They dropping copulas: Salient cues in the integration of speaker identity and syntax

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Introduction
An ERP study examined the effects that social and linguistic stereotypes have on syntactic processing, to address how social information is integrated with linguistic input on-line. There is already evidence that listeners incorporate social information into language processing in real time (VanBerkum et al., 2008; Tesink et al., 2009). Conversely, listeners use both experience and stereotypes to make inferences about a speaker’s social identity from phonological cues (Staum Casasanto, 2009). Furthermore, a foreign accent can lead listeners to expect grammatical errors (Muro & Dewing, 1998) and/or fail to produce a syntactic anomaly response (Hanulikova et al., 2012).

We focused on copula deletion, a feature of African American English (AAE), expecting copula deletion to trigger a syntactic anomaly response when uttered by a white standard speaker, but not when uttered by an AAE speaker. We also included a speaker with a foreign (Indian) accent, to test whether syntactic expectations are built on a general perception of otherness or on a collection of observations of stereotypical grammatical features related to specific social and language identities.

Method

Speakers
Three female speakers recorded all versions of all experimental sentences: a White Standard speaker, as African-American speaker, and an Indian-accented speaker.

Syntactic Manipulation: 120 items, 2 conditions per subject
Core structure: (He/she/it) (is/going to) (progressive verb(single syllable-verb))

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<thead>
<tr>
<th>Voice/Phonology</th>
<th>Syntactically Correct</th>
<th>Syntactic Violation</th>
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<tbody>
<tr>
<td>White Standard English</td>
<td>He called to tell us he’s going to be late today</td>
<td>He called to tell us he’s going to be late today</td>
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<tr>
<td>White Copula Deletion</td>
<td>He called to tell us he was going to be late today</td>
<td>He called to tell us he was going to be late today</td>
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<tr>
<td>African-American Standard English</td>
<td>He called to tell us he’s going to be late today</td>
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<tr>
<td>Indian Standard English</td>
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Semantic Control Manipulation: 40 items, all 6 conditions w/subject
Core structure: (Let me finish sweeping this floor before you walk in here)

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Participants and Procedure
60 participants (ages 18-25), were seated in front of a computer screen, with a fixation cross while listening to 480 trials (40 items per condition). After approximately 1/8 of all trials, at random, a prompt appeared on the screen asking the participant if they heard a specific word in the previous sentence. All participants were right-handed native speakers of a variety of American English and were asked afterward how familiar they were with the zero copula construction, and to optionally indicate how they identified ethically.

Recording & Analysis
Data were recorded from 61 active electrodes. Trials were time-locked to the –ing suffix of the progressive verb (the point of certain grammatical disambiguation) on syntactic manipulation trials and to the onset of the critical word on semantic manipulation trials. Data were analyzed in temporal windows corresponding to the P600 (syntactic manipulation) and the N400 (semantic manipulation). The mean signal voltage per trial was taken across the critical time-window for each target response. The mean of these averages was then taken by condition for each subject and submitted to 3(speaker) x 2(violation/no violation) ANOVAs.

Results
There was a significant interaction between syntactic violation and speaker (F(2,118) = 3.10, p<.01). Such that there was a P600 for the Standard condition (t(59)=-3.30, p<.01) but not for the AAVE condition (t(59)=-.30, p>.01). We found significant N400 results for lexical semantic violations in the Standard and AAVE conditions only. A reduced N400 for foreign, but not regional, accents was also reported by Goslin et al. (2012).

Conclusions
The perception of non-standard speech (in the AAVE and Indian conditions) led to lowered expectations for standard syntax, without clear evidence for dialect-specific syntactic expectations. These results suggest that listeners found copula deletion ungrammatical when listening to a Standard speaker, but not when listening to a speaker of a non-standard variety of English, regardless of whether the specific variety they hear is characterized by rules allowing for certain grammatical disambiguation.

Copula Deletion

Correctly formed examples
Who (are) you?
She (is) my teacher.

Incorrectly formed examples
She (was) my teacher.
*Intended tense is not conveyed
*I don’t know where he (is).
Construction fails if it cannot equate to a contraction in Standard American English
*But he really (is) a genius!
Intended stress is not conveyed

References