voltage :::::Desktop:volt.jpg experimenter instructions

**DAY 1**

When the participant arrives …

1. Have the participant sign the sign-in sheet.
2. Participant should fill out the consent and demographic forms.
3. Participant should fill out the video game and spatial questionnaires.

After filling out forms …

Experiment setup and training practice

1. Read over page 1 of the instructions with the participant.
2. Major points
   1. They will be completing a memory experiment in which they will be learning the locations of objects within virtual environments on the computer screen.
   2. First, they will be free roaming in one environment (the volcano world) to get comfortable with the controls and how their movement is visualized within the environment.
   3. They will then be doing a practice of the learning and testing portions of the navigation task.

Experiment

Order to run:

voltage\_header

voltage\_disp(header,1,run#) - runs 1-4

voltage\_config(header,1) - slow free roam

voltage\_config(header,2) - free roam

voltage\_config(header,3) - practice learning

voltage\_config(header,4) - practice test

voltage\_config(header,5) - learning, snow run1

voltage\_config(header,6) - learning, snow run2

voltage\_config(header,7) - learning, desert run1

voltage\_config(header,8) - test

voltage\_disp(header,2,run#), runs 1-4

In **MATLAB**, type the following commands and press enter after each.

* 1. Navigate to the experiment directory

>> cd ~/Experiments/voltage

* 1. Create the subject header (input testing location (e.g. DS for DellSeton), subject #, and gender)

>> voltage\_header

Part 1 - Free roam slow

1. In MATLAB (the voltage folder), make the configuration file for the practice study. This will make a voltage\_free\_roam\_slow.txt file in your folder, which can then be read by the navigation GUI.
2. >> voltage\_config(header, 1)
3. Complete free roam
   1. In a terminal, run the free roam bash script.

>> ./voltage.sh

* 1. A GUI will pop up for the experimental build. You will be using this from now on to run all portions of the navigation task. For all portions of the navigation task, 1 is left, 2 is straight, and 3 is right. Participants can hold two keys at once for smoother movement. Usually the best method is to hold 2 (straight) and tap 1 and 3 (left and right) as you move – you should mention this to the participant.
     1. Make sure the screen resolution is set to 1024x768 and the graphics quality is set to “Fantastic”.
     2. Hit “Play!” (The experiment will automatically run after a Unity intro.)

IMPORTANT: They need to be comfortable with moving through the environment. It needs to be second nature to them. They shouldn’t be focusing on their movement or the controls; they need to be learning the object locations. It’s guaranteed they will try to cut this portion short (“OK, got it!). You should test them by having them move to the four corners of the environment (“how about you move to the corner to the left of the ship.”). Let them experience the boundaries within the environment, so they know they can’t just go anywhere. For some people this may seem like overkill, but this will save you time as we progress. It’s for your benefit as well as to improve their performance.

* + 1. To exit free roam, hit Command+Q.
    2. In the terminal, press <ENTER>.

Part 2 - Free roam

1. In MATLAB (the voltage folder), make the configuration file for the free roam at the speed the participant will be using in the study. Make sure they feel comfortable with the movement speed. This will make a voltage\_free\_roam.txt file in your folder, which can then be read by the navigation GUI.
2. >> voltage\_config(header, 2)
3. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the practice study phase.
   1. **After completion (all parts of the navigation task from here on out end on their own), hit <ENTER> in the terminal.** This is very important in order to write the output files.

Part 3 – Practice study

1. Read over page 2 of the instructions with the participant.
2. In MATLAB (the voltage folder), make the configuration file for the practice study. This will make a prac\_study.txt file in your folder, which can then be read by the navigation GUI.

>> voltage\_config(header, 3)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the practice study phase.
2. **After completion, hit <ENTER> in the terminal**.

Part 4 – Practice test

1. Read over page 3 of the instructions with the participant.
2. In MATLAB, make the configuration file for the practice test.

>> voltage\_config(header, 4)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the practice study test.
2. **After completion, hit <ENTER> in the terminal.**

Part 5 – Practice detection task

1. Read over page 4 of the instructions with the participant.
2. In MATLAB, load the practice detection task.

>> voltage\_practice\_disp(header)

- Once the intro loads, hit “5” to begin.

Part 6 – Detection task part 1

1. In MATLAB, load the first detection task. They will be completing four runs of this task. Below, the “1” represents the first round of the detection task. For run #, you’ll have to input 1-4 as they move through the runs.

>> voltage\_disp(header, 1,run#)

- Once the intro loads, hit “7” to move to the fixation cross then hit “5” to begin.

- Hit up and replace (header,1,1) with (header,1,2), etc.

Part 6 – Learning (Runs 1-3)

1. Read over page 5 of the instructions with the participant. There are 3 learning runs!
2. **RUN 1:** In MATLAB, make the configuration file for the first learning run.

>> voltage\_config(header, 5)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the learning phase.

NOTE: The participant can pause and restart the learning phase by hitting the “Esc” key.

1. **After completion, hit <ENTER> in the terminal.**
2. **RUN 2:** In MATLAB, make the configuration file for the second learning run.

>> voltage\_config(header, 6)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the learning phase.

NOTE: The participant can pause and restart the learning phase by hitting the “Esc” key.

1. **After completion, hit <ENTER> in the terminal.**
2. **RUN 3:** In MATLAB, make the configuration file for the third learning run.

>> voltage\_config(header, 7)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the learning phase.

NOTE: The participant can pause and restart the learning phase by hitting the “Esc” key.

1. **After completion, hit <ENTER> in the terminal.**

Part 7 – Test

1. Read over page 6 of the instructions with the participant.
2. In MATLAB, make the configuration file for the testing phase.

>> voltage\_config(header, 8)

1. In the terminal, load the voltage bash script.

>> ./voltage.sh

1. Hit “Play!” to run the learning phase.
2. **After completion, hit <ENTER> in the terminal.**

Part 8 – Detection task part 2

You can let them know this is the last part of the study.

1. Read over page 7 of the instructions with the participant.
2. In MATLAB, load the first detection task. They will be completing four runs of this task. Below, the “1” represents the first round of the detection task. For run #, you’ll have to input 1-4 as they move through the runs.

>> voltage\_disp(header, 1,run#)

- Once the intro loads, hit “7” to move to the fixation cross then hit “5” to begin.

- Hit up and replace (header,1,1) with (header,1,2), etc.

Part 9 – Post experiment (Day 1)

1. Have them fill out the Day 1 questionnaire.

**DAY 2**

When the participant arrives …

1. Have the participant sign the sign-in sheet. Their subject # will remain the same as on Day1.

Experiment setup and training practice

1. Read over page 7 of the instructions with the participant.
2. In **MATLAB**, type the following commands and press enter after each.
   1. Navigate to the experiment directory

>> cd ~/Experiments/voltage

* 1. Load the participant’s header file from Day 1 located in “Data”.

- Drag voltage\_header\_(subj#)\_(subj initials).mat into the command window.

Experiment

Part 10 – Object preference practice task

You can let them know that the object preference task will be the only task they’ll be completing today.

1. In MATLAB, load the object preference practice task. There is only one (short) run of this task. >> voltage\_practice\_rep\_supp(header)

- Once the intro loads, hit “7” to move to the fixation cross then hit “5” to begin.

- Hit up and replace (header,1) with (header,2).

Part 11 – Object preference task

1. In MATLAB, load the object preference task. They will be completing two runs of this task. Below, the “1” represents run #; you’ll have to input 1-2 as they move through the runs.

>> voltage\_rep\_supp(header, 1)

- Once the intro loads, hit “7” to move to the fixation cross then hit “5” to begin.

- Hit up and replace (header,1) with (header,2).

Part 12 – Post experiment (Day 2)

1. Have them fill out the Day 2 questionnaire.
2. If the participant is paid, they should fill out the Payment Form (payment binder)
   1. Name and signature
   2. Experiment name – Voltage
   3. How much they were paid

Pay $20 (15 min = $2.5)

1. If the participant is Sona, give them a debrief form and let them know that we give them credit on Sona for their time.
2. Thank them for their participation!