

# Sex differences in exploration and the relationship to harm avoidance

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## Introduction

### Background:

- Sex differences are commonly found in home range size, navigation, spatial cognition, and harm avoidance
- Long-distance travel has been proposed to confer fitness benefits to males (e.g., finding mates), and fitness costs for females (e.g., risk to offspring). These may underlie the sex differences in range size and navigation.
- Exploration is a precursor for establishing a home range and navigating back to desired locations, but sex differences in exploration have yet to be tested experimentally.
- We expect these differences in navigation and harm-avoidance to affect exploration strategies.

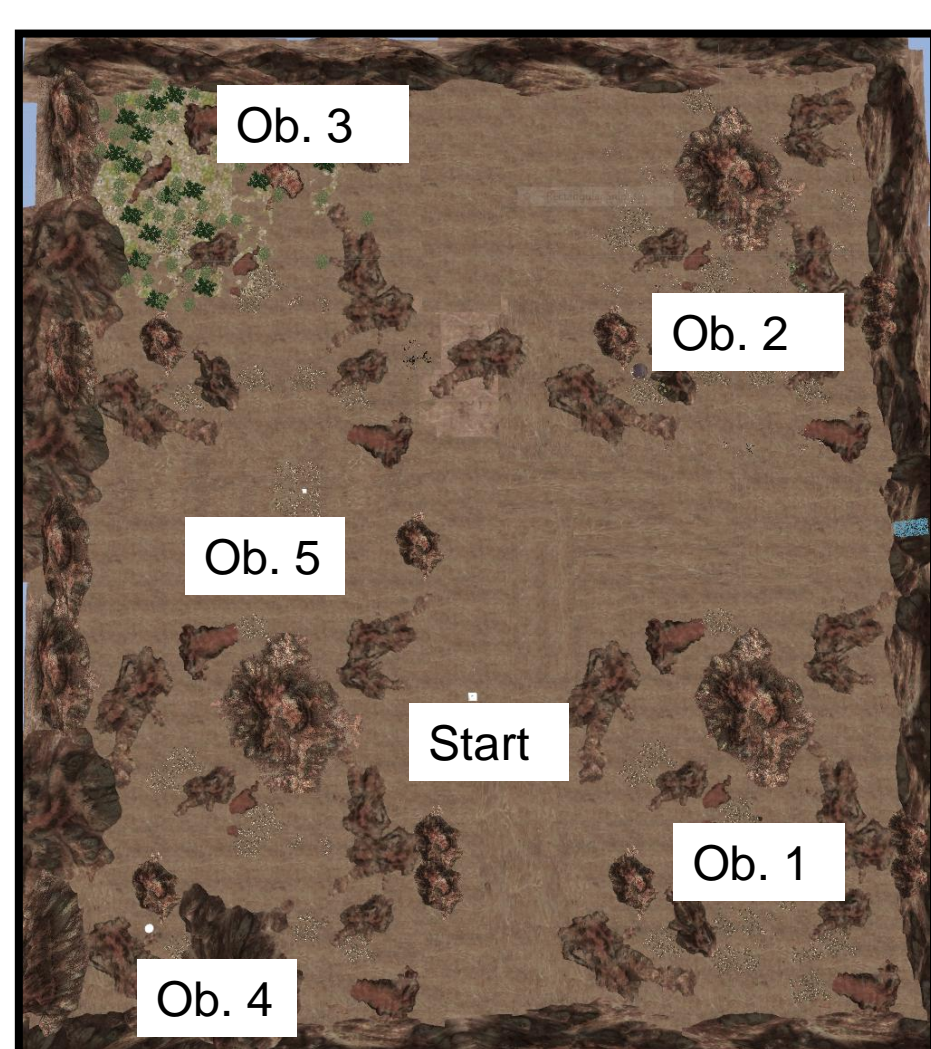
## Study 1: Method

**Sample:** 49 (30 F, 19 M) Undergraduates (Mean age 23.3 years)

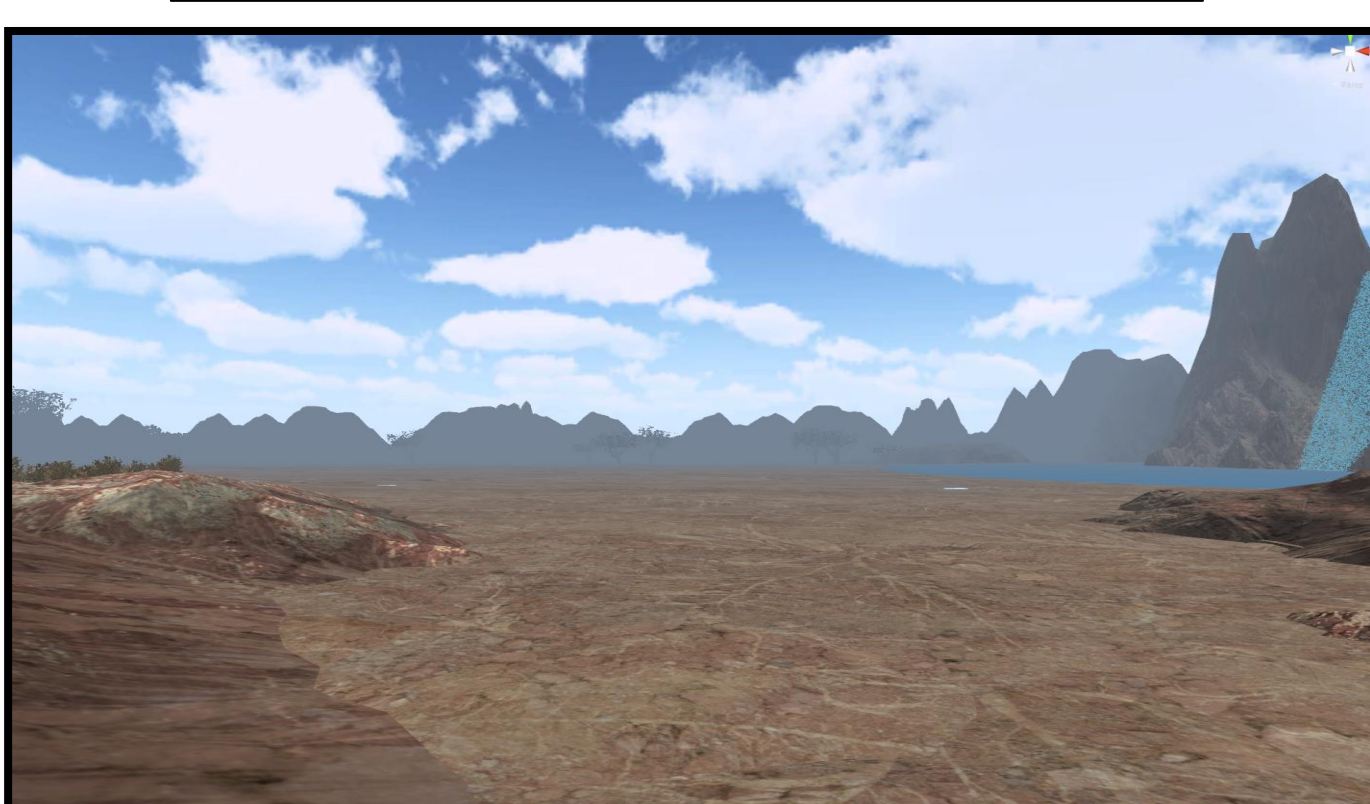
**Task:** Explore a 1 km<sup>2</sup> virtual environment in search of 5 objects. Try to find the objects as quickly as possible and remember where they are located.

**Materials:** Participants sat at a 30" monitor and used a gaming controller to explore world.

Top Down View of World



Samples of Participant View



\*Rendered Field of View = 60 degrees

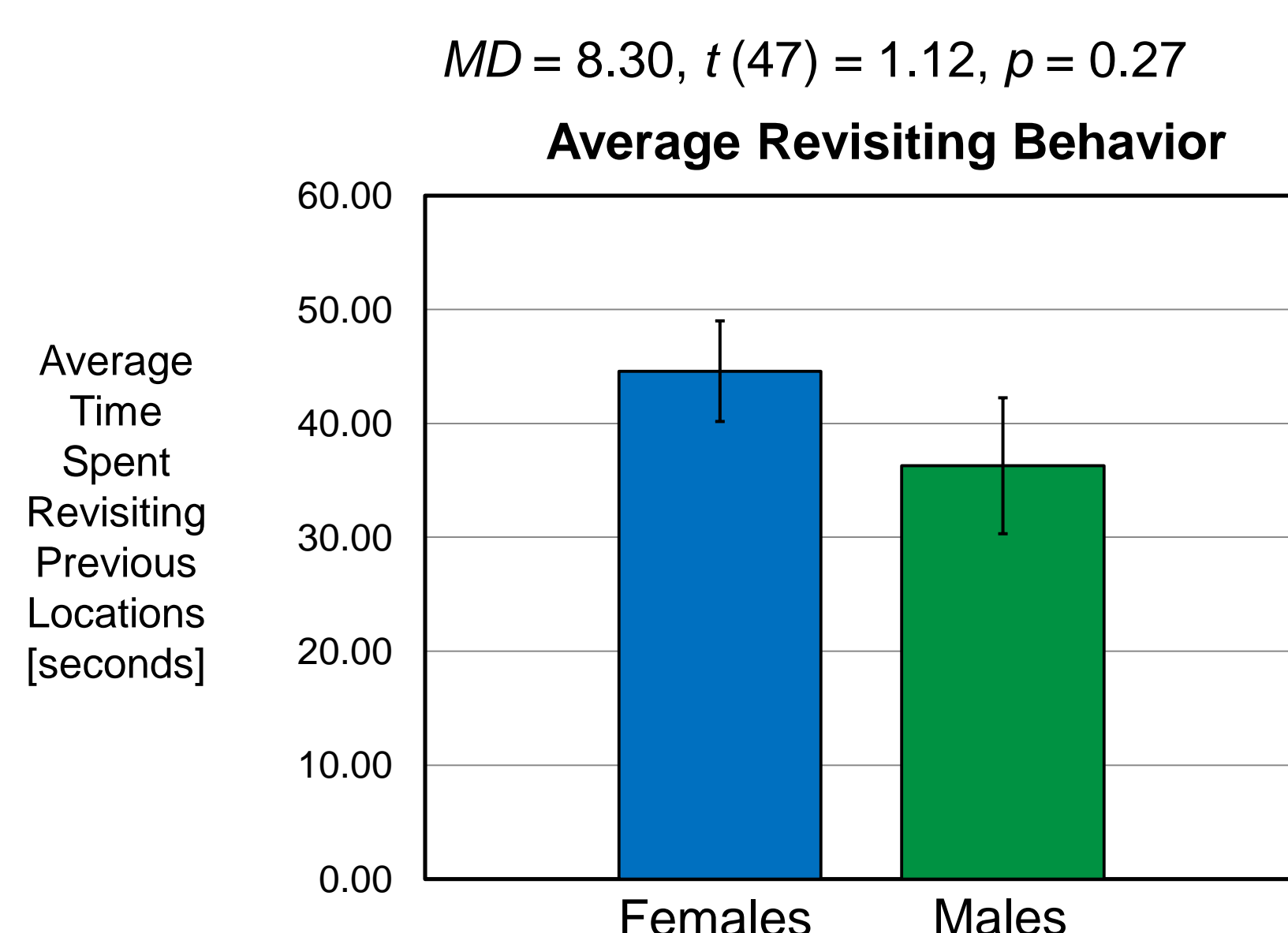
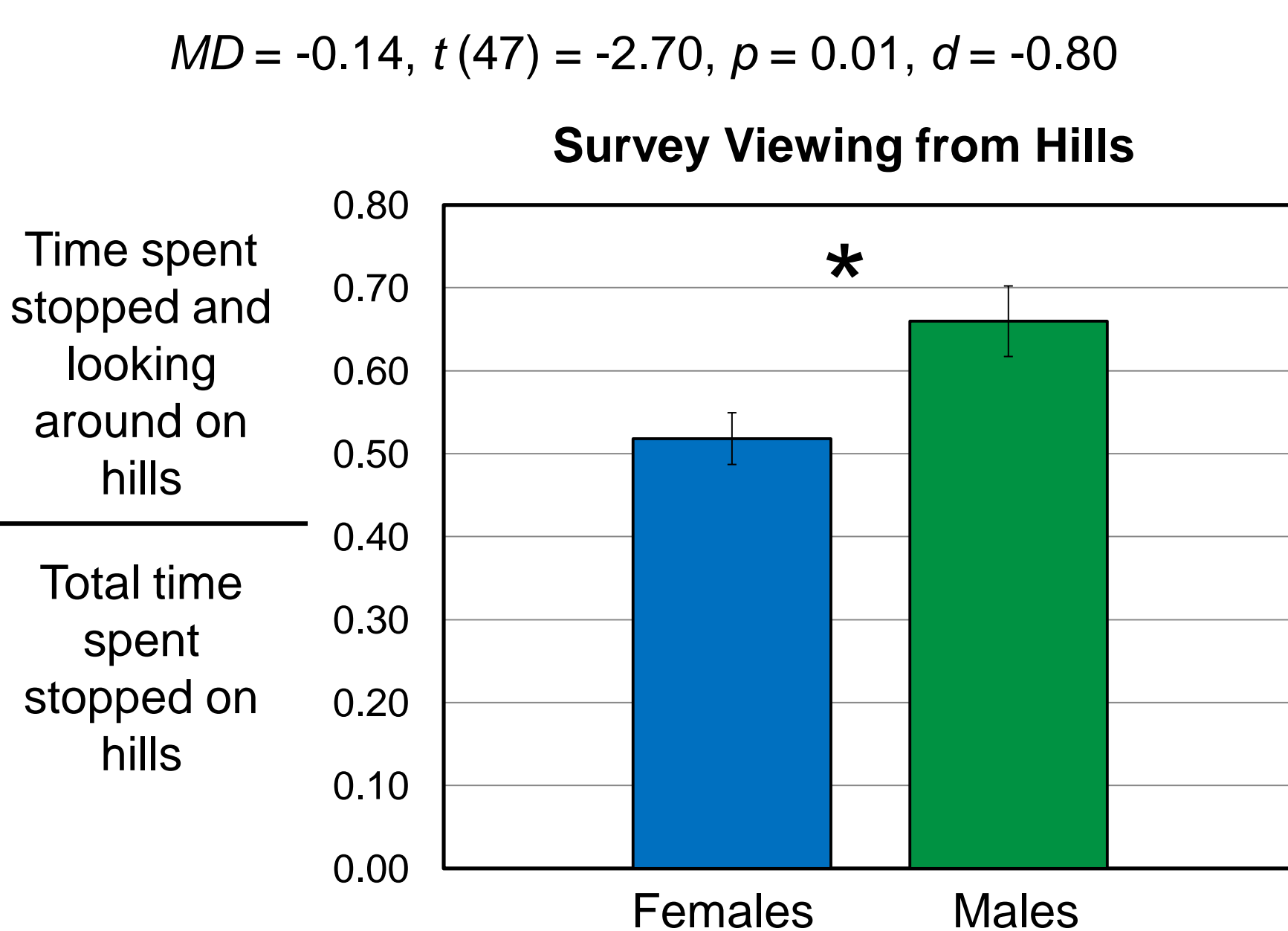
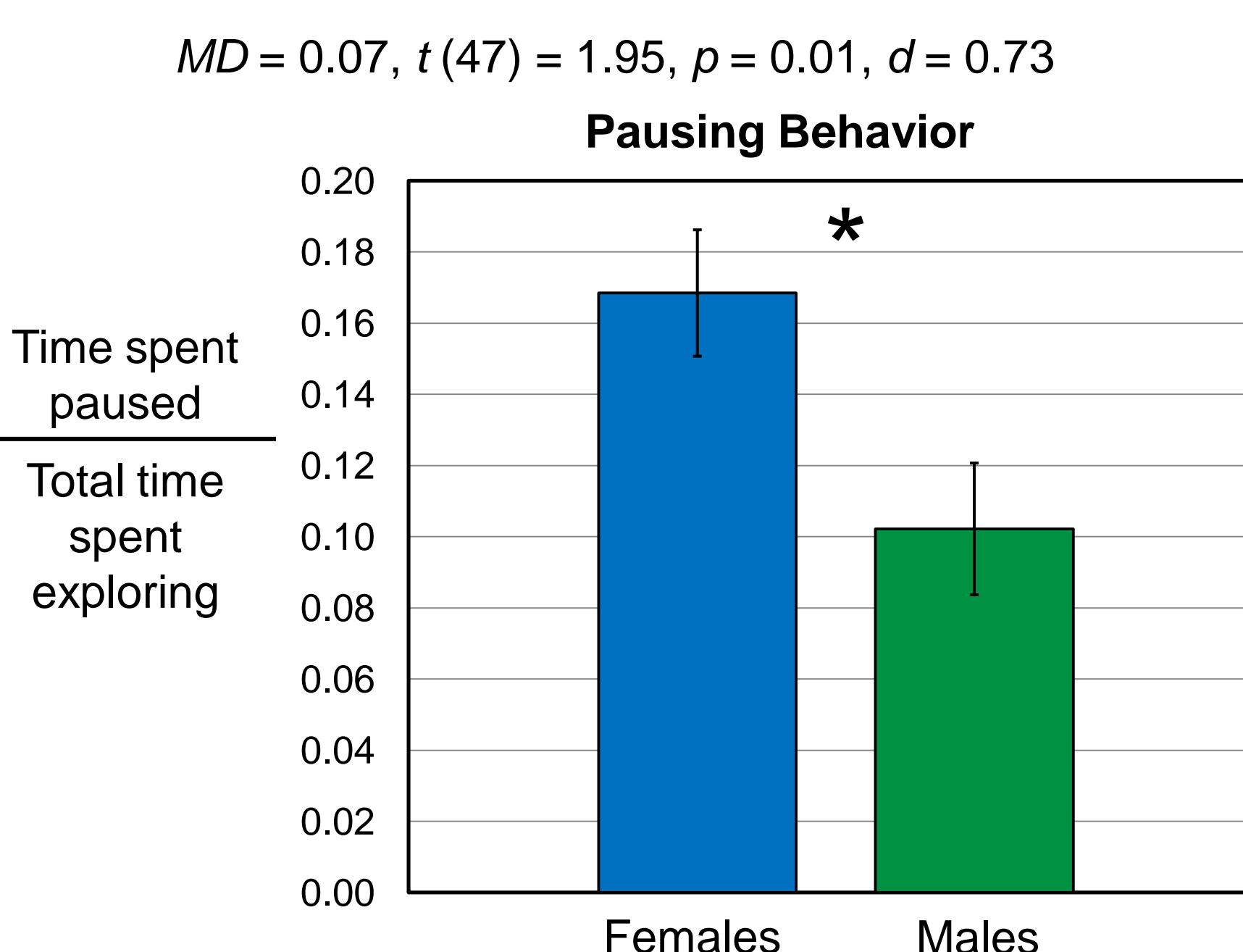
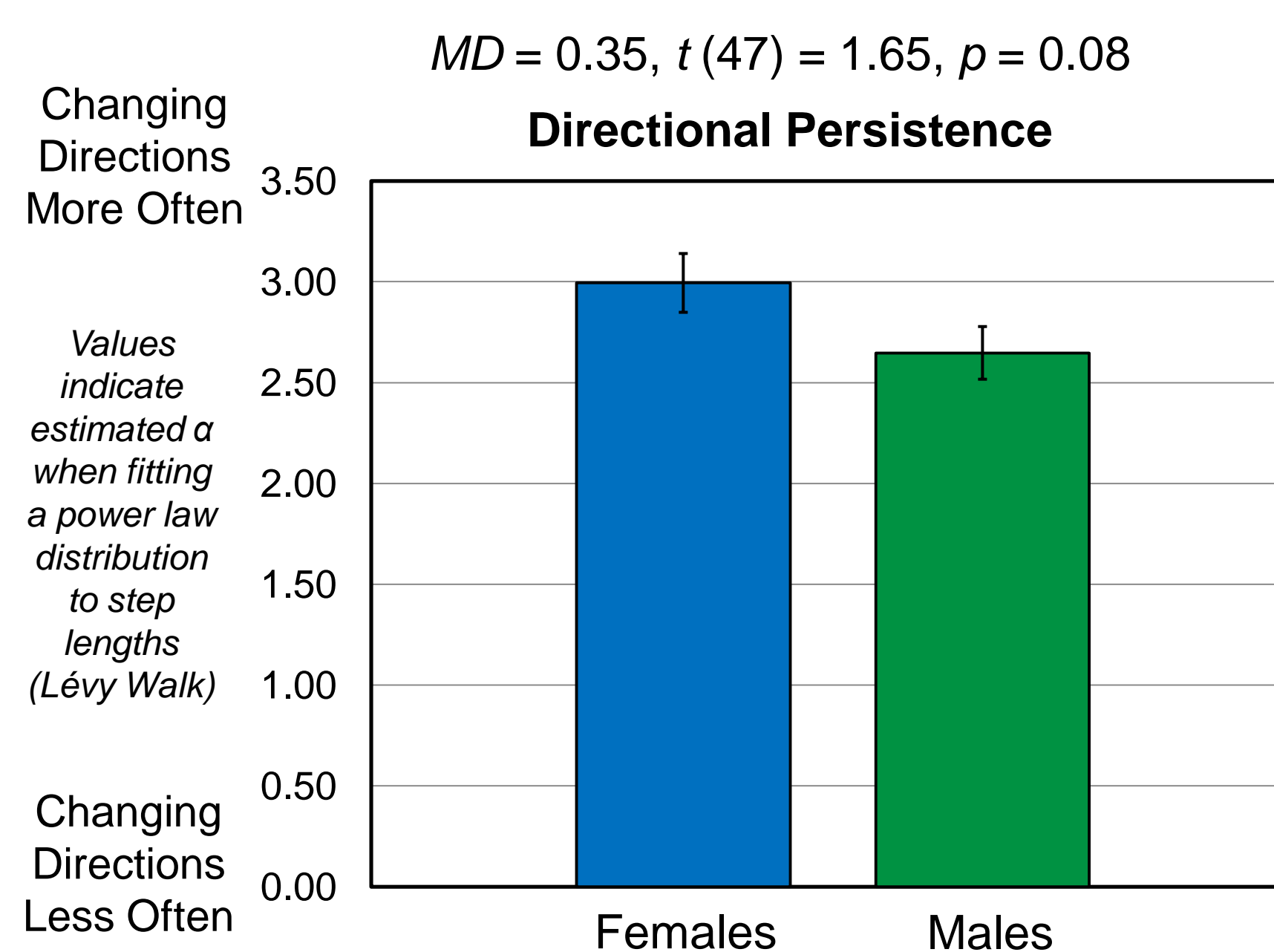
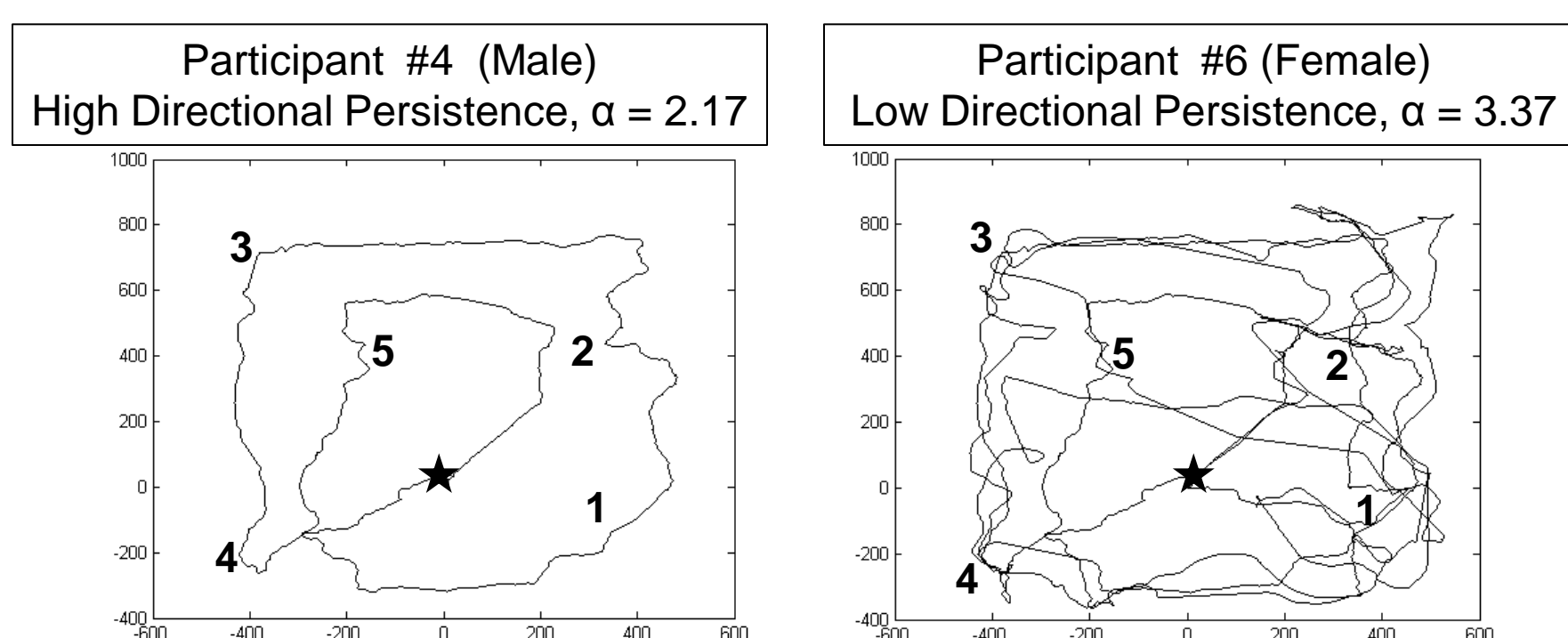
## Study 1: Results

No sex differences found in:

-Total Path Length  
( $M = 11,696$  [meters],  $SD = 3,944$ )

or

-Total Exploration Time  
( $M = 24.23$  [minutes],  $SD = 8.56$ )



## Study 2: Method

**Sample:** 17 (13 F, 4 M) of participants from Study 1, completed Questionnaires after exploration task (Study 1 Method).

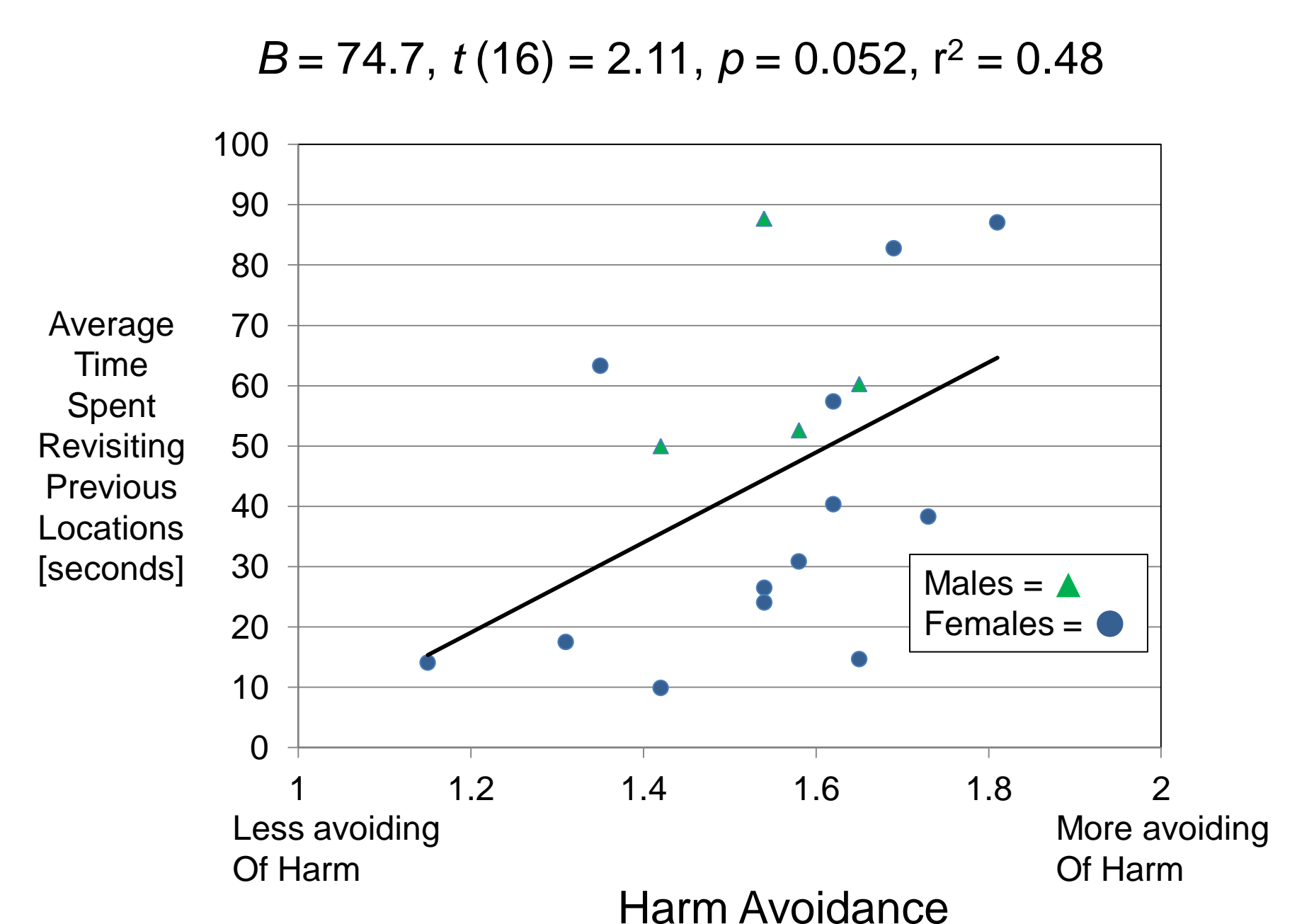
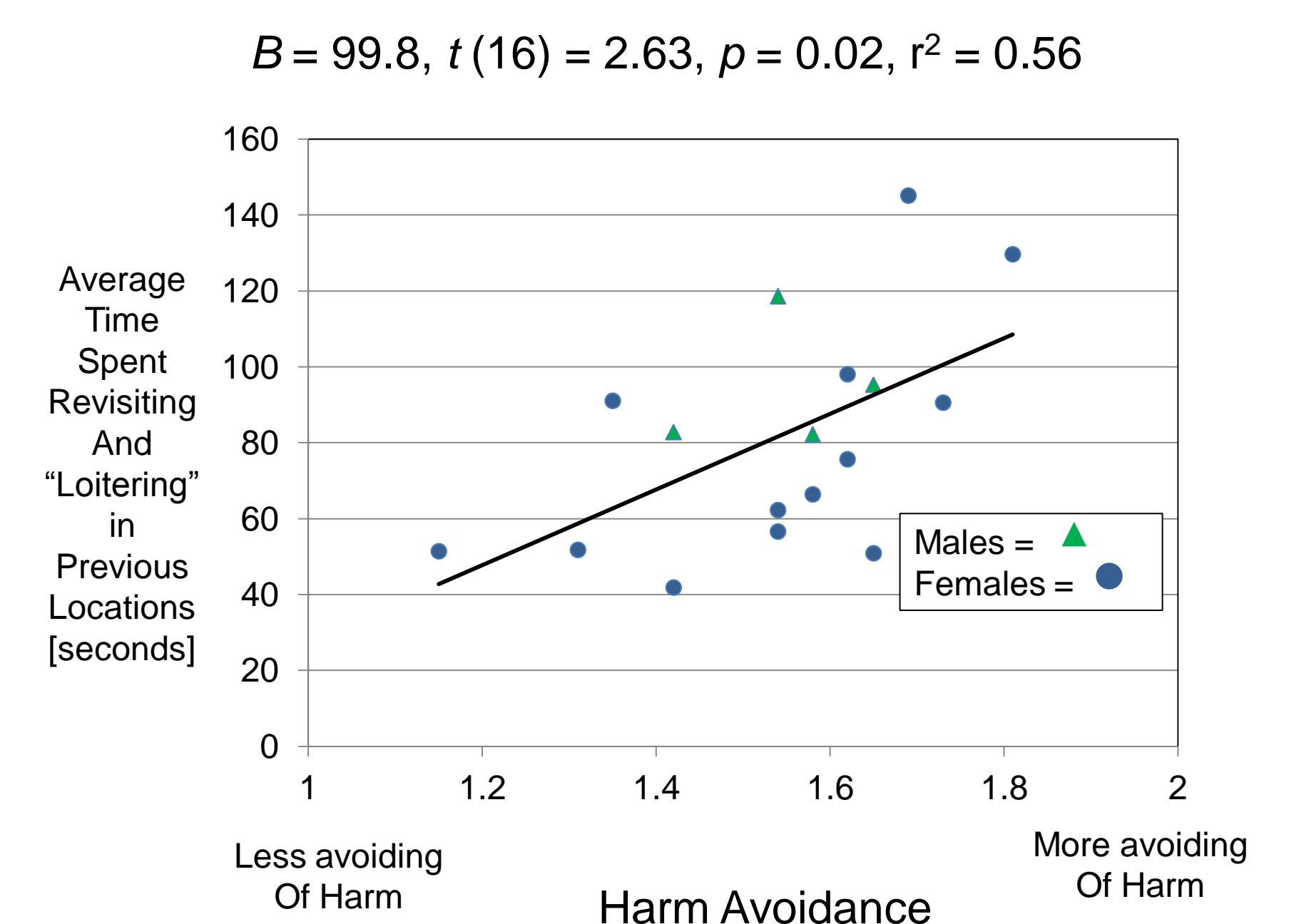
**Harm Avoidance:** 26 item forced choice response.

*Ex. Of these two situations I would dislike more:*

- Having to walk all day on a blistered foot.
- Sleeping out on a camping trip in an area where there are rattlesnakes.

## Study 2: Results

\*Data collection is ongoing and results are preliminary.



## Discussion

### Study 1:

- \* Females showed more pausing behavior during exploration.
- \* Males spent more time looking around from vantage points.

### Study 2:

- \* Preliminary results suggest that participants who were more avoidant of physically harmful situations were more likely to retrace previous paths while exploring.

For copies of the poster or additional information regarding this project please visit: [www.scanproject.org](http://www.scanproject.org)

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