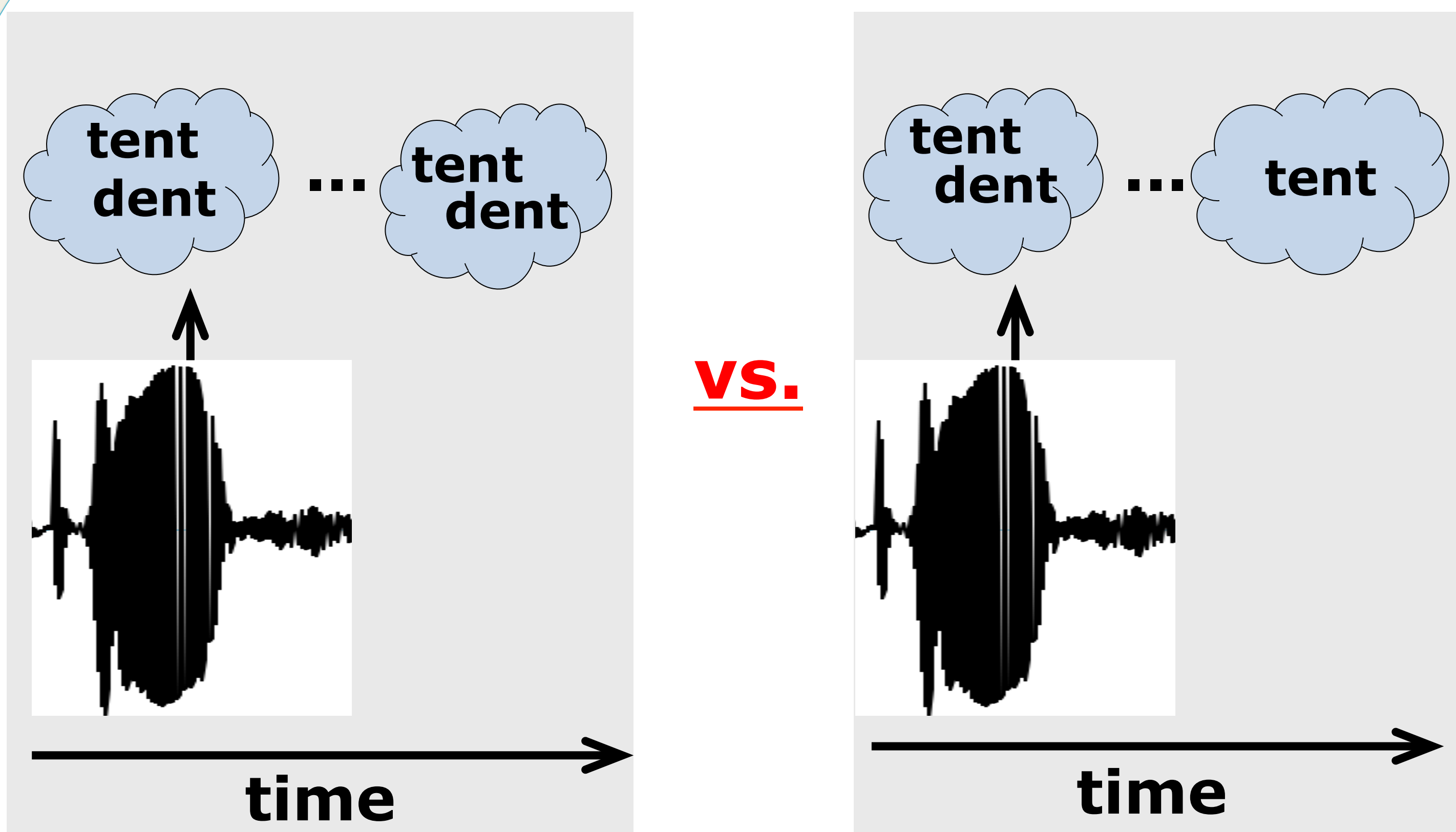# Expected Utility of Later Context Mediates Maintenance of Subcategorical Information in Word Recognition

Wednesday Bushong[1] and T. Florian Jaeger[1,2]

[1]Department of Brain & Cognitive Sciences, University of Rochester [2]Department of Computer Science, University of Rochester
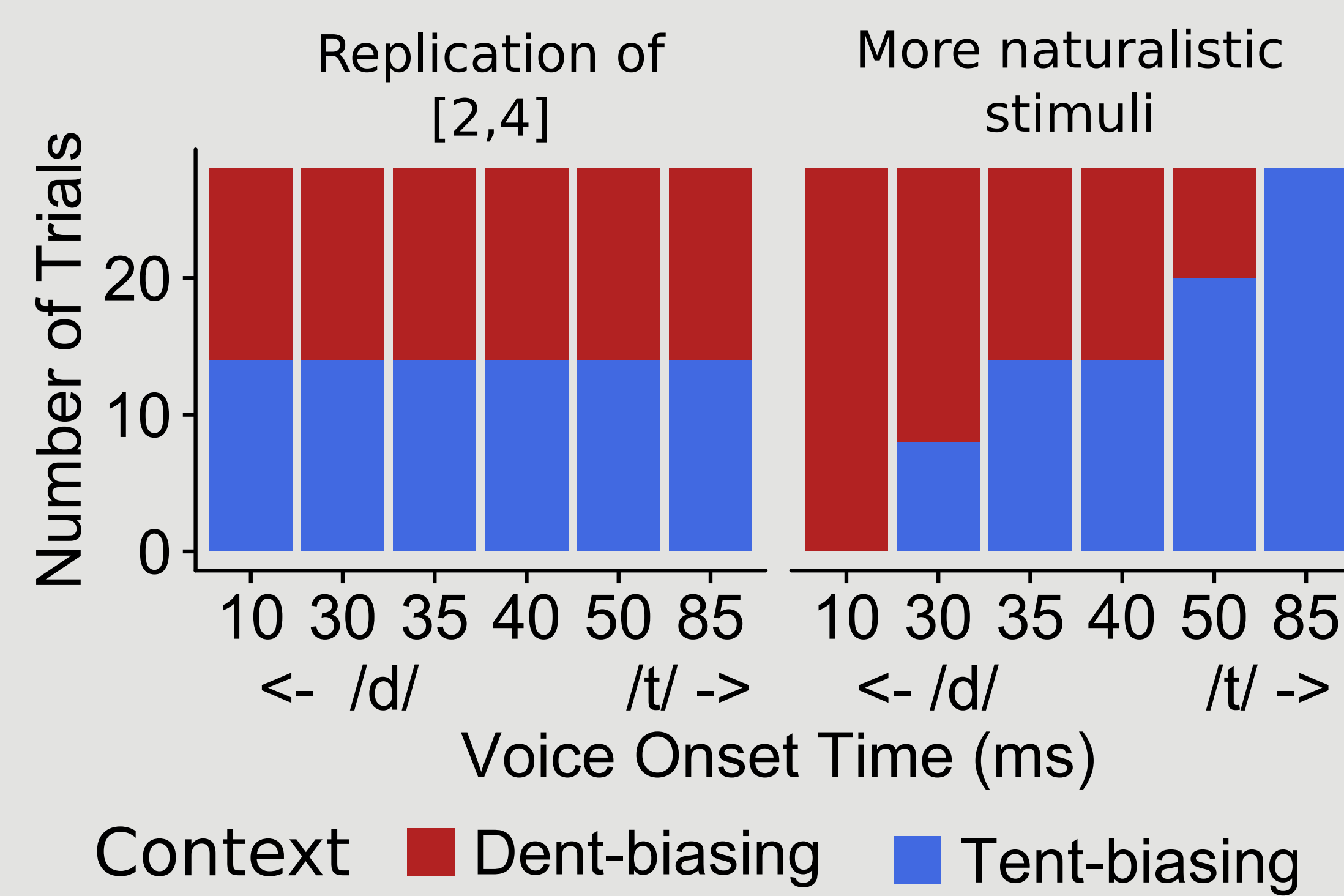
Motivation

Questions: Do listeners typically maintain subcategorical information about words after processing? What mediates this process?
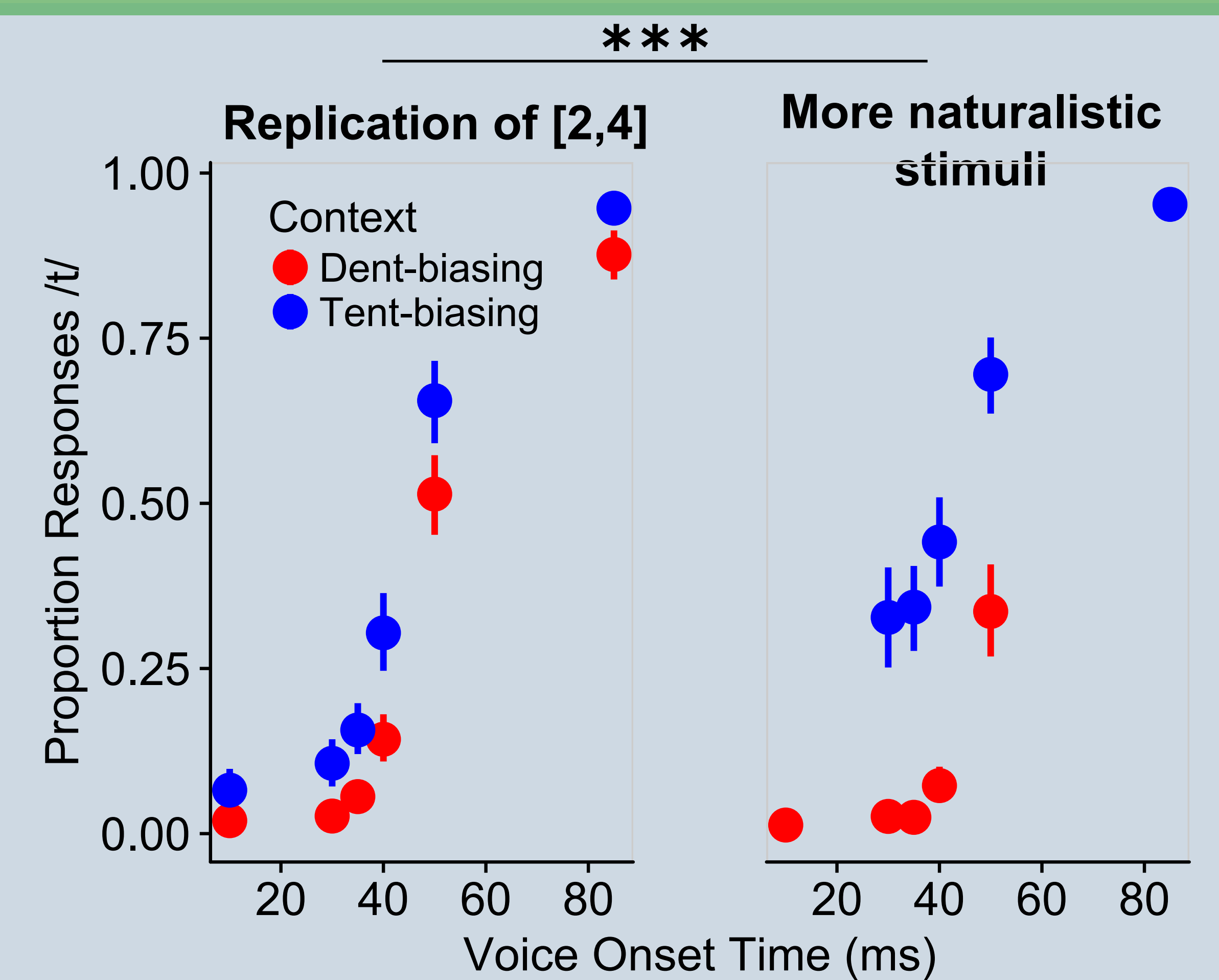
Hypothesis: No maintenance if experience suggests it wouldn't be beneficial

Study 1: Listeners maintain subcategorical information

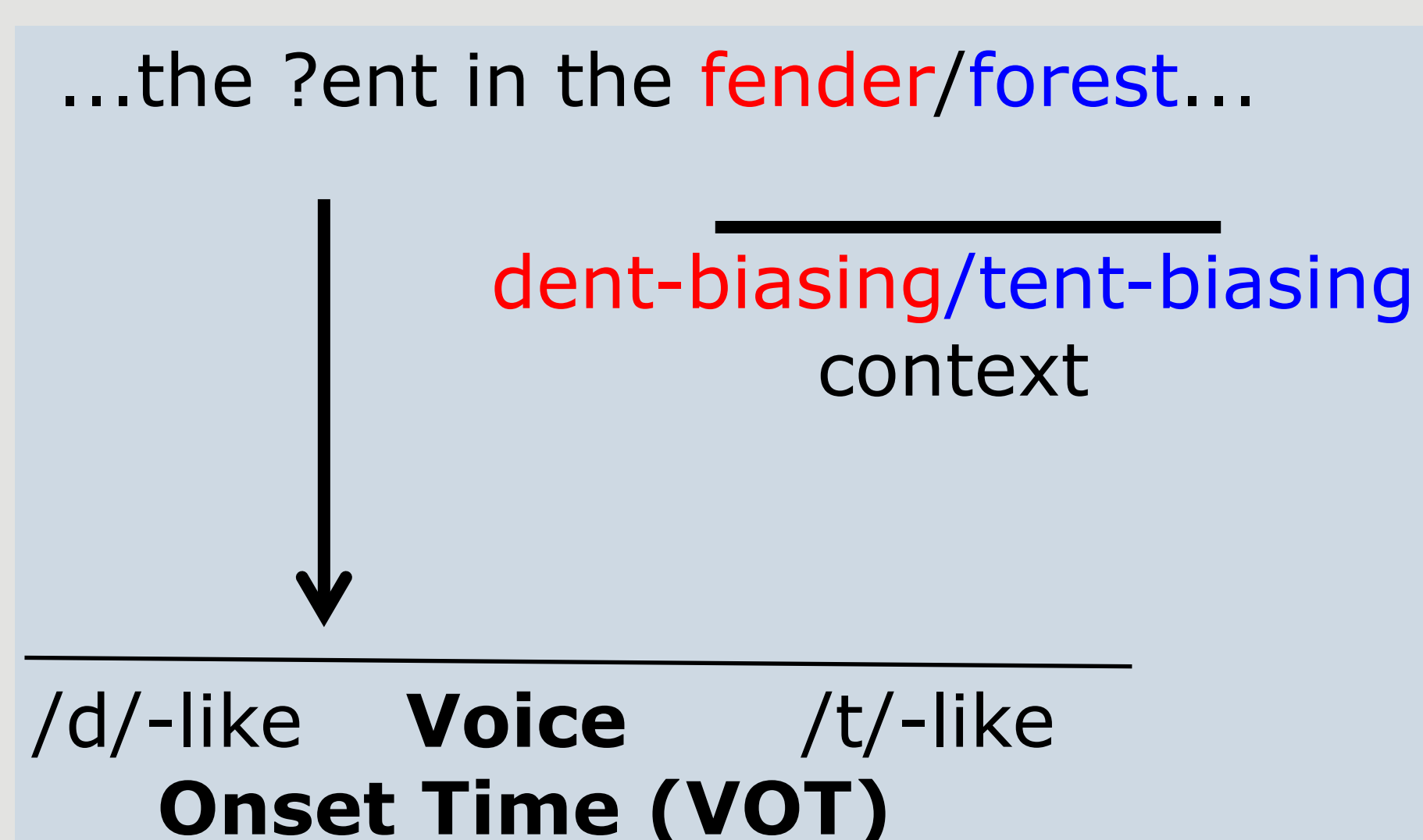Replicate right-context effect with new materials and more naturalistic stimuli (n=106)

When stimulus distributions more like everyday language (unlike [2,4]), *much clearer* evidence for uncertainty maintenance

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General Method

Use right-context effects to address these questions (see [1,2,3,4])

...the ?ent in the fender/forest...

→ dent-biasing/tent-biasing context
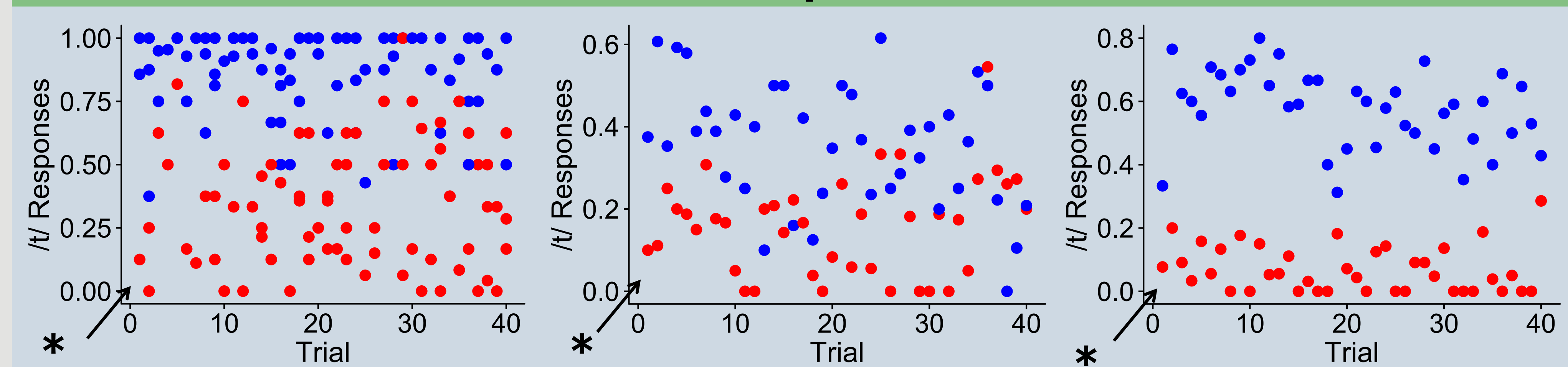
/d/-like **Voice Onset Time (VOT)** /t/-like

Basic logic: if listeners use **both** VOT & right context in categorization responses, they've maintained subcategorical information about the "?" sound (VOTs used: 10, 40, 50, 60, 85ms)

Study 2: Maintenance of subcategorical information is typical of language use

Method: Test whether participants show significant integration of VOT & context even *before* they have significant experience with the task

→ Use data from Study 1 groups & Study 3 exposure phase (informative context exposure group)

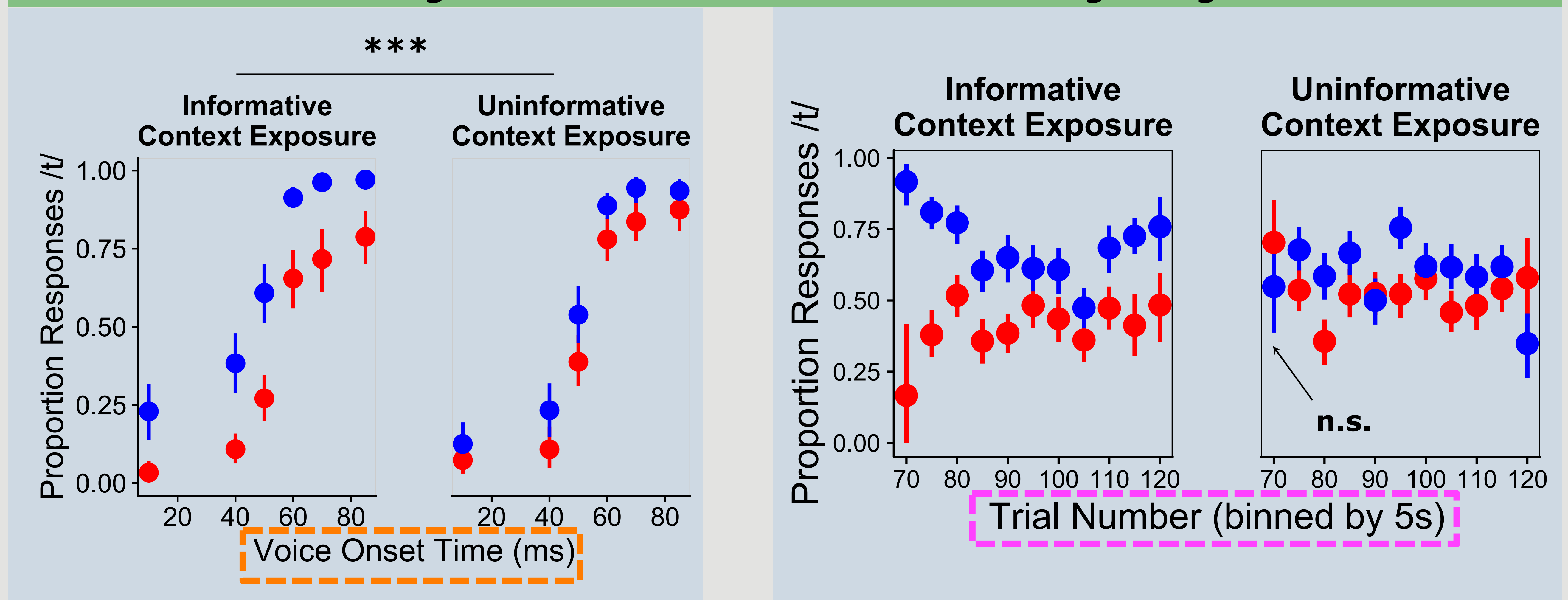**Listeners show right-context effects even from the very first trial of these experiments**

Study 3: Maintenance of subcategorical information is influenced by expected utility

Vary whether right-context is informative to word recognition (n=120)

	Informative Context Exposure Group	Uninformative Context Exposure Group
Exposure Phase (72 trials)	Once the ?ent in the wall was repaired, we were relieved. When the ?ent in the forest was well camouflaged, we began our hike.	Once the ?ent was made, we were done for the night. When the ?ent was taken care of, we were ready to go.
Test Phase (48 trials)	?ent in the campground... ?ent in the fender...	?ent in the campground... ?ent in the fender...

Right-context uninformative during exposure leads to:
smaller maintenance effect during test / *no* maintenance at the beginning of test

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References & Acknowledgments

[1] McMurray, Aslin, & Tanenhaus (2009) JML [2] Connine, Blasko, & Hall (1991) JML [3] Szostak & Pitt (2013) JEP:HPP [4] Bicknell et al. (under review) [5] Christiansen & Chater (2015) BBS

Conclusions & Future Work

Listeners **typically** maintain subcategorical information in memory during language processing, but this can be **modulated by how useful they expect maintenance to be**

Future work: is this a strategy employed during more naturalistic language use?

→ Some words are more likely to appear in informative contexts than others – do we see a similar behavioral pattern based on listeners' prior expectations about those words?