Control of article use in SAE and AAE-speaking children

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Introduction

Designing a test battery for language that is appropriate across dialects is difficult. Many of the items traditionally studied to assess the sophistication of preschoolers' speech include inflections such as tense and plurality that behave differently across dialects, resulting in the mis-assignment of clinical status to normal speakers of dialects such as African American English. One strategy towards solution of this dilemma has been to choose items that involve tests of linguistic knowledge that have no established dialect differences. Recent work on articles in English suggests there is promise in this area, since

a) there are no established dialect differences in the use of definite and indefinite articles between AAE and SAE.

b) SLI children, on the other hand, show significant difficulties using articles appropriately (Ramos, 1999)

Given those two premises, it is clear that the article items may be responded to in the same way by children regardless of dialect but dependent on their clinical status. The purpose of this study was to establish a baseline with normally-developing children and confirm that there are no dialect differences for 3-7 year olds.

Previous studies of article use have been fraught with methodological difficulties, and considerable variation depending on the methods and materials. Our analysis of the inadequacies of earlier experiments on this topic (see Cziko 1986) led us to design the task so that no objects relevant to the elicitation were present during the experiment. That is, we modified a recent procedure by Schafer and de Villiers (2000), which gets around the materials problem by using none! In effect, the children are asked questions that they answer "out of their heads", a procedure that might also lessen the disadvantage of children who are less used to test-type book materials. The purpose of the study was to elicit from children noun phrases containing the articles *a* and *the* under conditions that controlled for the maximum number of extralinguistic contributions to familiarity and uniqueness.

Subjects

The children were 71 3-7 year olds residing in a mid-size Northeast City. 53 of the subjects were African-American, speaking African-American English and 18 were white, speakers of Standard English. Because we tested only very small numbers of 3 and 7 year olds, we created three age groups: 3-4 years, 5 years, and 6-7 years. Two subjects- one African-American six year old and one White five year old, were subsequently removed from the data because of their large number of unscorable responses.

AAE		52
AGE	3 and 4	7
AGE	5	26
AGE	6 and 7	19
SAE		17
AGE	3 and 4	3
AGE	5	6
AGE	6 and 7	8

Procedure

Children were presented with a series of one –to- two–sentence long stories, and asked a question after each designed to minimally elicit a DP response. No contextual supports were used: all aspects of the stories were imagined.

There were a total of 15 questions divided into five conditions. The conditions were designed to elicit distinct types of nominals plus an article *a* or *the*. Adult speakers give the appropriate article over 95% of the time.

Our five conditions are charted in (1). Their labels reflect the anticipated adult response in the condition. As can be seen, the questions sometimes call for *the* and sometimes for *a*, they represent all the major conditions on that variation, and surprising subtlety of meanings. A sample question of each type is provided in 2):

1) Types of *a* and *the*

Condition	Label	Description
COND 1	Part-the:	Inherent part mentioned object
COND 2	Familiar-the:	Previously mentioned object
COND 3	Specific-a:	Referent known to speaker only
COND 4	Non-referential-a:	non-referential, but assumed in situation
COND 5	Predicational-a:	nominal following *have/be*

2) Examples[ii] of the 15 questions used in elicitation task.

COND 1: Sally was eating an ice-cream cone when suddenly- slosh! something fell out and she only had the cone left. What was it? (THE icecream)

COND 2: A cat and a bird were sitting in a tree. They were friends. One of them flew out of the tree. Guess which. (THE bird)

COND 3: I'll bet you have something hanging on the wall of your room at home. What is it? (A picture)

COND 4: Tyrone is going to take a nap, and he wants to cuddle with something,. What does he need? (A blanket)

COND 5: Think of a baseball player. Can you imagine what one looks like? What does he have? (A glove)

Results

Three different analyses were performed to see if there were significant dialect differences on this task.

First, we asked: is the task equally successful in eliciting the right kinds of responses, namely article+N, from both groups and across all contexts?

A repeated measures ANOVA with age and dialect as grouping variables, revealed a significant difference across the five conditions, i.e. the different conditions varied in their success rate at eliciting target linguistic responses. However, there were no significant dialect or age differences nor interactions of these variables with type: the task worked equally well for both groups and for this whole range of ages.

The second analysis asked whether the two dialect groups produced equivalent numbers of correct articles to the various conditions.

This was defined as the ratio of (target article) to the sum of (incorrect article + bare singular nouns), with all other answers being excluded from consideration. Again, a highly significant difference was found across conditions, but no dialect differences. A modest age trend was revealed, more consistent for the AAE speakers than the SAE speakers. This was probably masked in the SAE speakers by the inclusion of children from different socioeconomic backgrounds- the four year old SAE speakers were middle-class - and the whole SAE sample was very small.
NB: Because unscorable answers (possessives, mass nouns, other) were taken out of these data, the numbers of subjects for each type fluctuate and therefore the power of the ANOVA is decreased as subjects with incomplete data in any cell are removed. As a precaution, single anovas were run on each type to test the effects of age and dialect, which used more of the data. There were still no significant effects of dialect on any of the types tested individually.

The third analysis was the most stringent: did the children give us exactly the response, a+N or the+N, that was targeted?

In this case, responses that included the right article but the wrong noun were counted as wrong. This ANOVA revealed the same effect of condition, but no dialect differences and disappointingly, no overall age trend.

Error analysis

The ANOVAS support a story of similarity across groups, but given the small size of the SAE group, some caution is in order. There may not be enough power to reveal the significance of different error patterns across dialects and age groups. We found some intriguing differences in error patterns that vary with the dialect group, but may also reflect other cultural differences. Consider the tables below that break down the response choices for each article type by dialect, but collapsed across age group.

The major error pattern for the SAE speakers was the "bare singular" response, e.g. "hat" or "picture" with no article. This happened in the greatest numbers in the "Familiar-the" condition, the condition that was generally most difficult for the children. We have since confirmed this strong tendency in a recent study of a larger sample of SAE speaking children, 36 children aged 4-6, who offered bare nominals in the "Familiar the" context over 50% of the time.

Two explanations come to mind: one grammatical, and one pragmatic. The grammatical account echoes the analysis in Schafer and de Villiers (2000), that children's grammars lack a full adult DP until fairly late, and that the structure for "the+NP" lacks significant features relevant to discourse. The prediction is that children in just this phase will vacillate between competing structures, and choose as a default option the bare singular (see Chierchia, 1999 for discussion of the bare singular N possibility in Universal Grammar). The bare singular identifies an individual entity in the context. It allows the child to present the "right" answer without using the more complex grammatical form the condition calls for.

However we then must ask: Why is it six times more common for the SAE children than for the AAE speaking children in the FAMthe condition? That explanation may also be grammatical: there is some evidence that the bare singular in AAE denotes a kind, like a mass term does, and so it does not identify an individual entity. For example, in our database of AAE (Seymour et al 1998) we find examples like:

And then you get some lollipop.

or
I didn't have any game.

where the bare singular denotes a kind. Since the bare singular can be used to refer in this fashion, it is not available for default reference to an individual entity. The AAE grammar simply does not contain a default primitive form that allows speakers to opt out of the grammatical constraints on noun phrase construction.

A second possibility is a pragmatic one: the SAE children treat the task as a guessing game, in which the normal rules of discourse are suspended and bare nominals are permitted as elliptical answers. That explanation relies on the assumption that this is permissible only in multiple-choice situations, such as in the Familiar-the condition. On this account, one would not expect bare nominals in ordinary spontaneous speech, only in elliptical answers to questions with particular choices provided. This pragmatic account could not be extended to the AAE data. If bare singulars denote a kind, then it is not appropriate as an answer in guessing game to denote a particular entity.

Now the Familiar-the context was also hardest for the AAE speakers, but their solution to the problem differed. Instead of offering a bare nominal that was pragmatically correct, they answered with a grammatically correct answer that seemed erroneous in other ways. That is, in this situation, the AAE children gave a large minority of answers that consisted of the wrong choice in the situation. For example,

"A cat and a bird were sitting in a tree. They were friends. One of them flew out of the tree. Guess which." Answer: "The cat"

A pragmatic account could propose that the AAE children may not have been as familiar with test questions from adults, and may have considered this to be a trick question or one that called for an imaginative response. Again, however, our data does not really support this conclusion: we would expect far more responses that involved entities that were not introduced in the discourse. And why do this so much in the Familiar-the context?
The two accounts - grammatical and pragmatic - may be collapsed if one speculates that children of this age have particular difficulty computing what the listener's needs are, relevant to their answer in a guessing game situation. Assume that all the children are cooperating with their listener/questioner in the Familiar-the condition by choosing a response from among the entities introduced by the listener/questioner. The listener has two other needs:

i) a semantic/pragmatic one, i.e. choose the entity that best fits the listener's expectations e.g. her world knowledge about how birds and cats behave
and
ii) a grammatical one, namely choose a form of the nominal that encodes the uniqueness of the entity i.e. that it refers to the entity the listener has already introduced (in adult grammar we would say 'encode the listener's familiarity') e.g. say "The bird" not "A bird".

(i) and (ii) both require that the child form a response that encodes —in the lexical features of nouns or in the grammatical features of articles — knowledge about a listener's beliefs. Much previous work suggests encoding this information poses a significant challenge to children at this age. How do children respond when the challenge is greatest? In just this case, the SAE speaking children seem to do (i) at the expense of (ii), whereas the AAE speaking children seem to do (ii) at the expense of (i). The choice is dictated by the unavailability of the bare singular in AAE as a default.

More research is needed to decide between the grammatical and more general pragmatic/strategic interpretations. It is still possible that the response patterns result from different cultural expectations about test or quiz questions, but the pattern is not compelling in favor of that. One would expect the strategy (e.g. to choose something unexpected) to be more common across-the board, and for individual children to adopt it consistently. The world knowledge violations never outnumber the right choice of answer, suggesting they result from "crashes" in the derivation rather than consistent strategic choices. Instead, the two

response types (bare singular for SAE, world-violation for AAE) are restricted primarily to the very DP form we expect to be most difficult because it involves computation and encoding of the listener's needs (Schafer and de Villiers, 2000).

Conclusion

Both AAE - and SAE –speaking children from at least age four show good command of the right conditions in which to use indefinite versus definite articles, and parallel difficulty with the Familiar-the condition, argued to be the most challenging structure. The differences in error patterns are in need of replication and further study, but are suggestive of a deeper difference in the nature of the DP in AAE and SAE that deserves more careful study. The final grammar of DP in the two dialects may influence the path that children take towards mastery. The internal coherence of each system will then allow us to differentiate the responses of children with language impairment from the normal course.

Categories of responses in each condition by dialect

Part THE	**AAE**	**SAE**
The	52.9	79.4
A	2.9	0
bare noun	0	0
bare plural	0	0
mass noun	12.5	14.7
Possessive	7.7	2.9
other (not NP)	5.8	0
Article right, discourse fail	18.3	2.9

Familiar the	**AAE**	**SAE**
The	38.8	61.8
A	8.7	2.9
bare noun	2.9	20.6
bare plural	0	0
mass noun	0	0
Possessive	0	0
other (not NP)	15.5	0
Article right, discourse fail	28.2	14.7

Spec-a	**AAE**	**SAE**
A	57.4	35.3
The	2	0
bare noun	5.9	14.7
bare plural	15.8	11.8
mass noun	1	0
Possessive	9.9	14.7
other (not NP)	5	23.5
Article right, discourse fail	0	0

Kind-a	**AAE**	**SAE**
A	55.4	82.4
The	5.9	0
bare noun	9.9	8.8
bare plural	2	0
mass noun	1	0
Possessive	9.9	8.8
other (not NP)	2	0
Article right, discourse fail	9.9	0

Pred-a	**AAE**	**SAE**
A	78	94.1
The	2	0
bare noun	13	0
bare plural	3	5.9
mass noun	1	0
Possessive	0	0
other (not NP)	3	0
Article right, discourse fail	0	0

References

Chierchia, G. (1998) References to kinds across languages. Natural Language Semantics, 6,no.4 339-405.

Cziko, Gary. 1986. Testing the Language Bioprogram Hypothesis: A review of children's acquisition of articles. Language 62(4), 878-898.

Ramos, E. (1999). Acquisition of noun-phrase structure in children with Specific Language Impairment(SLI). Unpublished Ph.D. (Communication Disorders), University of Massachusetts, Amherst.

Schafer, R. & de Villiers, J. (2000) Imagining Articles: What *a* and *the* can tell us about the emergence of DP. In Proceedings of the Boston University Language Development conference, Somerville: Cascadilla press

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[ii] A selection of these items is now copyrighted by The Psychological Corporation for use in the Dialect Sensitive Language Test, Tryout edition.