

Causal coherence improves episodic memory of dynamic events

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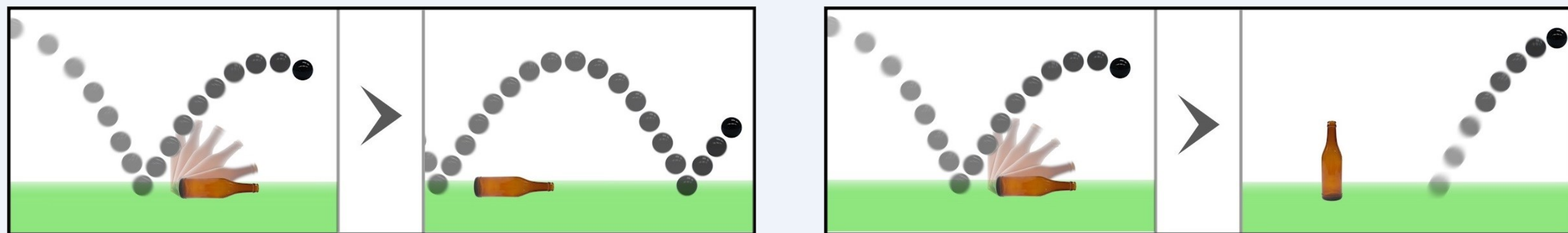
Causal Cognition Lab

CEU CENTRAL EUROPEAN UNIVERSITY

QUESTION

Does the causal structure of events influence how well they are remembered?

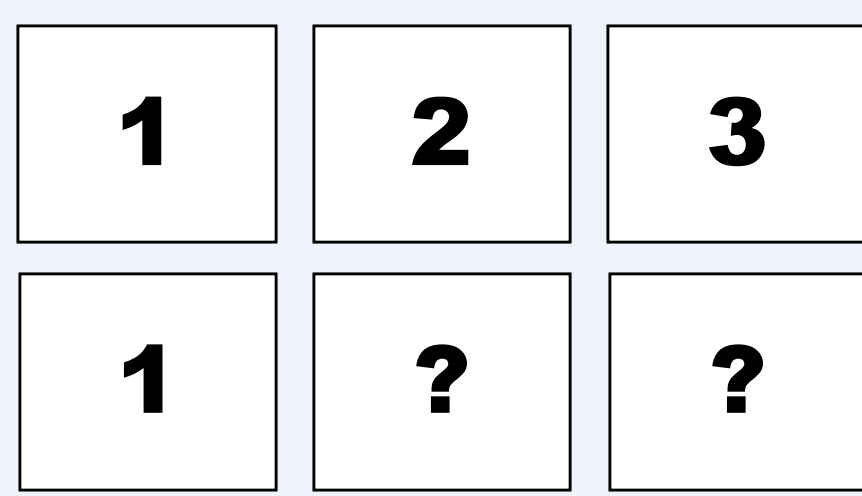
Causal structure



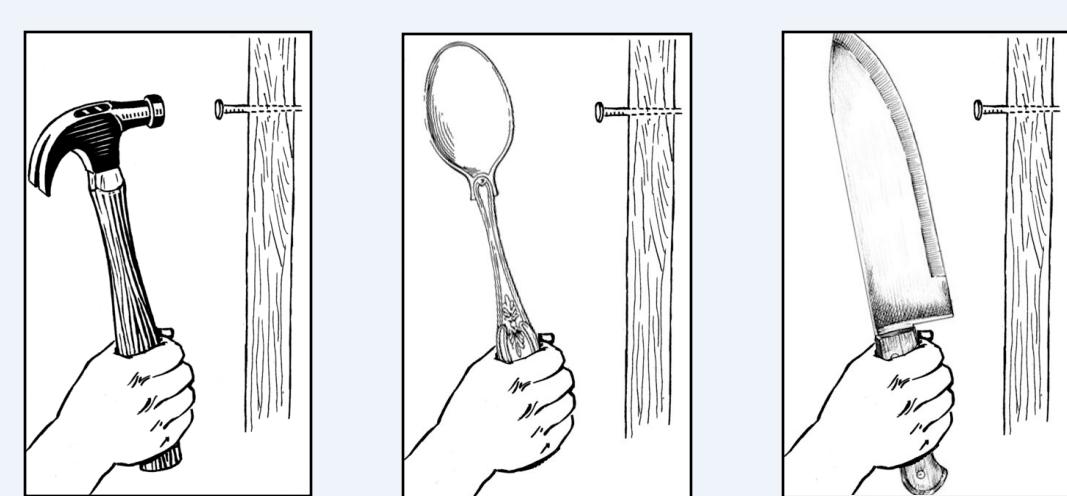
coherent

fragmented

Potentially influences recall of:



event order

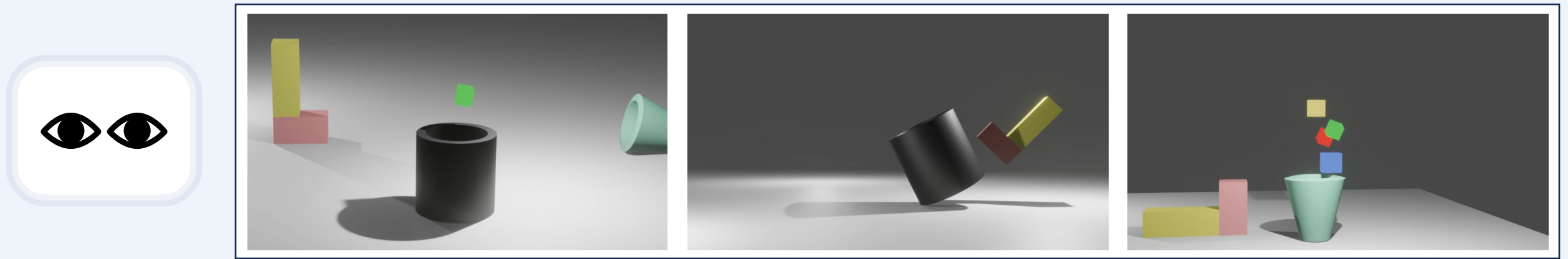


causally-relevant details

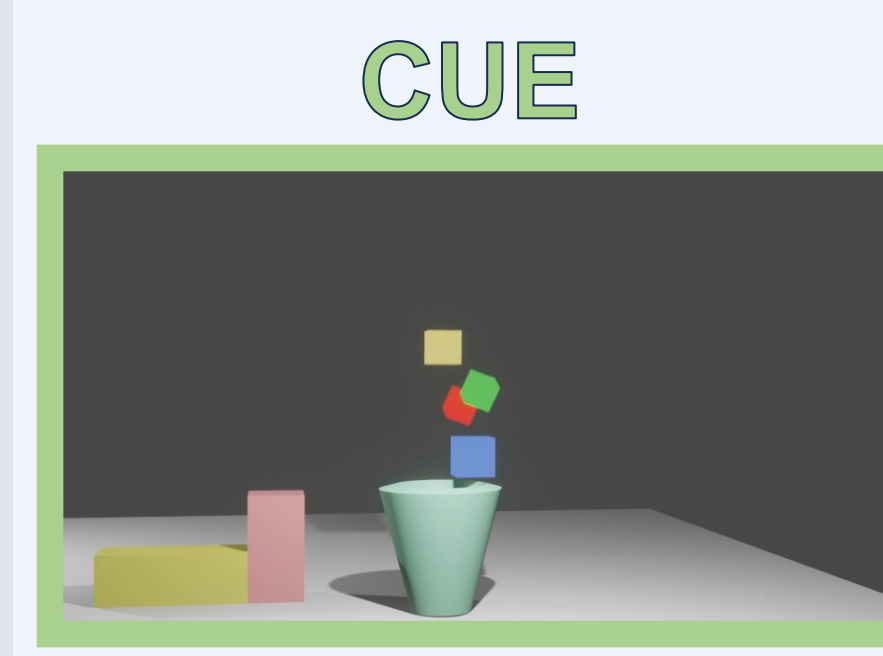
METHOD

Participants first watch multi-part videos of unfamiliar events, then undergo a cued memory task.

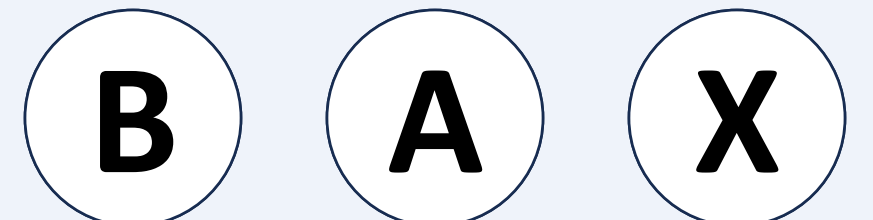
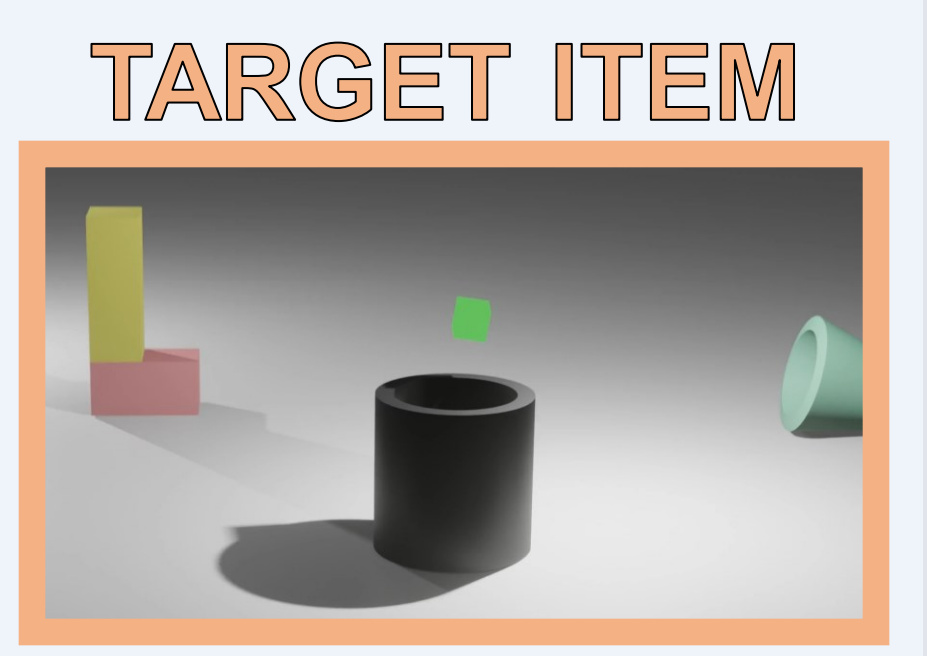
Video Presentation



Memory Task



Did the **target item** come **BEFORE** or **AFTER** the **cue**, or do you **reject** it (X)?

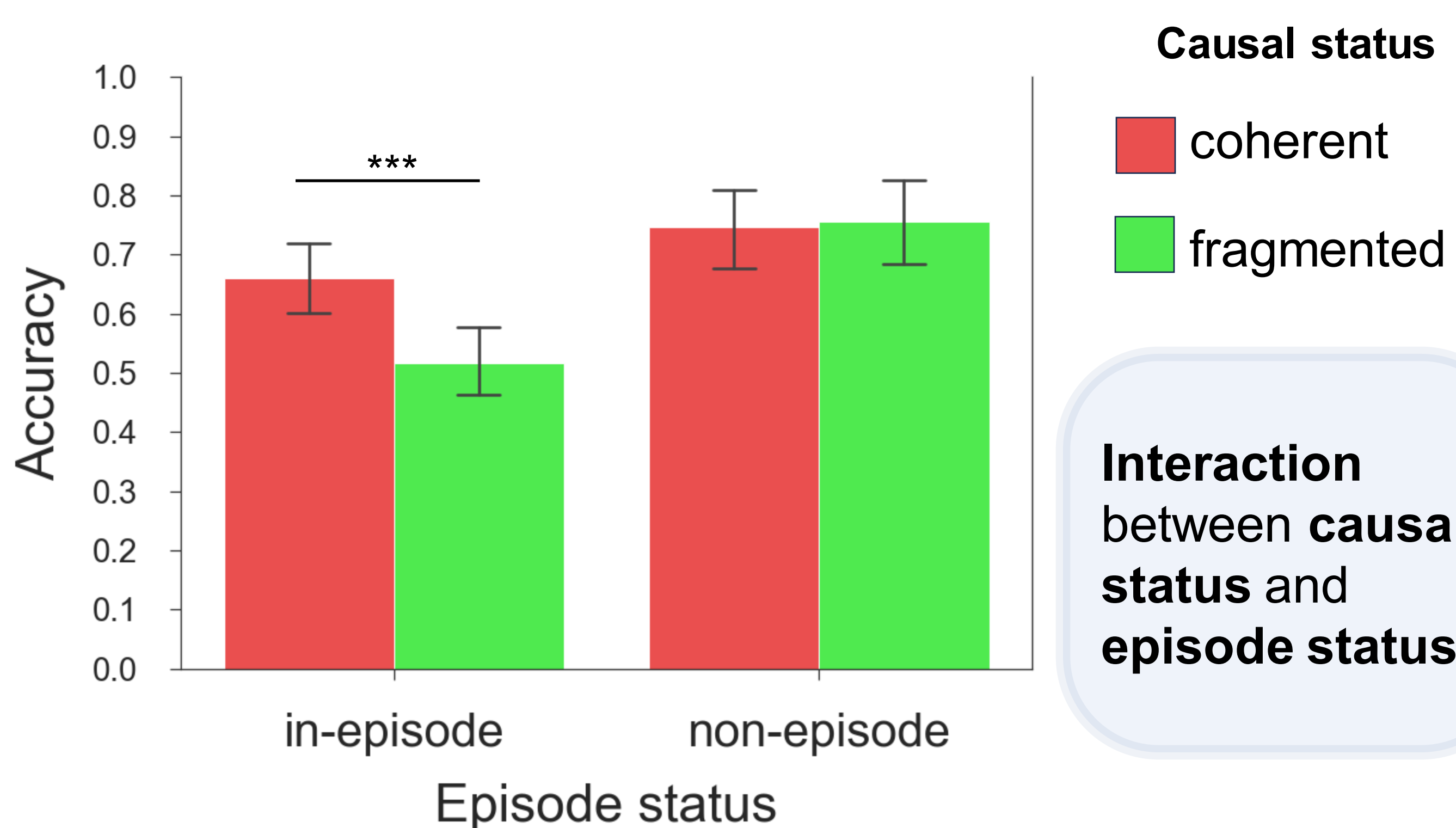


EXPERIMENT 1

In-episode items



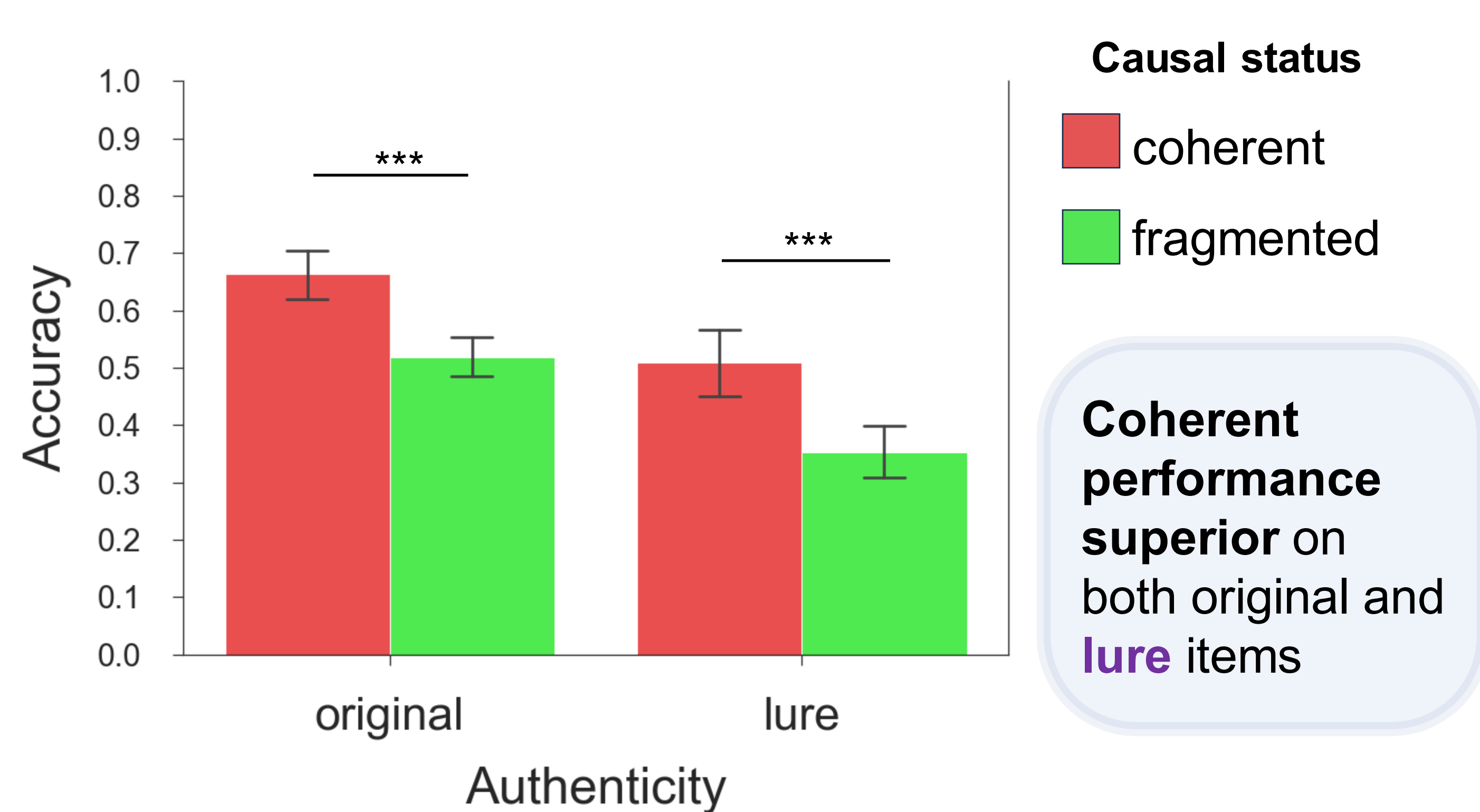
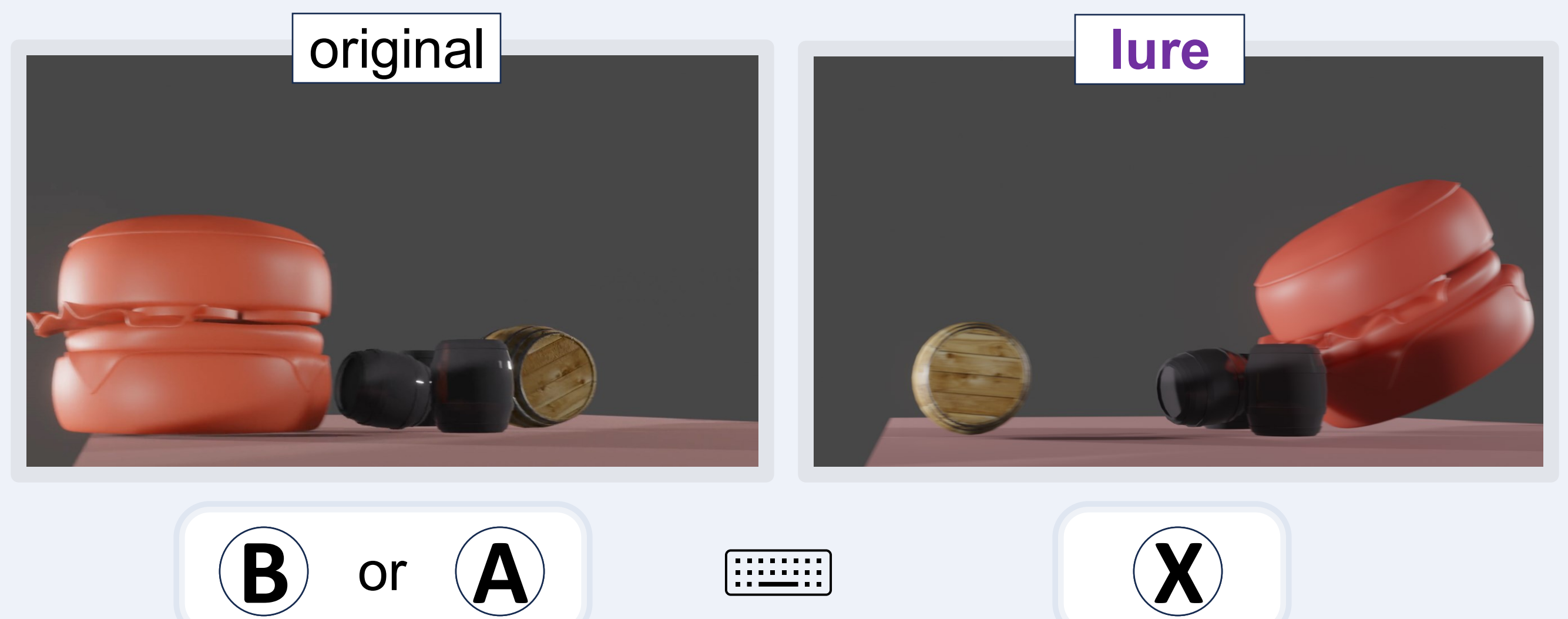
Non-episode items



Higher accuracy for **coherent in-episode** items.

EXPERIMENT 2

Authenticity manipulation



Better identification/rejection of **lures** for **coherent** items.

CONCLUSIONS

The **order of causally coherent events** is better remembered than that of causally fragmented ones.

Causally relevant content is better remembered if an event is coherent.

Reversing coherent stimuli completely removes the order advantage and significantly reduces lure detection.

IMPLICATIONS

- The episodic memory system is sensitive to the causal structure of events
- Knowledge of event-specific schemas not a prerequisite

