
The Complex Syntax Skills of Poor, Urban, African-American Preschoolers at School Entry

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The present study examines complex syntax production by a sample of 45 preschool-age African-American boys and girls (chronological age [CA] 4:0 to 5:6, years:months) from urban, low-income homes. The results provide quantitative descriptions of amounts of complex syntax and suggest a potential positive relationship between amounts of complex syntax and amounts of nonstandard English form usage in the children's connected speech. Clinical applications are discussed.

KEY WORDS: African-American English, complex syntax, dialect

Good communication skills are fundamental to a child's ability to learn. Teacher-child interaction is primarily in the form of speaking or listening to someone else speak, and lesson materials usually take the form of written language. African-American children who use nonstandard forms of English are often disadvantaged in classrooms because their communication skills are different from those used in most learning contexts (Baratz, 1969; Heath, 1986). For the purposes of the present discussion, the term African-American English (AAE) will be used to reference the linguistic system used by African-Americans, in keeping with the observations of Terrell and Terrell (1993) that these identifiers shift with society's shifts in racial name identification. Whereas the language of instruction in schools is overwhelmingly standard English (SE), the potential status of these children as speakers of a different linguistic system places them immediately at-risk upon enrollment in formal education (Saville-Troike, 1986; Taylor & Payne, 1983; Vaughn-Cooke, 1986). Ratusnik and Koenigsnecht (1976) observed that the use of AAE is even greater by African-American children from lower-class homes than by those from middle-class homes. This creates a pressing problem for the nation's big city schools because the number of African-American children living in poverty in America's large cities is increasing (Cole, 1980; Statistical Abstract of the United States, 1990; University of Michigan, Detroit Area Study, 1989).

Some African-American children who use AAE also present significant communication disorders. Unfortunately, because

few assessment instruments are available to distinguish disorders from dialectal variations, this subgroup of African-American children is high risk for academic failure. Appropriate academic placements and specific interventions to address their speech and language disorders may be precluded.

Despite the increasing incidence of African-American children living in poverty, little is known about the communication characteristics of this population, and few assessment instruments are available to guide academic and clinical decision-making. In the absence of reference profiles of key communication skills and the fundamental need to determine strengths and weaknesses of young children as they enter formal education, some scholars have advocated the modification of existing standardized instruments into test versions that are more culturally-fair (Stockman, 1986; Terrell & Terrell, 1993; Vaughn-Cooke, 1986). One recommendation has been to re-standardize current tests, applying locally-generated norms (Evard & Sabers, 1979). Noteworthy investigations of this type are the research reports of Seymour and Seymour (1981) and Haynes and Moran (1989) for articulation. A second recommendation has been to develop scoring adjustments that credit a child's performance for items on a test that might otherwise be penalized by the use of AAE. The research report of Cole and Taylor (1990) is a notable example of this approach, again applied to well-known articulation tests.

Although the feasibility of these approaches to modification has been demonstrated for articulation tests, their application does not seem appropriate for many language instruments. Despite the application of generous crediting systems, the performances of African-American children cluster disproportionately below the mean on major language tests (Arnold & Reed, 1976; Washington & Craig, 1992b; Wiener, Lewnau, & Erway, 1983). In addition to modifying responses to structured elicitations from formal tests, Nelson and Hyter (1990) and Nelson (1993) have developed a scoring adjustment for spontaneous language samples analyzed with Developmental Sentence Scoring (Lee, 1974). Like other scoring adjustments, the *Black English Scoring System* (BESS) provides credit for any SE usage targeted with the procedure, as well as any

usage that appears consistent with AAE. Outcome data are not yet available for this scoring adjustment as Nelson's (1993) report has not discriminated outcomes locally for the six geographic areas represented by her 64 subjects.

A number of serious concerns about modifying language instruments for use with young African-American children are suggested by these language reports. First, Washington and Craig (1992b) observed that the preponderance of African-American subjects scoring at the low end of the performance curve on a test is informative only in that it reveals a difference from other members of the standardization sample. It fails to be informative diagnostically when the child's own population is the desired standard of reference, and therefore offers little useful clinical information. Second, as Evard and Sabers (1979) caution, simply renorming a test does not ensure that the test is valid for that group. As descriptive systems, therefore, these adjusted test performance profiles are simply quantitative and are best considered uninformative for any other descriptive or qualitative purpose. Third, crediting processes seem susceptible to the overinterpretation of performances, and this is as potentially problematic to the child with a disorder as underestimation is to the child who is functioning within normal limits. Both errors should be avoided. Current procedures help guard against the second type of error but not the first; therefore, African-American children with communication problems may go undetected using these instruments.

There seems to be no substitute for establishing norm-referenced descriptions of the language of young African-American children. The present study was designed, therefore, to begin this process. Language was sampled during connected speech so that the outcomes would be child-centered, focusing on the behaviors the child is using, not simply on which SE behaviors the child is not using. The subjects were poor, residing in one community. They were in their first year of exposure to formal education—a time when they remain relatively free of systematic exposure to SE.

As a starting point for study of the language of African-American youngsters, complex syntax has been selected for examination. Whereas much of AAE is morphosyntactic in nature, the clause-level unit of analysis involved in a scoring of complex syntax renders it relatively unaffected by AAE. In addition, it is a major aspect of linguistics and of grammatical acquisition, and hence has potential diagnostic significance for children with language disorders (Aram & Nation, 1975; Leonard, 1972; Menyuk, 1964; Miller, 1991; Stark & Tallal, 1981; Wolfus, Moscovitch, & Kinsbourne, 1980). Further, complex syntax is of practical importance for both understanding directions and responding—important parts of classroom experiences (Loban, 1976).

In order to begin to address these issues, the following questions were posed:

1. What are the percentage frequencies of occurrence of utterances containing complex syntax in the oral productions of African-American preschoolers?
2. What are the percentage frequency distributions of specific types of complex syntax?

3. Are there systematic influences on the amounts of complex syntax observed?

METHOD

Subjects

The subjects were 45 African-American preschool children (21 boys and 24 girls) from urban, low-income homes in Metropolitan Detroit. They ranged in age from approximately 4:0 to 5:6 years:months and most used African-American English (AAE). Nonstandard syntactic and morphological features of their language have been described elsewhere (Washington & Craig, in press).

All of the children were from homes with annual incomes of \$10,000 or less. Family income was verified by the school personnel using documents from the Michigan State Department of Social Services. None of the subjects were receiving special education services, and all were judged by their teachers to be functioning normally in the classroom. In addition, each subject passed a bilateral hearing screening at 25dB for 500, 1,000, and 4,000Hz (ANSI, 1969) prior to data collection.

The subjects were a subsample of a larger project, and the subject selection procedures have been described elsewhere as well (Washington & Craig, in press). The children were recruited from an "at risk" preschool program and met the school system criteria for this placement based on their low family incomes. None of the subjects were medically at-risk, although this criterion applied to other children in their preschool classrooms. In brief, the preschool program in which the subjects were enrolled consisted of 396 children, 250 of whom were African-American. Of the latter, 28 were characterized by their teachers as "poor communicators" in the classroom (see Washington & Craig, 1992a for additional information about this subsample). All other African-American children attending the preschool were stratified by gender and then randomly selected on a continuous basis until a sample of 62 children whose "at-risk" factors included only low income were identified. After data collection, the status of one subject, a male, became ambiguous because a teacher reported that undocumented fetal alcohol syndrome was suspected. The data for this child were not pursued further and he was eliminated from the current data set, resulting in a sample of 61 preschoolers. Of the 61 potential preschoolers identified in this manner, three of the potential subjects were unresponsive, so the sample collection was abandoned. Samples were unavailable for the remainder due to subject attrition or a noisy recording environment on one day of data collections. Freeplay language samples were available for analysis from 45 subjects.

Data Collection

The data collection protocol involved three components: (a) administration of the *Peabody Picture Vocabulary Test-*

Revised (Dunn & Dunn, 1981), (b) collection of a 20-minute sample of each child engaged in freeplay, and (c) collection of a 10-minute sample of each child describing a set of 10 action pictures. The order of administration of these was randomly determined separately for each subject. In order to minimize the potential effects of fatigue during the data collection procedure, the three components of the protocol were administered during two separate appointments. The data from the vocabulary test administration have been reported elsewhere (Washington & Craig, 1992b). The more structured picture description context was not part of this analysis.

The toys were organized to form three different action play sets of potential interest to children of these ages, and included Barbie and Ken dolls with a Burger King play set; Ghostbuster figures, cars, and props; and the Fisher-Price school. The children were allowed to pick one set for use during freeplay, and their choices were successful in securing the interest of each subject for the duration of the taping.

The language samples were collected during adult-child discourse and involved three examiners who were African-American females. The examiners were experienced researchers, with special expertise in testing children. They were instructed to use African-American English with the children. They used AAE themselves as well as SE, and were observed to code-switch to AAE in conversations involving only African-Americans. The subjects wore a lapel microphone and the samples were audiorecorded.

Scoring

A transcript was prepared for each child and checked for accuracy by one of the experimenters who was African-American and familiar with AAE. Discourse was segmented into utterances defined as one or more words that could include brief stereotypic acknowledgments such as "mhm." Terminal intonation contours and pause durations were considered in making judgments between consecutive child utterances (Miller, 1981). In addition to the pause and intonation criteria, when two successive utterances occurred and the second included a clause-initial conjunction, it was considered a separate utterance if the content words in the two utterances involved different referents. In the following sample segment, none of these utterances were scored as complex syntax. They were judged to be consecutive separate utterances based on the child's pauses and intonation contours, and their discontinuity of reference for the specific nouns and verbs.

<i>Adult</i>	<i>Child</i>
	"this is a big cup/"
	"and this a boy for the dog/"
"mhm"	
	"and a boy drinkin/"

Utterances were examined for the presence of complex syntax, defined as any of the forms listed in Table 1. These types of complex syntax were identified from a number of sources including Bloom and Lahey (1978), Brown (1973),

Miller (1981), Fletcher and Garman (1988), and Owens (1988). These did not include phrases that were embedded, for example: "she *with the lunch box* she ate all her food;" but instead had to express more than one verb (after Lund & Duchan, 1988). More than one type of complex syntax was possible in a single utterance so co-occurrences of the above forms were noted as well. For example, one child described his favorite game by saying: "you get the mouses *and* you put it *where the trap fitna go down*." This utterance was scored for conjoining with *and*, as well as for a noninfinitive *wh*-clause.

Reliability

Approximately 10% of the utterances for each subject in this project were retranscribed by an independent observer, a certified speech-language pathologist. The targeted utterances were identified by numbering all child utterances in the transcript, randomly selecting one utterance as a starting point, and then identifying the number of subsequent utterances required to achieve the 10% level. A point-to-point comparison for morphemes was high (87%). This was calculated by dividing the number of agreements by the number of agreements plus disagreements. Agreement for utterance segmentation was also high (95%).

Eight of the transcripts were also selected randomly and another independent observer, a certified speech-language pathologist, rescored them using the complex syntax taxonomy. Point-to-point comparisons, calculated as described above, resulted in a 97% agreement for utterances containing complex syntax, and an 86% agreement for the complex syntax subtypes.

RESULTS

Approximately 4,000 utterances were scored using these procedures. Another approximately 7% of the total utterances collected were partially unintelligible, or considered ambiguous for scoring purposes, and were removed from the data set.

Overall, the 45 children varied considerably in the extent to which they used complex syntax during these oral production tasks. The percentage of utterances containing one or more of the complex sentence types ranged from 0 to 25%, with a mean of 8.2 and a standard deviation of 5.4. Figure 1 shows the number of subjects in the sample producing utterances containing complex syntax at the 0 to 25% frequency of occurrence levels, displayed in 2% increments. Three modes are apparent, suggestive of heterogeneous subgroups within the sample as a whole.

The amount of complex syntax across the subject sample correlated significantly with the number of different types of complex syntax that the children were using. A Pearson Product Moment Correlation revealed a high positive relationship ($r = .83, p < .01$) between the arcsine transformed percentage frequencies of occurrence of utterances containing complex syntax and the number of different types of

TABLE 1. Scoring definitions and examples for each type of complex syntax.

Definition	Examples
<p>Simple infinitive with same subject</p> <p>Utterances containing verb infinitives in which the subject is the same for both the main verb and the infinitive. Those involving early catenatives were not included, for example: <i>gotta, gonna, wanna, hafta, sposta</i>, and <i>fitna</i>, for example: "me and her <i>fitna</i> leave this on".</p>	<p>"he don't need to stand up"</p> <p>"they was tryin' to get in"</p>
<p>Simple noninfinitive <i>wh</i>-clause</p> <p>The <i>wh</i>-clause is followed by a subject plus verb, rather than an infinitive.</p>	<p>"this where they live at"</p> <p>"I don't know what it called"</p>
<p>Noun phrase complement</p> <p>Utterances in which a full subject and predicate clause replaces the noun phrase, usually in the object position of the main clause. <i>That</i> may be included or excluded and the main verbs are usually transitive.</p>	<p>"I told you there's a Whopper"</p> <p>"I think this'll work"</p>
<p>Let(s)/Lemme and Infinitive</p> <p>Utterances in which let, let's, or lemme introduce the main clause.</p>	<p>"lemme do it"</p> <p>"lets share these"</p>
<p>Relative clause</p> <p>Utterances in which a noun or pronoun in the main clause is modified by another clause. These did not include phrase modifications, for example: "the boy <i>in the swimming pool</i> is standing up."</p>	<p>"that's the noise that I like"</p> <p>"where the ghost you gotta put in?"</p>
<p>Infinitive with a different subject</p> <p>Utterances containing verb infinitives in which the subject of the infinitive is different from the subject of the verb in the main clause.</p>	<p>"the bus driver told the kids to stop"</p> <p>"why you don't want nobody to put it too close to your mouth?"</p>
<p>Unmarked infinitive</p> <p>Utterances containing infinitive verbs with the <i>to</i> omitted in which the main verb lexically was <i>let, help, make, or watch</i>. Deletions of <i>to</i> judged to be optional omissions and one of the AAE forms were not scored as unmarked infinitives, for example: "he goin' shoppin' (<i>to</i>) buy some cameras." Instead, these were scored for the clause structure that would have been assigned if the <i>to</i> had been said.</p>	<p>"I help (to) braid it sometimes"</p> <p>"are you gonna let her (to) wear these?"</p>
<p><i>Wh</i>-infinitive clause</p> <p>Two clauses linked by a <i>wh</i>-pronoun such as <i>what, when, where, or how</i>, in which an infinitive verb follows the <i>wh</i>-form</p>	<p>"she know how to do a flip"</p>
<p>Gerunds and Participles</p> <p>Utterances containing nouns formed from verbs + <i>ing</i>, or adjectives formed from verbs and ending in <i>ed, t, en</i> etc., respectively.</p>	<p>"they saw splashing"</p> <p>"it get rainy"</p>
<p>Tag questions</p> <p>Clauses added to the end of the main clause that are all positive or that contrast positive and negative relationships between clauses. These do not include single word tags, such as <i>okay</i> or <i>please</i>.</p>	<p>"these the french fries, ain't it?"</p> <p>"she got new clothes, don't she?"</p>
<p>Clauses joined by conjunctions</p> <p>The combining of clauses using the listed coordinate and subordinate conjunctions to link co-referential nouns in subject or object sentence roles. These did not include phrase or word coordinations, for example: "it's dogs, cat, <i>and</i> another dog" or "me <i>and</i> my Granny do;" nor pragmatic connectives serving as a form to link two turns and appearing in a sentence initial position, for example: "Yeah <i>but</i> don't stick me" in response to an adult question. They did include any clauses with an appropriate subject deletion in one clause when the subject was the same in both clauses, for example: "They sit down <i>and</i> watch people "</p>	<p>and: "this one happy and that one happy"</p> <p>but: "I like Michael Jordan but he ain't playin' on the team no more."</p> <p>so: "that go right there so it can shoot him"</p> <p>if: "nothing can stop me if I got this"</p> <p>because: "it ain't gonna come out because it's stuck"</p> <p>since: "I'll open the stuff for them since they don't know how to do it"</p> <p>before: "put him in there before he comes back out"</p> <p>when: "when you done with this you get to play with this one?"</p> <p>until: "I didn't know it until my brother said it"</p> <p>while: "they could be here while we's fixin' it, can't they?"</p> <p>like: "act like we already cook ours"</p>

TABLE 1 (CONT.). Scoring definitions and examples for each type of complex syntax.

Definition	Examples
<p>Incompletes^a Attempts at any of the above forms that included omission of clause coordinating conjunctions when ellipsis was not appropriate, or other major sentence elements necessary to determining the type of complex syntax.</p>	<p>"sometimes she cook I eat all my food" "there is a girl said you want some"</p>

Note: In the examples, unmarked or absent forms are enclosed in parentheses and target forms are indicated in bold type. ^aOmissions were not scored as Incompletes if they reflected an AAE form, or the missing constituent was obvious from the discourse or play contexts. For example: "think they is hot" was scored not as an Incomplete but as a Noun phrase complement because the complex syntax was obvious regardless of the noun or pronoun subject gloss.

complete forms used by the children throughout their samples. In other words, a child who produced higher levels of complex syntax also evidenced a larger repertoire of subtypes; the child did not simply use the same subtype over and over again.

Table 2 presents each subtype and the percentage of the total sample of 45 subjects who used each at least once in their samples. In Table 2, the complete forms are listed in the order of those most frequently occurring across subjects to those least frequently occurring. As this table shows, approximately two-thirds of the subjects used the *infinitive with same subject*, and over half used *noninfinitive wh-clauses* and the conjunction *and* as a clausal connective. In contrast, only one subject (2% of the sample) used the temporal conjunctions *since*, only one used *before*, only one used *until*, and only one used *like*. In addition, 20% of the children made attempts at complex syntax that omitted a critical constituent and, therefore, were scored as *incompletes*.

The variability across subjects seemed unrelated to a number of other factors. These included opportunities, as utterances were the base for all calculations and the amount of complex syntax was calculated for each subject as a percentage frequency of occurrence relative to each child's production of utterances. Chronological ages also appeared unrelated to the variability in amounts of complex syntax occurring in the language samples. A Pearson Product Moment correlation of arcsine transformed percentage frequencies of occurrence of utterances containing complex syntax and of ages in months failed to achieve statistical significance ($r = .13, p > .05$) This is not surprising as the chronological ages

within the subject sample were not widely dispersed (Range = 44 to 65 months). In addition, no statistically significant differences were observed in the amounts of complex syntax using arcsine transformed percentage frequencies relative to gender [$t(43) = .99, p > .05$]

The variability did seem related to the amounts of AAE form use in the children's utterances. In other work, Washington and Craig (in press) found three distinct subgroupings within these samples based on the amounts of AAE forms in the children's utterances, performed with exploratory multivariate hierarchical cluster analyses with complete linkage (Johnson, 1967) using the distance-based "nearest neighbor" criterion (Woods, Fletcher, & Hughes, 1986). The scoring system used by Washington and Craig (in press) to score AAE forms is presented in Appendix A. Table 3 reports means and standard deviations of AAE form use for each subgroup identified by them in that work. Not surprisingly, these were

TABLE 2. Percentaget of subjects (n = 45) producing each type of complex syntax.

Types	% of subjects
Complete forms	93
Infinitive-same subject	64
Noninfinitive <i>wh</i> -clause	58
and	53
Noun phrase complement	44
Let(s)/Lemme	36
Relative clause	31
Infinitive-different subject	29
Unmarked infinitive	27
if	27
<i>Wh</i> -infinitive clause	22
because	20
Gerunds and participles	18
but	18
when	13
so	9
Tag questions	7
while	7
since	2
before	2
until	2
like	2
Incomplete forms	20

FIGURE 1. Numbers of subjects at each percentage frequency level of complex syntax.

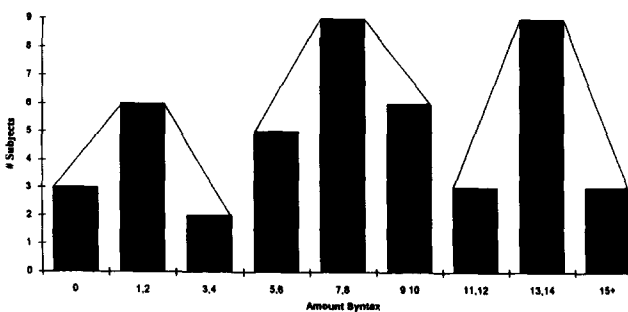


TABLE 3. Means (M) and standard deviations (SD) of the percentage frequencies of utterances containing AAE forms and complex syntax.

AAE-user group	High n = 12	Moderate n = 19	Low n = 14
AAE forms			
M%	27.9 ^a	17.2 ^a	7.5 ^a
SD	4.3	2.2	4.1
Complex Syntax			
M%	11.8 ^b	7.5	6.1 ^b
SD	6.4	4.4	4.2

^asignificantly different ($p < .01$)

^bsignificantly different ($p < .05$).

significantly different using a follow-up univariate ANOVA [$F(42) = 55.9, p < .01$] as a check on the cluster procedure. Subsequent Tukey HSD posthoc analyses revealed that all subgroups differed significantly from each other ($p < .01$). See Washington and Craig (in press) for additional discussion of the characteristics of AAE used by the three subgroups.

The coincidence of the tri-modal shape to the frequency distribution and to the three groups discovered by Washington and Craig for AAE-use prompted probing of a potential relationship between the two. First, a Pearson Product Moment Correlation of arcsine transformed percentages revealed a moderate, positive relationship ($r = .44, p < .01$) between the percentage frequencies of utterances containing complex syntax and AAE forms. Second, a univariate ANOVA of arcsine transformed percentage frequencies of utterances containing complex syntax revealed statistically significant differences among these subgroups as well [$F(2, 42) = 3.74, p < .05$]. Subsequent Tukey HSD posthoc comparisons indicated that the percentage frequencies of occurrence of complex syntax produced by the Low AAE-User group was significantly less than ($p < .05$) that of the High AAE-User group. Other between-group differences were not significant ($p > .05$). Table 3 displays these results. Overall, these findings indicate that children whose utterances coded the lowest amounts of complex syntax were also likely to produce low levels of African-American English forms.

DISCUSSION

The major goal of this investigation was to begin to characterize the use of complex syntax by a representative sample of poor, urban, African-American children at their time of school entry. In quantitative terms, the mean percentage frequencies of occurrence of utterances containing one or more instances of complex syntax was 8.2, with a standard deviation of 5.4.

The amounts of complex syntax varied across subjects, from 0 to 25%. A number of variables did not account for these individual differences because they were controlled in the research design of the study. These included: (a) socioeconomic status—all subjects lived in the same poor community

and their annual family incomes were less than \$10,000, (b) prior school experience—all subjects were in their first year of school and enrolled in the same preschool, and (c) prior formal experience with standard English—again, because the subjects were preschoolers in the same school. Further, all the children reportedly were developing normally and functioning appropriately in their classrooms. In addition to these research design controls, all occurrences of complex syntax were calculated relative to each child's own utterance production as a global check on varying opportunities. Further, chronological age and gender failed to achieve statistically significant relationships with the amounts of complex syntax used by the children.

Two variables, however, did appear related to individual variations. The number of different types of complex syntax correlated positively with the percentage frequencies of occurrence of utterances containing complex syntax. One might expect this relationship at the outset if all tokens were counted regardless of whether they represented only one or a number of different types. In the present study, however, amounts of complex syntax were scored by assigning each utterance a value of one if any complex syntax form was expressed regardless of whether the utterance contained one or more tokens, or one or more types of complex syntax. This reduced potential overlaps in the scorings and redundancy in the calculations, and allowed us to examine types as a separate variable. The findings indicate, therefore, that increased percentage frequencies of complex syntax were systematic, reflecting an increase in types.

It would be interesting to compare the current data to other developmental literature describing the acquisition of complex syntax. Unfortunately, information regarding the development of complex syntax by African-American children is lacking. Research with white children who are speakers of SE shows systematic increases in amounts of complex syntax with advancing chronological age in months during the early stages of language acquisition (Paul, 1981; Tyack & Gottsleben, 1974). In the present study, amounts of complex syntax ranged from 0 to 25% of utterances. No positive correlation was found, however, between the percentages of utterances using complex syntax and chronological age in months. A couple of explanations seem possible for the discrepancy in our findings and other developmental research. First, only one of our subjects was younger than 4 years of age (44 months), which approaches the upper limit of the chronological ages of the other studies. Perhaps beyond 4 years, the rate of increase in complex syntax slows so that chronological age is no longer a key dimension in understanding its occurrence. Second, 17 (38%) of our subjects produced utterances that used complex syntax at a level of 10% or more. Paul (1981) found that the oldest of her subjects, ranging from 43 to approximately 47 months, used complex syntax in 10 to 20% of their utterances as well. However, over half of our subjects failed to reach the 10% level. It is not possible to interpret the significance of this finding at this time because, unlike with other developmental research, we are unable to assure that all of our subjects were language-normal. Instruments for making these decisions with African-American children are unavailable, which was, in part, the motivation for this study. Given the high

levels of usage by approximately half of the subjects in this study, and expectations from other developmental research, the 3 subjects who failed to even attempt complex syntax usage (see Figure 1) are suspect for language disorder. Further, systematicity in other developmental literature relates to language stage, indexed by mean lengths of utterance (MLU), more clearly than chronological age (Paul, 1981; Tyack & Gottsleben, 1974). No quantitative index like MLU is available for AAE-users at this time. It will be interesting when a measure that indexes language stage is available for this population so that the correspondences between stage and amounts of complex syntax may be examined. Some of the unexplained variability in this data set may be better understood relative to the status of the rest of each child's linguistic system, but this awaits future research.

The distributional analyses of the subtypes revealed that some types of complex syntax were widely used. This included (a) two of the three types of infinitives that were marked with *to*, (b) the conjunction *and* to link two independent clauses, (c) noninfinitive *wh*-clauses, (d) noun phrase complements, and (e) *lets/lemme*. The action and play focus of the current spontaneous language sampling context may have facilitated use of some types over others. In addition, these types of complex syntax preserve the structural integrity of the main clause more than forms that disrupt the main clause, such as relative clauses or gerunds and participles. However, many of the types of complex syntax occurring infrequently across subjects also preserved the main clause, so it is not possible to determine whether cognitive complexity is or is not impacting these percentage frequencies of occurrence. This would be interesting to pursue in follow-up research because of the potential utility for characterizing developmental stages of grammatical acquisition when cognitive underpinnings such as these are understood. Research of this type would need to control for opportunities of specific types, which the connected speech sampling in freeplay did not permit in this study. A number of researchers have observed that *and* is highly frequent and the first connective used by young Standard English-speaking children (Bloom, Lahey, Hood, Lifter, & Fiess, 1980; Clark, 1970; Hood, Lahey, Lifter, & Bloom, 1978; Jacobsen, 1974; Limber, 1973; Miller, 1981) as well as children learning languages other than English (Clancy, 1974; Clancy, Jacobson, & Silva, 1976; Werner & Kaplan, 1963). Future research may discover that the frequency of use reflects developmental order and, by implication, cognitive complexity for this language-user group as well. Overall, this systematicity relative to types of complex syntax used by the children in this study lends empirical support to the view that AAE forms reflect a separate linguistic system and not a deficient imitation of standard English (Baratz, 1970; Dillard, 1972; Fasold & Wolfram, 1970; Labov, 1971; Wolfram & Fasold, 1974).

The percentage frequencies of occurrence of utterances containing an AAE form also correlated positively with the amounts of complex syntax. This discovery was serendipitous. It occurred as part of the search for behaviors accounting for individual subject variability, and was prompted by the prior analyses of Washington and Craig (in press). Considered together, lower amounts of complex syntax occurred in samples of children using lower amounts of AAE. There

is nothing in the prior literature to prepare one for this finding. Indeed, some of the early research in the 1960s and 1970s was conducted primarily to refute prevailing assumptions that AAE was a deficient imitation of SE (Baratz, 1969, 1970; Dillard, 1972; Fasold & Wolfram, 1970; Labov, 1971; Wolfram & Fasold, 1974). This relationship needs to be pursued in future research, both with other samples of children, and with other types of linguistic measures, to confirm this finding and to determine how robust this correspondence between amounts of AAE form use and grammatical complexity may be. If AAE form use is part of a larger profile of linguistic maturity, then it needs to be understood better and incorporated into theoretical perspectives about the nature of AAE. A relationship to overall linguistic complexity would provide support to theoretical viewpoints that emphasize differences between the nonstandard forms used by African-Americans and English as the parent language (Bailey & Maynor, 1989; Taylor, 1988; Wolfram, 1987).

Even though the explanations for individual variations in amount of complex syntax used during connected speech await additional research, the present findings offer some immediate clinical applications. Most clinical assessment instruments, for any language domain and with any population, provide performance outcomes on one or more specific language measures using an interpreted score, such as a standard score. Standard scores allow the clinician to evaluate how a specific child performs in comparison to other children's performances in the same population. In the present study, the subject selection procedures attempted to identify a sample of children who were quite homogeneous on potentially influential status variables and therefore were representative of the larger population of 4- to 5-1/2-year-old African-American boys and girls living in poverty in large northern Midwest urban centers at the time of school entry. The performance profiles obtained with this sample should be useful clinically for assessing the oral language production skills of other young African-American children as they enter formal education. Accordingly, standard deviations, a frequently used type of standard score, obtained from the subject sample in this study should be informative clinically for assessment purposes. Table 4 presents the percentage frequencies of complex syntax in a connected speech sample corresponding to -1 and to -2 standard deviations below the mean, as well as the numbers of subjects identified in the present investigation if these were considered clinically significant cutoffs. In other words, if poor complex syntax usage were defined as -1 standard deviation below the mean of the percentage frequencies of occurrence of complex syntax used by this representative sample of children, then the language of any child assessed with this measure would be considered clinically significant if fewer than approximately 3% of his/her utterances expressed complex syntax.

Adopting a different tactic, another method for determining poor use of complex syntax could apply another type of standard score—percentiles. For a sample size of 45, the clinically significant cutoff would be 4.5 subjects. In the present study, 4 subjects used 1% or less complex syntax in connected speech. (See Table 4.)

In order for these calculations to be valid for assessment purposes, complex syntax comparisons will be necessary for

TABLE 4. Calculations of standard deviations (SD)^a below the mean^b for the percentage frequencies of occurrence of utterances containing complex syntax, and the number of subjects identified for each.

Calculation	% of complex syntax	Number of subjects
- 1 SD	< 2.8	9
- 2 SD	0	3
< 10%	≤ 1.0	4

^a1 standard deviation = 5.4.

^bMean = 8.2.

children who are known to present clinically significant language disorders. This type of comparison would also be necessary to determine which cutoff is most appropriate. At this time, however, it seems more appropriate to use the data presented above, with some interpretive caution, rather than continuing to rely on test modifications that fail to accomplish their intended performance gains or have no locally generated norms to support interpretation. Clearly, most urban, poor, young African-American children are using complex syntax at the time of school entry, so the child who evidences no complex syntax in connected discourse is atypical. Overall, the present discussion exemplifies the type of culturally fair alternative that needs to be developed in order to validly characterize the language skills of young African-American children.

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APPENDIX

SCORING SYSTEM FOR THE AFRICAN-AMERICAN ENGLISH FORMS
(WASHINGTON & CRAIG, IN PRESS).

Definition	Examples
Zero copula or auxiliary "is," "are" and modal auxiliaries "will," "can," and "do" are variably included	"the bridge out" "how you do this"
Subject-verb agreement A subject and verb that differ in either number or person	"what do this mean"
Fitna/sposeta/bouta Abbreviated forms of "fixing to," "supposed to," and "about to," coding imminent action. (Examples of utterances that were not scored for this form were: "they <i>fixin</i> it," "what are we <i>supposed to</i> do to that," "what <i>about</i> they lunch?")	fitna : "she fitna backward flip" sposeta : "when does it sposeta go" bouta : "this one bouta go in the school"
Ain't "ain't" as a negative auxiliary	"why she ain't comin'"
Undifferentiated pronoun case Nominative, objective, and demonstrative cases of pronouns occur interchangeably	"him did and him"
Multiple negation Two or more negative markers in one utterance	"I don't got no brothers"
Zero possessive Possession coded by word order, so that the possessive -s marker is deleted, or the nominative or objective case of pronouns is used rather than the possessive	"he hit the man car," "kids just goin' to walk to they school"
Zero past tense "-ed" is not always used to denote regular past constructions, or the present tense form is used in place of the irregular past form	"and this car crash" "and then them fall"
Zero "-ing" Present progressive morpheme "-ing" is deleted	"and the lady is sleep"
Invariant "be" Infinitival "be" with a variety of subjects coding habitual action ("it's gonna be far away" was an example of when habitual "be" was not scored); or to state a rule	"and this one be flying up in the sky" "if he be drunk I'm taking him to jail"
Zero "to" Infinitive marker "to" is deleted	"now my turn shoot you"
Zero plural Variable inclusion of plural marker "-s"	"ghost are boys"
Double modal Two modal forms for a single verb form	"I'm is the last one ridin on"
Regularized reflexive Reflexive pronouns "himself" and "themselves" are expressed using "hisself" and "theyself"	"he stands by hisself"
Indefinite article "a" regardless of vowel context	"Brandon had to play for a hour, didn't he?"
Appositive pronoun Both a pronoun and a noun reference the same person or object	"the teacher she's goin' up here"
Remote past "been" "been" is used to mark action in the remote past, ("hi, what you been doing" is an example of an utterance containing "been" that was not AAE form)	no examples of this form were found