3096: The Role of Risk Tolerance in Navigation Strategy Decisions

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INTRODUCTION

- How do people navigate in uncertain situations, and how does their confidence influence their decisions?
- **We evaluate the risk tolerance hypothesis** – that general willingness to explore guides navigation strategy selection.

Stage 1 Accepted Registered Report Aims/Analyses

Aim 1. Is risk tolerance a domain general trait that explains variability in decisions across choice contexts?

Aim 2. Is navigation strategy selection related to self-reported confidence?

METHODS

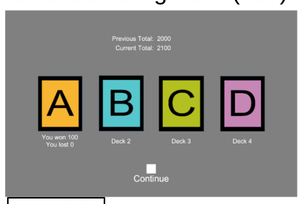
Participants

N=147	*M* (SD)
Age (years)	19.6 (1.29)
% Women	75.5%
Education (years)	13.5 (1.19)

Measures

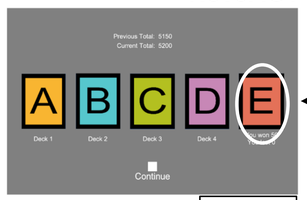
Gambling Task

Iowa Gambling Task (IGT)[1]



100 trials

Novel IGT



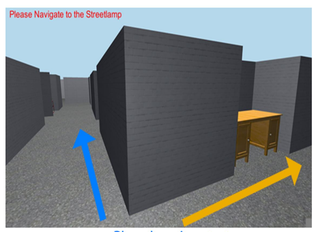
A new deck is presented. Will subjects choose to explore it?

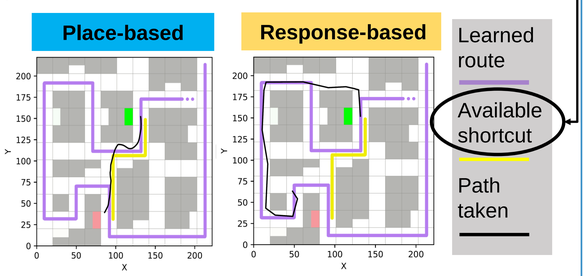
60 trials

Navigation Task

Dual Solution Paradigm (DSP) [2,3,4]

A shortcut is available. Will subjects choose to explore it?



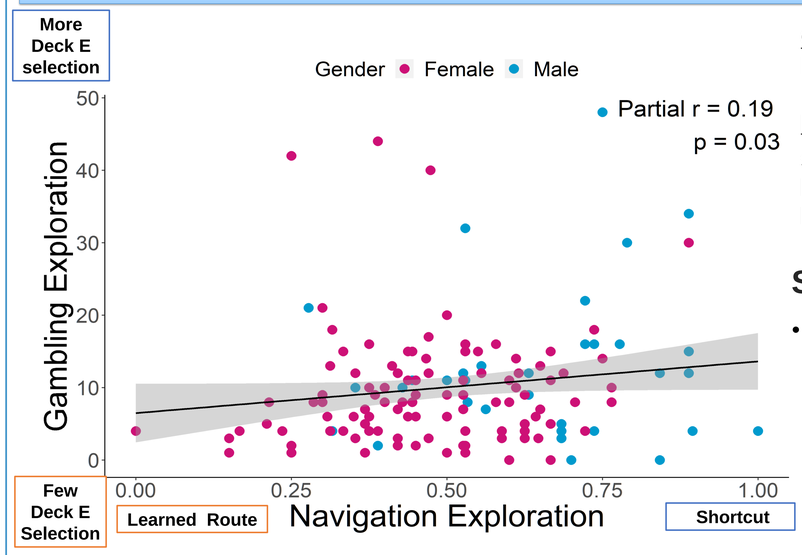


Additional Control Measures

- Virtual Silcton[5] (spatial ability control)
- Go/NoGo[6] (decision-making control)

RESULTS

Aim 1



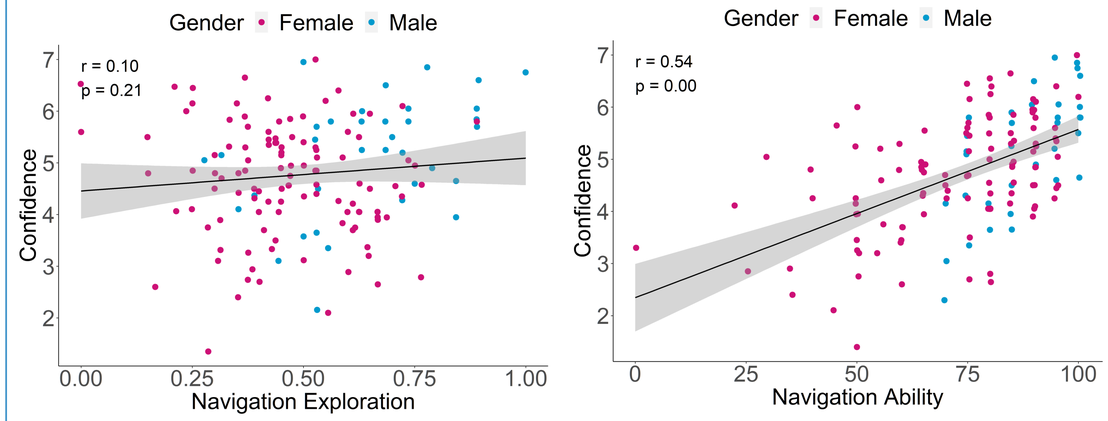
Gambling Exploration
Deck E selections

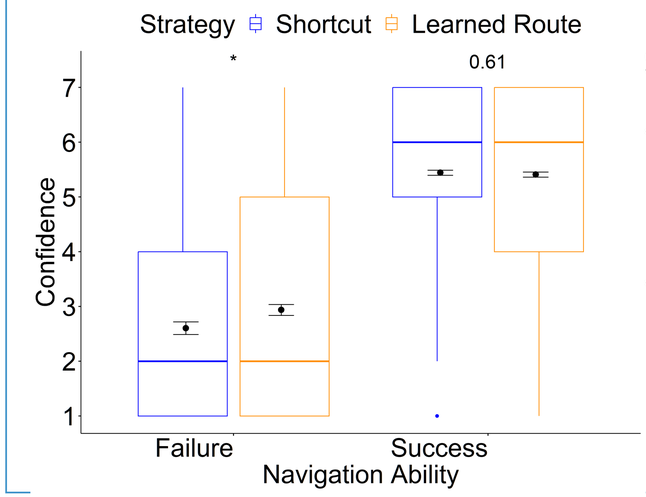
Navigation Exploration
shortcuts/ shortcuts + learned route + reverse learned route

Support for Aim 1:

- Higher exploration during gambling positively correlates with higher exploration during navigation (controlling for navigation ability).

Aim 2





Support for Aim 2:

- Higher navigation ability is related to increased self-reported confidence.
- Significant difference in confidence between Place and Response trials when failing to reach the goal.

DISCUSSION

Aim 1:

- People show similar levels of risk tolerance across domains.

Aim 2:

- Successful navigators are more confident than those who struggle.
- Self-reported trial confidence may help explain individual differences in navigation strategy choice.

NEXT STEPS

Aging:

Aim 1: Compare risk tolerance across age groups.

Aim 2: Study age-related differences in exploration under uncertainty.

Aim 3: Examine confidence and risk tolerance across age groups.

SCD:

Aim 1: Explore the role of cognitive factors in risk tolerance.

Aim 2: Investigate the role of confidence in risk tolerance among participants with Subjective Cognitive Decline (SCD).

REFERENCES

1. Bechara et al., (1994)
2. Marchette et al., (2011)
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5. Weisberg et al., (2014)
6. Gordon & Caramazza, (1982, 1983)
7. Ptenza, (2013)
8. Yu et al., (2016)

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