Instructions for eRDS6

Procedure

<u>Distance eye to screen</u>: 150 cm through the mirrors (accomodation distance)

Be sure that sound is ON.

First administer the **DST8**. Be sure the light is turned off for all testings.

Run **eRDS6.m**. Start with **menu 3 (practice).** Enter the ID used for the DST. In our experiment, we follow the naming convention (ID_T#).

After checking that the participant still sees only one fused box, give the following instructions, along with the pictures:

"Before each presentation, you will see a fixation cross and circle in the middle of the screen. When the small dot in the center turns white and you are ready, press the spacebar to make the stimulus appear. The stimulus is divided in 3 horizontal stripes. Each stripe will have either blue and black dots, or white and black dots. You will be presented either with blue/black dots on top and bottom stripes(and black&white in the middle), or with blue/black in the middle (and black&white on top and bottom stripes).

The target is the blue/black stripe(s). The target will appear in a different depth plane than the other stripe(s). *(Show to the participant the sheet with stimuli here.)*

If you see the target closer to you than the black&white stripe(s), press the down arrow key. It will look like the target e is floating in front.

If the target is further away than the black&white stripe(s), press the up arrow key. The target will look more like a hole. Guess what is the most likely if you have doubts. Be careful because there are black dots both in the target and in the background. Imagine that you see blue dots in the center stripe far behind some of the white dots. What key would you press?"

If the answer is incorrect, clarify the instructions and retry.

"This is a practice, so the dots are going to be shown for long, and the task will be easy. A correct response will bring a high pitch sound, an incorrect will give a low pitch noise."

eRDS 2000ms

Run eRDS6.m. Use menu 4. Enter an ID for the eRDS file that will be saved. In our experiment, we follow the naming convention (ID_T#). Enter the ID used for the DST (ID_T#).

Give the following extra instructions:

 "Are you still seeing one large box? This is going to be long presentations, except that this is not a practice anymore. As a result, it will be longer, around 10 min long. You will get meaningful feedback only on the 24 first trials. Then the feedback sound will only tell you that you have answered, not whether it was correct or not. Please do your best, even if you are not confident about your answers. You can look everywhere on the stimulus but **it is important that you look at different places**. I will leave the room, please call me if you need anything."

eRDS 200ms

Run eRDS6.m. Use menu 5. Enter the same ID for the eRDS file that will be saved (ID_T#). Enter the ID used for the DST (ID_T#). Each menu will give a different saved file.

Give the following extra instructions:

 "Are you still seeing one large box? This is going to be the same exercise, with flashed presentations. It will take only 5 min. Remember that the feedback sound will only tell you that you have answered, not whether it was correct or not, except during the 24 first trials. Please do your best, even if you are not confident about your answer, and remember that **it is important to look at different places.** I will leave the room, please call me if you need anything."

Crash control on Windows

If you need to exit, press alt+tab, keeping alt pressed down and use the mouse to close the PTB onscreen by clicking the cross (or ctr+alt+del and end PTB onscreen for the dirty way). If you cannot write in the command window anymore, press ctr+C. If you cannot see the taskbar on Windows, write ShowHideWinTaskbarMex in the command window and press enter. If you want to know what happens, there should be a log file with the content of the command window available by date and time in the log folder. Data is in the dataFiles folder.

Analysis

Use file stereoAcuity.m (analysis folder in eRDS) with the ID given for the participant followed by the menu number: `stereoAcuity('011_T1_menu5')`

The results are two figures (one for far disparities, one for near disparities), with 6 plots on each figure. One figure for near disparities (crossed) and one figure for far disparities (uncrossed).
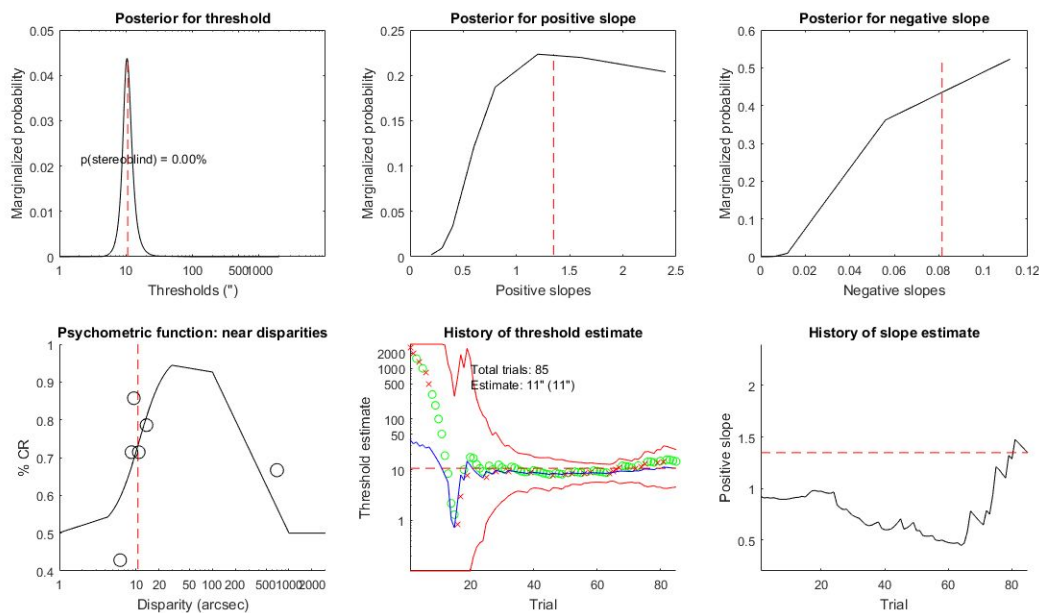
Plot1: threshold probability distribution, marginalized on other parameters. Gives the current posterior probability distribution, the estimated threshold (sum of all probabilities weighted by their value, indicated by a vertical line) and the stereoblind probability.

<u>Plot2, 3</u>: Probability distributions for positive slope (plot 2) and negative slope (plot 3). For the positive slope, higher values correspond to flatter curves . For the negative slope, higher values correspond to curves going down quicker. Vertical lines are final estimates.

<u>Plot4 </u>: Estimated psychometric function using final estimates. Dots show an average of the data.

<u>Plot5 </u>: History of threshold estimates. Blue line: evolution of the estimated threshold. Green circles: correct responses, red crosses: incorrect response, dotted red line: final estimated threshold.

<u>Plot6 </u>: History of positive slope estimates.

Figures are automatically saved in *figures* folder.