

Language Shifts the Representation of Sounds in Time: From Auditory Individuals to Auditory Ensembles

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Individuating/grouping events in time

"What did you do last week?"

Can you individuate days or were they all a blur?

"I went to this amazing concert"

"I had the best date"

"individuals"

(e.g. Zacks et al., 2009; Newton, 1979)

"a ton of meetings"

"it was a tough week in general"

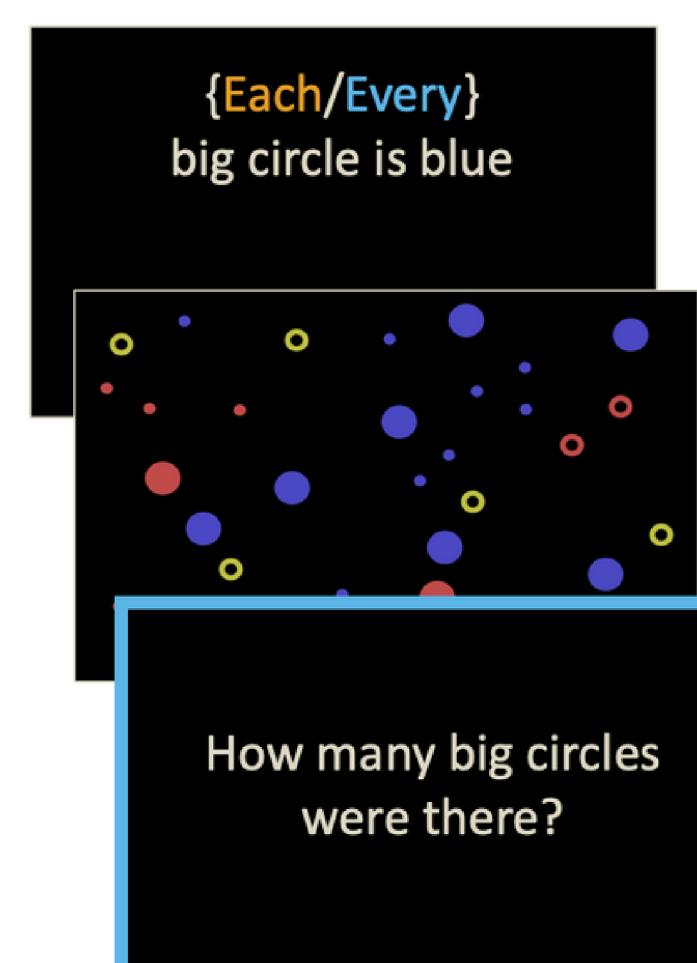
"ensembles"

(e.g. Piazza et al., 2013; Albrecht & Scholl, 2012)

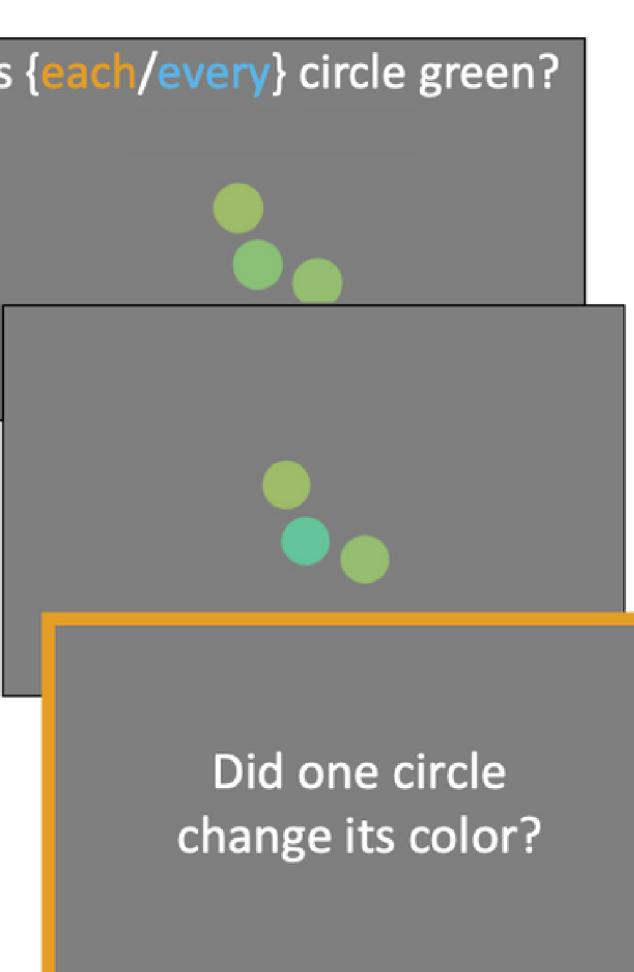
We experience the world as **events unfolding over time** -- but we do not represent events in equal resolution. Some events might be individuated, while others are just represented as gists.

What determines whether we individuate events in time or not?

The power of a single word?



(Knowlton 2021; Knowlton, Pietroski, Halberda, & Lidz 2022; Knowlton, Trueswell, & Papafragou 2023)



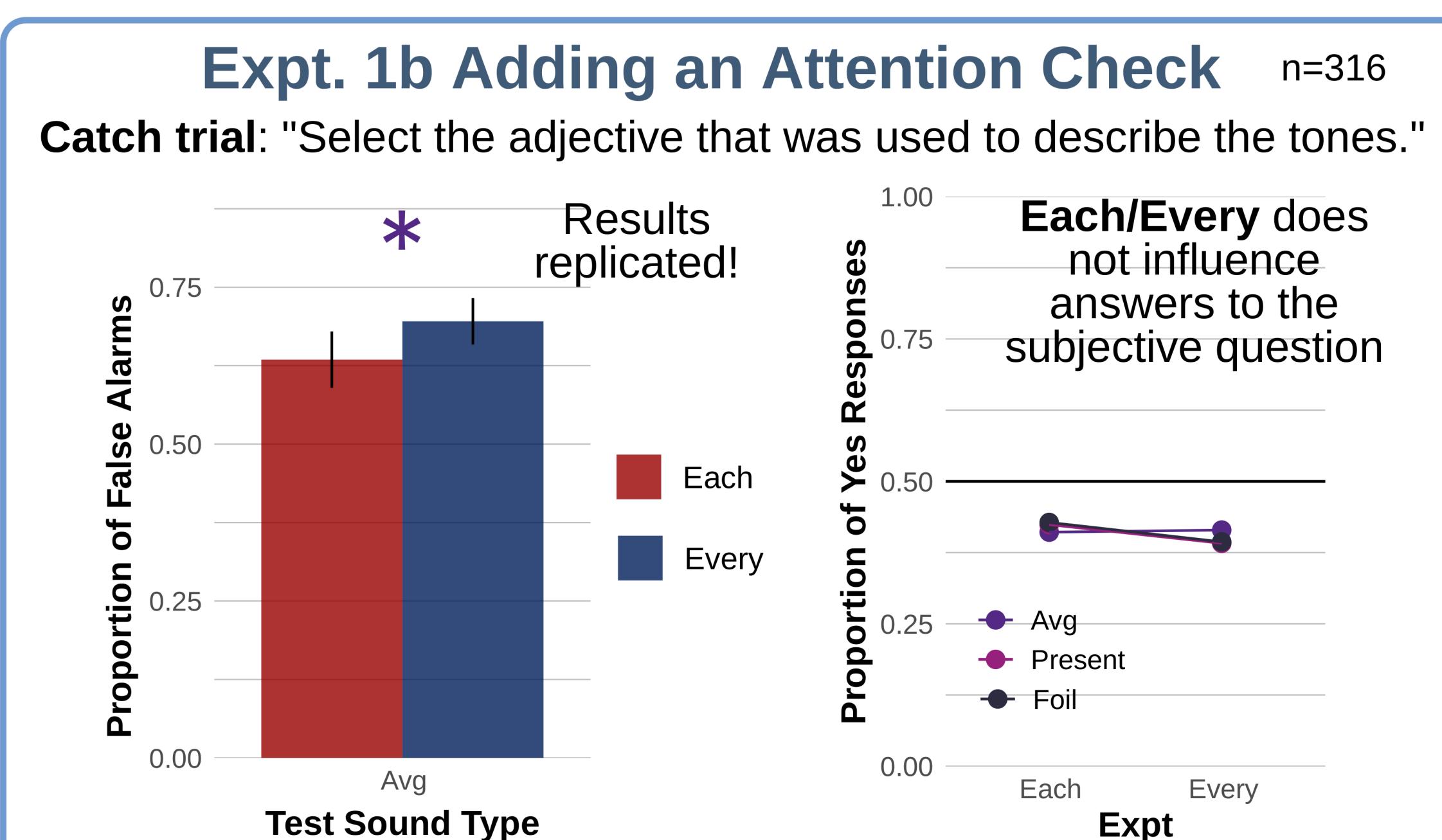
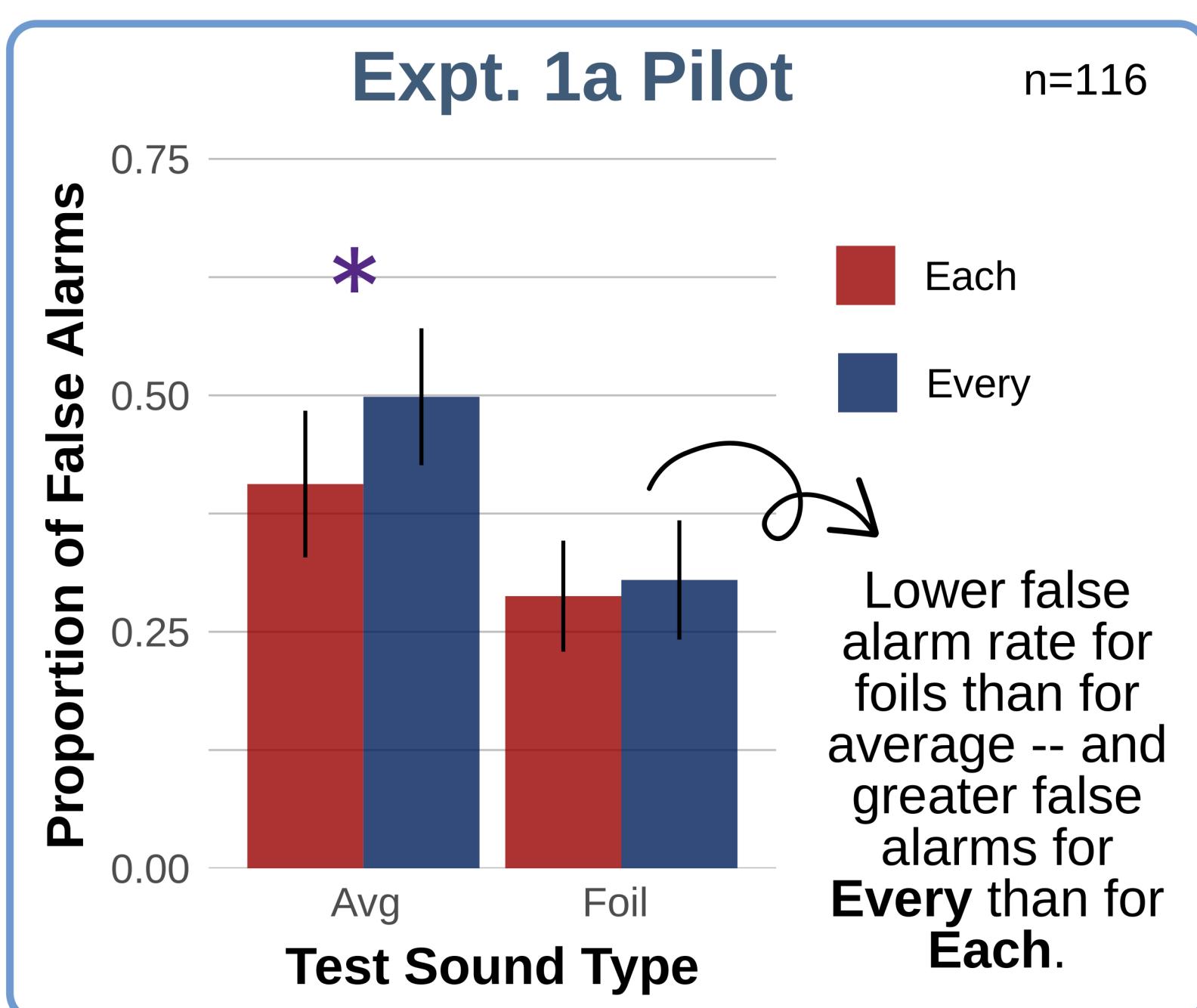
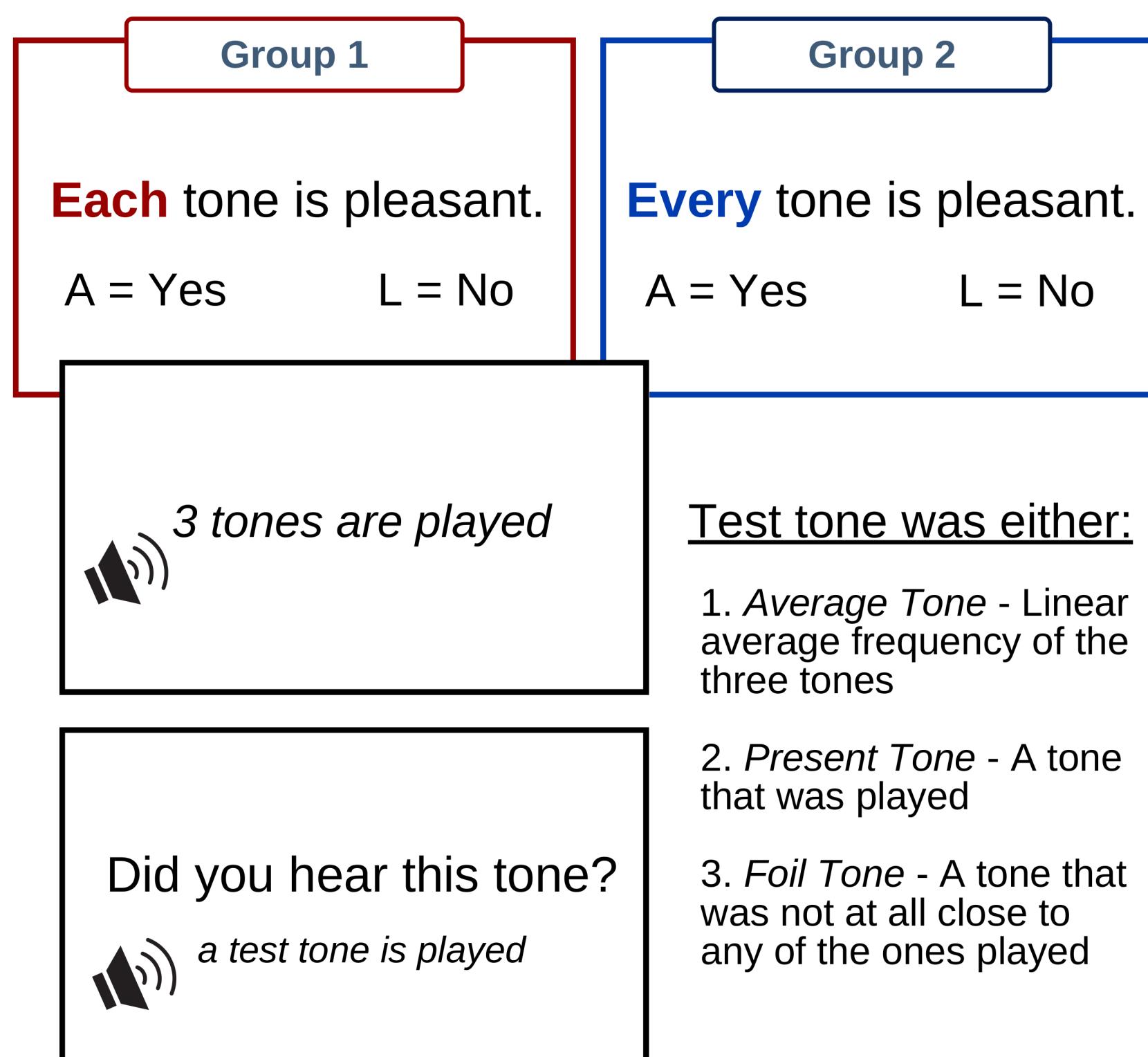
Ensemble Performance:
every > each

Individuation Performance:
each > every

The meaning of "**Each**" invites **individuating** the things under discussion, whereas the meaning of "**Every**" invites treating those things as **members of a group**

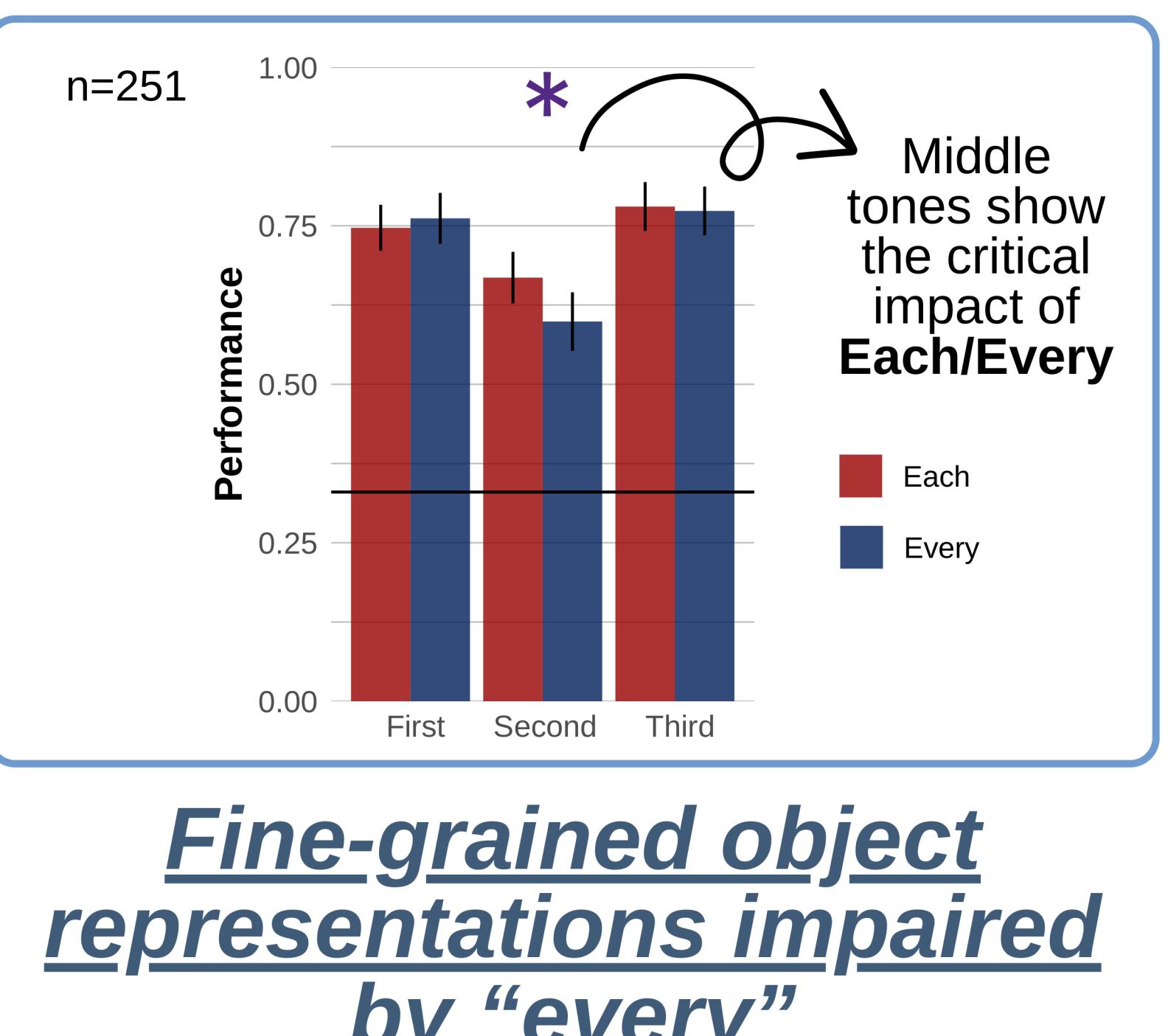
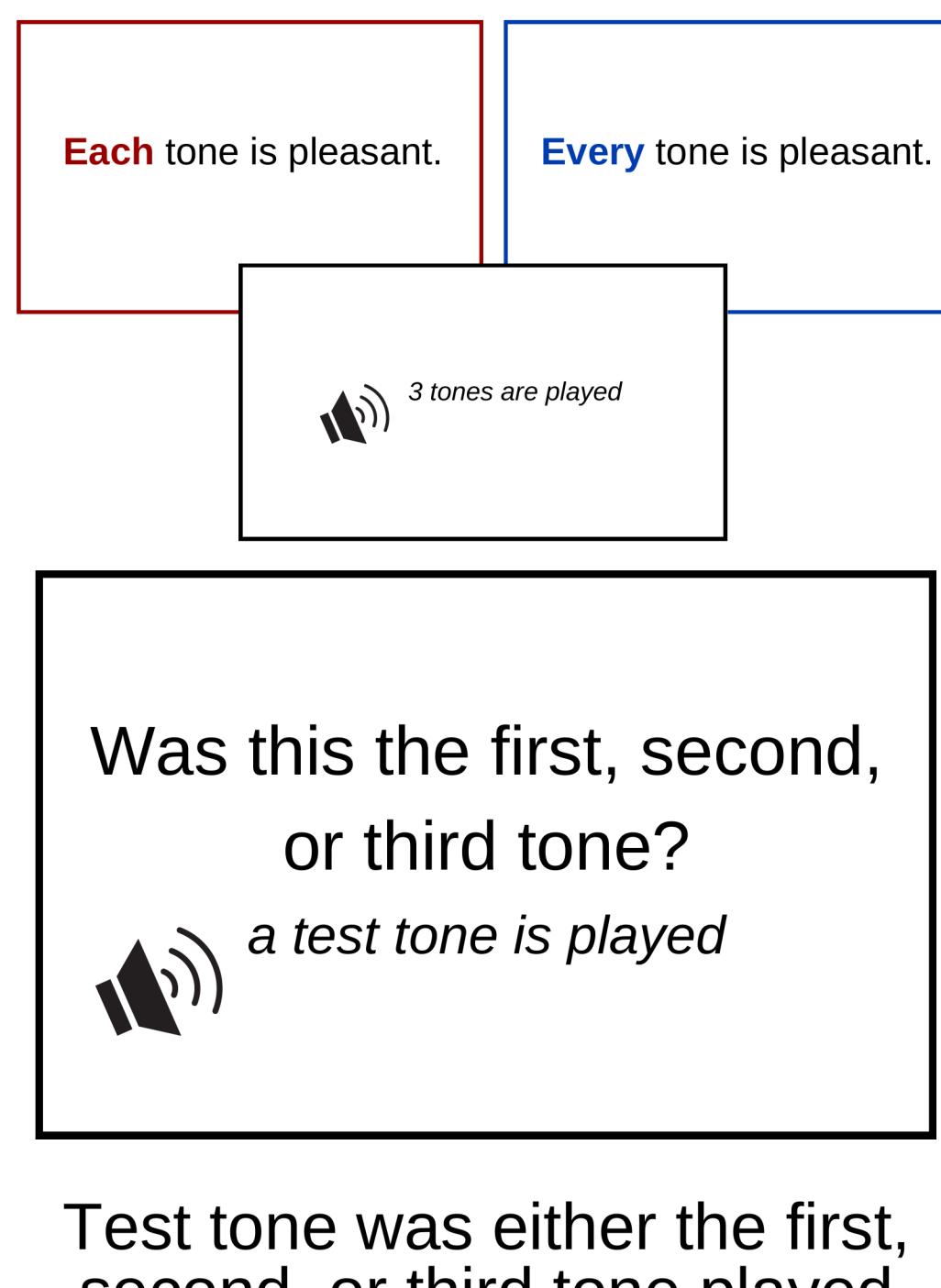
Could processing each/every impact representation of sounds in time?

Expt. 1: Does "every" lead to false memories of hearing the "average" tone?



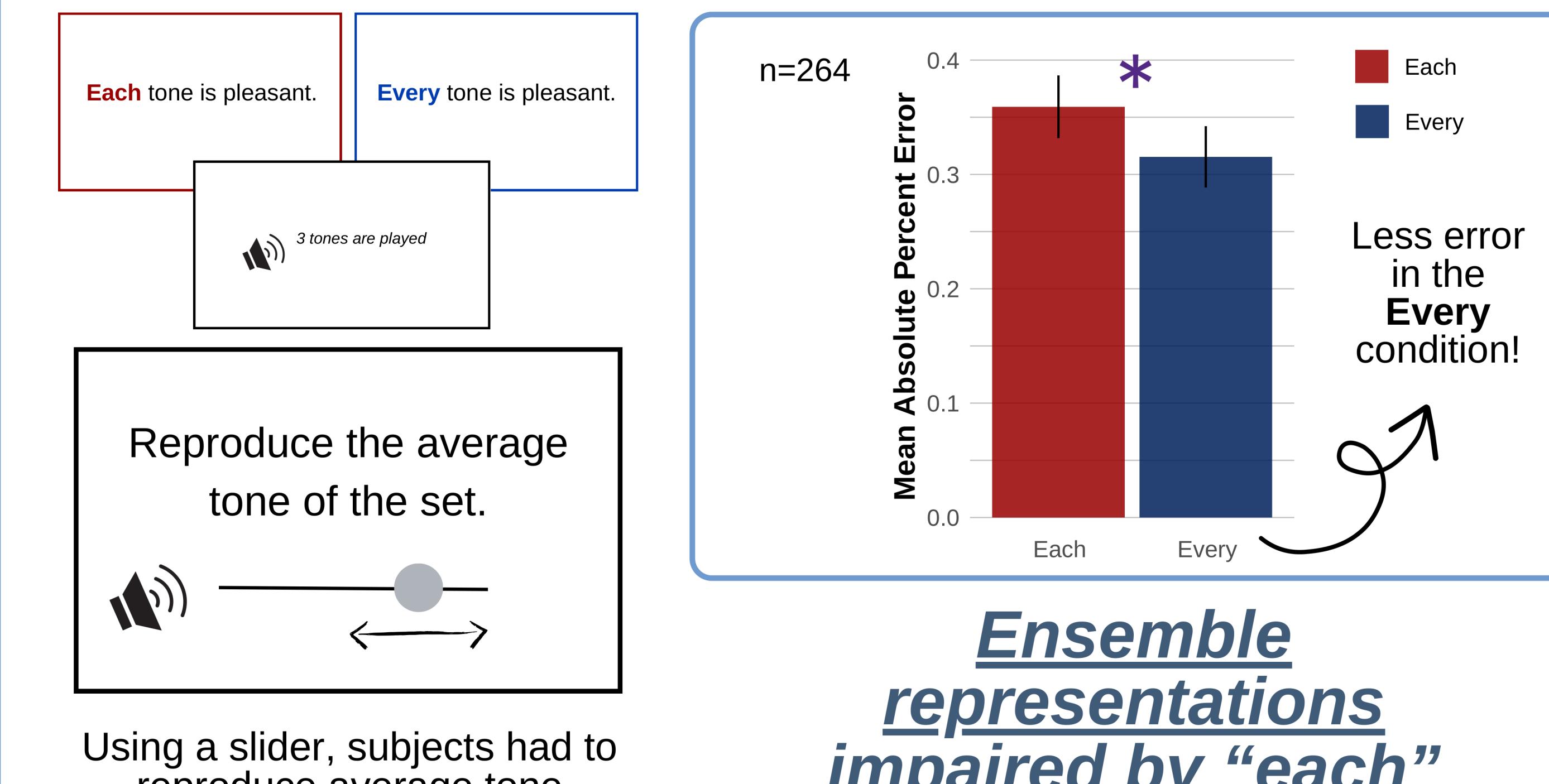
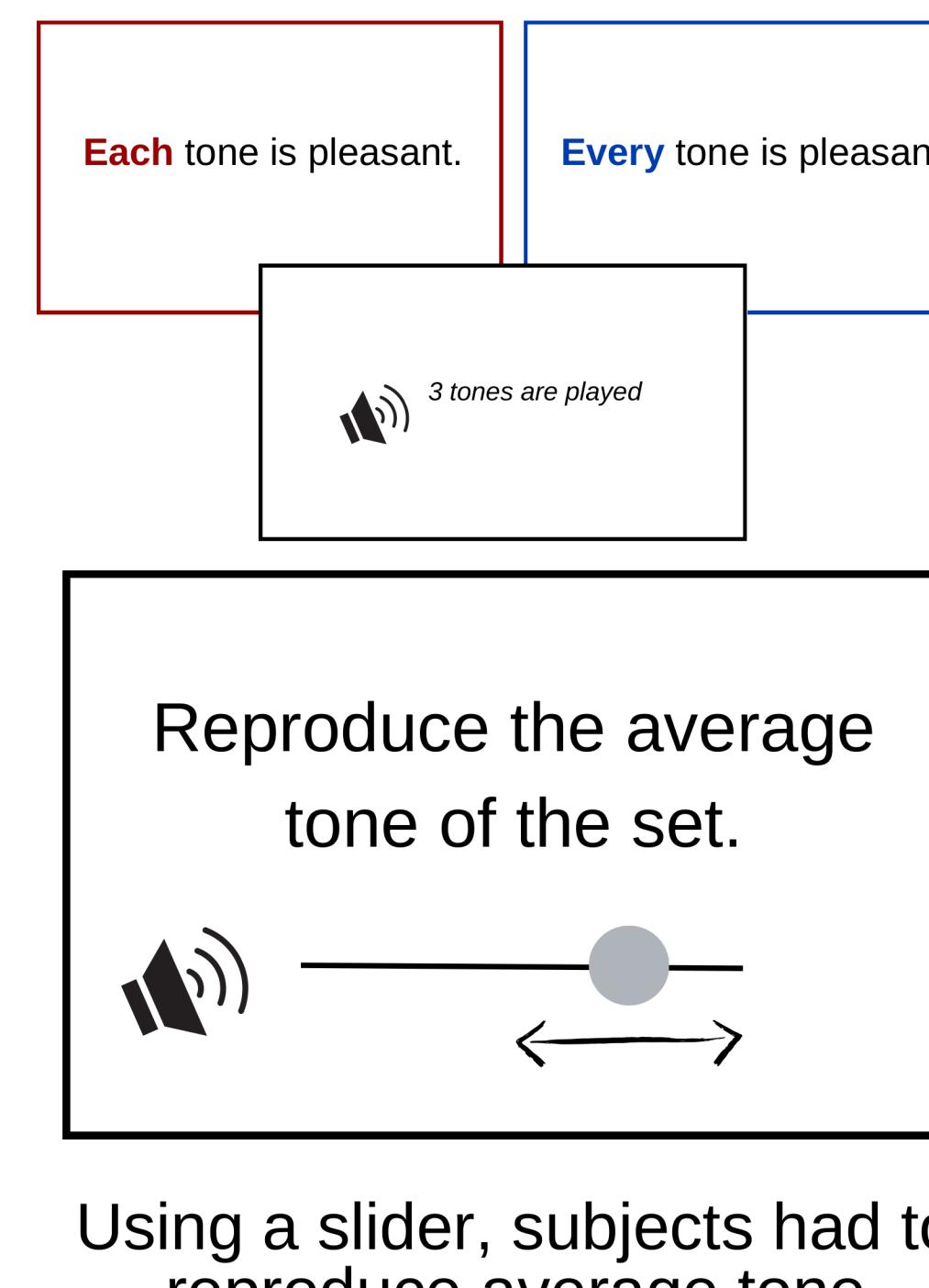
"Every" leads people to falsely remember hearing the average!

Expt. 2: "Each" on temporal order memory?



Test tone was either the first, second, or third tone played

Expt. 3: "Every" on ensemble memory?



Conclusions

Bridging language and event perception

Events in time can be represented both as individuals and ensembles; Language plays one role in determining which system is deployed (even when the language used is entirely task-irrelevant!)

A new linguistic framing effect?

The words "each" and "every" are ubiquitous and occur in contexts beyond objects in space, or events in time. Imagine for instance "each dollar" versus "every dollar".