

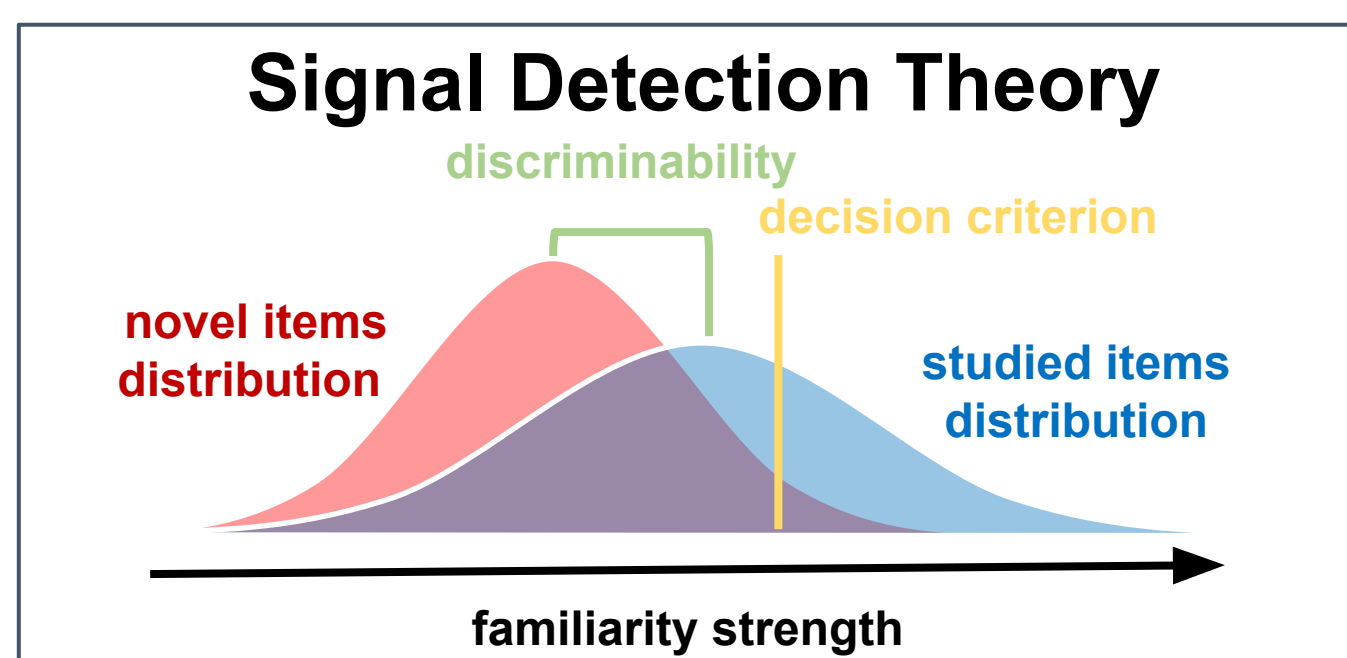
Memory, Money, & the Self: How Internal vs. External Directives Influence Criterion-Shifting Behavior



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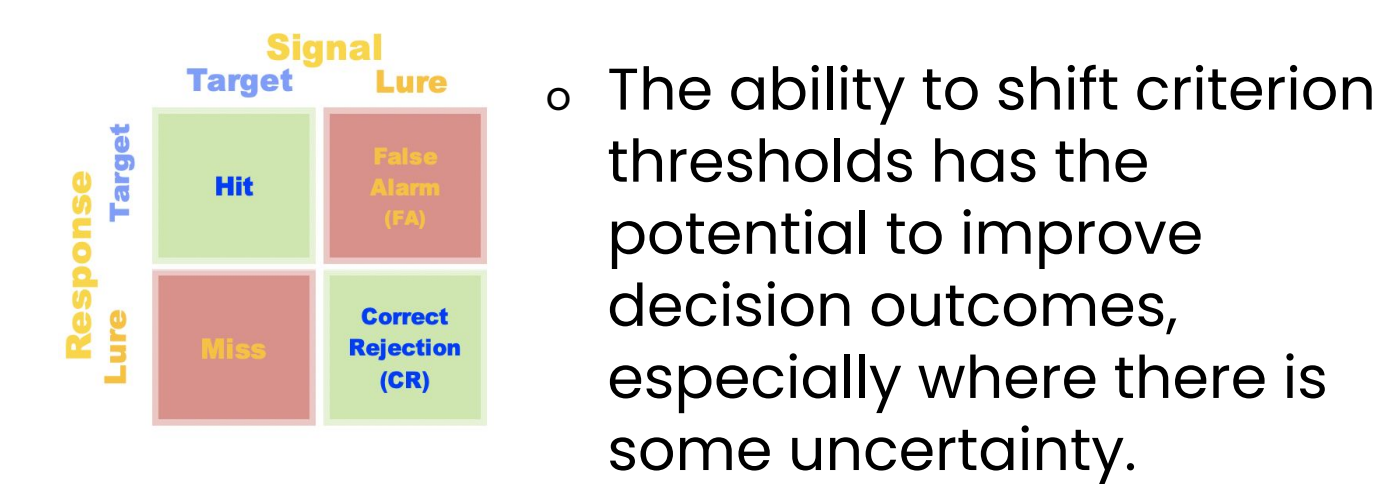
Introduction

- When individuals make a recognition memory judgment, they must decide whether an item was previously studied (old) or not (new) by determining whether the familiarity strength of an item exceeds the decision criterion (strength of familiarity required to respond 'old').

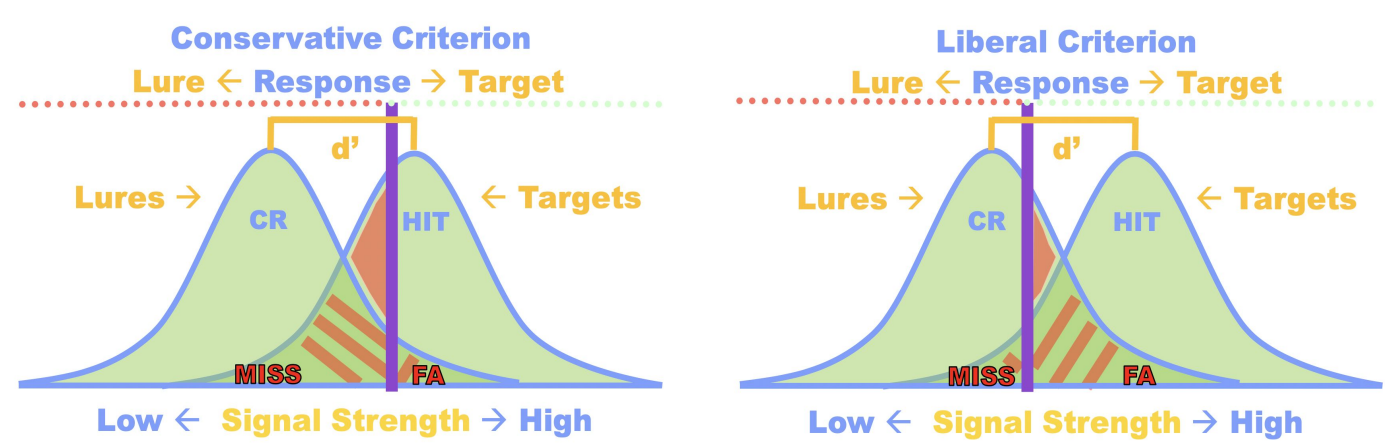


- Discriminability:
 $d' = Z(\text{Hit rate}) - Z(\text{FA rate})^2$
- Decision criterion:
 $c = -0.5 \times [Z(\text{Hit rate}) + Z(\text{FA rate})]$
- Criterion shift = $c(\text{conservative}) - c(\text{liberal})$

- Responding 'old' will result in a hit or false alarm (FA), whereas responding 'new' results in either a correct rejection (CR) or miss.³



The ability to shift criterion thresholds has the potential to improve decision outcomes, especially where there is some uncertainty.



- The tendency to criterion shift appears to be a stable cognitive trait¹, yet the nature or origin of this stability remains to be clarified.

Aim: So far, reliable predictive factors for criterion-shifting behavior have not been identified. This study aims to address whether internal or external directives influence participants criterion shifting behavior.

Hypothesis:

Internal vs. External Motivation/Directive: The money condition will show the largest criterion shifting behavior, followed by the "do better," baseline, and finally, the memory directive will show the lowest shifting behavior.

Methods

Participants

- SONA Participants
- N=37, Female=26, Male=10, Non-binary=1, Average Age=19.38 years

Questionnaires

- Positive and Negative Affect Scale (PANAS)
- Maximizing Tendency Scale (MTS)

Methods (con't.)

Recognition Memory Task

Internal Directive Tasks - Session 1

1. Baseline Task:

- Participants were instructed to respond to old vs. new face images without any direct focus on strategy implied



2. "Do Better" Task

- Participants were instructed to improve their scores and rewarded based on improvement
- "Write your commitment toward doing better on this task and your strategy toward doing better."

External Directive Tasks - Session 2

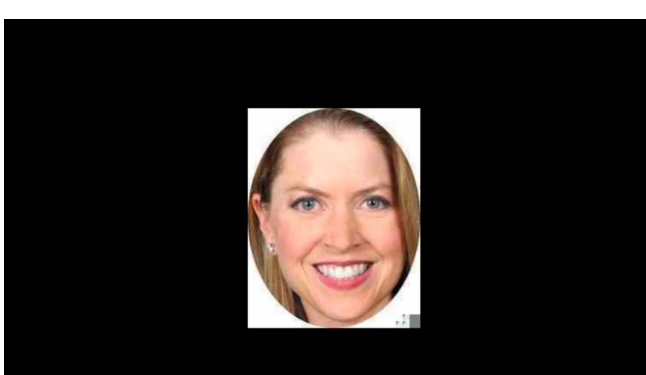
3. Money Task

- Participants were instructed to focus on the reward as a strategy
- "Write your commitment toward focusing on money on this task and your money strategy."

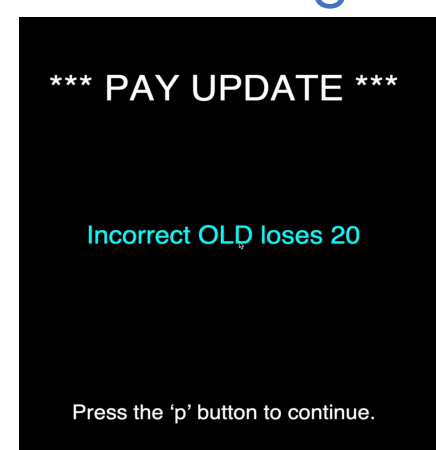
4. Memory Task

- Participants were instructed to focus on their memory as a strategy for their performance and asked to write their commitment to focus on memory
- "Write your commitment toward using your memory on this task and your memory strategy."

600 ms stimuli - 324 total



Participants made aware of payment changes



STUDY PHASE: 1/6

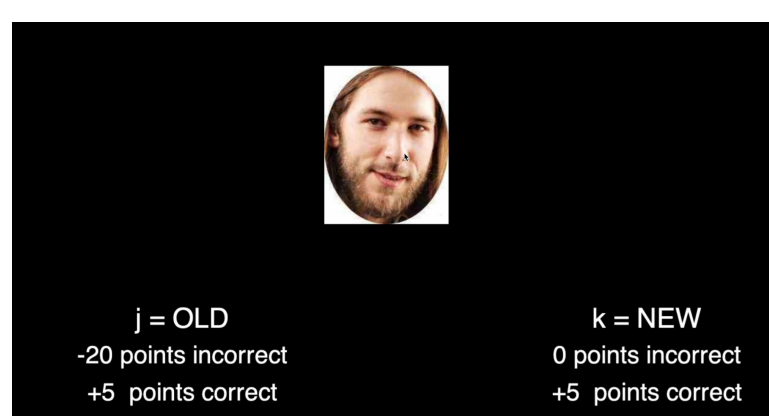
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6 Study + Decision Phase Pairs

DECISION PHASE: 1/6

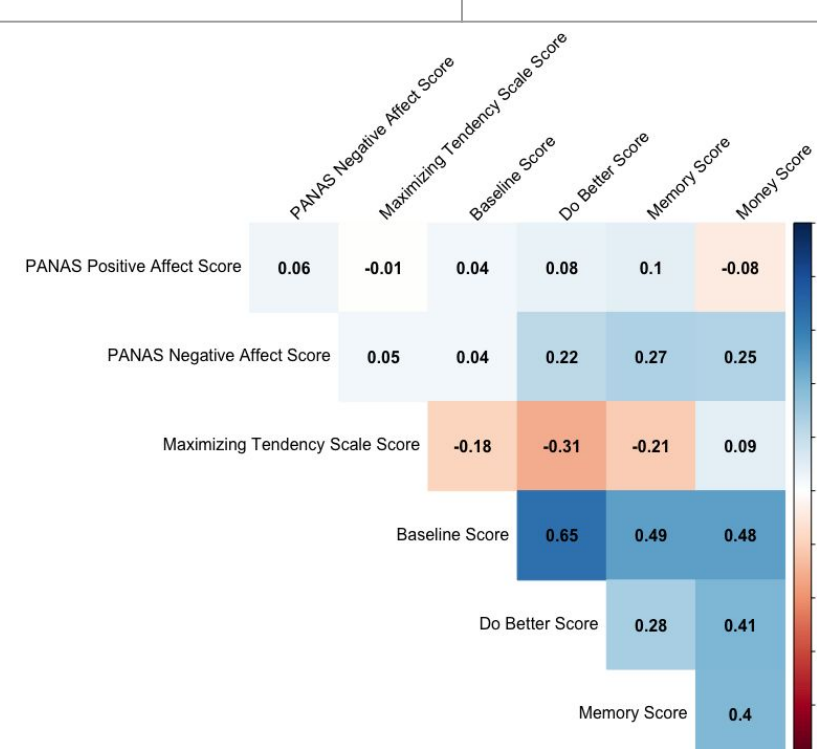
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Liberal, Neutral, Or Conservative Condition



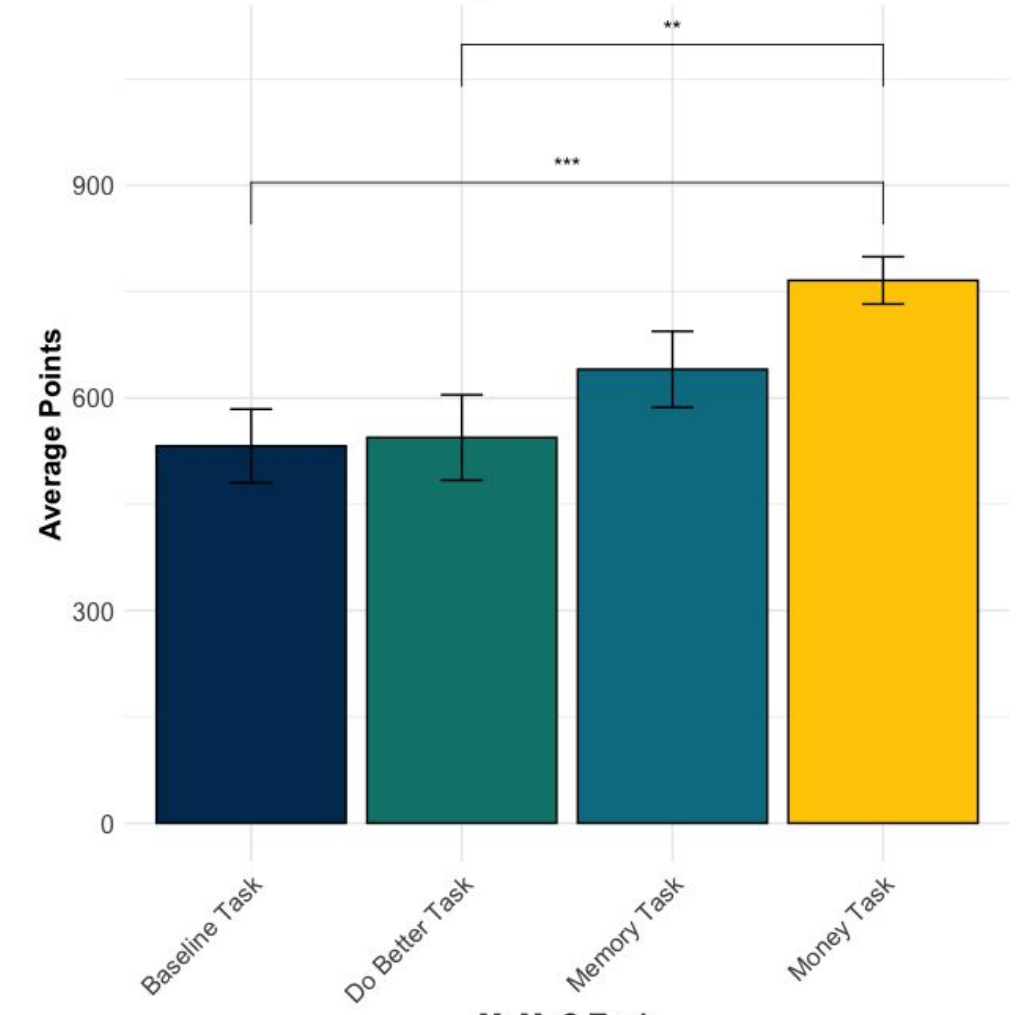
Results

Measure	Value
Positive PANAS	27.4 ± 7.8
Negative PANAS	15.3 ± 6.1
MTS	33.9 ± 4.6

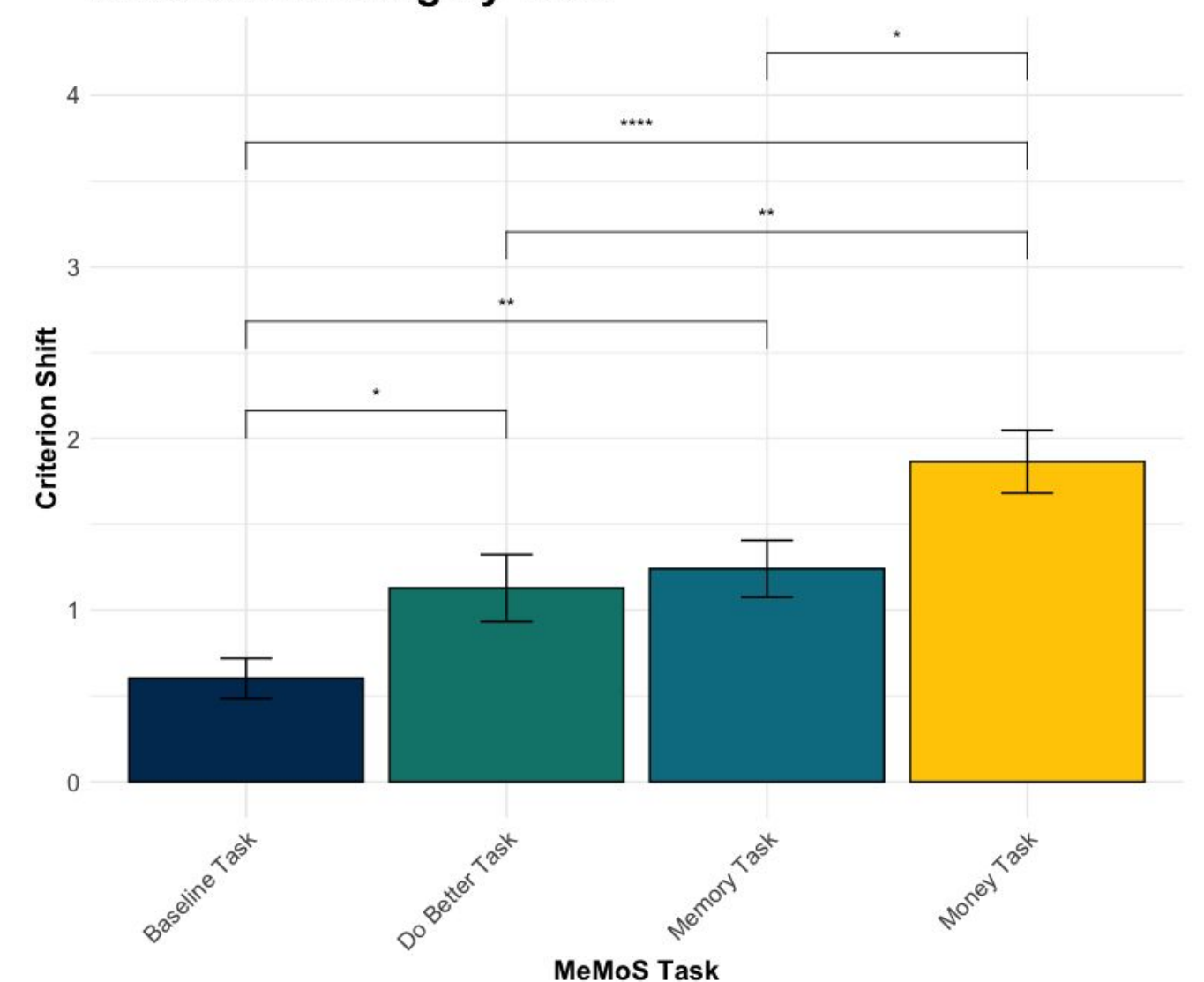


Results (con't.)

MeMoS Score by Task



Criterion Shifting by Task



Discussion

Conclusions

- Criterion shifting is greatest between baseline and money task
- There are differences in performance between some external directive tasks and others

Limitations

- Fatigue and video length

Future Directions

- Collected memory questionnaires prior to the first task and confidence ratings for each trial
- Eye-tracking or more in-depth understanding of strategies used by participants

References

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