Sex differences in exploration and the relationship to harm avoidance  
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Introduction

Background: 
1. Sex differences are commonly found in home range size, navigation, spatial cognition, and harm avoidance. 
2. 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. 
3. 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. 
4. 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 km² 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.

Study 1: Results

No sex differences found in: 
- Total Path Length (M = 11,696 meters, SD = 3,944) 
- Total Exploration Time (M = 24.23 minutes, SD = 8.56)

Changing Directions More Often: 
MD = 0.35, t(47) = 1.65, p = 0.08

Directional Persistence

Time spent paused 
MD = 0.07, t(47) = 1.95, p = 0.01, d = 0.73

Pausing Behavior

Time spent stopped and looking around on hills 
MD = -0.14, t(47) = -2.70, p = 0.01, d = 0.80

Survey Viewing from Hills

Average Time Spent Revisiting Previous Locations [seconds]

Average Revisiting Behavior

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: 
1. Having to walk all day on a blistered foot. 
2. 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

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