Experience with dialectal variants modulates online syntactic processing

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What makes difficult syntactic structures difficult?
- Intrinsic properties?
  - » e.g., memory demands, parsing heuristics
- Infrequency / lack of experience?
  - » Repeated exposure can make hard structures easier

Test online comprehension of a **dialectal syntactic variant**:
- Are these structures easy with **long-term** (lifetime) experience?
- Can readers **learn** to comprehend based on **recent** experience?

NEEDS + PARTICIPLE

Syntactic construction used in Ohio, western Pennsylvania

"The display case needs polished before we add the trophies."

means:

"The display case needs to be polished..."

(Object of *polish* is *display case*)

But without knowledge of *needs* + participle construction, *"The display case needs polished..."* must be interpreted as including a modifier of an upcoming noun:

"The display case needs polished trophies to look its best."

(*Polished* modifies *trophies*)

Results in **garden path** effect when **disambiguating region** disambiguates sentence to *needs* + participle structure.

MATERIALS & METHOD

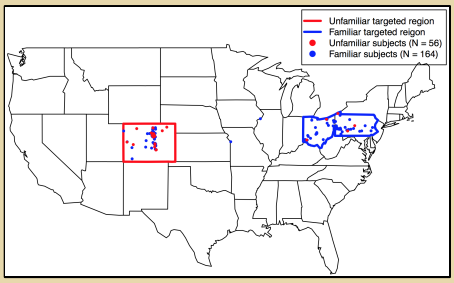
- 20 simulated e-mail stimuli, 3-4 sentences each
- 10 critical e-mails:
  - » Next-to-last sentence contains *needs* + participle
  - » 15% of total sentences

"I'm certainly excited to have a new award to display. The display case needs polished before we add the trophy. Let's do that this afternoon.

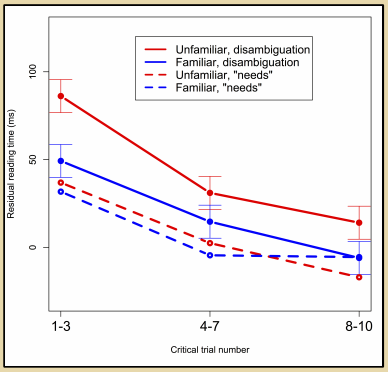
- Task: Web-based word-by-word self-paced reading
- Measure: Residual reading time at **disambiguation**
  - » **Disambiguation** = Two words after the participle
- Additional cover story manipulation (source of e-mails: company in Pittsburgh vs. company in Denver)

PARTICIPANT RECRUITMENT

- Web-based (Amazon Mechanical Turk)
- Recruit participants from areas likely to be:
  - » **Unfamiliar** with *needs* + participle (**CO**)
  - » **Familiar** with *needs* + participle (**OH** & **PA**)
- Confirm familiarity with post-experiment questionnaire
  - » Lure questions about other structures to avoid bias



READING TIME RESULTS



Long-term exposure to *needs* + participle matters
- » Familiar participants **faster** in disambiguation

But, unfamiliar participants **learn**
- » Group difference declines after early trials

Not about differences in overall reading speed
- » Equal reading times at unambiguous *needs*

CONCLUSION

- Strong role of **experience** in syntactic processing
  - » Structure easier for participants with long-term experience
  - » Quickly learn to comprehend after recent experience
- **Web-based methods** can recruit participants varying in dialectal features relevant to sentence comprehension
- No effect observed of putative source of e-mails
  - » Participants may not know geography of *needs*+participle
  - » Poor cue: Some Denver residents use *needs*+participle

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