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## Recognition Memory for Auditory and Visual Objects

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# Recognition Memory for Auditory and Visual Objects

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## Introduction

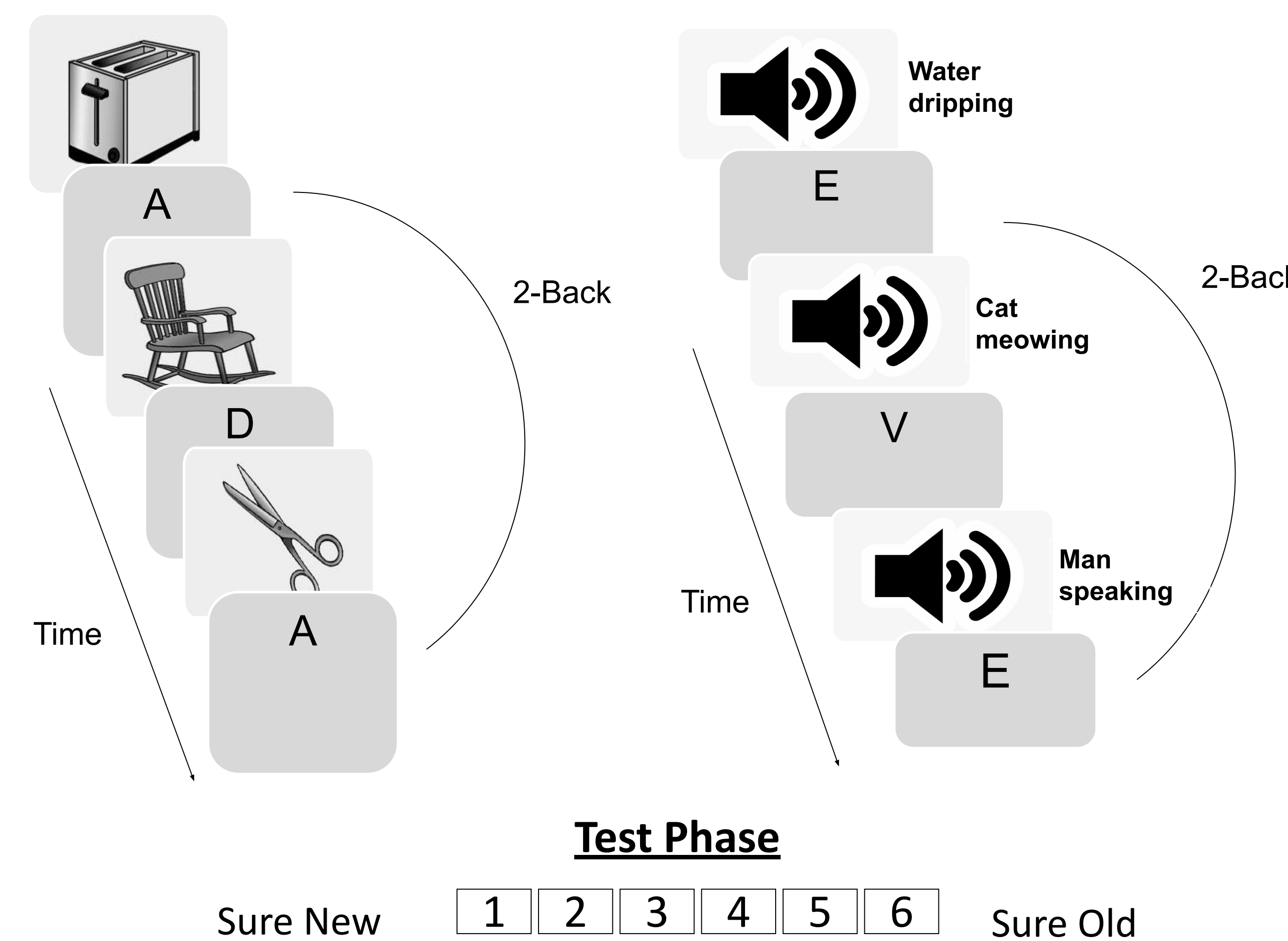
Visual object memory is superior to auditory object memory. Our past research showed that auditory memory was less sensitive to dividing attention during study, which may be attributable to representational differences between auditory memory and visual memory.

In the present study, we attempted to equate auditory and visual memory representations in order to adequately investigate the impact of dividing attention on recognition memory.

Recognition memory is thought to rely on two distinct processes, recollection and familiarity. Recollection involves the retrieval of precise qualitative detail and is the most sensitive to dividing attention.

## Method Continued

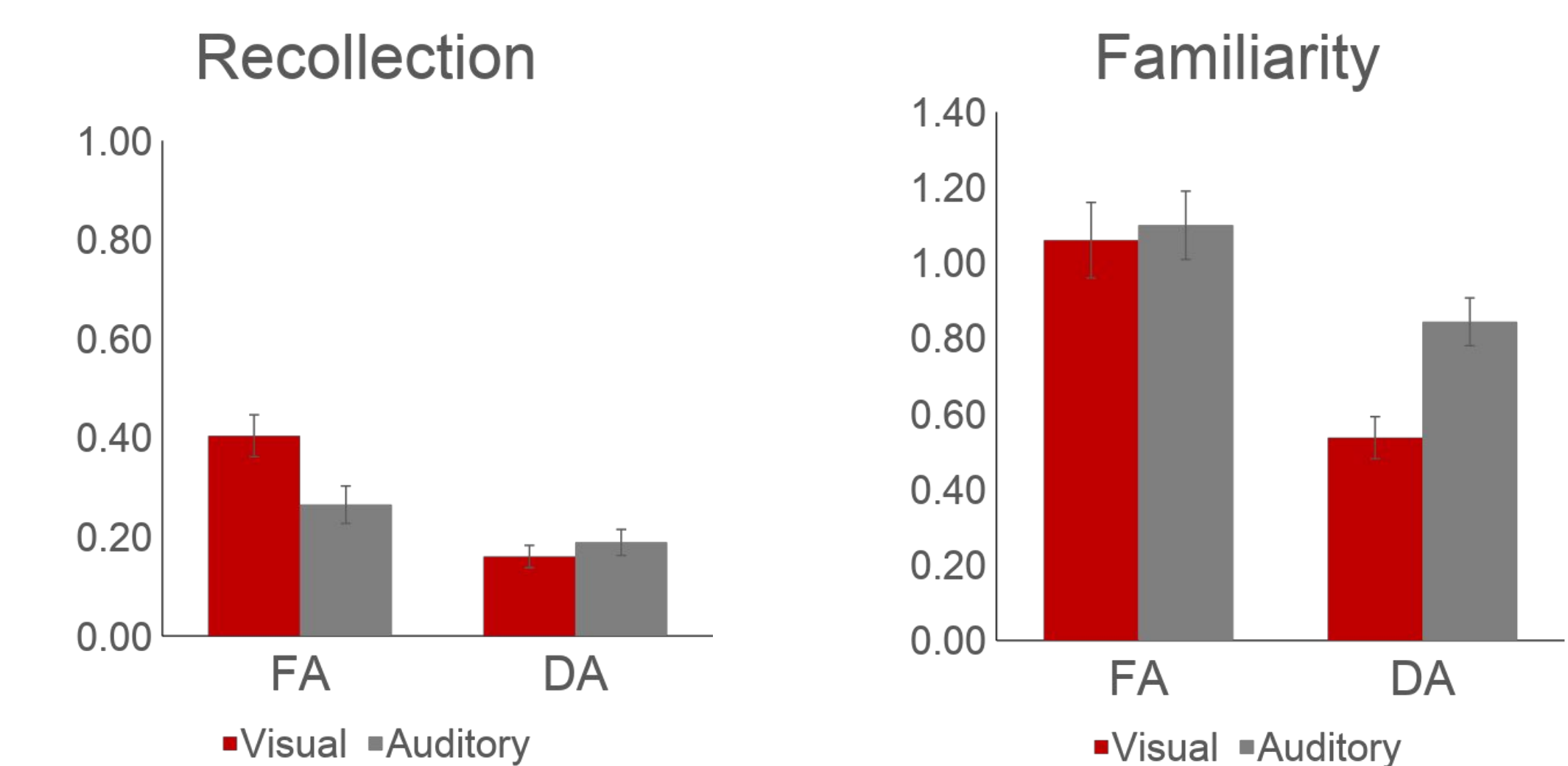
### Divided Attention Condition



## Recollection vs Familiarity Results

**Recollection:** Dividing attention had a large negative effect on visual recollection ( $d = 1.28$ ,  $BF_{alt} = 4135.5$ ). However, dividing attention had no effect on auditory recollection ( $d = .415$ ,  $BF_{alt} = .81$ ).

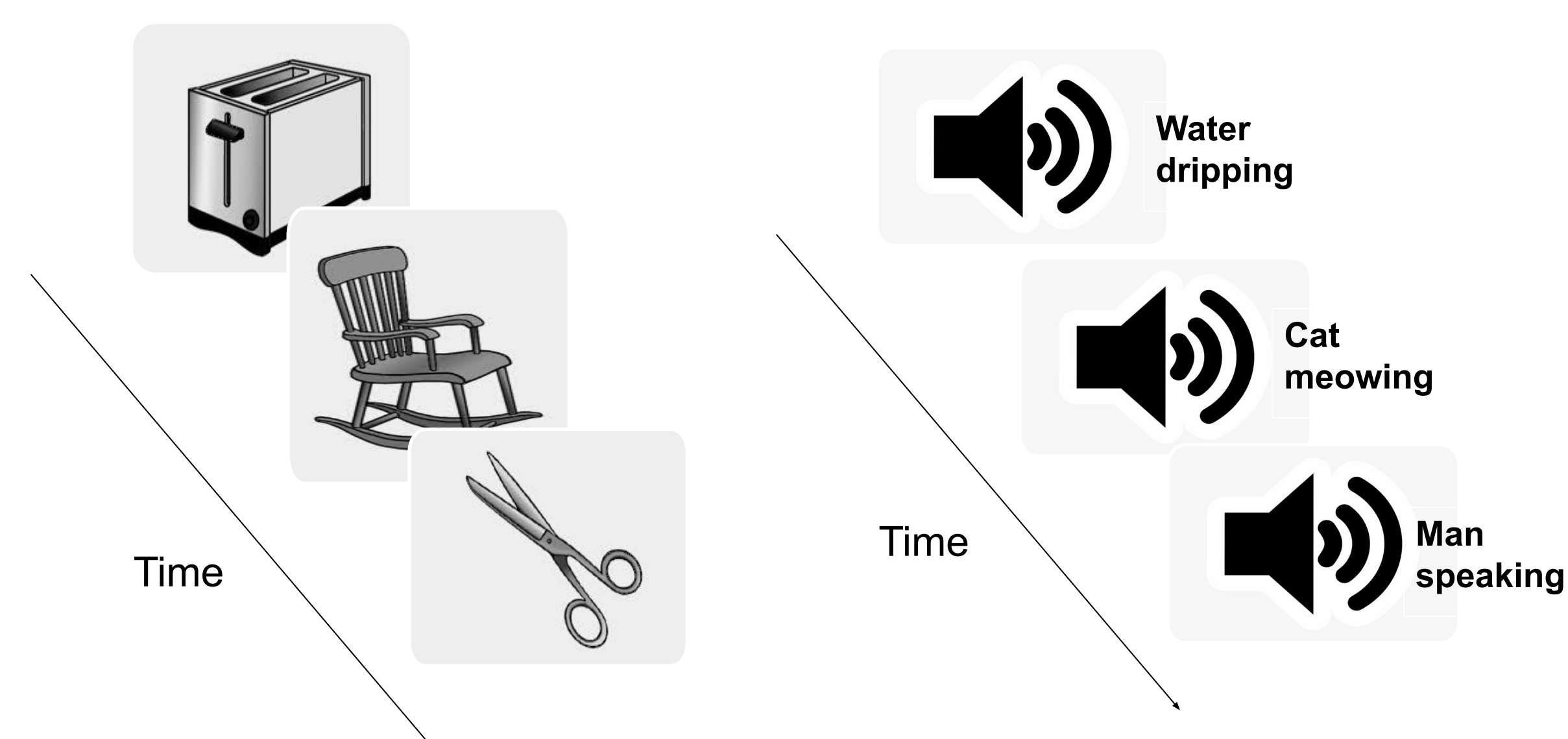
**Familiarity:** The same pattern as recollection was observed. Dividing attention reduced visual object familiarity ( $BF_{alt} = 3.026 \text{ e}+9$ ), but not auditory object familiarity ( $BF_{alt} = 2.38$ ).



## Method

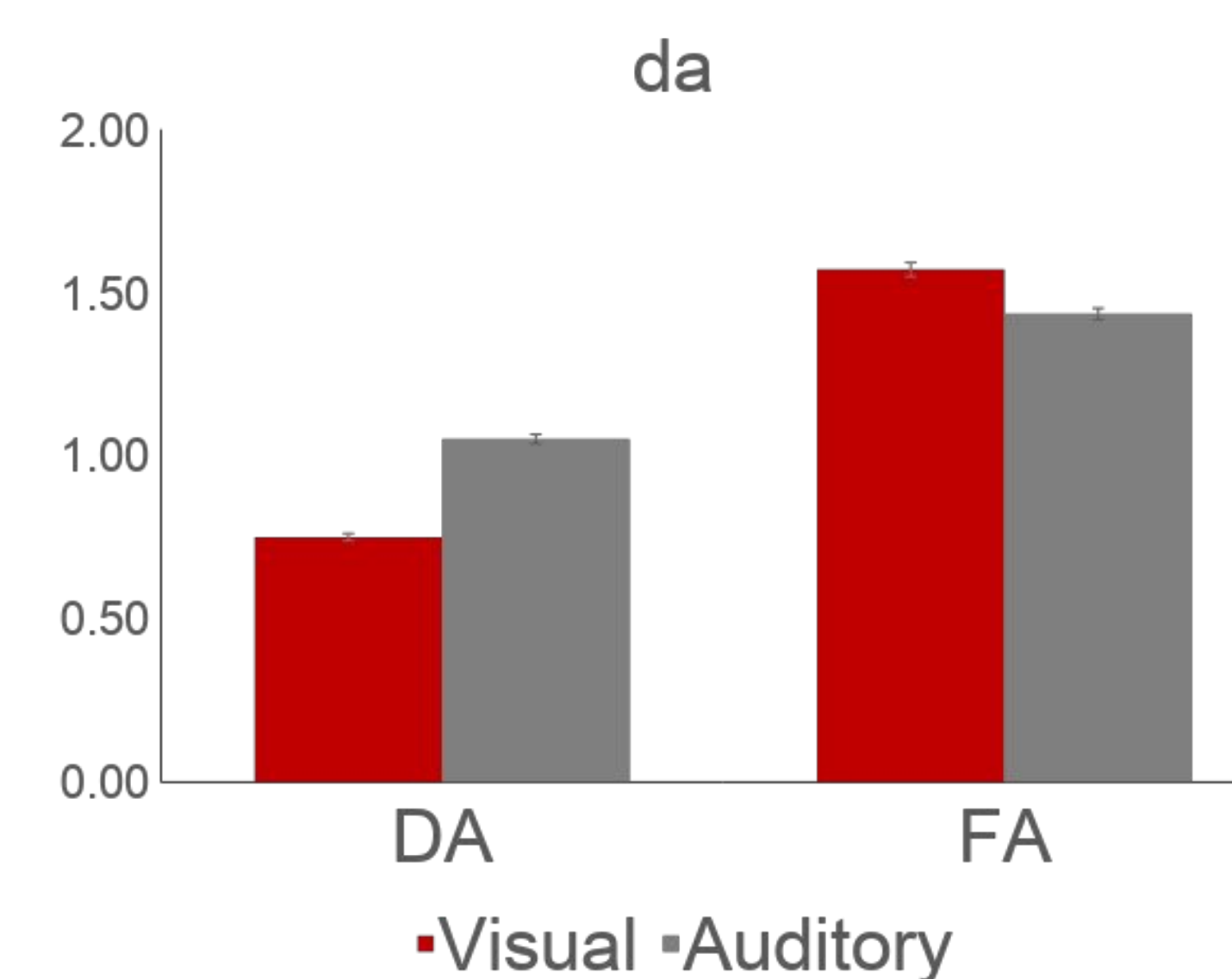
Participants were randomly assigned to either full attention or divided attention conditions. Attention was divided using an N-Back task. Participants were presented auditory and visual objects.

### Full Attention Condition



## da Results

In the full attention condition, visual and auditory memory were equated (Cohen's  $d = .28$ ,  $BF_{alt} = .56$ ). However, in the divided attention condition of visual memory was significantly worse than auditory memory.



## Discussion

We were able to equate auditory memory performance with visual memory performance in the full attention condition by reducing overall visual recognition.

Despite lower visual memory performance, we still found visual recollection to be uniquely sensitive to reduced attention, unlike auditory memory.

This suggests that auditory memory representations may be stored at a lower fidelity and are not as reliant on attention as visual memory.

## References

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