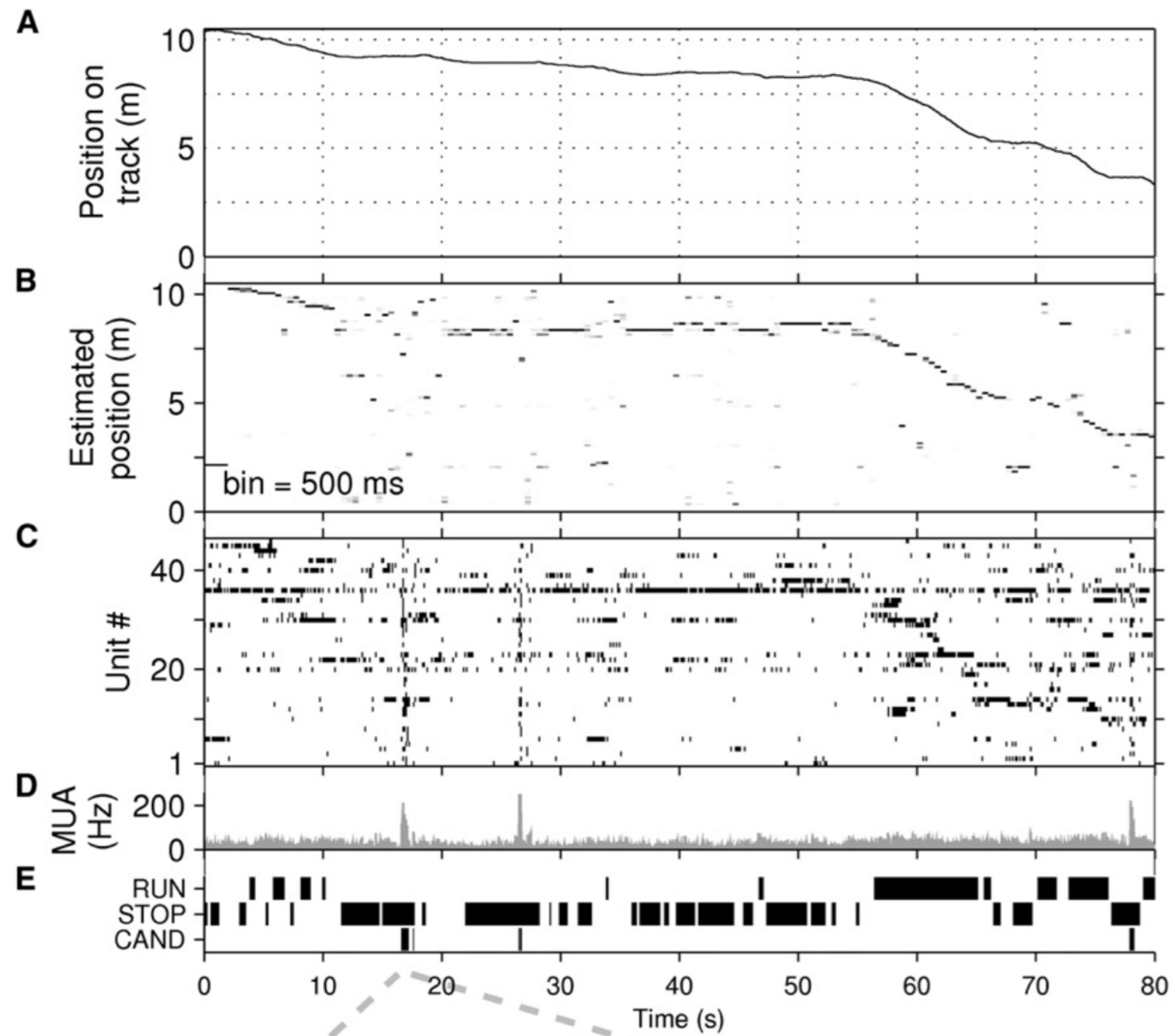
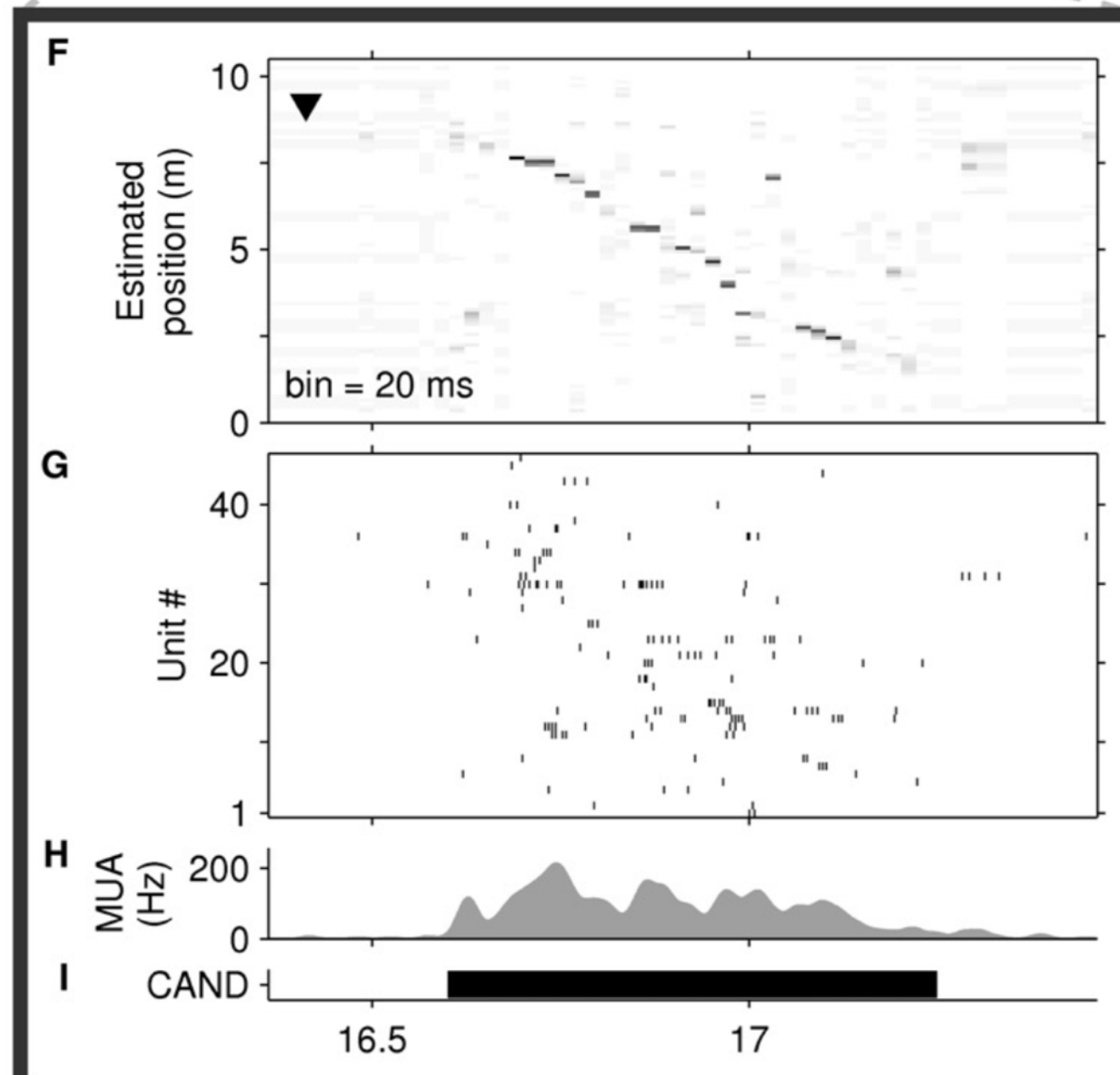


replay



replay



replay

Forward replay of A→B
trajectory

Davidson, Kloosterman and Wilson, 2009

what is it for?

- only phenomenological...
- observed in rats, songbirds and people
- sleep is good for learning
- sensory cues in sleeping people aid learning

Biasing the content of hippocampal replay during sleep

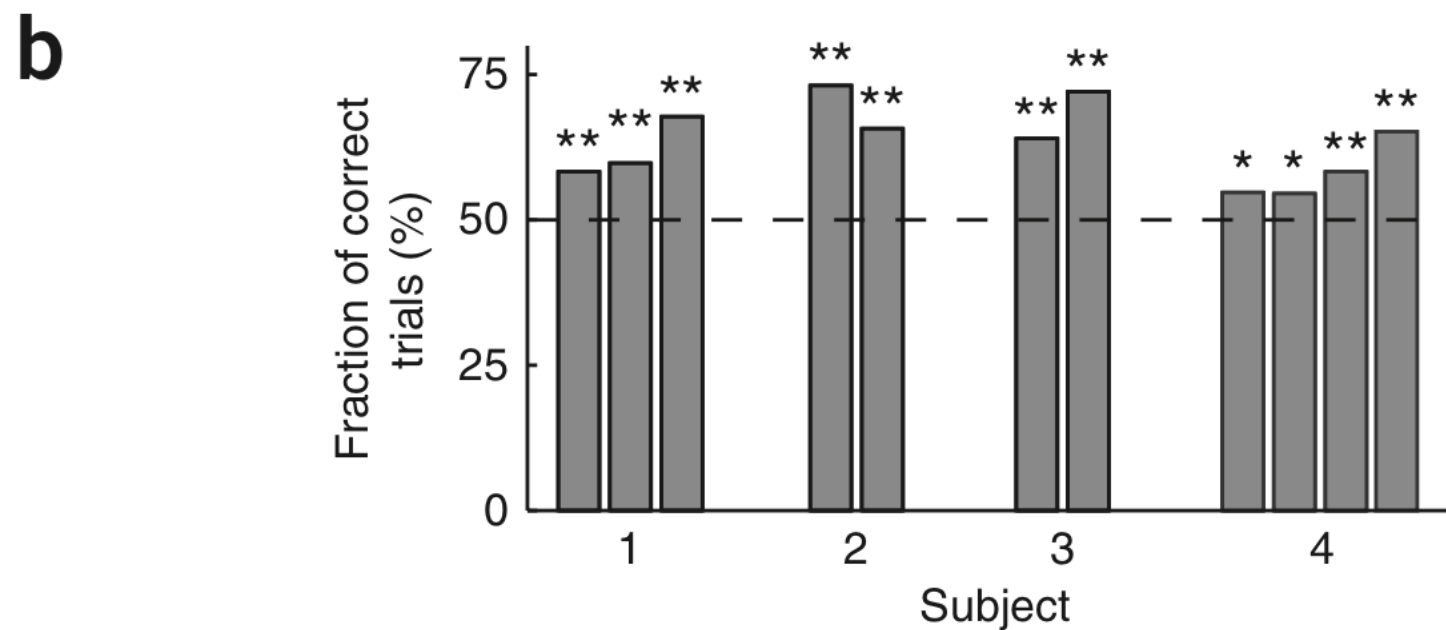
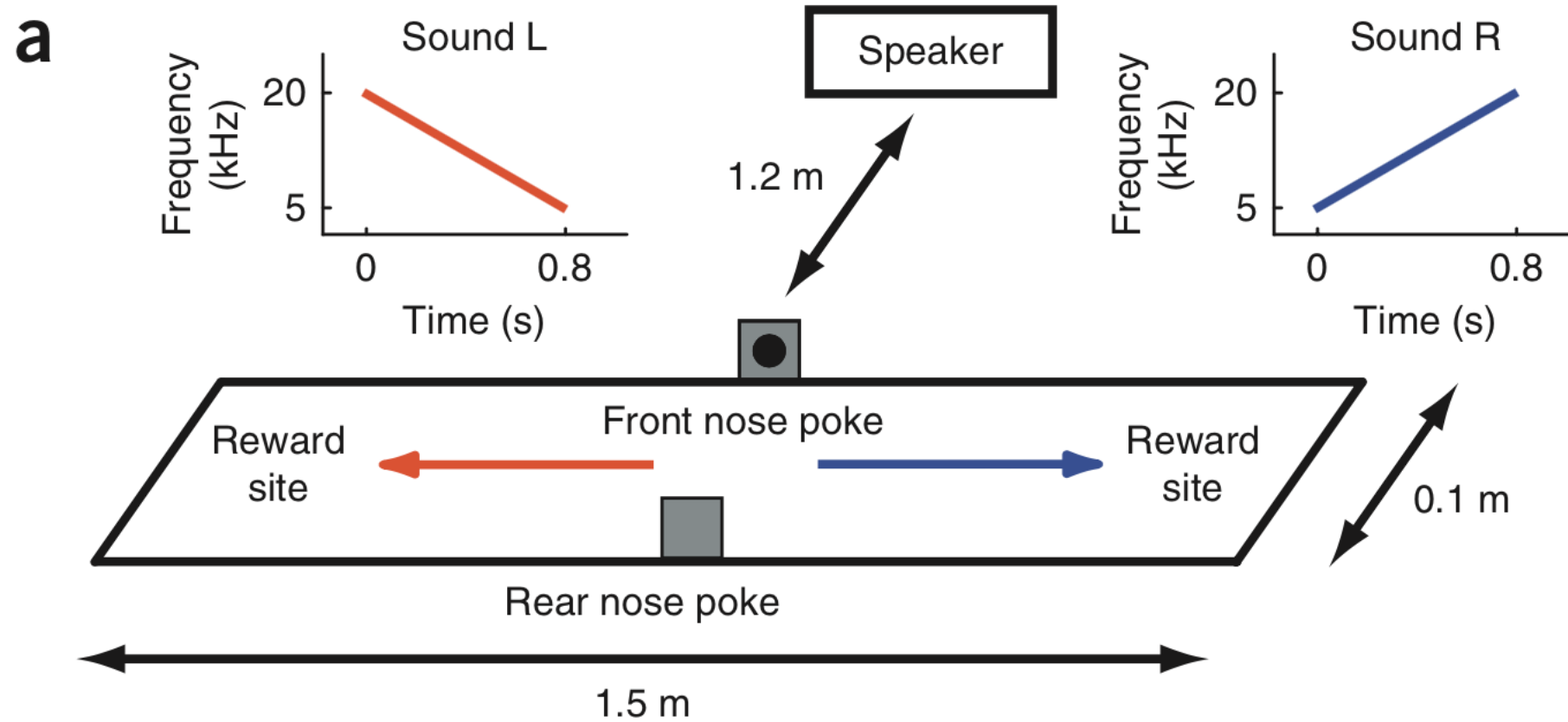
Daniel Bendor & Matthew A Wilson

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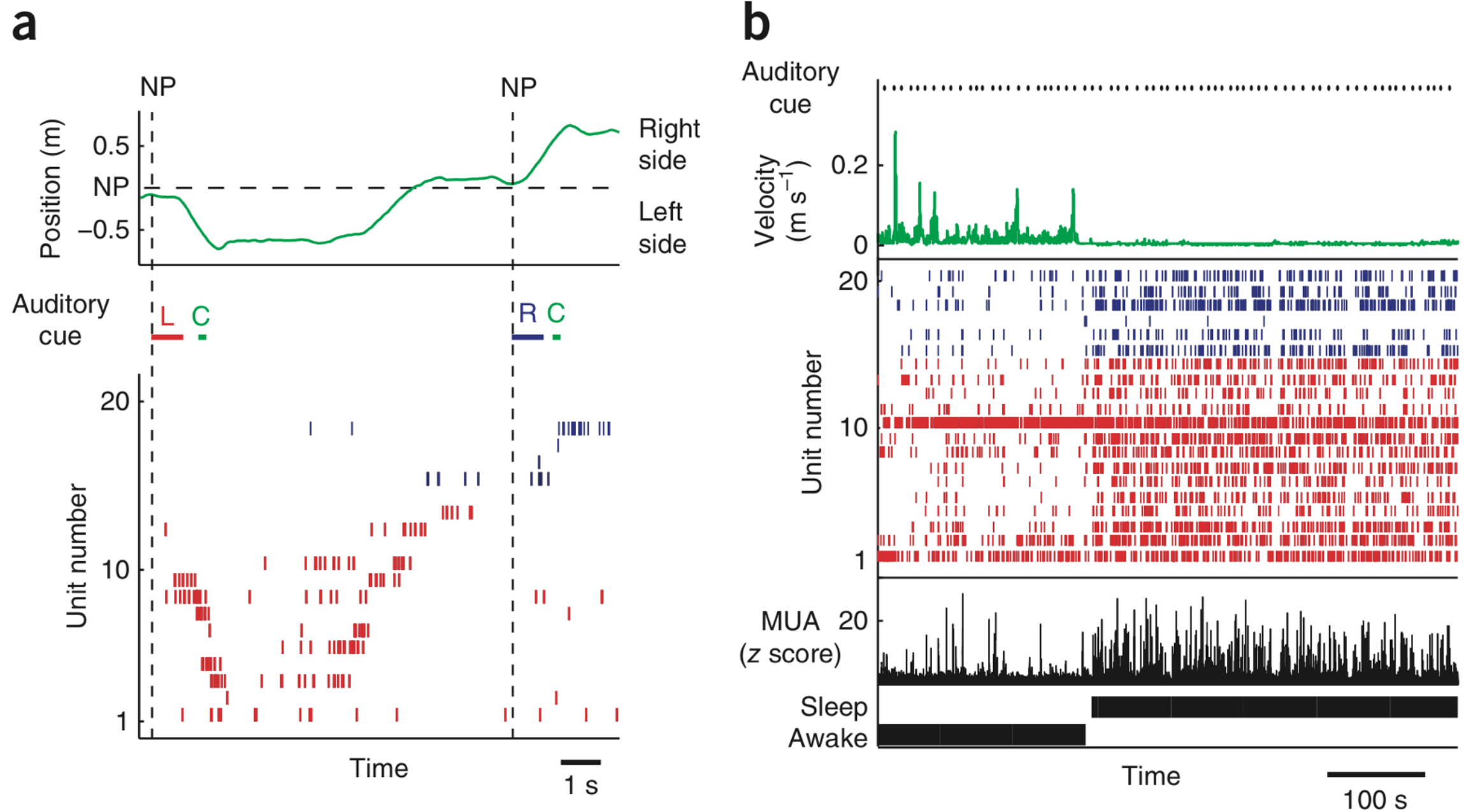
justification

- replay might be important for learning
- in humans, sensory cues during sleep help learning
- if replay aids learning, should expect more replay during learning
- do sensory cues affect replay?

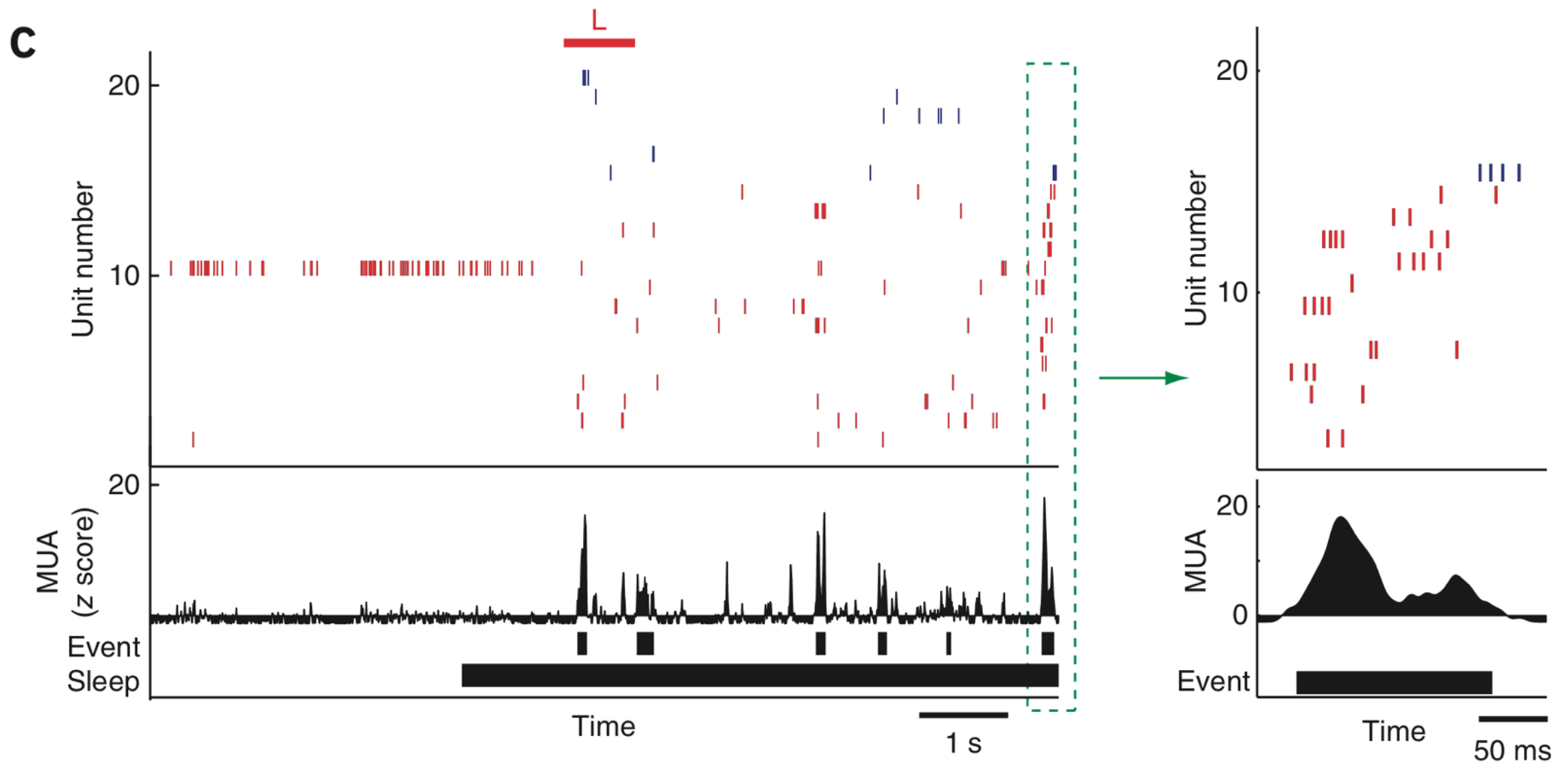
the task



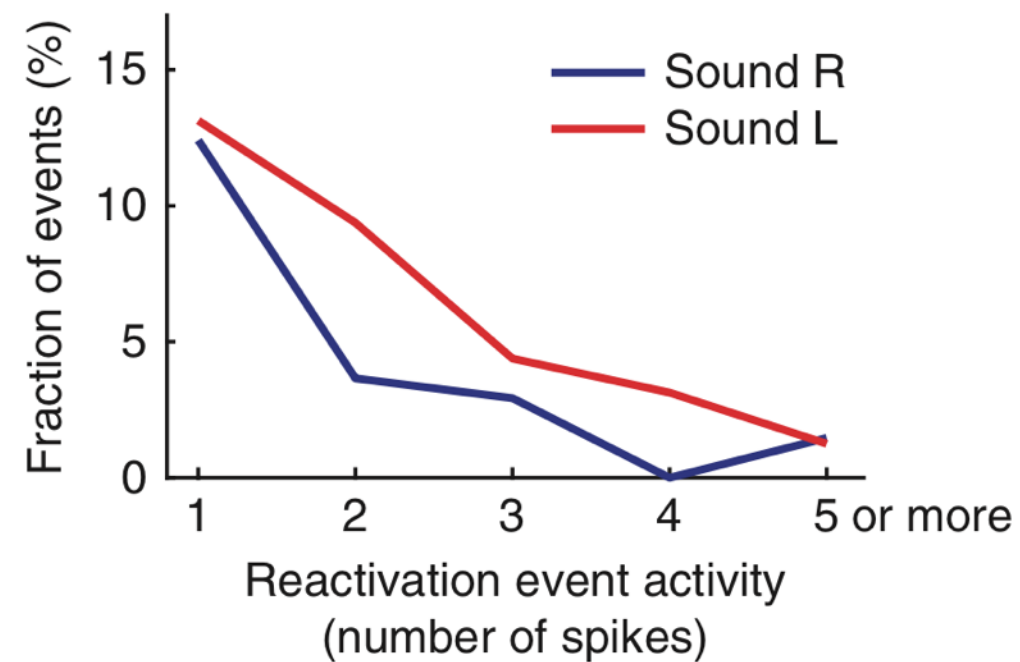
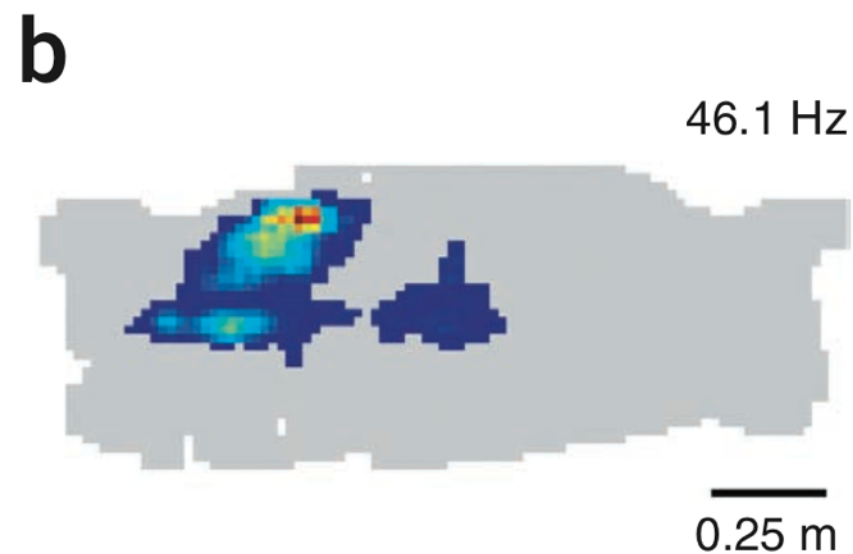
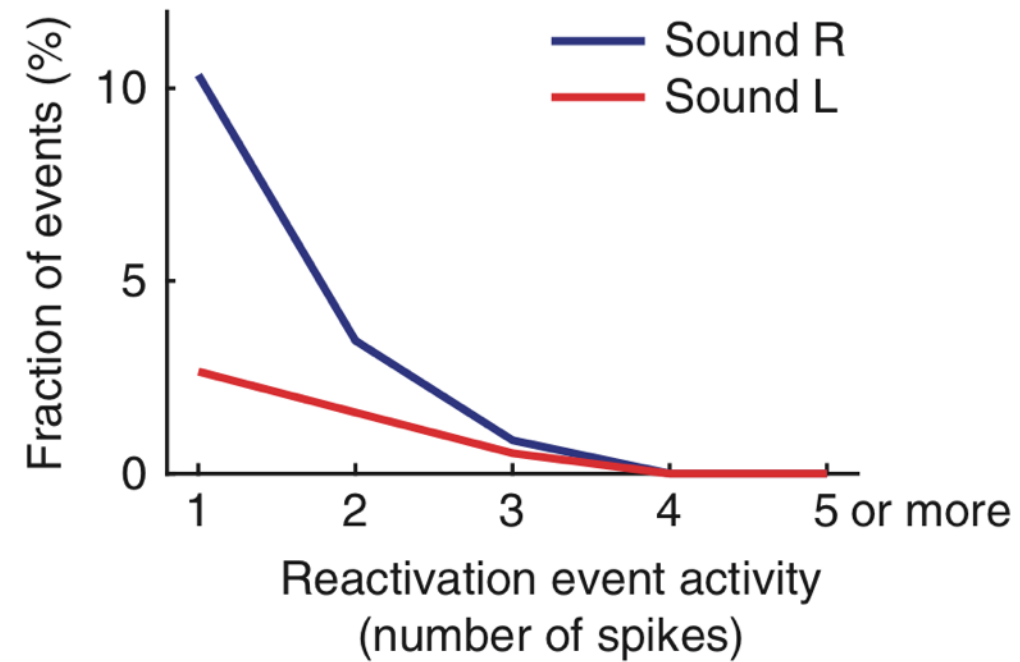
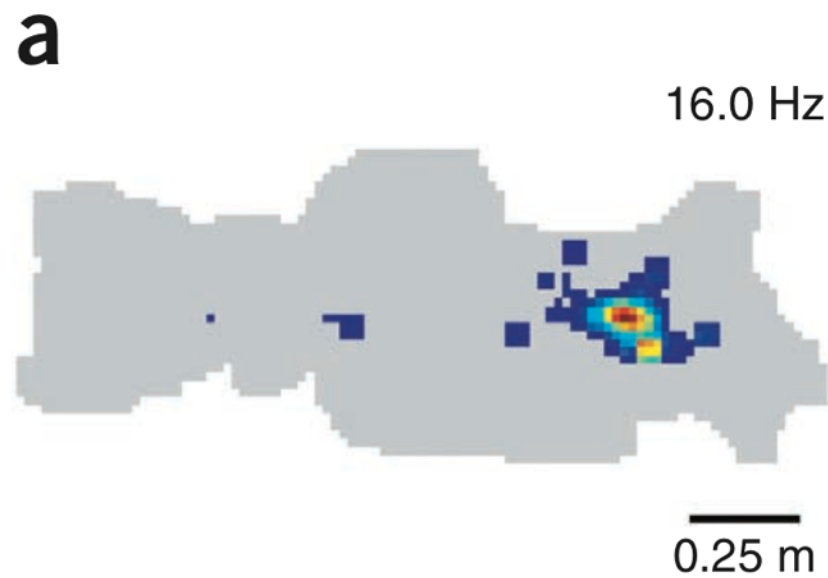
place cell activity



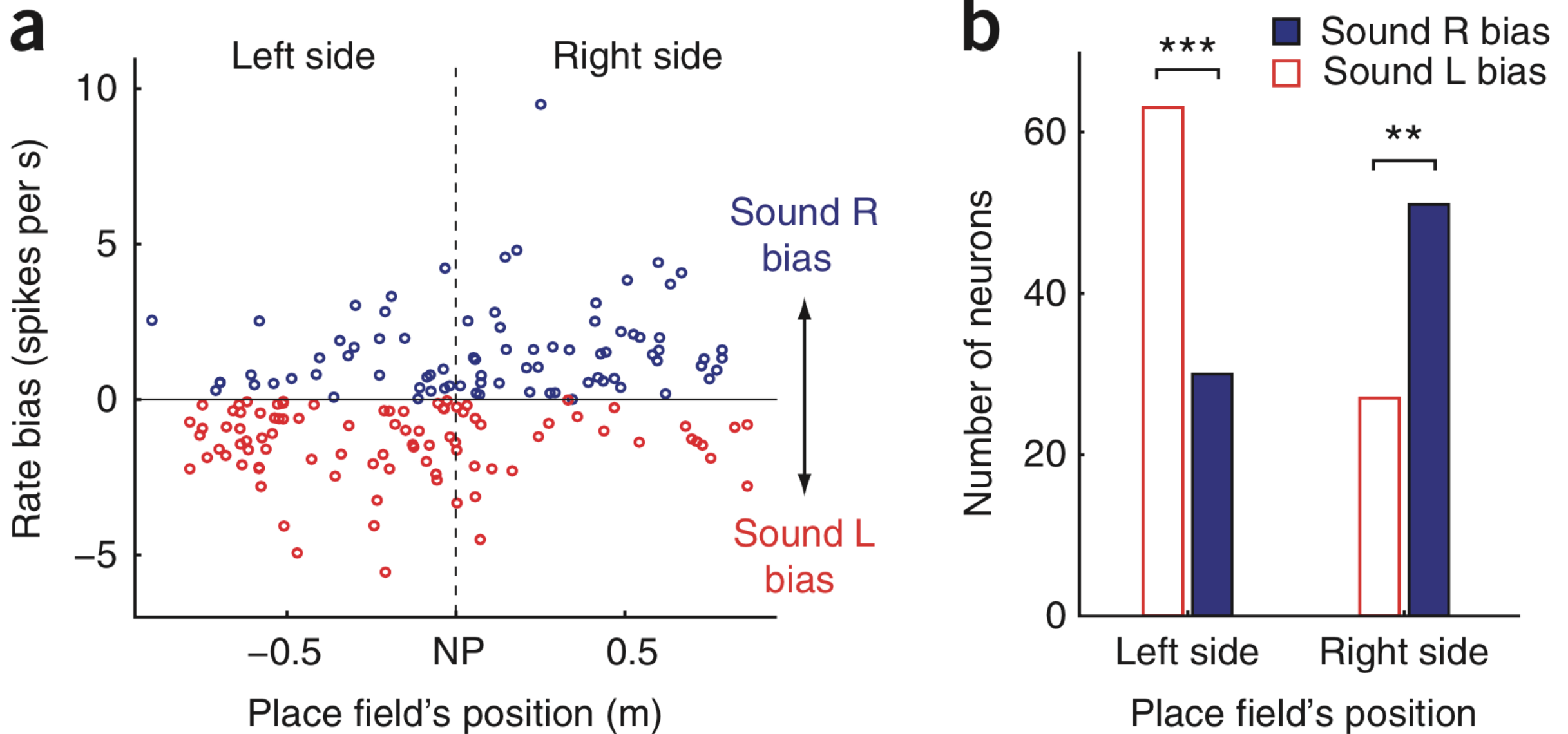
sleep activity



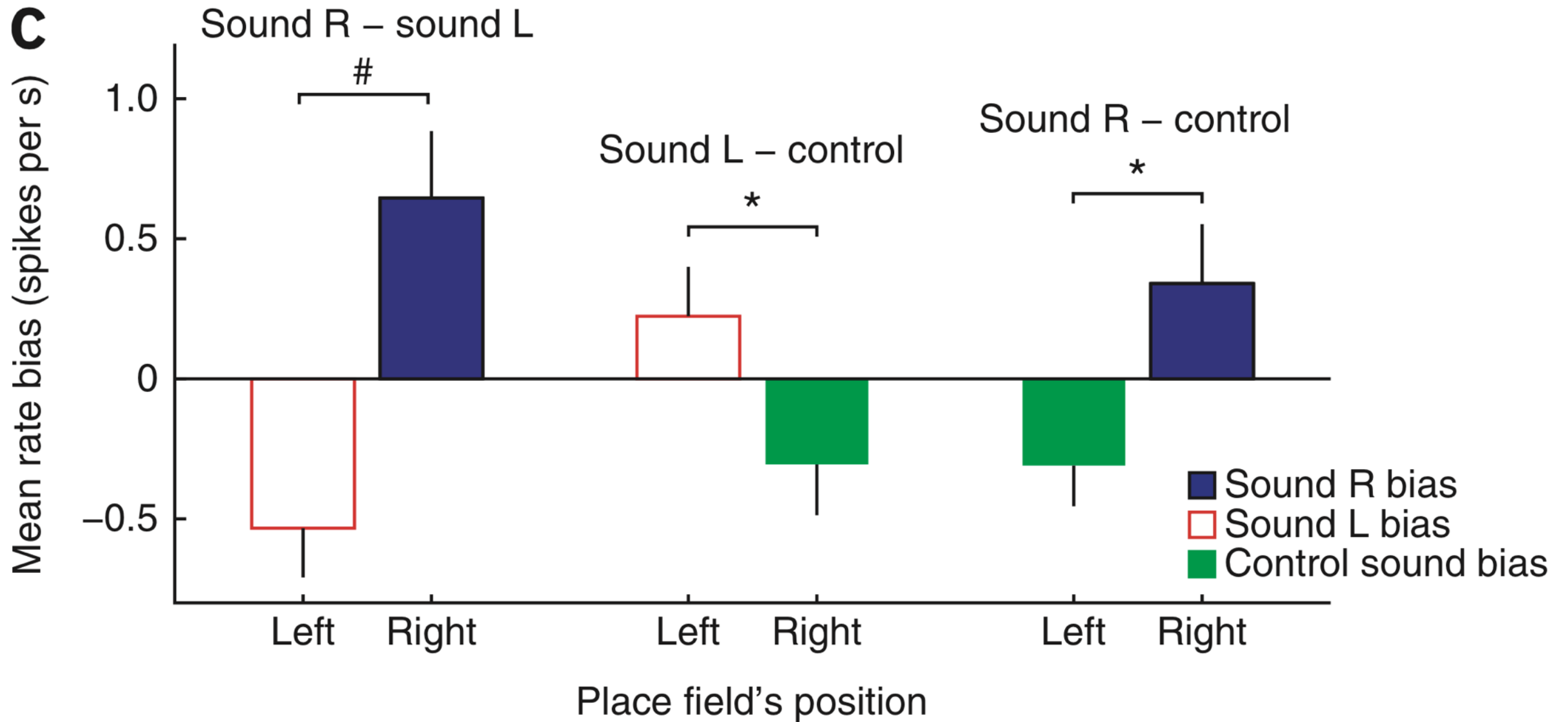
example of bias



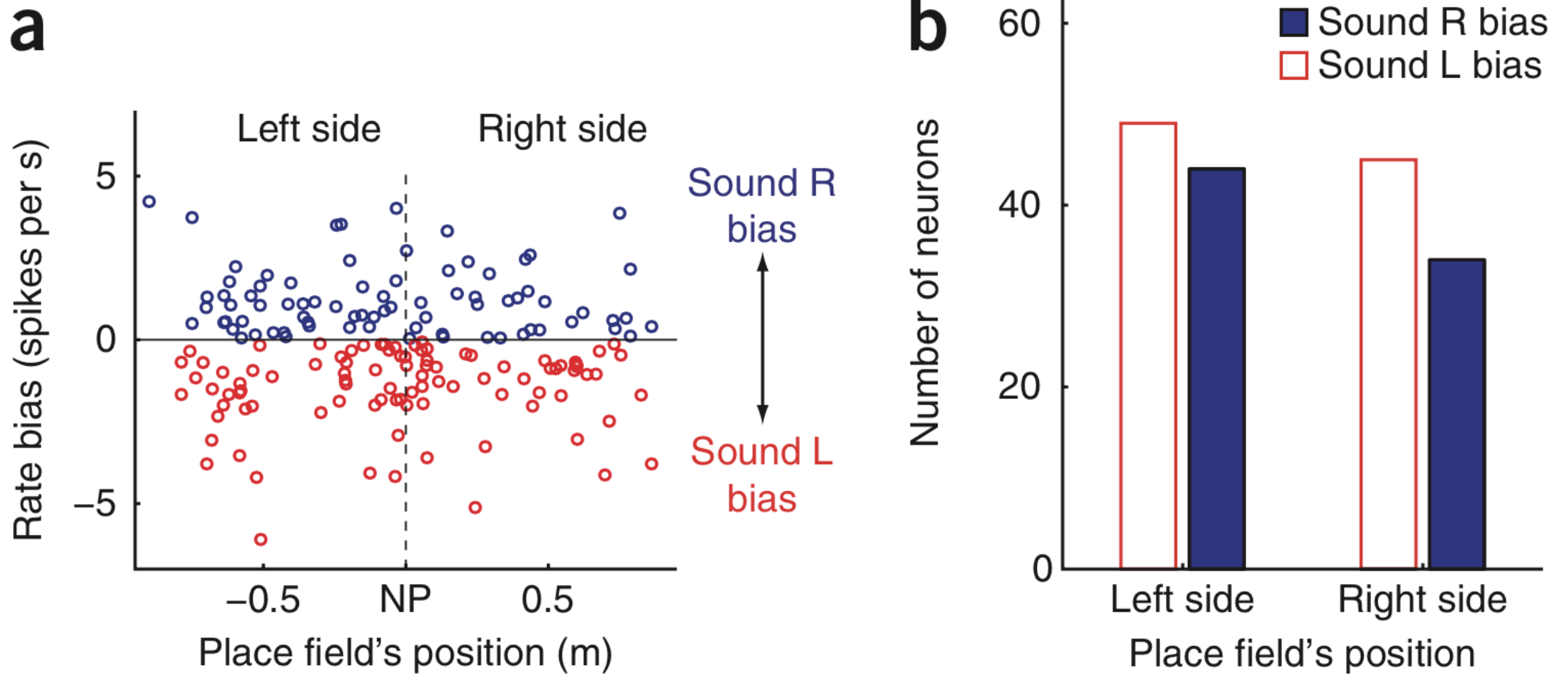
population bias



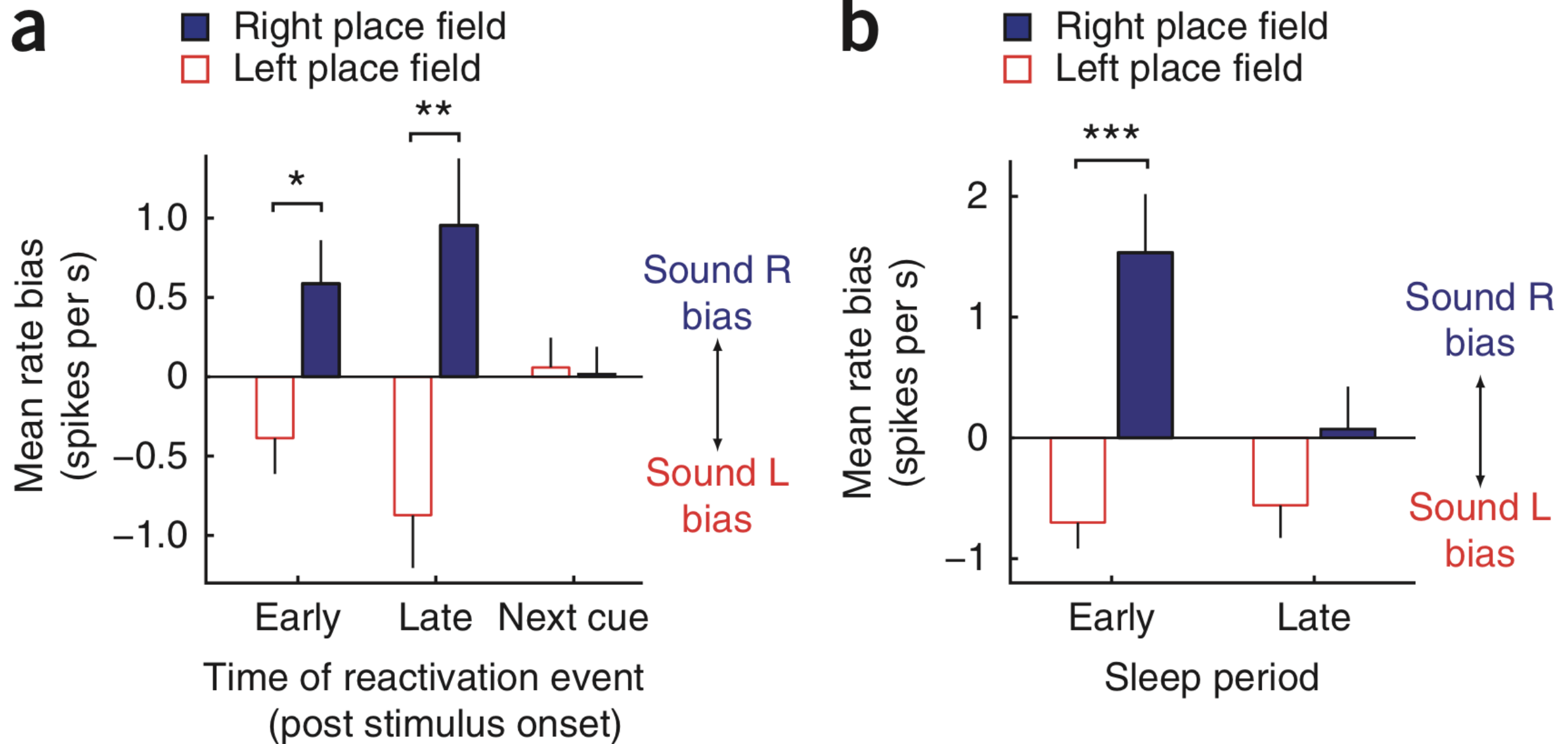
both L and R cells biased



no bias in awake replay

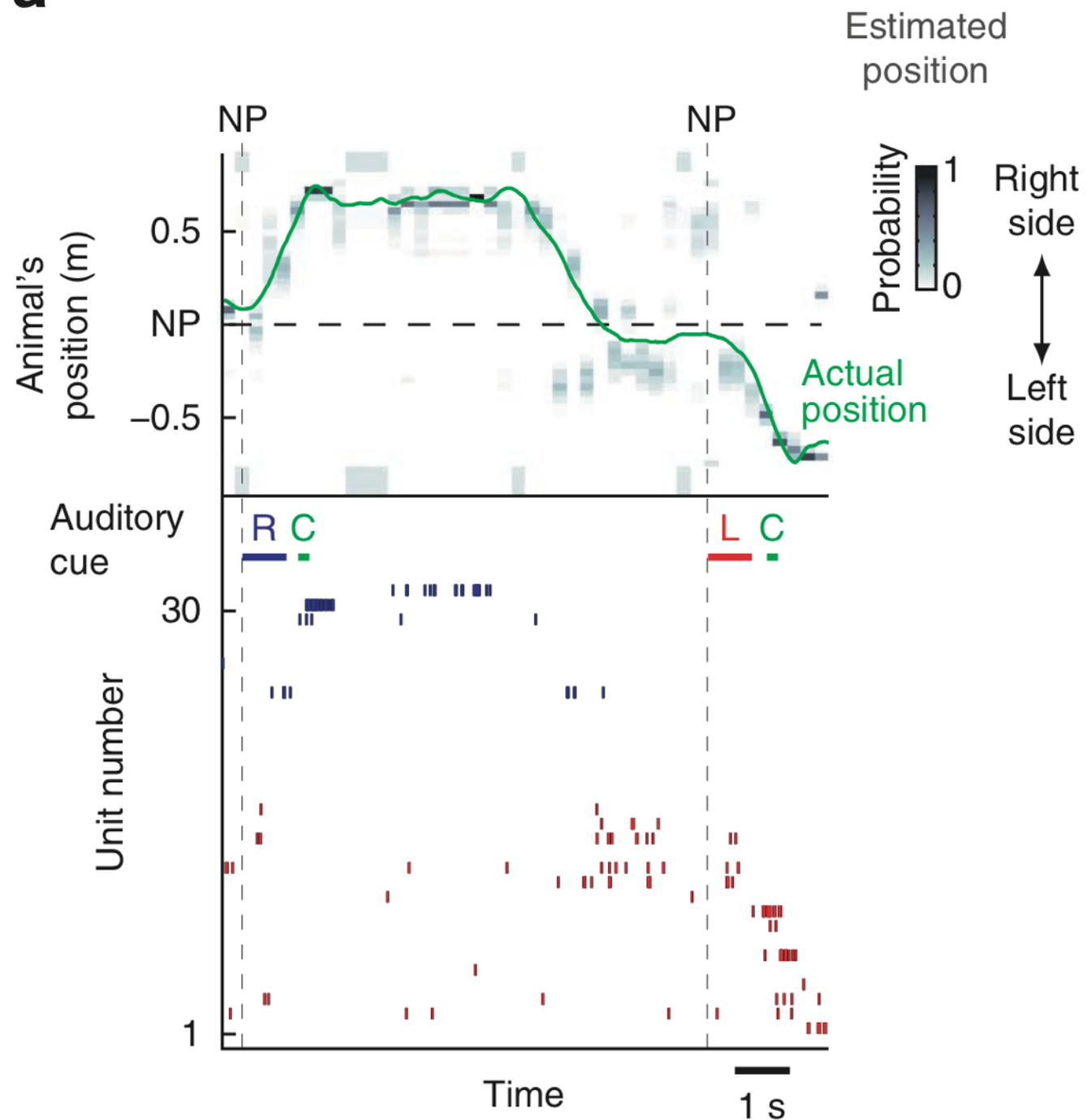


temporal dynamics



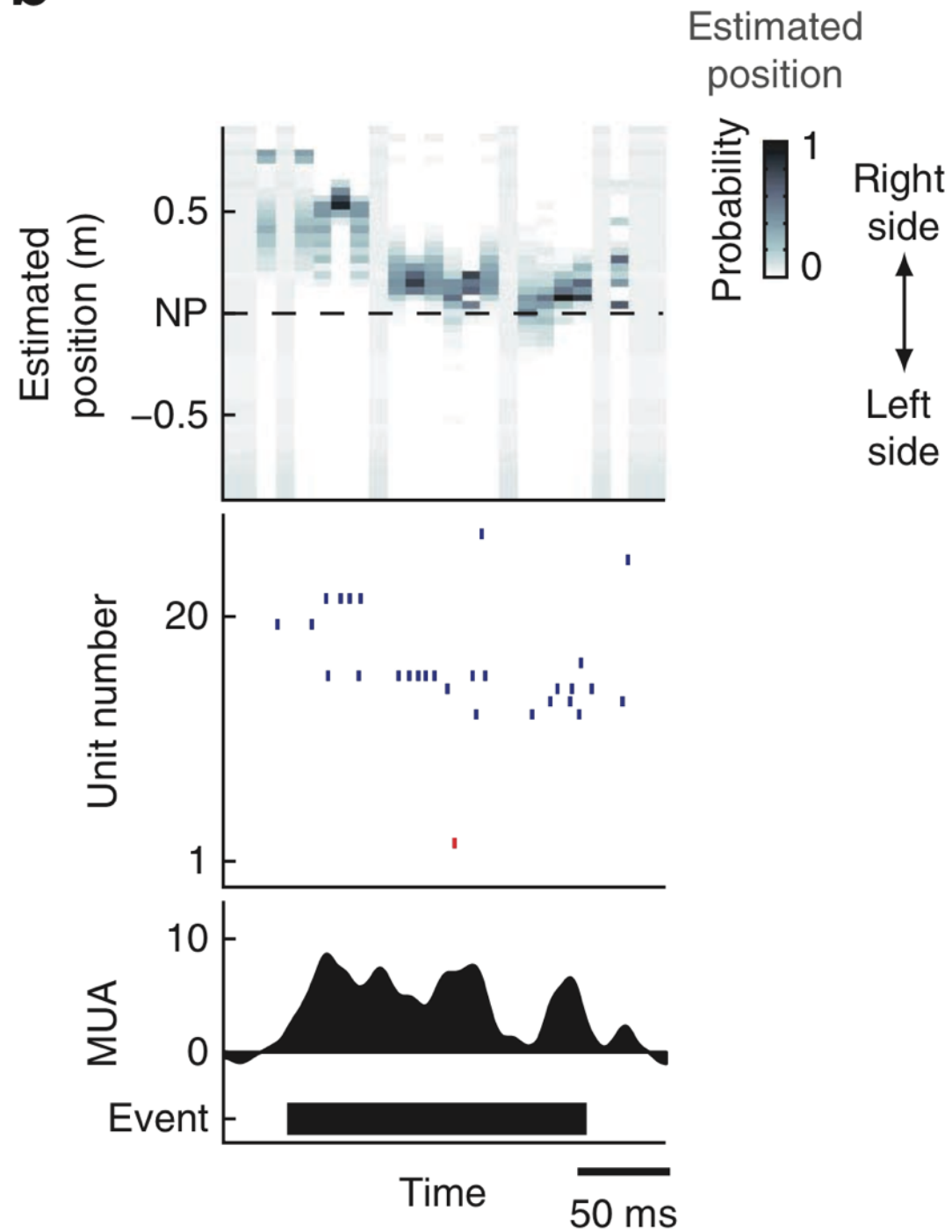
decoding population activity

a

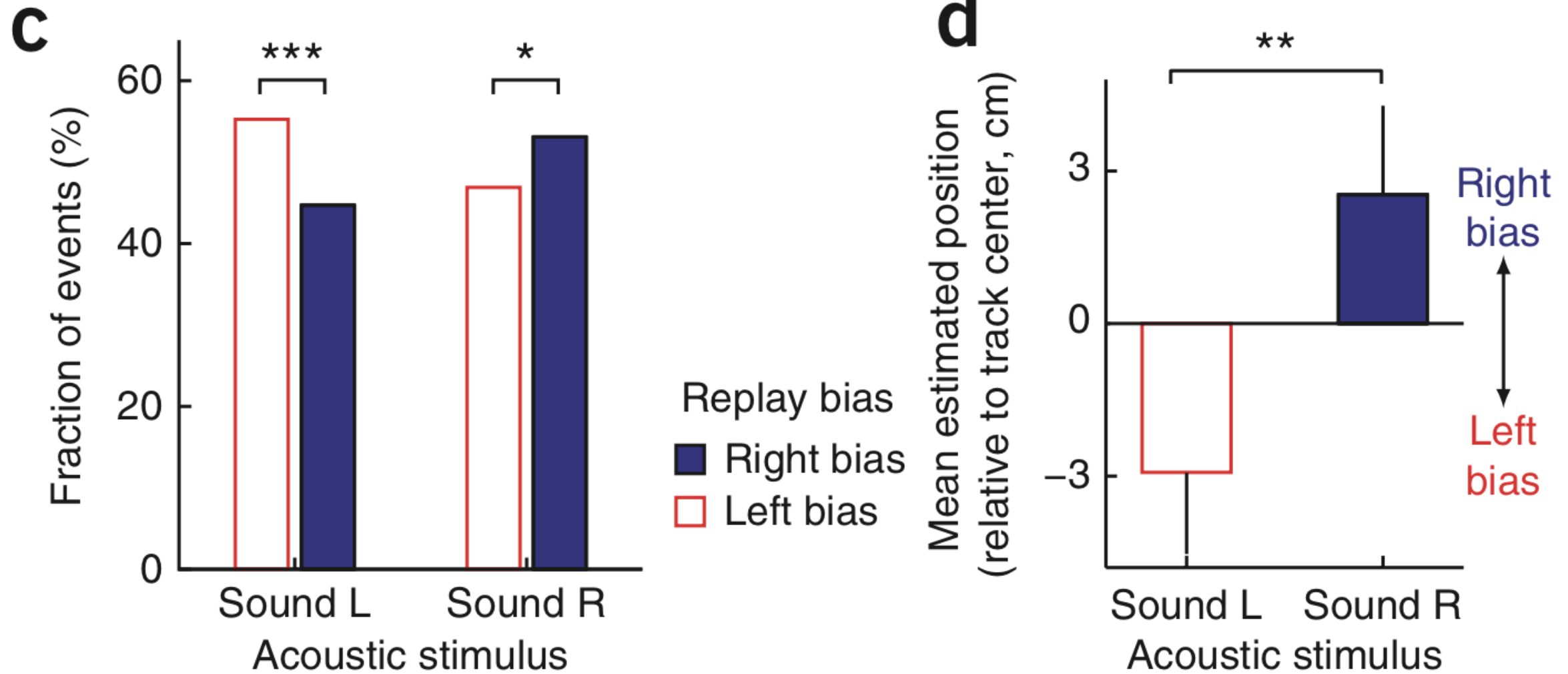


position reconstruction

b



position reconstruction



questions

- Sensory cues affected content of replay, but did not necessarily increase number of replay events.
- Events here were defined as bursts of MUA. Not clear if those events were specific to task memory.
- Sought to test replay's contribution to memory consolidation...