

African American English-Speaking Children's Comprehension of Past Tense: Evidence from a Grammaticality Judgment Task

Abstract

Children who are dialectal speakers, in particular those that speak African American English (AAE), have been documented to perform below the normative average on language tests used by speech language pathologists. Such findings have caused many to argue that the tests are culturally biased. Before the tests are considered biased, it is important for researchers and clinicians to have a detailed description of the language systems of children from culturally and linguistic diverse backgrounds. While the features of AAE have been documented with great detail in spontaneous language, research documenting AAE-speakers' performance on common language probes and across economic backgrounds is lacking. This study will provide a better understanding of how AAE-speaking children comprehend past tense, a linguistic form often included on such language tests. The results will provide researchers and clinicians alike with data detailed enough to begin to understand how socioeconomic status and dialect effect language production and comprehension for AAE-speaking children.

Project Description

In Standard English, overt marking of past tense is obligatory (i.e., *Yesterday, he walked to the store*) with the exception of a few verbs (i.e., *cut* and *put*). For AAE, past tense is considered optional (i.e., *Yesterday, he walked to the store* or *Yesterday, he walk to the store.*) As such, both of the previous sentences are considered appropriate for indicating past tense in AAE. Studying the spontaneous language of AAE-speaking adults and children has allowed linguists to document such a pattern and 34 others reflected in AAE (see Getting & McDonald, 2001). In addition, there is limited data to suggest that AAE-speaking children do not comprehend sentences marked with standard forms as well as those that reflect AAE forms (Johnson, 2005). Missing from this literature base are data-driven studies that document the effect poverty has on production and comprehension of AAE features. The primary investigator's dissertation examined production of past tense and found that neither socioeconomic status nor context (spontaneous or elicited production) affected the children's marking of past tense (Pruitt, 2006). As a follow-up to these findings, this study is designed to evaluate AAE-speaking children's comprehension of past tense using a grammaticality judgment task. The following question will guide the current study:

- (1) Does socio-economic status influence AAE-speaking children's ability to comprehend past tense as measured by a grammaticality judgment task?
- (2) Does socio-economic status influence AAE-speaking children's reaction time for grammaticality judgments?
- (3) Are the children's production and comprehension of past tense related?

Procedures

The data for the current project were collected at the same time as the data used in the primary investigator's dissertation (Pruitt, 2006). The participants include 45 African American children from an urban community in Louisiana: 15 six-year old children from low-income backgrounds (LSES; $M = 73.5$ months), 15 age-matched peers from middle-income backgrounds (AM; $M = 71.1$ months), and 15 vocabulary-matched peers from middle-income backgrounds (VM; $M = 59.64$ months). The LSES group have mothers who did not graduate from high school ($M = 10.00$ years, $SD = 1.41$), and the AM and VM groups have mothers who completed at least two years of college education ($AM = 15.71$, $SD = .47$; $VM = 15.43$, $SD = .85$). As judged by a listener judgment task, all of the children are considered to be AAE speakers. The VM group was included to ensure general language ability did not influence past tense marking. In addition, all of the children performed within normal limits on a cognitive measure.

Calculation of Dialect Density. At the time of the previous studies, spontaneous language samples were collected during adult-child play sessions. These language samples have been transcribed and coded following conventional transcription guidelines. The first step of the current study will be to identify the utterances within the samples that contain at least one of the 35 dialectal features associated with AAE (as described in Getting & McDonald, 2001). Word processing Find/Replace commands and Systematic Analysis of Language Transcription software will be used to facilitate and check coding. Frequency counts of each nonmainstream pattern will be used to generate the participants' rate and range of dialect features, referred to as their individual dialect density. This measure will provide further insight into the participants' production of AAE features which may serve as a necessary covariate.

Grammaticality Judgment Task. In addition to the information provided by the spontaneous language samples, the participants' responses and reaction times during a grammaticality judgment task will serve as data for the current project. These data were also collected previously. However, it has not been fully manipulated into the format needed to analyze the results. Three general types of stimuli were presented: those that represent Standard American English adult grammar, those that contain instances of zero-marking past tense that are consistent with AAE grammar, and control sentences that contain errors not predicted to be a part of AAE grammar (bad agreement and dropped *-ing*). A baseline, non-linguistic reaction time measure was also collected.

The stimuli were audio-recorded and digitized for presentation on a laptop computer. To match the dialect of the participants, an African American, Baton Rouge native female recorded the stimuli. Each utterance constituted a stimulus item to be judged by the participant. Using computer software (Cedrus Corporation, 2006), the child's responses and reaction times were detected through pressing buttons on a computer mouse. The children were instructed, "Listen to this robot talk. Sometimes it will say things that sound *good* and sometimes it will say things that sound *not so good*. If it says something that sounds *good*, press the smiley button. If it says something that sounds *not so good*, press the sad button." Ten trial items that did not include past tense marking were presented. The children were provided feedback about their choices. To control for order effects, all of the items were counterbalanced by the computer program.

For the current study, the individuals' reaction time for each given item must be coded manually with respect to the type of item and the individual's responses to the given item. In addition, accuracy percentages ($A \sim$, based on signal detection theory, will be calculated for each experimental condition to adjust for any "yes" bias. This will serve as the comprehension measure.

Reliability. Reliability for the coding of dialect features within the spontaneous language samples will be assessed by having a second judge independently code two of the language samples from each participant group. For the grammaticality judgment task, a second judge will randomly enter and perform the necessary data manipulations for two of the participants from each group. For all measures, interrater agreement will be obtained by dividing the total number of agreements by the total number of agreements + disagreements.

Data Entry and Analyses. Participant characteristics, dialect densities, and grammaticality judgment responses and reaction times will be entered into a single database. Each participant will be assigned a random identification code which will be used within the database and on any protocols. No identifying information will be associated with the data. Only the primary investigator and research assistants assigned to this project will have access to the database, recordings of the language samples, or other data. Upon approval of this project, human subject approval at San Diego State will be obtained. The data collection and storage procedures were previously approved by the Institutional Review Board at Louisiana State University.

A mixed-model ANOVA will be run on both of the dependent variables: the accuracy percentage on the grammaticality judgment task and the reaction time (in milliseconds). The two independent variables will be Group (LSES, AM, LM) and Form (regular past tense, irregular past tense, control sentences). If group differences are revealed for the dialect density measure or the reaction times on the non-linguistic reaction time measure, they will be used as covariates to control for possible confounds.

Summary of Work Already Completed

As described, the current study is an extension of the primary investigator's dissertation research which evaluated AAE-speaking children's production of past tense in both spontaneous and elicited language contexts (Pruitt, 2006). The data for the current project were collected in conjunction with the data used for the dissertation project. However, the data for the current study have not been entered or analyzed.

Significance

Uniquely, this study examines dialectal features within the context of poverty. The inclusion of AAE-speaking children from middle-income backgrounds allows for the examining the effects of poverty on language development above and beyond dialect variation. The results of the current study will be a first step at determining if dialect status and/or poverty play a role in comprehension of tense bearing morphemes, in particular past tense. Using these data and comparing them to the participants' production data will also allow for examining the relationship between the AAE speakers' production and comprehension of past tense. Such information is a first-step at examining the language processes being examined in standardized tests. A greater understanding of these processes will allow for better assessment practices.

In addition, this study will provide the preliminary data needed to strengthen the primary investigator's current line of research which focuses on the effects of poverty on language development. The results of the present study will serve as the pilot data needed to apply for future external funding. Future projects are expected to examine the production and comprehension of tense morphology in children from varying socio-economic and cultural backgrounds. This information will help to detail the linguistic profiles of children reared in poverty. Such information will aid researchers and clinicians in their efforts to examine and diagnose language impairments more accurately within the context of poverty and dialectal diversity.

Beyond the scope of research, this experience will provide the students who will assist with this project and students in future classes I teach at SDSU with an understanding of AAE, the coding procedures commonly used when working with language samples of dialect speakers, and the use of grammaticality judgment tasks for examining comprehension. In addition, the coded language samples will be used for in class assignments in courses that I currently teach (e.g., SLHS 613) or those I hope to develop (e.g., a graduate seminar in dialectal variation).

Timeline of Project

This project will begin at the start of the spring 2007 semester and is expected to last until the end of October 2007. Refer to the below table for a graphic representation of the projected timeline. During the first two months, the primary investigator will begin organizing the data and training the graduate assistant. In the next five months, the graduate assistant will code the language samples, enter the data into the computer spreadsheet, and begin the manipulations necessary to fully explore the reaction time data. Data analysis and interpretation will begin in July and be completed by September. Manuscript preparation and submission to the *Journal of Speech, Language, and Hearing Research* is expected to take the final three months.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Organize Data and Spreadsheet												
Student Training on Procedures												
Calculation of Dialect Density												
G3 Data entry/manipulation												
Data analysis/interpretation												
Manuscript preparation & submission												

References

- Cedrus Corporation (2006). SuperLab 4.0 [Computer program]. San Pedro, California. Hisham Abboud.
- Johnson, V. (2005). Comprehension of Third Person Singular /s/ in AAE-Speaking Children. *Language, Speech, and Hearing Services in Schools, 36*, 116-124.
- Getting, J. B. & McDonald, J. L. (2001). Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research, 44*, 207-223.
- Pruitt, S. (2006). Grammatical Morphology of Children Reared in Poverty: Implications for specific language impairment. Unpublished doctoral dissertation, Louisiana State University, Baton Rouge.
- Seymour, H., Bland-Steward, L., & Green, L. (1998). Difference versus deficit in child African American English. *Language, Speech, and Hearing Services in the Schools, 29*, 96-108.

Experience and Qualifications

As a research assistant to Dr. Janna Getting at Louisiana State University for six years, I developed the skills necessary to transcribe, code, and analyze language samples of both standard and nonmainstream dialect speakers. I also participated in the development of a dialect density metric. This experience provided me the skills necessary to focus my research on the morphosyntactic abilities of typically developing preschool children and children diagnosed with language impairments, child language development in the context of linguistic diversity and poverty, efficacy of prevention models for "at-risk" populations, and the role of child language research in shaping public policy. As detailed below, my educational, clinical, and research experiences qualify me to carry out this experiment and use this research to further develop my areas of research.

Education:

Ph.D. Louisiana State University, Communication Disorders, 2006

Minor: Public Policy

M.A. Louisiana State University, Communication Disorders/Speech Language Pathology, 2002

B.A. Louisiana State University, Communication Disorders, Linguistics Minor, 2000

Minor: Linguistics

Certification:

Certificate of Clinical Competence in Speech Language Pathology, CCC-SLP, 2003-present

Louisiana License in Speech Language Pathology, 2002-present

California License in Speech Language Pathology, Applied for

Academic Positions:

Assistant Professor, School of Speech, Language, & Hearing Sciences, San Diego State University, San Diego, CA.

Related Publications:

Getting, J., Pruitt, S., Farho, S., Huckabee, H., Roy, V. (under review). An Exploratory Study of Low-income and Under-educated Mothers within the Context of a Prevention Program. *American Journal of Speech Language Pathology*

Getting, J.B., Pruitt, S.L., and Roy, V.P. (2006). Community-Based Caregiver Training: A Rationale and Model for Early Interventionists Who Work with Low-Income Families. *Zero to Three*. 27: 13-21.

Getting, J., & Pruitt, S. (2005). Southern African American English Use Across Groups. *Clinical Linguistics and Phonetics*, 3(2) 136-144.

Dissertation:

Grammatical Morphology of Children Reared in Poverty: Implications for Specific Language Impairment

I have not received any previous University Grants.