

Dialect differences in the comprehension of agreement in U.S. varieties of English

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Background: Accommodating variability across speakers is a crucial component of comprehending language. A large body of work exists on phonological variability (e.g., accent accommodation [1]), but less is known about how listeners process morphosyntax that differs from the grammar of their native dialect (e.g., *?They **was** reading an abstract*). One possibility is that comprehenders simply treat such differences as errors to repair. However, when confronting novel morphosyntactic cues in a non-native dialect or foreign accent, there is evidence that listeners are less likely to detect anomalies than if the same cues are presented in their native dialect [3, 4, 6]. This pattern suggests that comprehenders adjust their usage of morphosyntactic cues depending on the dialect of their interlocutor [2, 5], but it is unclear whether on-line differences in anomaly detection are followed by offline differences in interpretation. Using subject-verb agreement variation, we test whether participants correctly interpret subject number in sentences that are grammatical in a less familiar dialect but anomalous in their primary dialect.

Methods: Speakers of Mainstream American English (MAE) participated via Prolific (n=101 in analysis). They read sentences in one of two guises, manipulated between participants: MAE or Non-mainstream American English (NMAE). Guise was established through filler items using morphosyntactic phenomena that are common across varieties of NMAE (Table 1), as well as the *-ing/-in* alternation on verbs. Sentences were presented word-by-word, appearing inside a speech bubble next to a stick figure to facilitate the usage of a non-mainstream dialect in writing. Subjects of critical sentences were irregular nouns that are the same in singular and plural form (e.g., *deer*), so that number is marked only on the auxiliary and a bound anaphor: *The deer {**was/were**} calmly warmin(g) {**itself/themselves**} by the fire*. Table 2 shows the four experimental conditions and their grammatical acceptability by dialect. After each sentence, participants selected an image from the following set: a singular version of the subject (1 deer), a plural version (multiple deer), and two distractors (1 sheep, multiple sheep).

Under a *dialect-specific* account, we hypothesized that participants would use specific knowledge of NMAE to adjust interpretations, reliably interpreting *was+themselves* as plural but showing chance performance on *were+itself*. Under a *dialect-general* account, we hypothesized that participants would reduce their reliance on agreement cues on the verb in a less familiar dialect, favoring a singular interpretation for *were+itself* and a plural interpretation for *was+themselves*.

Results: As shown in Fig. 1, in the MAE-grammatical conditions, participants nearly categorically selected the correct image (singular for *was+itself*, plural for *were+themselves*). We modeled participants' selection of pictures in the MAE-ungrammatical conditions using logistic mixed-effects regression with effects-coded variables. Most importantly, there was a significant main effect of Guise, indicating that participants were more likely to select an image that matched the verb morphology (and not the anaphor) in the MAE Guise, compared to the NMAE Guise ($p=0.03$). Additionally, there was a significant main effect of condition ($p=0.002$), indicating that participants were more likely to select a verb-compatible image in the *were+itself* condition than the *was+themselves* condition, and a significant intercept term, indicating that participants were more reliant on the anaphor than subject-verb agreement overall. There was no interaction between Guise and Condition ($p=0.81$).

Discussion: The results are consistent with a *dialect-general* account, where participants reduce their use of agreement cues in a less familiar dialect, rather than using specific knowledge of that dialect's grammar. This is consistent with previous ERP studies in the U.S. [6]. Future work will be necessary to determine how offline interpretation relates to temporarily on-line commitments and to determine the relationship between listeners' experience of dialect diversity and their linguistic expectations.

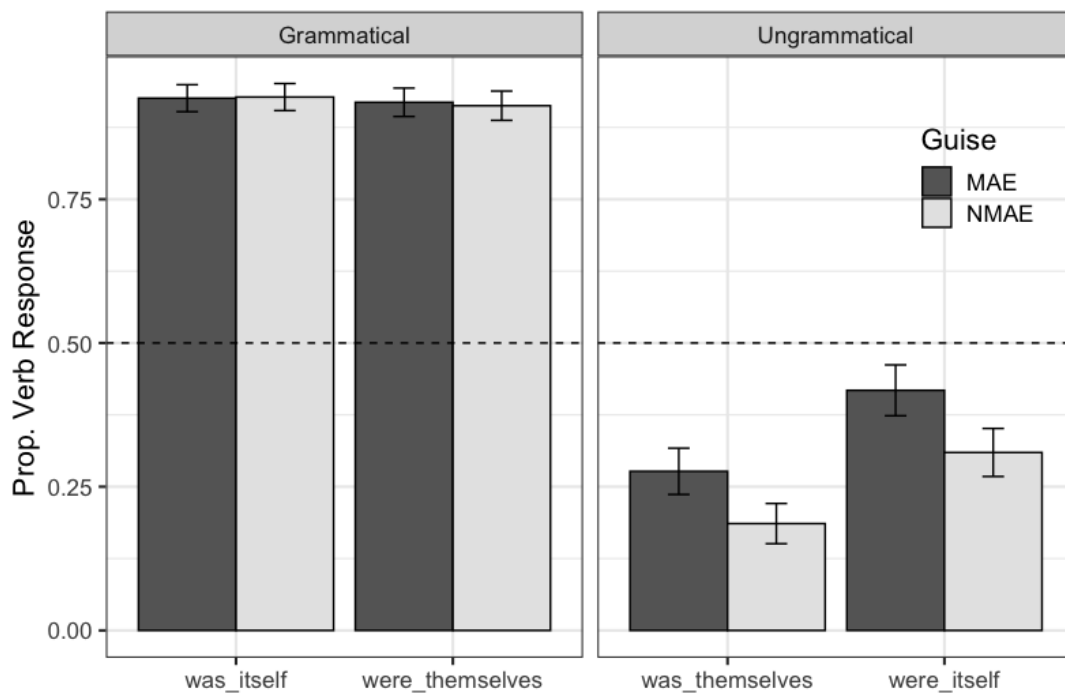
Table 1: Types of filler sentences used to establish guise

| Phenomenon | NMAE Example | MAE Equivalent |
|-------------------|------------------------------|---------------------------------|
| Negative concord | They don't have no scooter. | They don't have the scooter. |
| Null copula | The dog barkin in the park. | The dog is barking in the park. |
| Null 3rd singular | The bug squirm on the stump. | The bug squirms on the stump. |

Table 2: Example of critical stimuli with grammaticality in each variety of U.S. English

| | MAE | NMAE |
|--|---------------|----------------|
| The deer was quietly warming itself by the fire | Grammatical | Grammatical |
| The deer were quietly warming themselves by the fire | Grammatical | Status Unclear |
| The deer was quietly warming themselves by the fire | Ungrammatical | Grammatical |
| The deer were quietly warming itself by the fire | Ungrammatical | Ungrammatical |

Figure 1: Responses to picture selection task. Error bars represent 95% confidence intervals, and the dashed line represents chance performance (excluding distractor responses).



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