

# Effects of Retrieval Mode on Temporal Discounting

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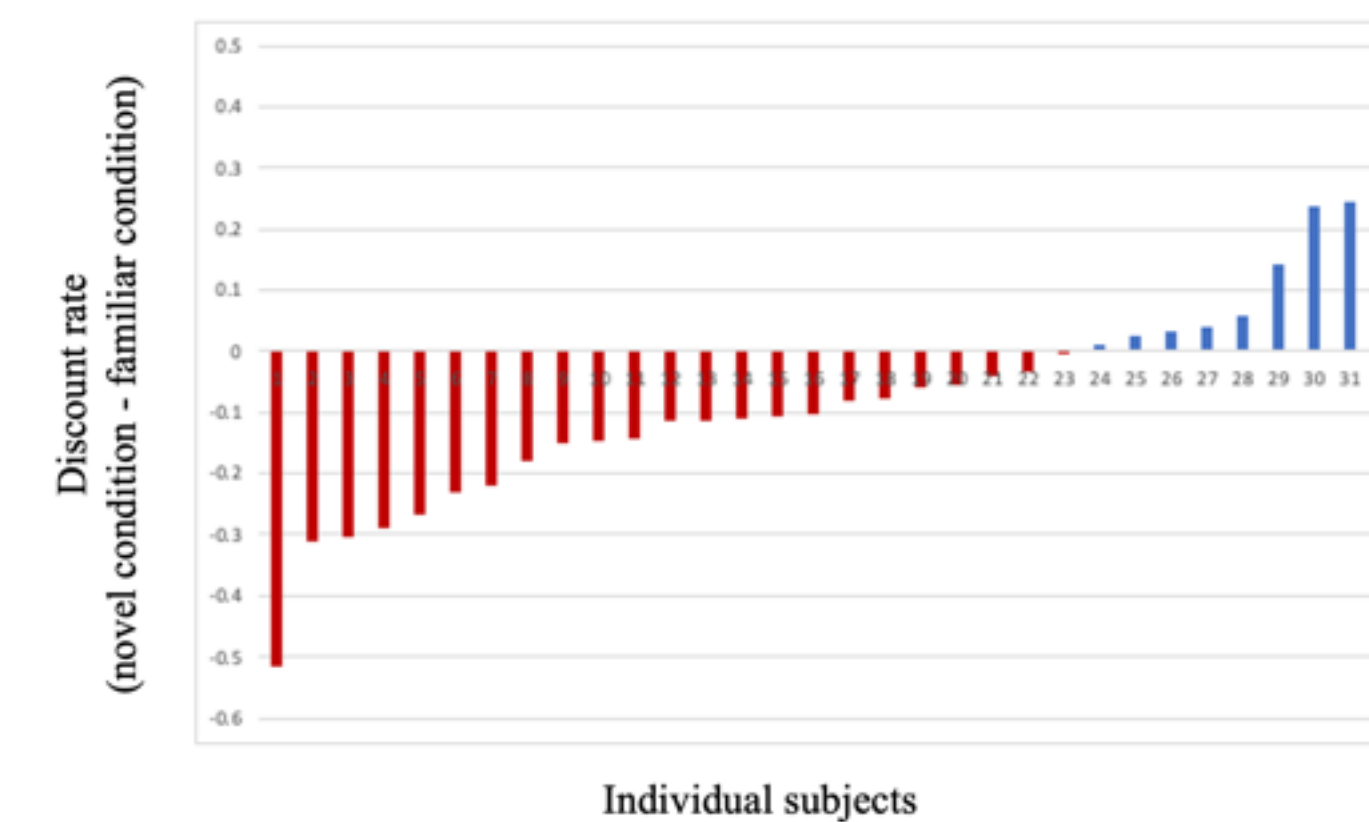
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## Background

- Temporal Discounting is reducing the subjective value of delayed rewards in decision-making
- Manipulations to reduce individual temporal discounting rates could be especially beneficial in countering addiction, impulsive decision-making in people with high temporal discounting rates
- Imagining the future<sup>1</sup> or thinking about the past<sup>2</sup> reduces temporal discounting, suggesting memory retrieval is involved in future oriented choices
- **Can inducing retrieval mode by showing people familiar images lead to reduced temporal discounting because familiarity could lead to recollection?<sup>3</sup>**
- **Hypothesis:** Participants will have lower temporal discounting rate for choices that were preceded by a familiar scene image compared to choices that were preceded by a novel scene image

## Results

- Result showed reduced discounting for novel trials as compared to familiar trials, which was the contrary to our hypothesis [ $T(31) = 2.48, p = 0.019, n = 32$ ]
- This result remained significant even when controlling for the particular task form ( $F(1,30) = 5.98; p = 0.021$ )



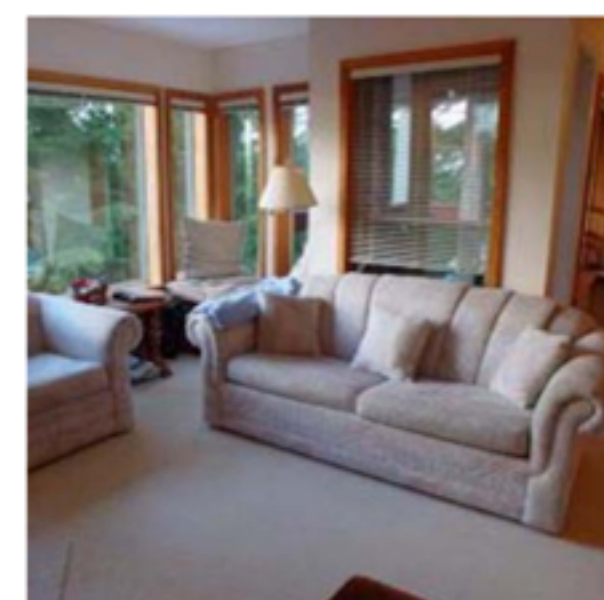
Discounting rates fit to hyperbolic model<sup>5,6</sup>

## Methods

- 100 participants through Amazon's mechanical Turk performed 2 tasks

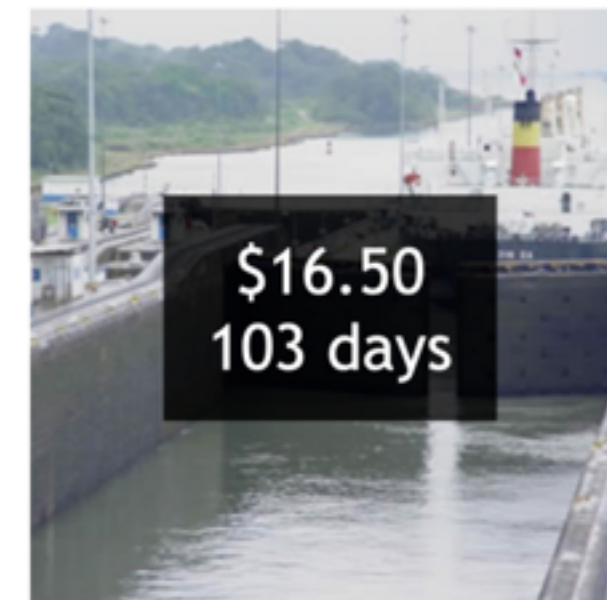
Task 1: Familiarization<sup>4</sup>

Task 2: Inter-temporal choice between an immediate \$10 reward and a larger delayed [1-180 days] reward [\$10.50-46]



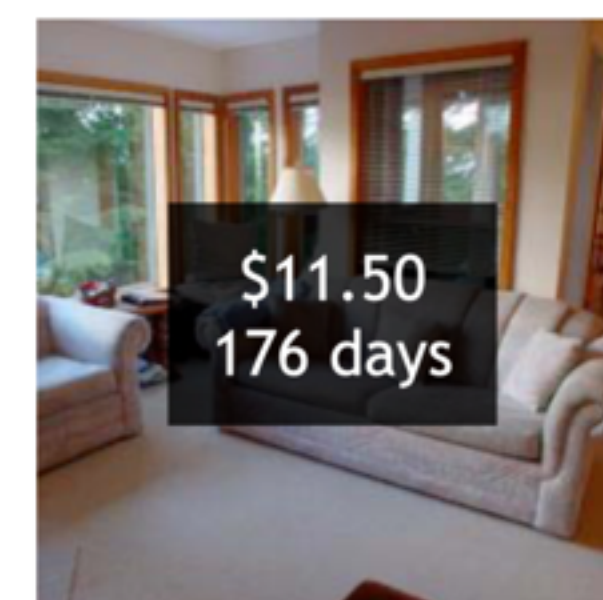
Indoor

5 familiar images x 4



Outdoor

90 novel scenes



Indoor

5 familiar scenes (Task 1) x 18

- 68 participants were excluded for failing catch trials, choosing all immediate/delayed rewards, taking too long, etc.

## Conclusions

- Induced retrieval mode with familiar images did not reduce temporal discounting. In fact, it reversed it.
- **Limitation:** Excluded more than we expected and ended up with fewer participants.
- **Possible explanation:** Increased emotional arousal due to novelty can lead to choice of a non-default option, in this case the delayed reward.<sup>7,8,9</sup>

## References and Acknowledgements

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