common in foreign-language assessment (Durán 1988; Bachman and Palmer 2008), and such testing of language proficiency is even sometimes mandated by federal law. Further, the assessment of children's native-language development is also typically measured in scalar indices in the field of speech and language pathology with good construct and concurrent validity (Kelley, Jones and Fein 2003). Notwithstanding linguists' and sociolinguists' theoretical and descriptive reservations, it appears that cautiously-constructed indices may provide valid information about the relative use of a designated language variety. In recent studies on the development of AAE, researchers have utilized measurement models that reduce AAE use to a scalar score that indicates high reliability and construct validity (Oetting and McDonald 2002; Seymour, Roeper and De Villiers 2003; Craig and Washington 2006).

One of the measures of overall dialect use employed in this study is the Dialect Density Measure (DDM) developed by Craig and Washington (2006) and Oetting and McDonald (2001, 2002): a token-based approach in which the number of vernacular dialect features per communication unit or number of words is calculated. A set of 33 dialect features that includes 24 morphosyntactic and nine phonological features was originally compiled by Craig and Washington,

based on the canonical structures of vernacularity described in the descriptive literature on AAE over the past four decades. The application of the DDM (Oetting and McDonald 2002; Craig and Washington 2006; Renn 2007) has indicated that it can be useful as a measure of composite AAE use, particularly if combined with the application of other, complementary kinds of analysis. In one study (Renn 2007), the DDM developed by Craig and Washington (2006) was revised by linguists Walt Wolfram and J. Michael Terry to exhibit categories and features that more accurately reflected the linguistic status of the inventory of structures set forth by Craig and Washington. This inventory expanded the set of morphosyntactic major variables to 29, as well as a number of subcategories within the variables. At the same time, it was more limited in terms of its phonological structures, so that only three were included in the set. The predominance of morphosyntactic features in this measure shows an obvious bias towards the role of grammatical features in marking AAE dialect use.[4] When the two inventories were applied to the examination of stylistic variation for 112 Grade 6 subjects in two contextual situations (Renn 2007), the DDM developed by Craig and Washington (2006) and the revised one offered by Wolfram and Terry showed extremely high reliability ($r = .99$), suggesting concurrent and content validity for the measure. For this study, we use the revised DDM code adopted by Renn (2007) for our measure.

With respect to DDMs such as this one, it should be noted that the confluence of the developmental and the social features of language in early childhood makes it difficult if not impossible to tease out which morphosyntactical/phonological features exhibited in child speech can be attributed to the respective factors. Craig and Washington (2006), from the perspective of speech/language pathology, address this issue at length in chapter 4 of their text, discussing the challenges given the relative paucity of literature on African American language acquisition in particular. While they defend their version of the DDM, modified for this study, they admit that '[w]hether or not a specific feature occurs likely reflects a complex set of influences, which range widely from sociocultural forces to sampling error' (2006: 39).

Hence, a DDM can be a useful tool for quantifying African American English vernacularity in a given speech context, but does not seek to address the underlying causes for what features are exhibited at a certain time. Additional analyses could be conducted to get at linguistic-internal constraints related to a child's DDM, such as language-acquisition factors, phonological factors, etc. Also, social factors likely contributing to a child's DDM should also be examined in complementary studies.

To complement the token-based DDM measure, we also conduct a simple, type-based analysis of AAE use in this study. This analysis focuses on the different types of AAE features that are represented as opposed to the frequency of AAE tokens. While a speaker may, for example, show a high incidence of AAE tokens per word or communication unit in their DDM, it is possible that this figure may be due to a limited number of AAE structures used more frequently, thus potentially skewing

the representation of vernacular AAE. It is therefore important to determine how different AAE structures might be represented. This analysis will rely on the composite inventory of structures proposed by AAE linguistic specialists (Renn 2007), a modified version of those used by Craig and Washington (2006). Type-based profiles of AAE may operate in tandem with, or independent from, token-based accounts such as the DDM so that it is important to include type-based measures as well as token-based measures in the description (Oetting and McDonald 2002).

Finally, we compute the relative frequency of selected dialect variants in terms of a modified version of the sociolinguistic variationist model (Cedergren and Sankoff 1974) in which the frequency of use is computed in relation to the potential cases where it might occur. In this paradigm, relative occurrence and the structural linguistic and social constraints on variability are calculated on the basis of a probabilistic-based multivariate regression model developed specifically for application to linguistic variability (Cedergren and Sankoff 1974). Because of the restrictions in terms of conversational language data, it is necessary to limit this phase of the analysis to variables that have the potential for meaningful quantitative measurement. Accordingly, this phase of analysis is limited to more frequently occurring variables such as *-s* third person absence (e.g. *She go to the store*), copula/auxiliary absence (e.g. *She nice*), and nasal fronting (e.g. *swimmin'* for *swimming*). This selective subset deliberately includes variables that are common to all non-mainstream varieties of English (*-ing* fronting) as well as those that tend to be restricted to AAE among North American vernacular English varieties (3rd person singular *-s* absence, copula absence, invariant *be*). It cannot be assumed, for example, that a generic diagnostic variable characteristic of all vernacular varieties of English such as *-ing* fronting (Schneider 2008) will parallel structural variables that are unique to AAE among American English dialects, such as 3rd person singular *-s* absence (Rickford 1999; Wolfram and Schilling-Estes 2006).

The different types of analyses provide an important vantage point that combines the complementary perspective of token-based, type-based, and variationist analytical traditions within linguistics and sociolinguistics to reliably reflect AAE use.

DATA AND ANALYSIS

The language samples utilized for this analysis were taken from 32 children at six temporal points of their lives, with the aim of representing life stages relevant to the vernacularity hypotheses recounted above: 48 months, Grade 1, Grade 4, Grade 6, Grade 8, and Grade 10. At each age, language samples were chosen on the basis of the naturalness and relative fluency of the conversational interactions.[5] At 48 months, the sample was taken from a 10 to 15-minute interaction between the child and an examiner during interactive play. The Grade 1 and Grade 4 samples were interactions between the child and his/her

mother, during which the dyad discussed some shared experiences together, such as the child's school experience, and the child's dreams for the future. The Grades 6, 8, and 10 samples were between the child and a peer of his/her choosing, during which the speakers were given collaborative problem-solving tasks, with freedom for interspersed 'chatting' as well. Grades 6, 8, and 10 samples were taken from the interview context considered to be more casual or informal in the interviewing format that included both 'formal' and 'informal' interview contexts (Renn 2007). The interactions were recorded in both audio and visual media, using audio CDs and 8-millimeter videocassettes. Audio media (or in cases where audio media was deficient, video media) were digitized and transcribed using ELAN software (Brugman and Wittenburg 2006). Language samples were then coded and tabulated using SALT software and transcription conventions (Miller and Iglesias 2008), and a minimum of 50 utterances, or 'communication units' were required to be included in the analysis (see Renn 2007). A 'communication unit' was determined based on the definition set forth by Loban (1976) and likewise used by Craig and Washington (2006): an independent clause plus its modifiers. The transcriptions were coded according to the 29 morphosyntactic and three phonological features in the refined DDM used by Renn (2007). For three morphosyntactic features – copula absence, modal/auxiliary absence, third person singular *-s* absence, and one phonological feature, *-ing* fronting – occurrences of the 'standard' variant were tabulated as well as the 'non-standard' variant in order to determine use in terms of actual and potential occurrences, the procedure routinely conducted in variation analysis. For each child, at each stage in his/her life, the frequency of these individual features was noted as well as total features per utterance and total features per word, the primary measures used for the DDM. Figure 1 depicts DDM scores for the speakers across the temporal data points, based on the number of dialect features per utterance.[6]

The data show that many of the children at 48 months exhibit higher relative vernacularity, and that this vernacularity diminishes in the early grades (1 and 4), while sometimes increasing again in the later grades. At the same time, it is notable that there is not one uniform trajectory that all the children share; instead, several distinct patterns emerge. In order to clarify the complex trajectories of vernacular use shown in Figure 1, Figures 2 and 3 indicate the number of speakers whose optimal (Figure 2) and minimal (Figure 3) vernacular use occurs at each of the six temporal points in the study.

Several observations can be made on the basis of these figures. We see that optimal and minimal periods of AAE use may vary considerably. The most common optimal periods are Grade 6 and 8 (ages 11–13), but some speakers show a peak at 48 months and several speakers peak in Grade 10 (about age 15). Significantly, no speakers show a vernacular peak at Grade 1 and 4 (age six–nine); these periods are reserved for minimal AAE use as indicated in Figure 3. In fact, 75 percent (24 of the 32 speakers) show minimal AAE use during these two periods.

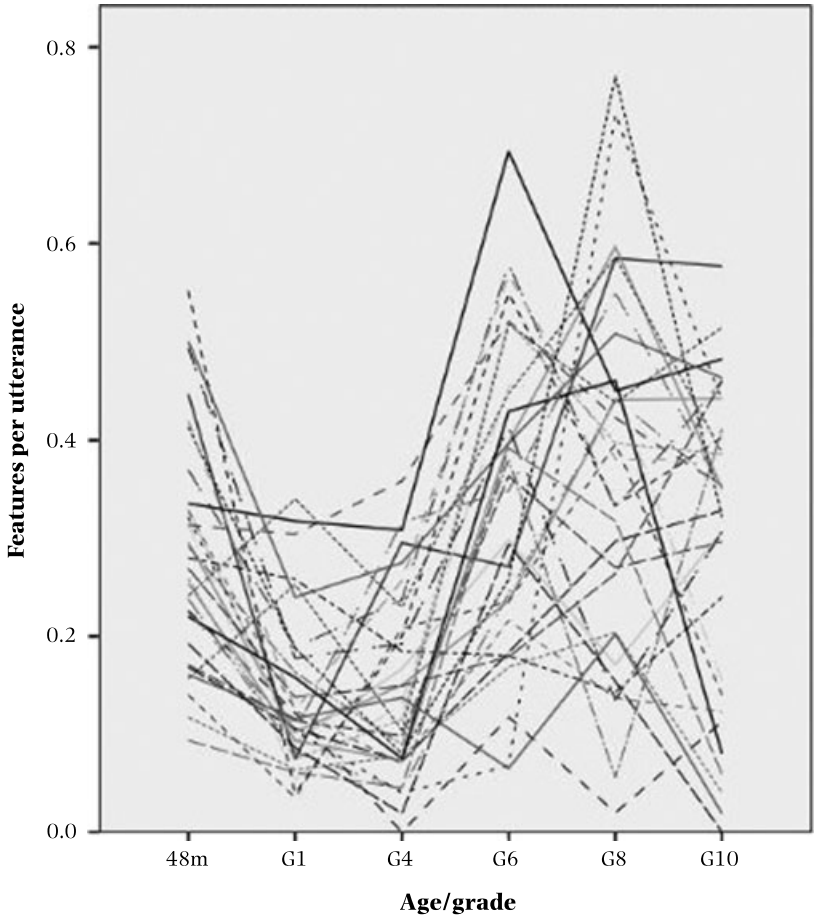


Figure 1: Features per utterance across the lifespan by speaker

We also see several different trajectories of change in AAE use over the six temporal points. Figure 4 shows the two primary trajectories:

1. the 'roller coaster' trajectory, in which there is a higher level of AAE use at 48 months, a dip during Grade 1 and 4, a rise in AAE use in Grade 6 and 8, and then a recession in Grade 10; and
2. a curvilinear trajectory, in which early AAE use at 48 months recedes in Grade 1 and 4, then accelerates through Grade 6, 8, and 10.

The number of speakers who fit into each group is given for each of the trajectories. These two primary trajectories account for 26 of the 32 speakers; the other three trajectories show either:

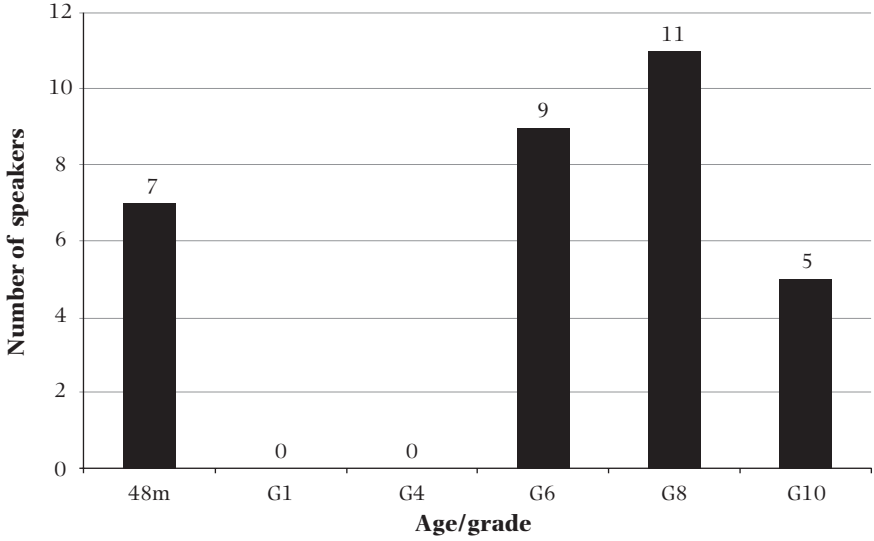


Figure 2: Peak vernacular temporal period. (Total N = 32 speakers)

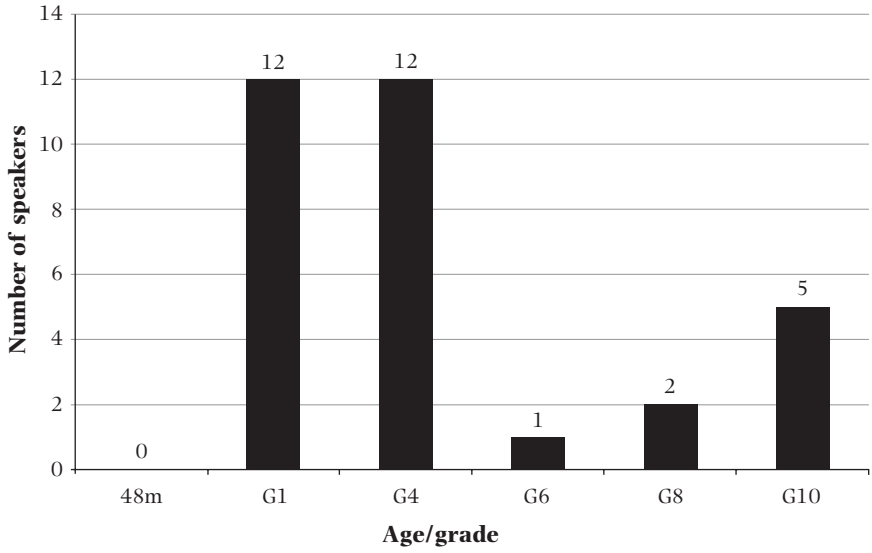
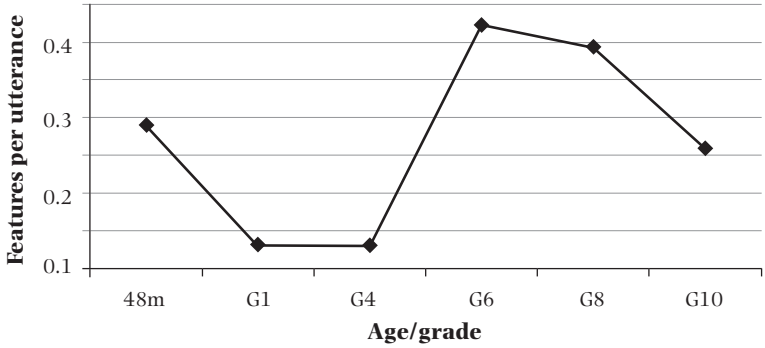
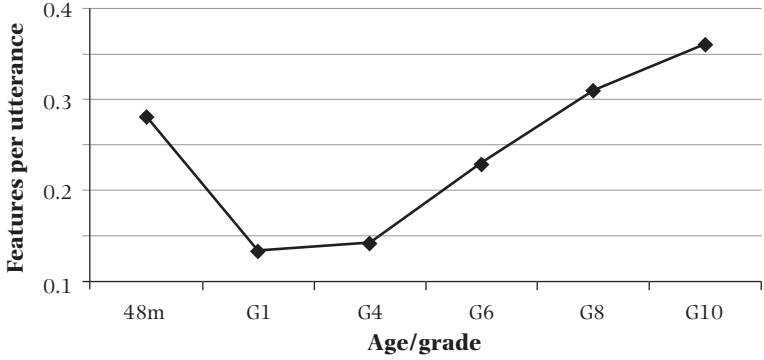


Figure 3: Minimal vernacular temporal period. (Total N = 32 speakers)



(a) 'Roller coaster' trajectory (conflated N = 22)



(b) Curvilinear trajectory (conflated N = 6)

Figure 4: Alternative trajectories of change over the early lifespan: (a) 'Roller coaster' trajectory; and (b) Curvilinear trajectory

1. a relatively level pattern of AAE use;
2. an incremental decline over the six temporal periods; or
3. a progressive increase in the use of AAE features over time.

In Table 1, we use paired-sample t-tests to compare each of the contiguous temporal data points with the others, first for the entire sample of 32 speakers and then for each of the two primary trajectories identified in Figure 4. The alternative trajectories in Figure 4 and the different optimal and minimal periods of AAE use indicate that there is no unilateral period for optimal AAE use. At the same time, there are a limited set of trajectories and important trends in peak and minimal AAE use. For example, Grade 1 and 4 clearly show a recession in overall AAE use while peak periods may occur at preschool or in middle school and secondary school. The group as a whole and the primary trajectory groups ('roller coaster' and curvilinear) show a significant downgrade from 48 months to Grade 1 and there is a significant increase in AAE use from Grade 6 to Grade

Table 1: Results of paired-sample t-tests comparing age/grade[a]

Speaker	48 m–Grade 1	Grades 1–4	Grades 4–6	Grades 6–8	Grades 8–10
All speakers (N = 32)	sig. down $p < 0.001$	no sig. $p = 0.550$	sig. up $p < 0.001$	no sig. $p = 0.858$	sig. down $p < 0.05$
'Roller coaster' (N = 20)	sig. down $p < 0.001$	no sig. $p = 0.960$	sig. up $p < 0.001$	no sig. $p = 0.675$	sig. down $p < 0.05$
Curvilinear (N = 6)[b]	sig. down $p < 0.05$	no sig. $p = 0.867$	sig. down $p < 0.05$	no sig. $p = 0.192$	no sig. $p = 0.248$

[a]Approximate ages: Grade 1 = six years; Grade 4 = nine years; Grade 6 = 11 years; Grade 8 = 13 years; Grade 10 = 15 years.
[b]Insufficient numbers, but trends can be noted.

Table 2: Most frequent vernacular variants by feature

Most frequent features	N	Percent of total AAE features
Nasal fronting	1665	31.7
Copula absence	837	16.0
Auxiliary absence	670	12.8
3rd person singular *-s* absence	351	6.7
Invariant *be*	164	3.1
Negative concord	152	2.9
Ain't for 'is not'	125	2.4
Total	3,964	74.3
Total AAE features in sample	5,249	100.0

8 for the entire group, followed by a significant downturn again in AAE use from Grade 8 to Grade 10, in effect, verifying the 'roller coaster' trajectory as the dominant trajectory.

In Table 2, a list of the most frequently occurring features of the DDM is given in descending order of frequency, along with the percentages of the features in terms of the overall number of features.

The most frequently occurring feature, nasal fronting, is not a trait distinctive to AAE at all; it is simply one of the shared traits of most vernacular varieties of English. At the same time, other features in this list – such as copula absence, 3rd person singular *-s* absence, and invariant *be* – are generally considered to be associated primarily with AAE in terms of vernacular varieties of English in the U.S.

As noted earlier in our discussion, DDMs are token-based measures; it is important to complement this analytical approach with type-based and variation-based approaches to AAE. To examine the data in terms of type-based

measures we provide first a profile of four different speakers, two considered to be high-vernacular AAE users and two considered to be low-vernacular users. Table 3 presents the range of vernacular features used by these four representatives. Despite their differences, these individuals demonstrate that children on both ends of the vernacular continuum use many of the same core AAE features (e.g. nasal fronting, 3rd person singular *-s* absence, modal/auxiliary absence, etc.) while more obscure AAE features (e.g. past tense for participles, remote past *been*) are more likely to be used by only high-vernacular speakers.

In Figure 5, we examine the relationship between the token-based frequency analysis and the type-based representation in terms of the different structural AAE features that are included in our analysis. The results of the linear regression analysis ($r^2 = .467$, $p < .001$) indicate that token-based and type-based analyses of AAE are mutually supportive in terms of indexing AAE speakers. Thus, the most vernacular children will also use the most varied AAE feature types and vice versa. It is also important to determine if children are consistent in utilizing the same structures. For example, the high-vernacular children from Table 3, Keisha and Darius (pseudonyms), who scored quite high on the general DDM measure, used 21 and 19 different features each, respectively. At the same time, they shared 15 of those features. Similarly, the low-vernacular children, Maressa and Danielle (10 and nine different features each, respectively), shared five of the same features. Furthermore, regardless of the level of vernacularity, the children all tended to use the same features most frequently (i.e. nasal fronting, copula absence, modal/auxiliary absence, 3rd person singular *-s* absence, and invariant *be*). The type-based tabulation expands on the DDM and addresses one of its potential skewing limitations. The analysis shows further that there is a shared, preferred set of structures regardless of vernacular status.

We now consider the third dimension of analysis, patterns of relative frequency in terms of actual in relation to potential occurrence, the hallmark of variation analysis for diagnostic linguistic variables. A frequency-based variation analysis, using a logistic regression tool, Goldvarb software (Sankoff, Tagliamonte and Smith 2005), was applied to determine what constraints seemed to be at play with the data. In this analysis, three potential social/speaker factors were considered:

- sex;
- age/grade level; and
- speaker.

Three linguistic features were selected on the basis of both their frequency of occurrence in the data and the ease with which potential versus actual cases could be tabulated:

- *-ing* fronting;
- copula absence; and
- 3rd person singular *-s* absence.

Table 3: Repertoire of AAE features used by two high-vernacular speakers (H1 and H2) and two low-vernacular speakers (L1 and L2). A check mark indicates a feature used by a speaker

Feature	H1	H2	L1	L2	Feature	H1	H2	L1	L2	Feature	H1	H2	L1	L2	Feature	H1	H2	L1	L2	Feature	H1	H2	L1	L2
Nasal fronting	✓	✓	✓	✓	*Ain't* for 'is not'	✓	✓	✓	-	Possessive *-s* absence	✓	-	-	-	Zero preposition	✓	✓	-	-	Zero infinitive *to*	✓	✓	-	✓
Copula absence	✓	✓	-	✓	*Is/was* leveling	✓	✓	✓	-	*Ain't* for 'do/have not'	✓	✓	-	-	Zero article	✓	✓	-	✓	Appositive pronoun	✓	✓	-	✓
Modal/aux. absence	✓	✓	✓	✓	Plural *-s* absence	✓	✓	-	✓	*Finta, poseta, bouta*	✓	-	-	-	Zero *-ing*	✓	✓	-	✓	Remote past *been*	-	✓	-	-
3rd pers. sing. *-s* absence	✓	✓	✓	✓	Object pronoun for demonstrative	✓	✓	-	-	Object pronoun for possessive	-	✓	-	-	Inflectional *-s* for non-3rd pers. sing. subject	✓	-	-	-	Uninverted direct question	✓	✓	-	✓
Invariant *Be*	✓	✓	-	-	Zero past tense	✓	✓	✓	-	Preterite *had*	✓	-	✓	-	Existential *it*	✓	-	-	-	Pre-vocalic CCR	-	✓	✓	-
-ed absence	✓	✓	-	-	Regularized do/have	✓	✓	-	-	Negative concord	✓	✓	✓	-	*a* article before vowel	✓	✓	✓	-	Zero relative pronoun	✓	✓	-	-
Regularized reflexive pronoun	✓	-	-	-	Labialization of inter-dent. fricatives	✓	✓	-	-	Personal/ benefactive dative construction	✓	-	-	-	Past form for participles	✓	-	-	-	Double-marked verbs	-	-	-	✓

H1 ('Keisha') 31 different features exhibited
Average: 10.6 different features per 100 utterances

H2 ('Darius') 26 different features exhibited
Average: 12.3 different features per 100 utterances

L1 ('Danielle') 10 different features exhibited
Average: 5.6 different features per 100 utterances

L2 ('Maressa') 11 different features exhibited
Average: 4.0 different features per 100 utterances

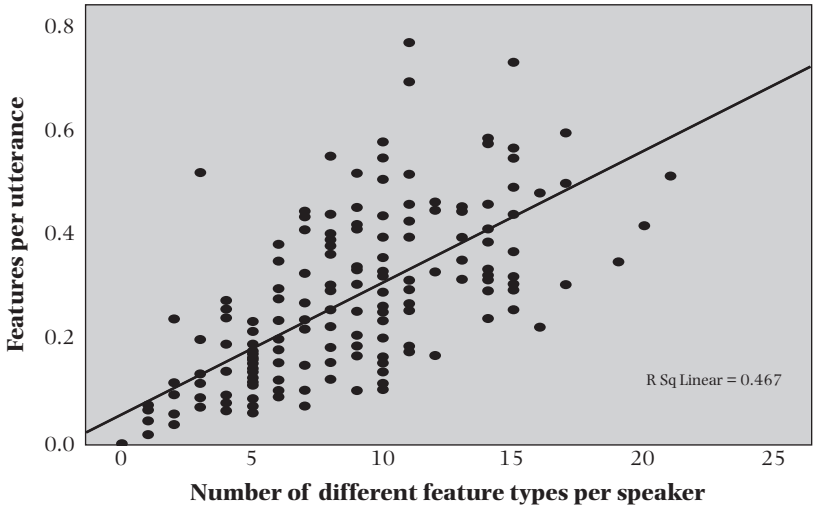


Figure 5: Linear regression of dialect features per utterance with different feature types

The first of these is a socially diagnostic variable of American English in general, whereas the latter two are unique to AAE in regional location of the speakers. Results for *-ing* fronting are given in Figure 6. Gender proved to be a non-significant factor for *-ing* fronting and the other variables examined here, while age/grade was significant. Individual speaker also emerged as a significant factor for this feature in the data set, with 16 speakers favoring this feature and 16 speakers disfavoring it (factor weight range: 0.078 – 0.913). The trajectory of *-ing* fronting indicated in the graphic display of the probability scores is noteworthy; it is favored significantly at 48 months, disfavored in Grade 1 and 4 (age about six – nine), then favored again at Grade 6 and 8 (age about 11 – 13), thus following a curvilinear trajectory.

Copula absence, shown in Figure 7, shows a similar kind of trajectory. It is favored (0.650) at 48 months, strongly disfavored in Grade 1 (0.376) and Grade 4 (0.232), then re-emerges progressively as a favoring effect in Grades 8 (0.527) and 10 (0.539). Again, individual speaker (N = 31) also emerged as a significant factor for this feature in the data set, with 17 speakers favoring this feature and 14 speakers disfavoring this feature (factor weight range: 0.057 – 0.743). As with the other variables, gender was not a significant factor.

The variationist analysis of 3rd person singular *-s* absence in Figure 8 shows a roller-coaster effect over time, with significant favoring at 48 months (0.650), the characteristic disfavoring effect of Grades 1 (0.263) and 4 (0.272), favoring at Grade 6 (0.601) and Grade 8 (0.568) and then a recession at Grade 10 (0.454).

Group	Factor wt.	App/total	Input & wt.
48m	0.617	0.88	0.90
Grade 1	0.314	0.67	0.72
Grade 4	0.278	0.64	0.68
Grade 6	0.551	0.83	0.87
Grade 8	0.573	0.83	0.88
Grade 10	0.481	0.82	0.84

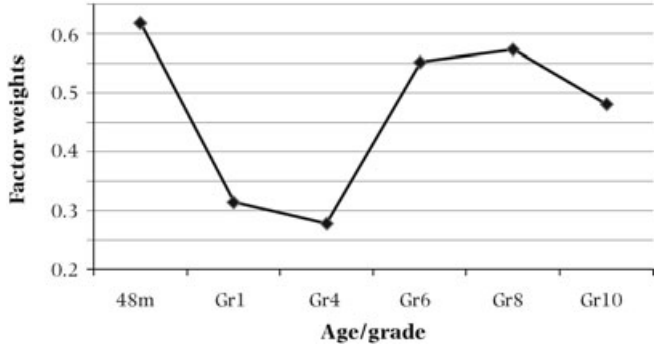


Figure 6: Variationist analysis – *-ing* fronting

Group	Factor wt.	App/total	Input & wt.
48m	0.650	0.40	0.37
Grade 1	0.365	0.17	0.16
Grade 4	0.232	0.10	0.09
Grade 6	0.471	0.23	0.22
Grade 8	0.527	0.28	0.27
Grade 10	0.539	0.30	0.27

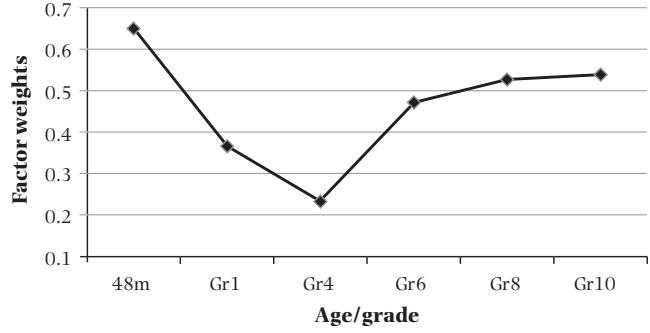


Figure 7: Variationist analysis – Copula absence

Group	Factor wt.	App/total	Input & wt.
48m	0.650	0.40	0.37
Grade 1	0.365	0.17	0.16
Grade 4	0.232	0.10	0.09
Grade 6	0.471	0.23	0.22
Grade 8	0.527	0.28	0.27
Grade 10	0.539	0.30	0.27

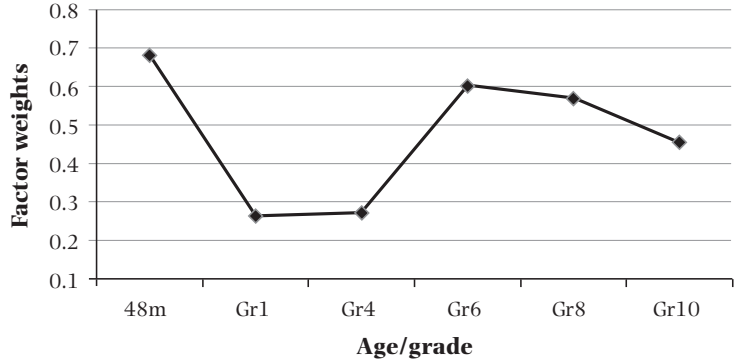


Figure 8: Variationist analysis – 3rd person singular *-s* absence

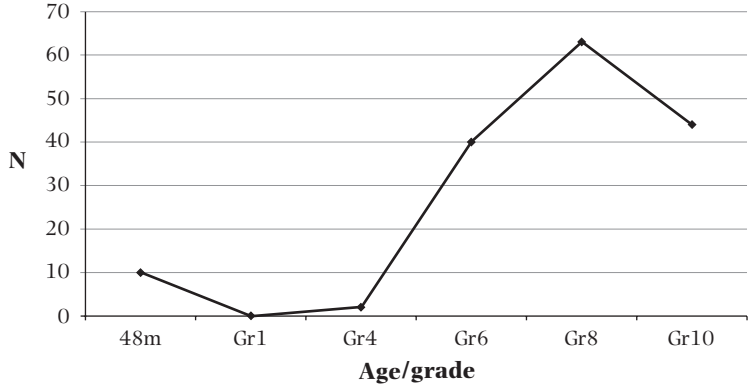


Figure 9: Relative use of invariant *be* over age/grade

Once again, we find individual speaker (N = 30) to be a significant factor, with 18 speakers favoring and 12 speakers disfavoring this feature (factor weight range: 0.063 – 0.944).

One final variable is considered here, the raw usage levels of invariant *be*. The occurrence of invariant *be* is given only in terms of actual Ns in Figure 9 because

of the difficulties in determining potential environments for the use of habitual *be*.[7] Though invariant *be* is only given in terms of raw usage levels, it parallels the minimization trend of the other features, with no children using the feature in Grades 1 and 4 at all. However, it is also infrequent at 48 months, unlike the other variables we have examined. Its use accelerates sharply in Grade 6 and Grade 8, then recedes slightly in Grade 10. As an aspectual marker that tends to be acquired in later child development, its trajectory of use reflects this phenomenon, suggesting that some AAE features need to be considered in terms of their interaction with language acquisition. While invariant *be* may reflect this interaction in terms of its later development, features such as copula absence and inflection *-s* may reflect an interaction with language development in a different direction. Copula absence and inflectional *-s* absence are characteristics of language development in English irrespective of dialect. Thus, their occurrence as part of a dialect may show an additive effect in which a dialect trait converges with a developmental structure to account for heightened occurrence among younger children, in particular, those at 48 months in our study.

The data suggest that a longitudinal approach using a dialect density measure can illustrate a child's level of vernacularity over time, a type-based analysis can shed light on which features are most likely to be selected and shared by speakers, and a frequency-based variation analysis can shed light on what factors, particularly age and inter-speaker variation, seem to resonate prominently in the use/non-use of particular features.

SOCIAL AND SOCIOPSYCHOLOGICAL FACTORS

Our analysis of the complete cohort of speakers will naturally consider a full range of social, psychological, and educational factors that might correlate with trends in early AAE use and the multiplex social, educational, and personal factors in the trajectory of vernacular use during childhood and adolescence. The comprehensive, longitudinal study has gathered systematic data on more than 120 demographic, social, psychological, and educational factors for analysis (Burchinal et al. 2006, 2008). In this initial stage of inquiry we consider only five factors representing demographic, social, and self-regard factors to provide an exploratory inquiry into the effect of external factors on AAE development. We consider:

- age/grade;
- gender;
- mother's education;
- score on an Afro-centrality index;
- number/quality of contacts with African Americans;
- number/quality of contacts with white friends; and
- the racial density of the school attended.

Table 4: Social factors and AAE use: A multi-level, mixed effects regression analysis, based on features per utterance

Factor	Coefficient	Std. Error	Z	P > |z|
Gender (F = 1; M = 2)	0.0539993	0.0388776	1.39	0.165
Age/grade (P = 1; M = 2; S = 3)	0.0886572	0.0224718	3.95	*0.000
Mother's education (years of formal education)	−0.0213139	0.0089227	−2.39	*0.017
Afro-centrality (continuous range 1–5)	−0.0009446	0.0272061	−0.03	0.972
African American social contacts (continuous range 1–5)	0.0106308	0.0340201	0.31	0.755
White social contacts (continuous range 1–5)	−0.0041059	0.0324305	−0.13	0.899
% African Americans in school	0.0011965	0.0008480	1.41	0.158
Constant	0.2385387	0.2079344	1.15	0.251

*Significant result.

A separate study (Renn and Terry 2009; Renn 2010) considers the role of stylistic shifting from a longitudinal perspective, showing the expansion of stylistic variation from Grade 2 through Grade 8. Most of the variables in our inquiry are self-explanatory but the racial centrality index is a recently developed self-regard measure developed by sociologists (Rowley et al. 2008) in which a subject responds on a Likert scale to questions such as 'I like my friends to be black,' 'I like to read books about black people,' and 'I feel close to other blacks,' in order to determine the subjects' self-acceptance of their status as African Americans. In Table 4, results for a multi-level, mixed-effects regression analysis are given, based on AAE features per utterance. The analysis indicates that only two of the factors are significant, grade/age ($p < .001$) and mother's education ($p < .05$). The mother's level of education may reflect the fact that there is a high correlation with the mother's score on the DDM at 48 months and Grade 1, which recedes in Grade 4 and then re-emerges in Grade 8 (Callahan and Morgan 2009). The analysis of demographic, social, and socio-psychological measures is still in its initial stage, but it offers an important perspective on the range of factors that needs to be considered in the longitudinal consideration of AAE.[8]

DISCUSSION

We now return to our original questions about the trajectory of change in vernacular AAE during childhood and adolescence. While the data analysis is not yet complete, it nonetheless provides an important perspective about possible trajectories of change in vernacular AAE over the early lifespan. At the same time, this inquiry offers a perspective on the utility of complementary methods of analysis used to capture these profiles of change.

DDM scores for each child at each age/grade show the variability of alternative peak periods for optimal vernacularity, including the 48-month period and periods during adolescence, namely Grade 6, Grade 8, or Grade 10. The variability in vernacular optimization suggests that there is no support for a unilateral position on optimal AAE use as set forth in our introduction. In fact, we documented at least two different patterns of vernacular optimization and change.

The analysis also underscores the validity of alternative trajectories of AAE use over time. Clearly, the 'roller coaster' and curvilinear trajectories must be considered authentic trajectories of change in AAE in early childhood and adolescence, along with stable and progressive or regressive trajectories.

One of the most consistent aspects of AAE trajectories is the minimization of AAE use, starting in Grade 1 and reaching its lowest point in Grade 4. Though vernacular optimization can vary greatly, none of the speakers shows vernacular optimization peaks at Grade 1 or Grade 4, supporting Craig and Washington's hypothesis (2006) about the decline of the vernacular during the early years of schooling. There may be a variety of factors that contributes to this early decline, but the corrective effect of early school socialization in Standard American English would appear to be a primary explanation. This interpretation is supported by the trajectory of the representative individual linguistic variables we examined. For example, a highly salient, generally stigmatized structure of American English such as *-ing* fronting is sharply reduced at this stage and there is limited used of the iconic AAE structure, invariant *be.*

At this time, we have only considered a small subset of social and socio-psychological variables that might correlate with AAE use, including gender, age/grade, racial density in the school, Afro-centrality, friendship-group ethnicity, and mother's education. Only age/grade and mother's education show statistical significance, but Renn (2010) in a related, more inclusive study of stylistic variation for the cohort of 67 speakers shows a significant effect for the Afro-centrality index, suggesting that our more comprehensive study may reveal significant external effects of AAE use.[9]

In our analysis, we applied token-based, type-based, and variationist-based tabulations to profile changes during the early lifespan. The token-based and type-based accounts also show a significant correlation (e.g. $r^2 = .467, p < .01$ for the number of different types of features and number of features per utterance), suggesting that either token-based or type-based indices might be used as a

valid measure for assessing vernacularity. It is also noteworthy that a core of vernacular features is consistently shared among the speakers. Thus, all 32 of the speakers show *-ing* fronting, 31 speakers show copula absence, 31 speakers show 3rd person singular *-s* absence, and 22 speakers had at least one case of habitual *be*. The recurrent core of features supports Renn's (2007) conclusion that a subset of the larger core of features may be used as a valid index of vernacularity. More importantly, it offers support for the core hypothesis on vernacular AAE – that there is a subset of features that is uniformly represented in this variety, at least in the regional context of the urban North Carolina piedmont region.

Some of the most noteworthy observations of this study come from the examination of individual variables. Different linguistic variables may show varied trajectories of change over the lifespan of speakers; some of these show similarities with the trajectories indicated by the dialect density measures, but not all. For example, *-ing* fronting shows its highest relative level of use at 48 months, followed by a sharp decline at Grade 1 and Grade 4, then a gradual progression in use through Grade 10. A similar curvilinear trajectory is indicated for copula absence, which shows its highest relative usage level at 48 months, a sharp decline at Grade 1 and Grade 4, then a rise and leveling in Grade 8 and 10. The fact that copula absence and *-ing* fronting show their highest level of relative use at 48 months may, at first glance, appear to support a version of the preschool optimization hypothesis. However, there is another possible explanation. Copula absence is a developmental feature of language acquisition that affects all children acquiring English (Becker 2002, 2005). At the same time, it is a feature of developing vernacular AAE that shifts in usage over the developmental years (Kovac 1980; Lucas and Borders 1994). Thus, the accelerated incidence of copula absence at 48 months for some of the speakers may be a function of convergence between a developmental structure and a dialect feature. A similar explanation might be offered for the optimized use of *-ing* fronting during the 48-month period when it is compared with the progressive temporal data points (Wolfram 1989). That is, the developmental acquisition of final unstressed velar nasal may converge with a model vernacular that commonly uses *-ing* fronting. Wolfram (1974) shows that acquisition of English as second language along with a target vernacular dialect characterized by variable prevocalic consonant-cluster reduction may, in fact, lead to a level of relative use that exceeds the target dialect.

The convergence explanation for intensified use *vis-à-vis* a generalized version of the early optimization hypothesis is supported indirectly by the observation that other AAE structures do not follow this longitudinal trajectory, namely invariant *be*. The distinctive denotation of habitual *be* as a grammaticalized aspectual marker is apparently acquired in later childhood and maintained during adolescence if a speaker becomes a primary vernacular user. Thus, specific linguistic variables might be optimized during early childhood, for reasons that might have to do with the convergence of developmental and dialect traits,

while others clearly follow a trajectory of use that appears to support the peer-adolescent hypothesis.

Given the restriction of creole-like traits, such as undifferentiated pronouns, to the early childhood time period where they might be attributable to development, it is difficult to find confirmation for the childhood basilectal hypothesis as postulated by Stewart (1965, 1968) and Dillard (1972). One would expect that other vernacular features would show optimization during this early childhood period along with these creole-like traits, but this is clearly not the case apart from the features that converge with development. Accordingly, we cautiously hypothesize that only the core features of vernacular AAE that are optimized in early childhood are those that converge with developmental traits.

CONCLUSION

Although there are questions yet to be answered based on a more comprehensive examination of our full sample of cohorts and the investigation of additional linguistic variables and social factors related to the family, peer, and educational backgrounds of speakers, it is clear that the path of vernacular AAE use in childhood and adolescence cannot be reduced to a unilateral trajectory. We have identified several authentic trajectory patterns of use based on our sample of 32 speakers. Furthermore, we see that childhood and adolescent vernacular AAE development is sensitive to linguistic structure. Like overall trajectories, particular linguistic variables may show different patterns of development and use through childhood and adolescence. Again, the paths of development for particular linguistic structures cannot be reduced to a singular pattern. And individual structures do not match the overall trajectories indicated in dialect density measures isomorphically.

Our investigation underscores the utility of complementary methods of analysis, since the token-based, type-based, and variation-based analyses provide insight into the different dimensions of vernacular development and change through childhood and adolescence. None of the methods may be sufficient in itself, but together they help provide perspective on the overall development and the development of particular structures in vernacular AAE. After almost a half-century of inquiry into vernacular AAE, we are finally in a position to address empirically some of the earliest hypotheses about its change and variation during childhood and adolescence.

NOTES

1. Support for this research was provided by NSF Grant No. BCS-0843865 and BCS-0544744, as well as a series of grants to collect the data over the past 17 years, including Maternal and Child Health Bureau Grants MCJ-370599, MCJ-379154, MCJ-370649, R40 MC 00343, and R40MC05488-01, U.S. Department of Health

and Human Services. Our indebtedness to the research team for the collection of these data over this extended duration is beyond expression, particularly to Joanne Roberts and Susan Zeisel, who directed the project. A special tribute is due to Susan Zeisel, who was responsible for maintaining regular contact with families, for arranging schedules for interviews, and for fostering the positive social relations that are a requisite for this exceptional rate of continuation in this study. Thanks also to the team of interviewers and data collectors over the years, as well as our current colleagues: Jenn Renn, J. Michael Terry, Sandra Jackson, and Jenille Adams. We dedicate this study to the memory of Dr. Joanne Roberts, the original Principal Investigator of this research effort who was suddenly and tragically taken from us in 2008.

2. One of the recorded sources of data available for Stewart and Dillard's observation was the so-called 'Yellow House,' a small, one-family house in a low-income area of Washington D.C. rented by the Center for Applied Linguistics in the mid-1960s. The house, open to neighborhood children for leisure time activities, was equipped with inconspicuous, strategically located microphones in the couch and ceiling of the living room. For information about the recording situation in the Yellow House, see Loman (1967), which includes phonetic transcriptions of conversations from this residency.
3. Although the issue of vernacular dialect variation during childhood and adolescence is obviously related to the issue of learning a second dialect (e.g. Chambers 1992; Roberts 2002), for the sake of this discussion we restrict our focus to trajectories of vernacular AAE use without confronting this essential issue.
4. Though morphosyntactic features are considered to be stronger markers of vernacular dialect use than phonological ones, this does not necessarily mean that they have a stronger role in the perceptual identification of speakers as AAE speakers. In fact, Thomas (2007) suggests that phonetic cues may be stronger than grammatical features in the perceptual identification of AAE speakers.
5. It should be acknowledged that a potential reliability/validity threat to this study may have been introduced in the use of different interactive contexts at different age levels. However, a developmental/sociological argument can be made for using mother-child interactions at Grades 1 and 4 and peer-peer interactions for Grades 6, 8, and 10 in order to elicit the most informal, natural speech. While the 48-month interaction with an examiner has the potential to be the most unnatural, it is noteworthy that 48 months emerged as one of the most vernacular periods in the life span.
6. Some researchers have used the number of words instead of utterances as the basis for calculating the density of dialect features but the correlation between the units of measurement is quite high (Renn 2007). In this study, the correlation of features per utterance and features per word was conducted for a subsample of eight speakers, showing a high correlation coefficient ($r = .879$, $p < .001$). We thus conclude that the structural unit used as the basis for calculating the child's overall vernacularity index does not appear to be a major consideration in calculating a dialect density score.
7. As noted in various descriptive accounts (Labov et al. 1968; Fasold 1972; Rickford 1999), calculating the incidence of invariant *be* usage in terms of potential occurrences is problematic in variation analysis. Accordingly, we have just used the raw overall occurrence of this feature rather than actual cases in relation to potential occurrences, following the tradition of the studies cited above.

8. Renn's (2010) analysis shows the significance of some of these social factors on AAE style shifting over time based on the full database of subjects. For example, she shows that females show more style shifting over time than males, and that African American students with higher percentages of European Americans in their schools show a greater degree of shifting than those with lesser percentages (Renn 2010). Our exploratory description here is intended primarily to demonstrate that it is essential to consider the intersection of other social and demographic variables with grade/age in accounting for AAE development over time.
9. The extensive, longitudinal data available on family, peer, and school environment collected over the course of the study (Roberts et al. 1995; Burchinal, Roberts, Hooper and Zeisel 2000; Burchinal et al. 2000; Roberts, Burchinal and Zeisel 2002; Burchinal et al. 2006; Burchinal et al. 2008) will allow us to examine some of these factors in detail as we expand the basis of the study.

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