

# 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	Experimental 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

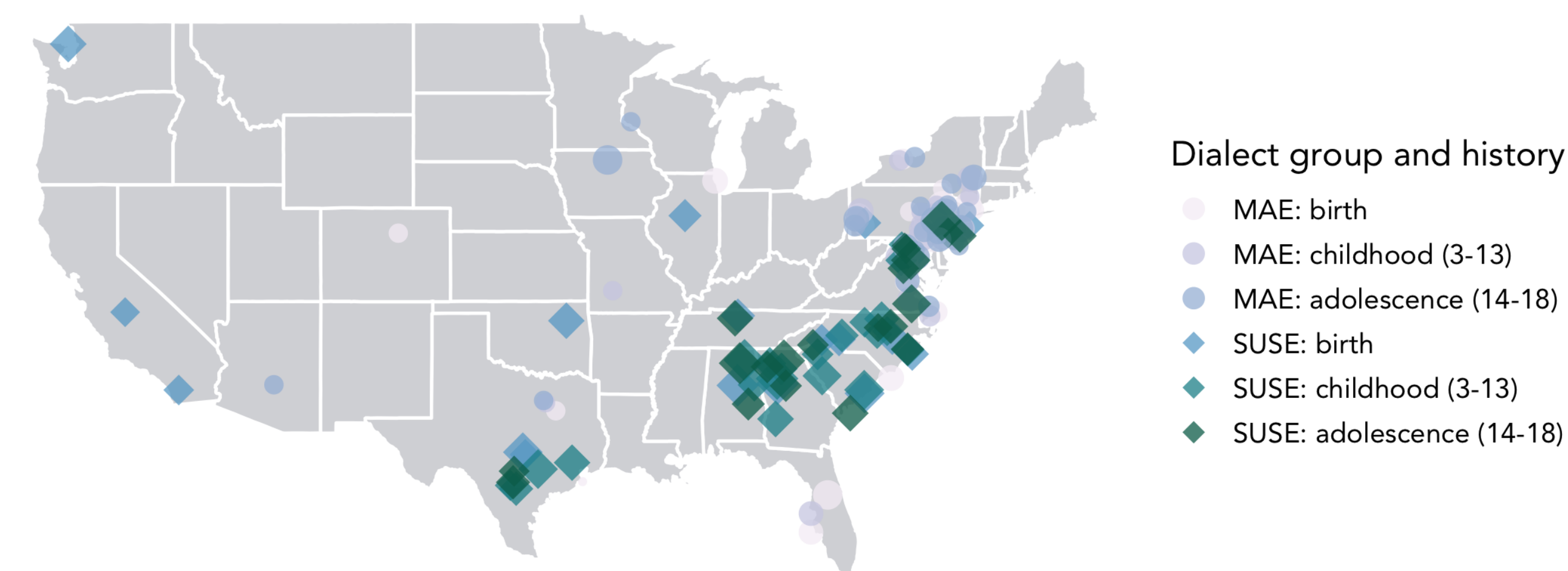
Type	ERP		Offline measures	
	Mainstream	Southern	Mainstream	Southern
Standard single modal	Baseline	Baseline	High	High
Attested double modal	(N400-)P600	Same as baseline	Low	Similar to standard single modals
Unattested double modal			Same as attested double modals	Lower than single and attested double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

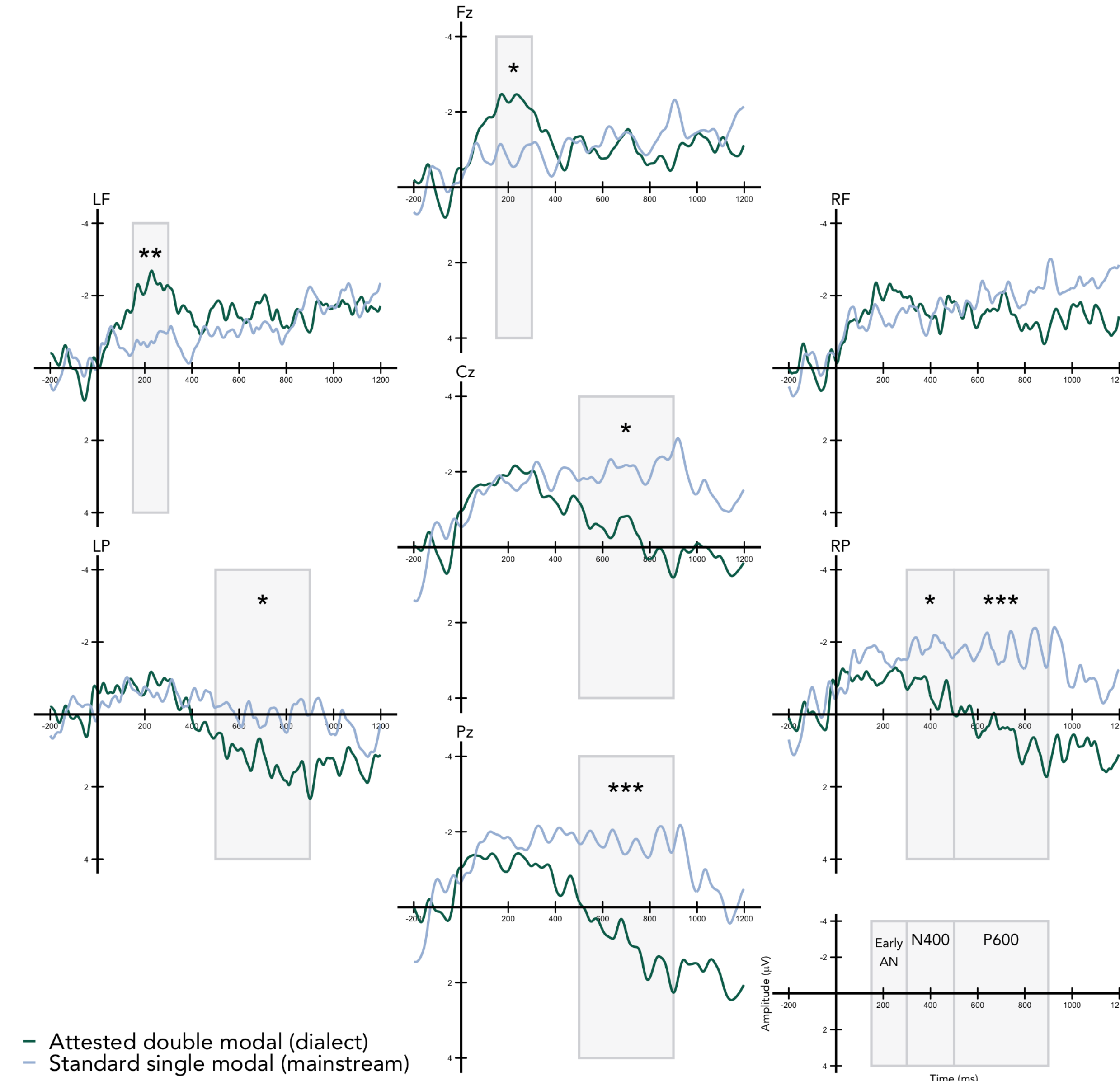
Regional dialect exposure from birth through adolescence



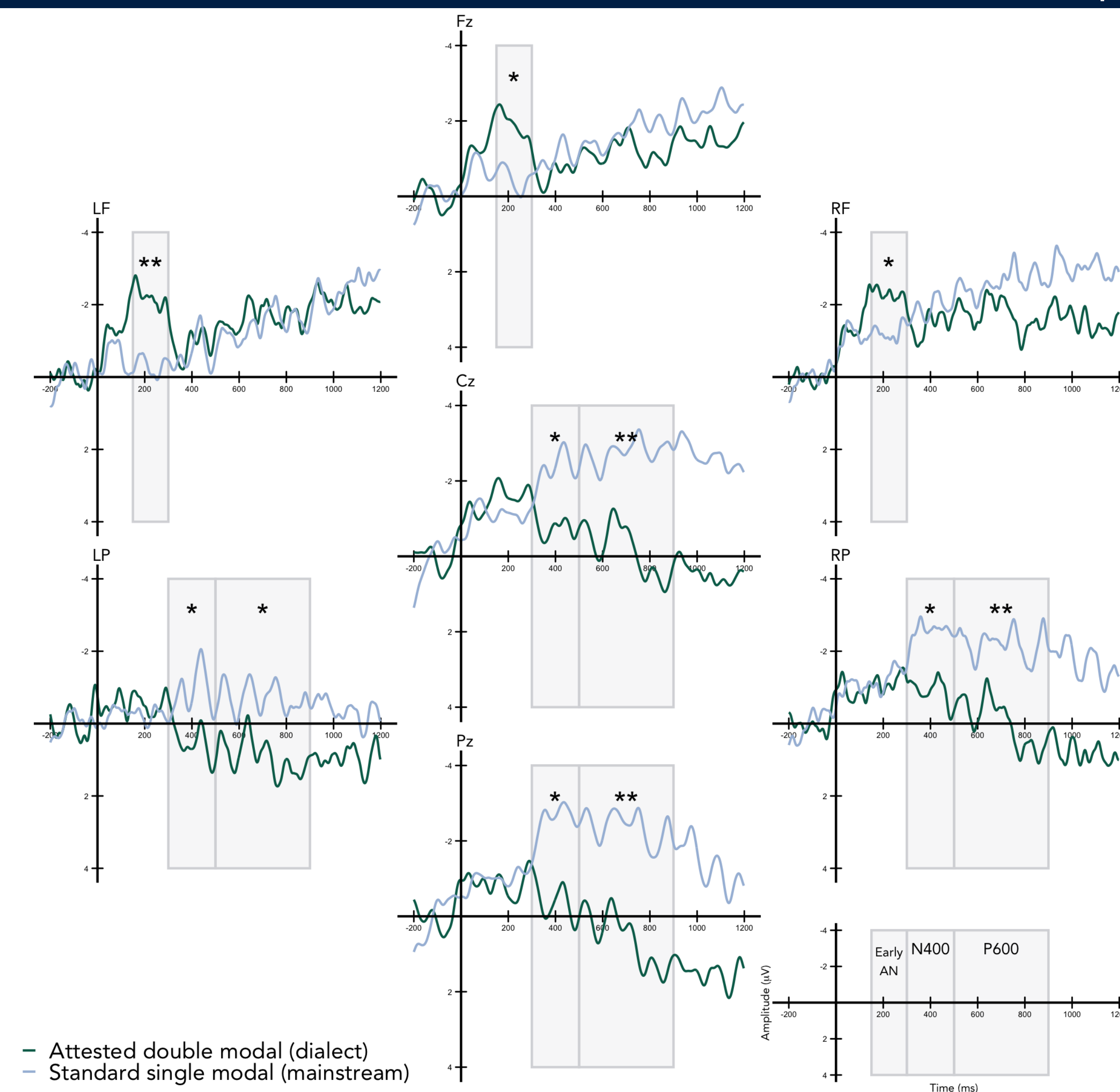
Symbol size indicates "Southernness" score: sum of double modal exposure and familiarity

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

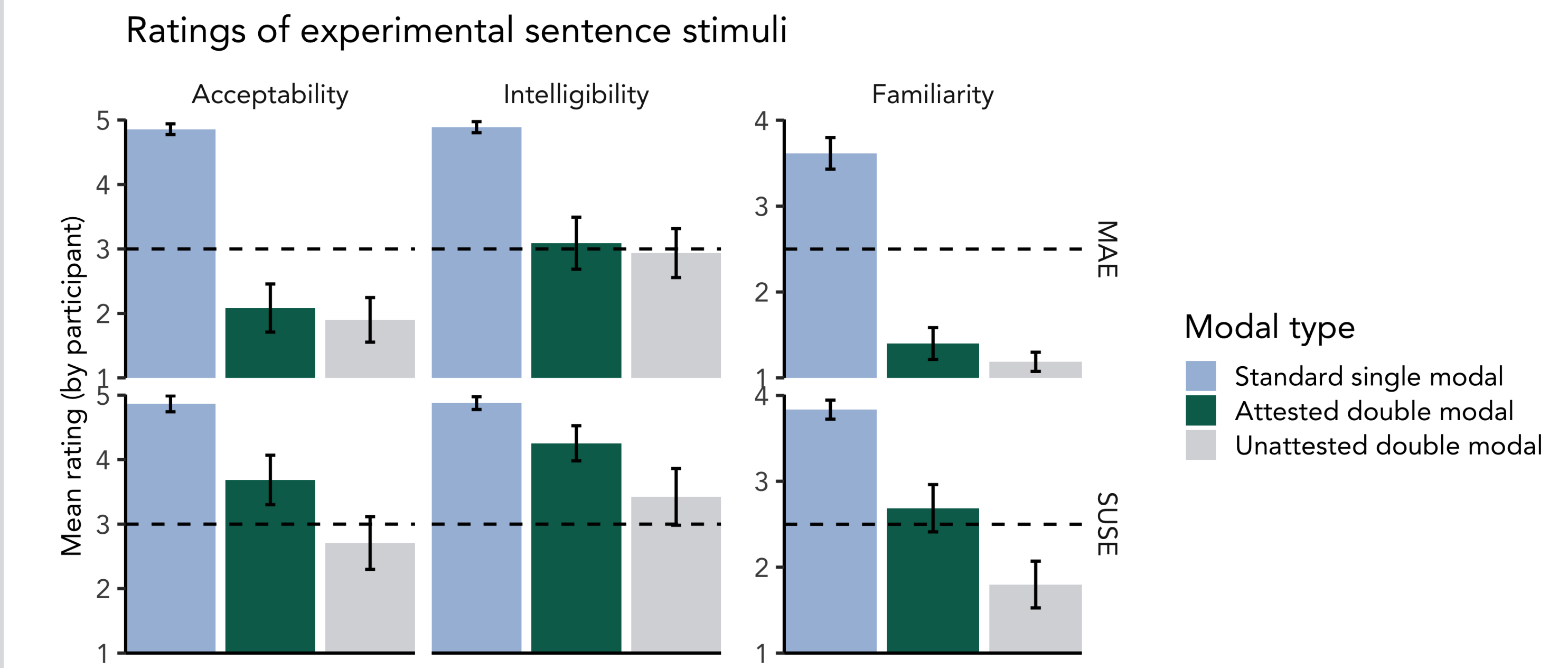
## Mainstream American English listener group



## Southern United States English listener group

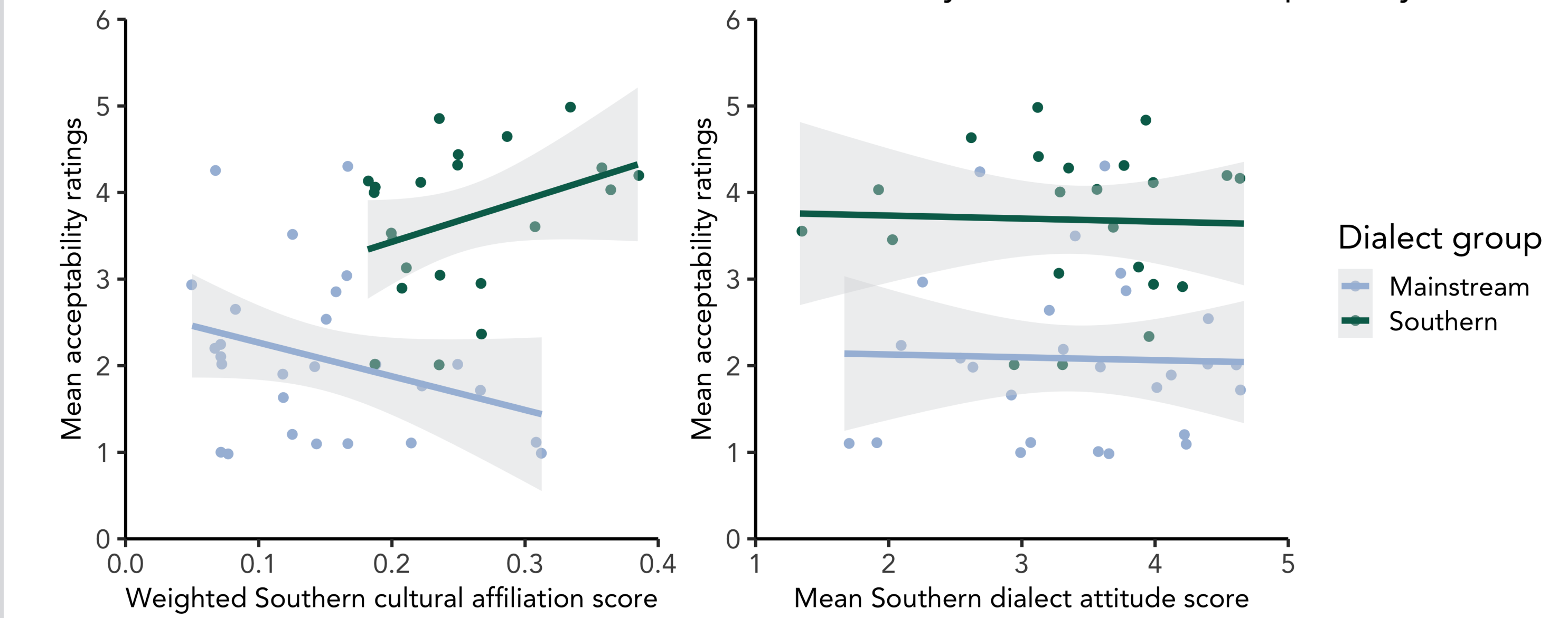


## Offline tasks



Error bars represent 95% confidence intervals

Southern cultural affiliation and dialect attitudes by double modal acceptability



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 language exposure, use, and 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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