

We "might could" revisit syntactic processing: Studying dialectal variation with event-related potentials

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Background

- Dialectal (regional, social, or ethnocultural) variation is inherent to language
- Theories of language processing are limited in their explanatory power of everyday speech without including variation
- Neurocognitive studies of dialect tend to focus on phonological (acoustic) or lexical (word-based) rather than syntactic (structural) variation
- Syntactic processing research with EEG typically relies written stimuli containing grammatical violations or ambiguities
- Double modals:** indirectness or hedging (Hasty, 2012; Mishoe & Montgomery, 1994)

Stimuli

| Condition | Context sentence | Type | Target sentence |
|-------------------------------|--|-------------------------|--|
| Critical | "Kaitlyn is having a hard time with her essay." | Standard single modal | "She thinks she <i>should</i> ask the professor for an extension." |
| | | Attested double modal | "She thinks she <i>might should</i> ask the professor for an extension." |
| | | Unattested double modal | "She thinks she <i>could should</i> ask the professor for an extension." |
| Filler | "Kaitlyn waits for the bus every morning to go to work." | | "She said <i>the that</i> bus is usually late." |
| Modals used: could and should | | | |

Predictions

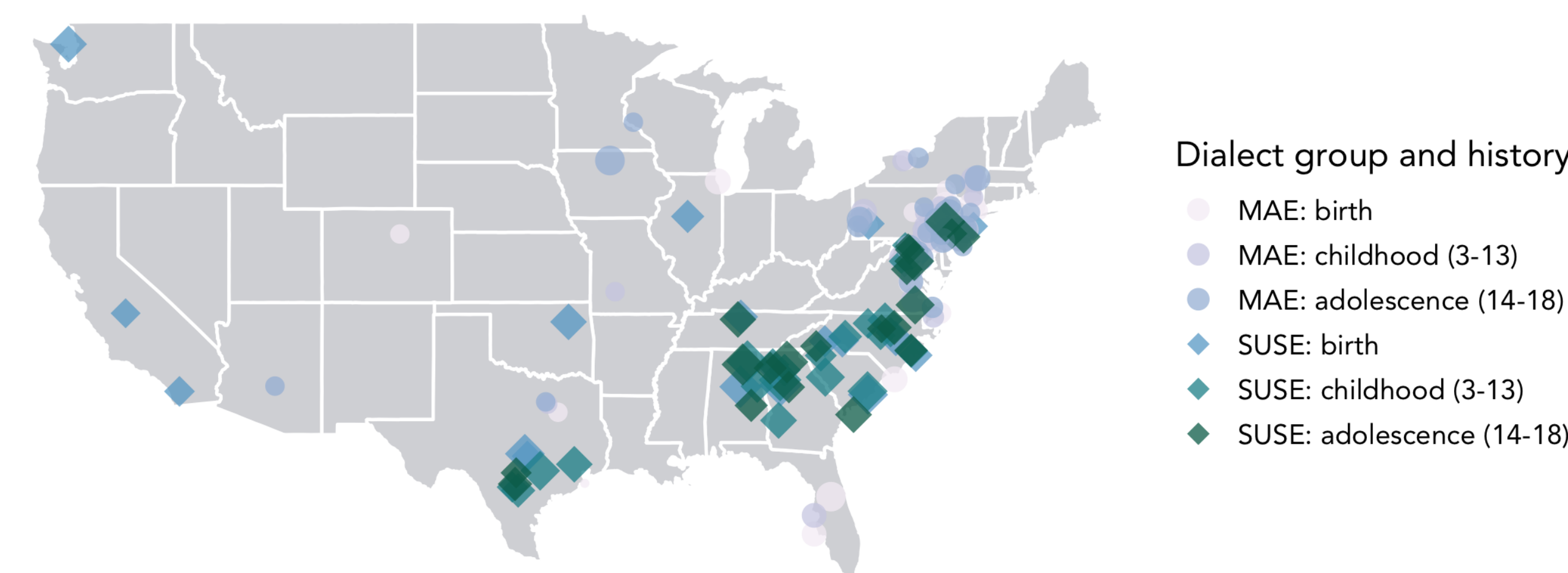
| Type | ERP | | Offline measures | |
|-------------------------|-------------|------------------|--------------------------------|--|
| | Mainstream | Southern | Mainstream | Southern |
| Standard single modal | Baseline | Baseline | High | High |
| Attested double modal | (N400-)P600 | Same as baseline | Low | Similar to standard single modals |
| Unattested double modal | | | Same as attested double modals | Lower than single and attested double modals |

ERP time-locked to second modal (could or should) in attested double modal sentences to compare to standard single modal

Participants

| Group | Stage | Location | Dialect | Total tested | ERP | Offline | Mean age |
|------------|----------|---|--|--------------|-----|---------|----------|
| Mainstream | Complete | Did not lived in the South for a significant period of time | Not exposed to "might could" and unfamiliar with double modals | 30 | 25 | 27 | 19.6 |
| Southern | Ongoing | Lived in the South from ages 3-13 or 14-18 | Exposed to "might could" or familiar with double modals | 23 | 20 | 22 | 19.9 |

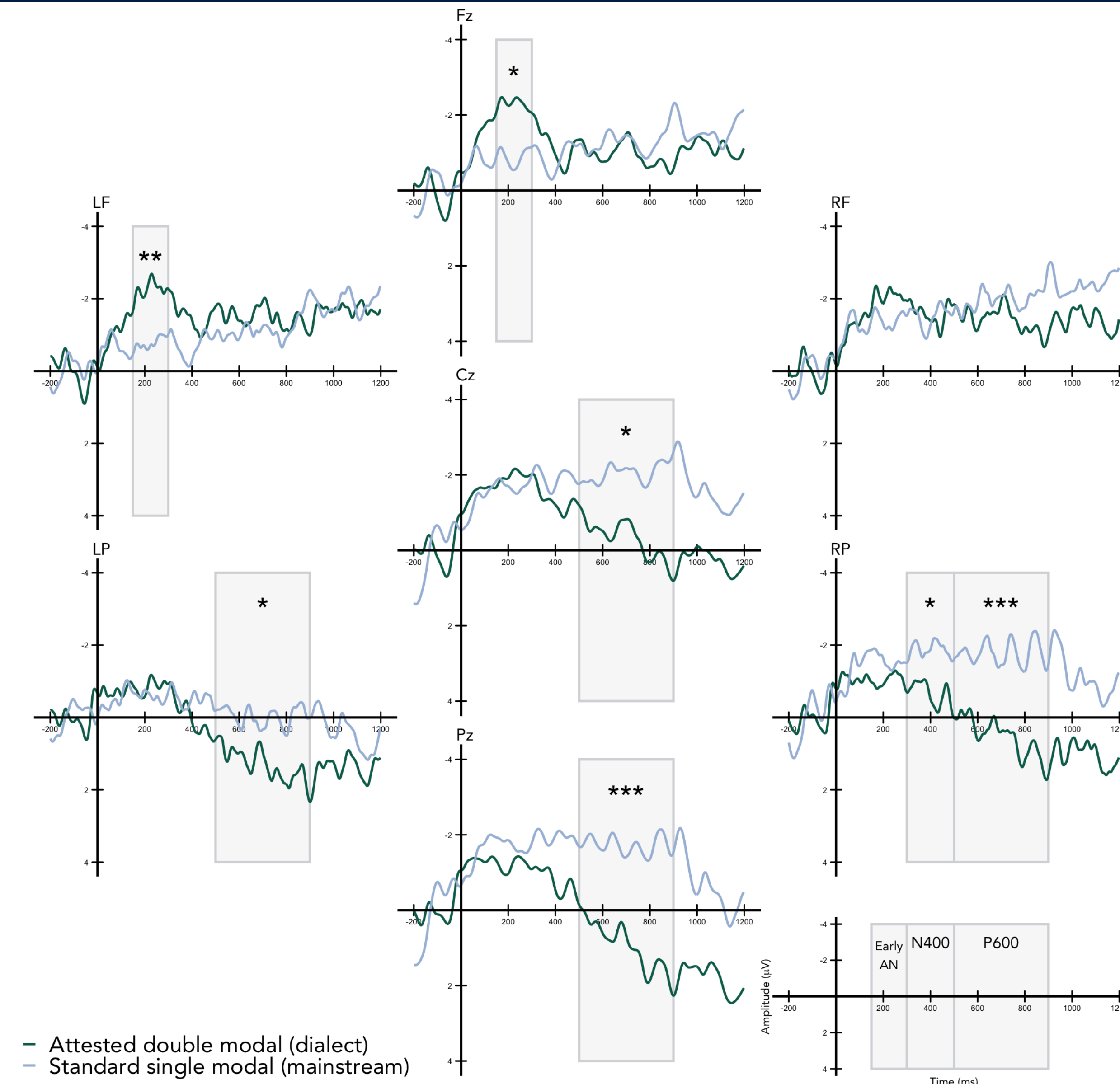
Regional dialect exposure from birth through adolescence



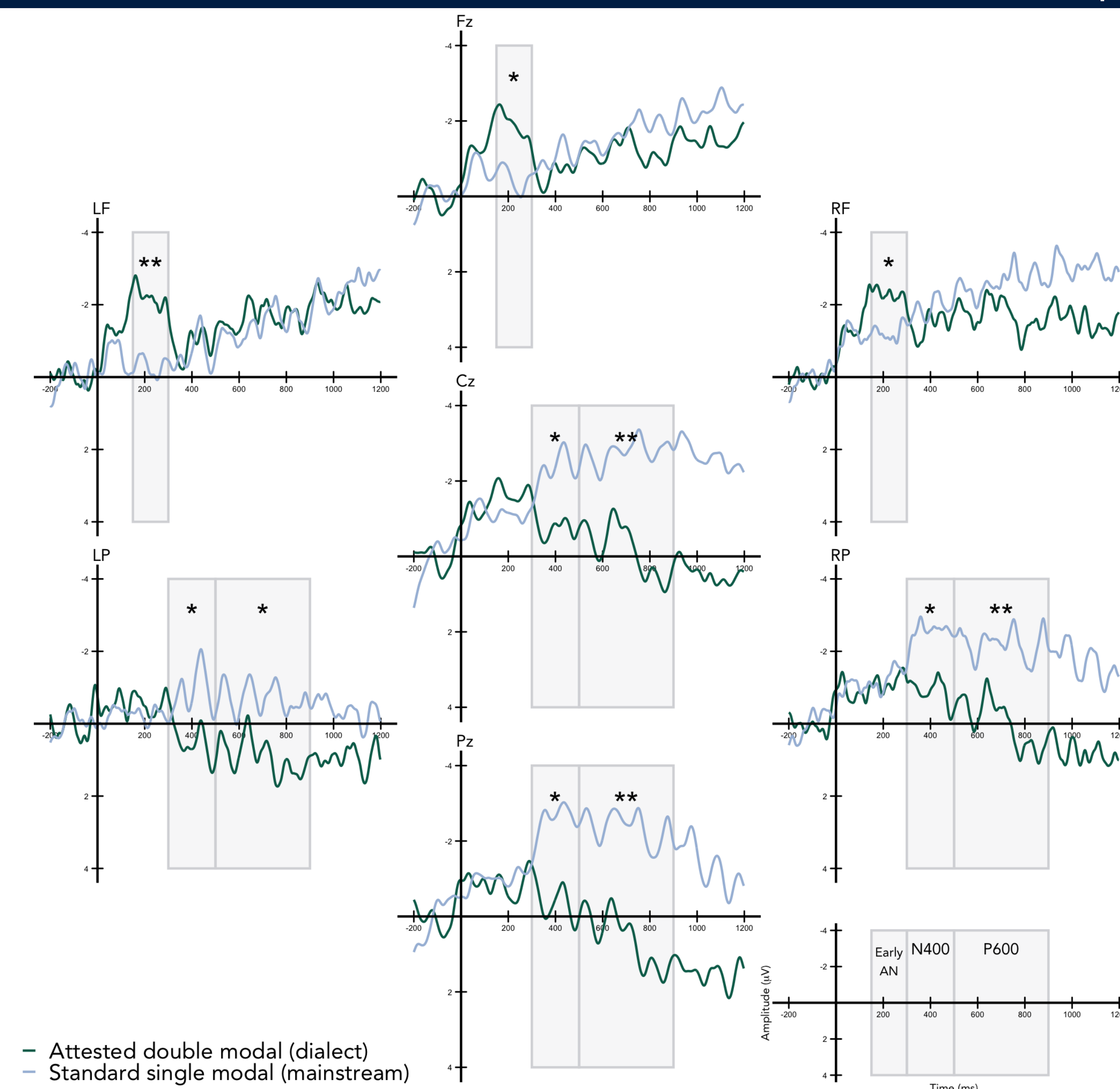
Symbol size indicates "Southernness" score: sum of double modal exposure and familiarity

Both dialect groups are sensitive to syntactic variation at both structure-building (early AN) and integration (P600) levels of processing

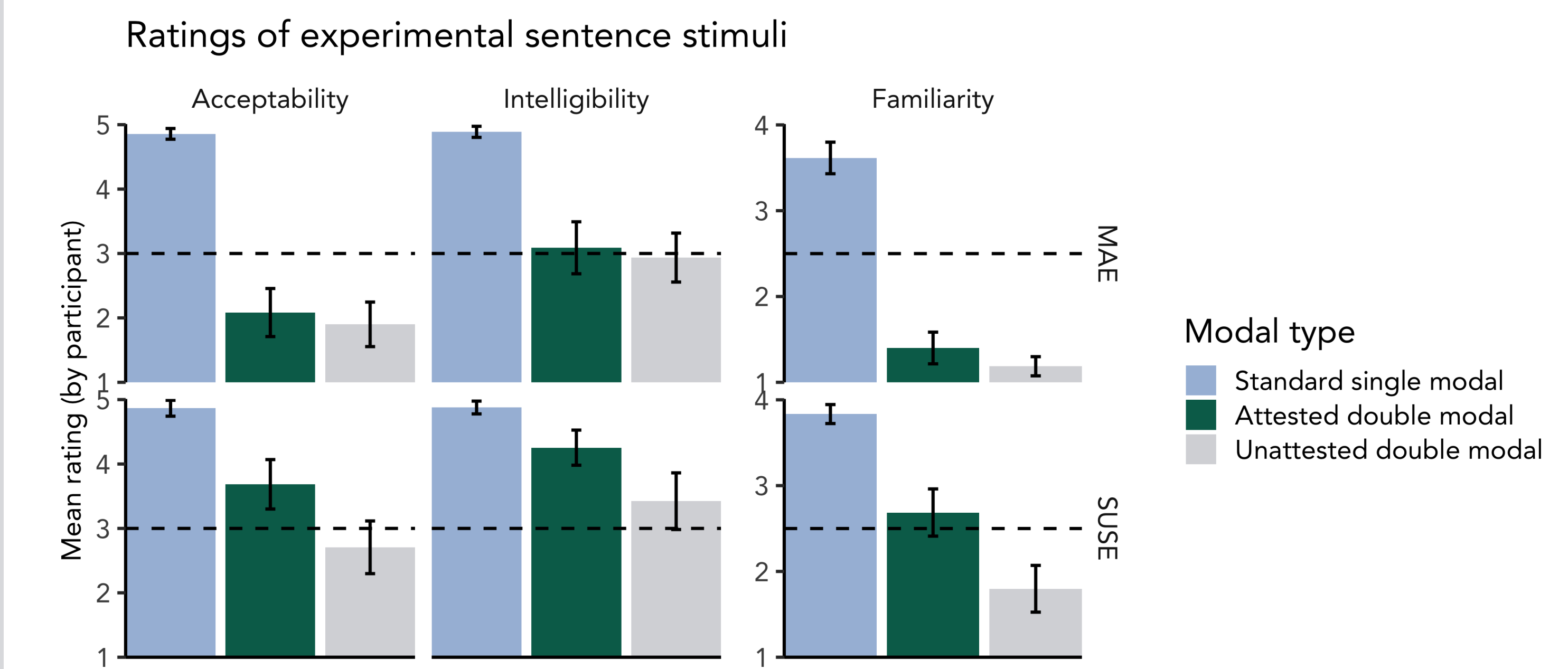
Mainstream American English listener group



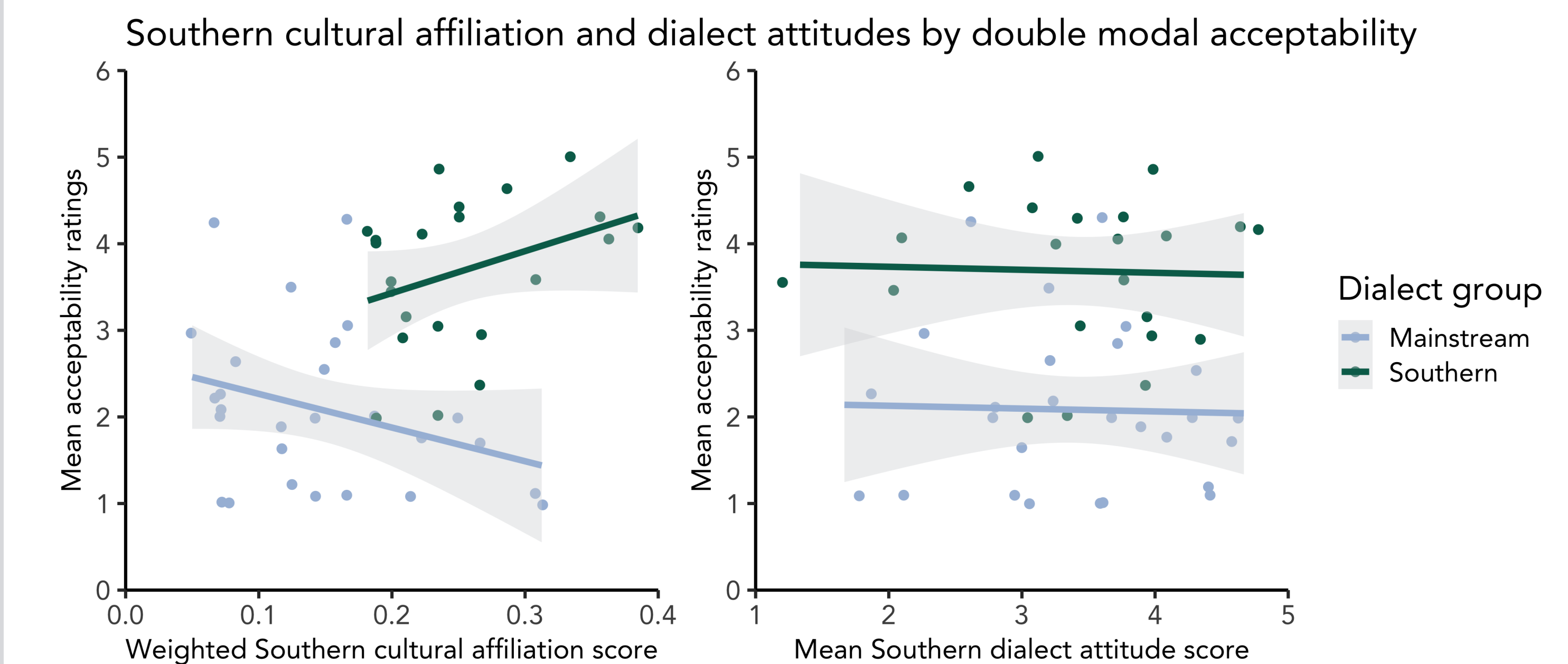
Southern United States English listener group



Offline tasks



Error bars represent 95% confidence intervals



95% confidence intervals displayed around regression lines

Results

- Mainstream listeners exhibited the expected P600 effect, reflecting **syntactic reanalysis**, in response to attested double modals
- Southern listeners, contrary to predictions, also showed a robust P600 effect
- Attested double modals elicited early anterior negativities, reflecting **automatic detection** of non-standard speech, in both dialect groups
- Southern listeners displayed a strong dissociation between their ratings of attested double modals and their ERP responses

Conclusion

Are our brains more prescriptive than our mouths?

- Combining neurocognitive and linguistic methods reveals dynamic interactions among dialect experience, sociolinguistic variables, and language processing
- Future direction:** studying Southern speakers in their local communities with *The Brain Bus* (mobile EEG system) to disentangle the effects of dialect immersion and experience

References and acknowledgements

Hasty, J. D. (2012). We might should oughta take a second look at this: A syntactic re-analysis of double modals in Southern United States English. *Lingua*, 122(14), 1716–1738.

Mishoe, M., & Montgomery, M. (1994). The pragmatics of multiple modal variation in North and South Carolina. *American Speech*, 69(1), 3–29.



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