Waldo Experiment Protocol:

Section 1 Initial Set Up:

1. Open waldo\_code\_updated\_eyetracking.m in tadinLab-Dropbox-waldo\_experiment\_files.m on Matlab in Room A.
2. Turn on the projector:
   1. Never leave the projector on for more than 20 mins without using it.
3. Set up the eye tracker for the experiment:
   1. Viewing distance (distance between the screen to subject’s eyes): **148.59 cm** (58.5 inches).
   2. Adjust the mirror angle to about 45 degrees.
   3. The proper height should let the subject be able to view the whole screen.
   4. Plug the wire and uncap the lens of the eye tracker, and then turn on the eye tracking computer.
   5. Follow the instructions on the screen. Select EyeLink (not Windows 7) when prompted. If the wire was not plugged before turning on the eye tracking computer, plug the wire, and type ‘elXX.exe’ and press enter on the eye tracking keyboard.

Section 2 Instruction & Paperwork after the subject comes:

1. Let the subjects read the consent forms and explain the task as follow:
   1. The Waldo task asks the participant to search a specific face (which we call the target face) in a crowd of faces. Each trial begins with fixating on the target face, which is presented at the center of the screen. After that, the actual experiment trials will be presented.
   2. The target face will not change across the trials, but it can be presented in any angle (gaze direction) and location on the screen.
   3. The participant need to use the mouse to click on the face he or she finds as **quickly and accurately** as possible:
      1. Correct trials: there will be a black frame surrounding the face and a sound from the speaker.
      2. Errors: there will be a black frame surround the correct face.
   4. There are 450 trials, separated into 5 blocks and therefore each block will have 90 trials. (Line 102: nrepeat should be 50 for the experiment)
      1. The first ten trials show the target face for longer time (2 sec) for learning.
   5. The participant will have 30s break for every 90 trials:
      1. The break time is subject to change for the pilot trials.
      2. The estimated time of completion is within an hour.
   6. The participant can end the experiment at any time.
2. Check binocular visual acuity:
   1. Check from 20/100 to 20/20. (Acceptable: 20/30 [line 6]-20/20[line 8])
   2. If the participant is wearing spectacles or lenses for the check, then they need to wear them for the experiment
3. Let the participant sign the consent form.
4. Update the subject ID in the MatLab code (line 20):
   1. Pilots: pscPilot\_No.
   2. Subjects: waldo\_No.
5. After sitting down, the subject need to fixate the chin at the chin rest.
   1. If the height is not comfortable, adjust the height of the chair.
   2. Make sure that screen is right in front of the participant in the center of the vision.
   3. Do not adjust the head rest unless the chair height adjustment is not enough. Adjusting the chin rest is okay. Head rest is just harder to move.
   4. Let the subject move his/her head away if the adjustment of the eye tracker is needed.

Section 3 Experiment Instructions:

1. Run the experiment:
   1. Wait about 1min to load the identities. The experiment is ready to begin when the welcome text is presented.
2. Calibration and Validation for eye tracking [monocular, left eye] (\*for details, see the protocol for eye tracker)
   1. Check the image for the pupil and corneal reflection
   2. Click on the pupil for focus. Also adjust the bar on the eye tracker for better focus.
   3. If the calibration is not good, redo calibration.
   4. If the calibration always fails:
      1. Press ctrl + c for times, type sca in Matlab command window
      2. After exit, change the eye\_tacking parameter at Line 15 from 1 to 0.
      3. Re-run the experiment (without using the eye tracker).
   5. For validation, the average error should be less than 1.
      1. Redo validation (or calibration and validation) if the average error is high
   6. After calibration and validation, make sure the mouse is on the projector screen, not on the computer screen and it is moving properly.
3. Keep the Experiment notes on the paper form during the experiment and then use Experiment notes in REDCap after the experiment.
   1. The REDCap version should be more concise and structured.
   2. Check the completeness of the notes.

Section 4 Post-experiment:

1. Check whether the data are appropriately stored.
   1. Data files should be stored in Waldo\_Data folder.
      1. Experiment file: waldo\_data.mat
      2. Eye tracking data file: id.edf
2. After checking, follow the questions on Post-Experiment survey and have a short conversation with the participant.
3. Ask the participant to fill in participant survey form and AQ test on REDCap [on my lap top or on the computer in Room A]
   1. Instructor should leave the room
4. Fill in Post-experiment survey on REDCap:
   1. The experimenter should ask the participants the questions on the survey and write down what they have responded.
   2. Fill out the REDCap version of the survey after the experiment.
   3. Check the completeness of the survey on REDCap.
5. AQ test scoring:
   1. Check the completeness of the test.

Sections 5 Others & Clean-up:

1. Payment:
   1. Compensation: 10$/hour
      1. If the participant uses more than an hour but less than an hour and half, pay the participant 15$.
   2. Ask the participant to sign the form for reimbursement and the check. The form and the check should be in the drawer.
   3. Sign the check. (instructor)
2. Forms & Dropbox:
   1. Check the completeness of AQ test with scoring, Participant information form, Experiment notes and the post-experiment survey.
   2. Export the participant information form in Excel after finishing data collection or when the lab manger needs them.
   3. Use flash drive to make a copy of the experiment data and upload the data to Dropbox after each participant’s experiment.
3. Clean-up:
   1. Exit the eye tracker on the monitor
   2. Unplug the eye tracker and cap the lens at the top
   3. Turn off the eye tracking monitor and eye tracking computer
   4. Turn off the projector

* Important Note:

1. Do not leave the projector on without using it for more than 20 mins.
2. The participant information form has demographic information and the condition of eye-sight. Check the answer of eye sight again after experiment.
3. Check the code and the console for waldo\_code\_updated\_eyetracking.m:
   1. Line 15: parameter for the eye tracker
      1. 1 = recording the eye data
      2. 0 = no eye data is recorded for the subject
   2. Line 20: the subject ID in the form of waldo\_No.
   3. Line 102: in the section for experiment design, nrepeat is 50.
4. Data:
   1. Data file: waldo\_data.mat
   2. Eye tracking data file: id.edf
      1. Check the console, the message needs to show that the edf file is moved to proper position [show in the folder].
5. REDCap:
   1. The participant information survey
   2. Experiment notes
   3. Post-experiment survey
   4. AQ test
   5. AQ scoring
      1. Check completeness for each participant’s documents
      2. The participant should fill in the participant information form and the AQ test by themselves alone in Room A.
      3. The instructor should fill in the Experiment notes during the experiment and the Post-Experiment survey on REDCap.
6. Copy the experiment data into a flash drive and upload the data to Dropbox after finishing the experiment with each subject.