

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

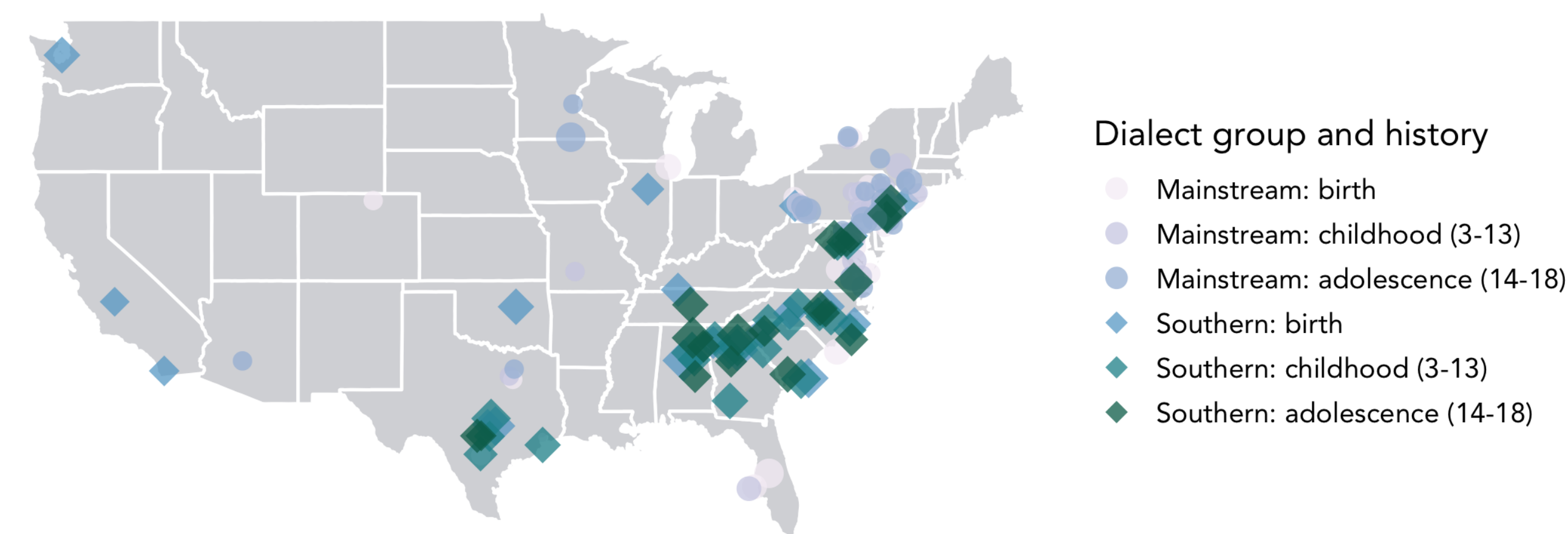
Type	ERP		Offline measures	
	Mainstream	Southern	Mainstream	Southern
Standard single modal	Baseline	Baseline	High	High
Attested double modal	(N400-)P600	Same as baseline	Low	Similar to standard single modals
Unattested double modal			Same as attested double modals	Lower than single and attested double 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 live 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 during childhood or adolescence	Exposed to "might could" or familiar with double modals	23	20	22	19.9

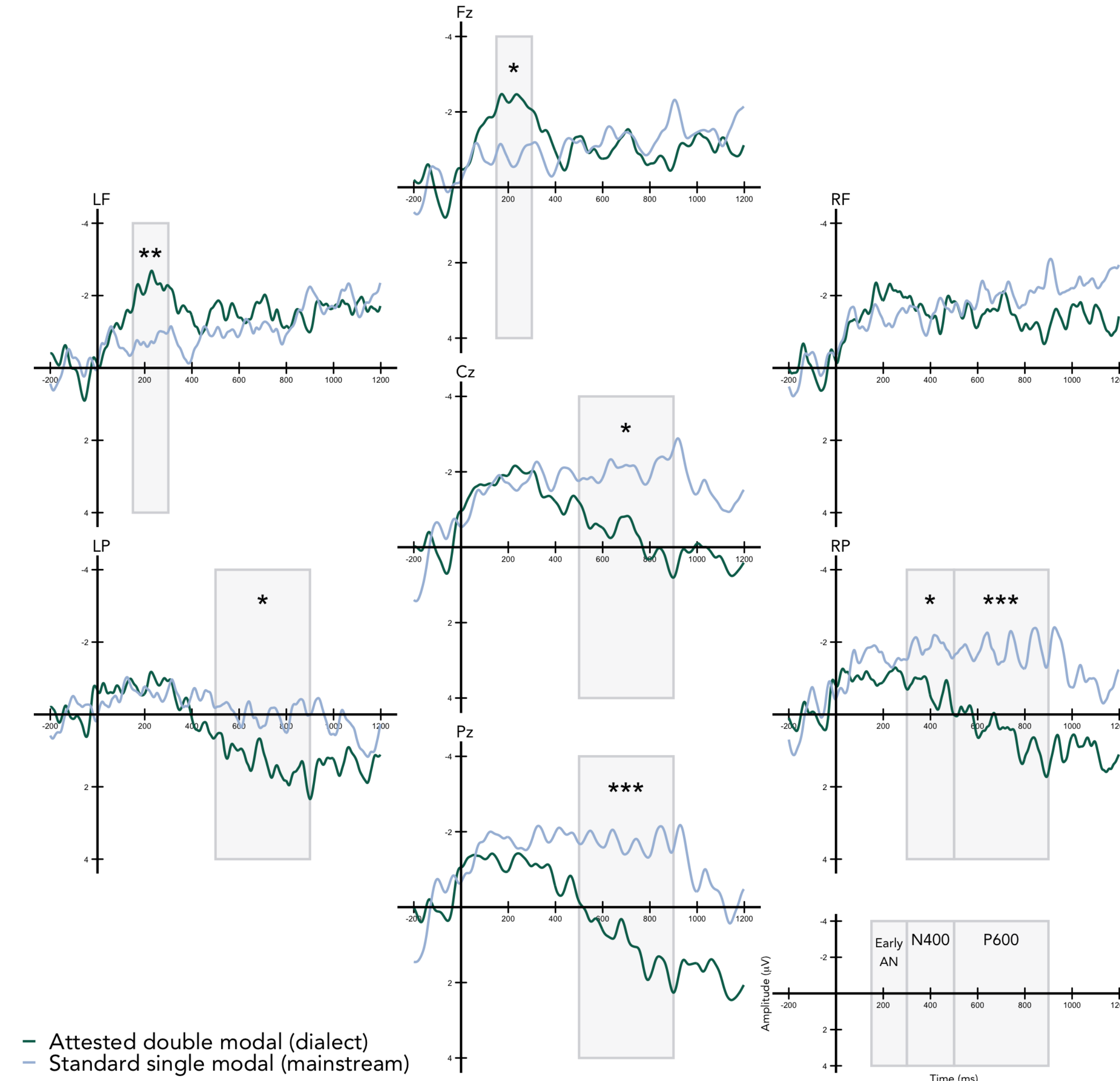
Regional dialect exposure from birth through adolescence



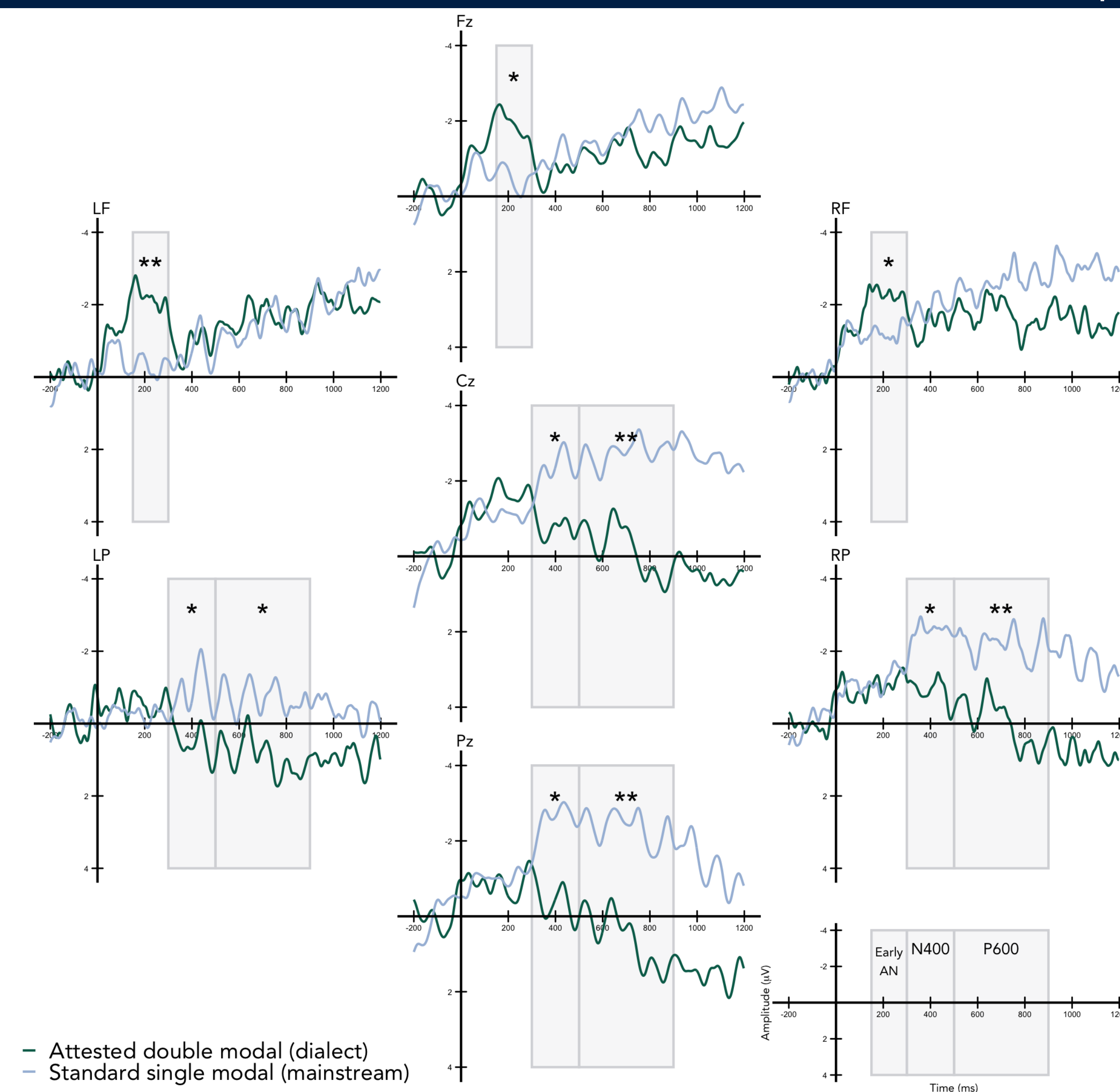
Size indicates "Southernness" score: sum of double modal exposure and familiarity

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

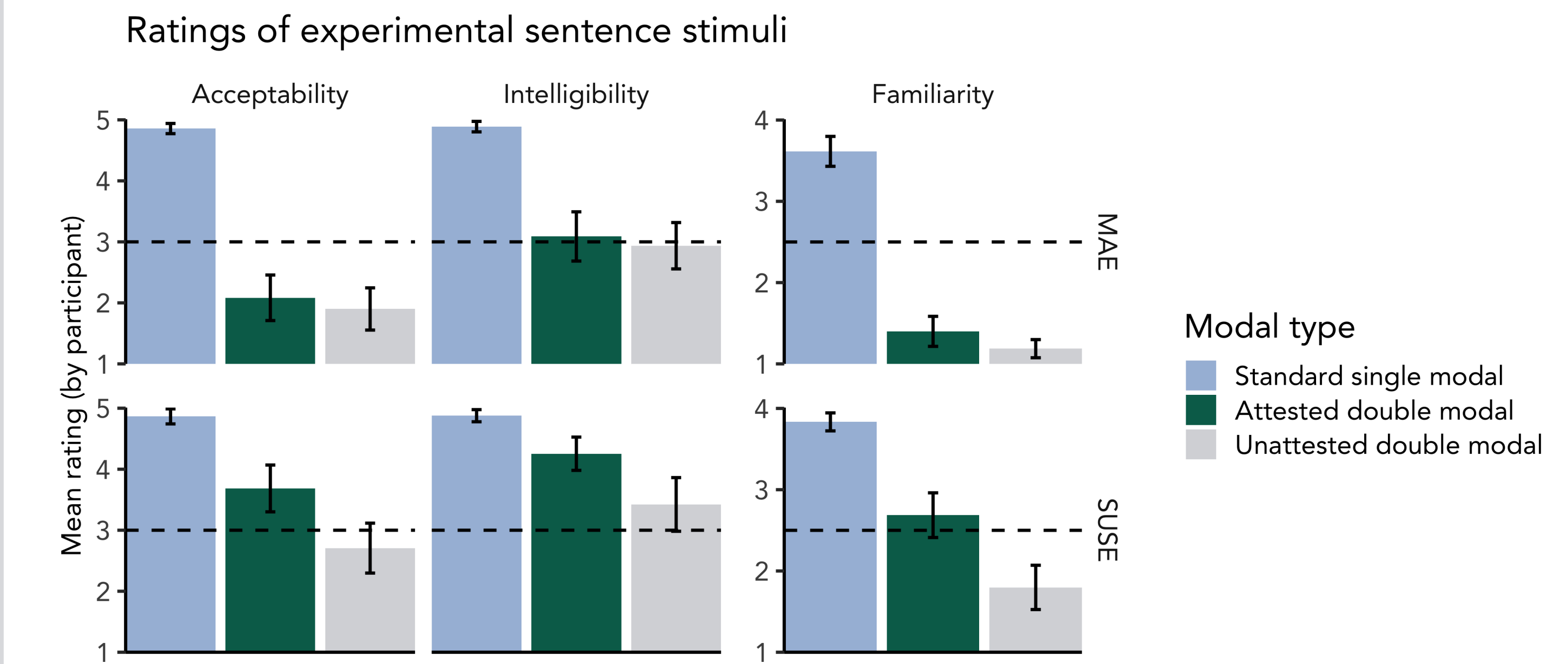
Mainstream American English listener group



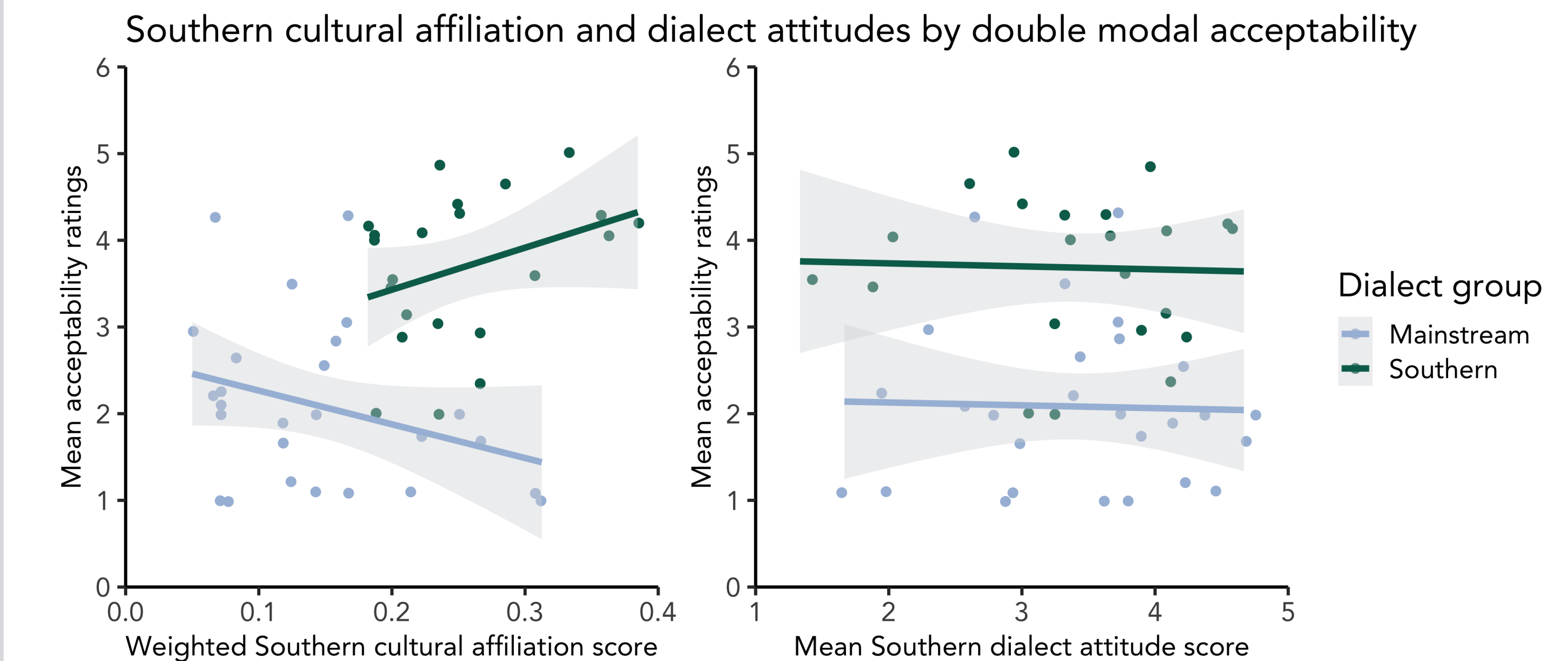
Southern United States English listener group



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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