Instructions Attention and VWM -for experimenter

Hi,

the script(s) is made to be highly flexible and user-friendly as much as it could be. Here a small explanation.

**Structure**

VWM evaluation (12 practice trials + 80 trials) → here the participant simply has to perform a delayed match to sample task, i.e. report whether the second array of stimuli is the same (“m”) or different (“z”) to the first.

QUEST (5 practice trials + 50 trials) → here the participant has to report the location of a flash appearing on the screen by pressing one of 4 alternatives: “i”, “o”, “l”or “k”.

Main experiment (12 practice trials + 3 blocks of 160 trials each) → here the participant will have both to detect the change between the first array of stimuli and the second AND the appearance of the flash (80% present).

**Interface and procedure**

The main action required from the experimenter is to drag and drop the file “start\_EXP.m” to the console. A window will pop-up requiring some minimal data of the subject, and which parts of the experiment should be run, and how many blocks should be run in the main experiment. This again to make the experiment customizable and flexible in case of crashes or any other sort of issues. Anyway, better to keep the default values.

The shift between one experimental module and the other happens automatically, just requires the experimenter to confirm the action with a pop-up window. After the QUEST for example, the computed contrast value will be shown: the experimenter can decide to keep this value, change the value or re-run QUEST.

In all the modules except QUEST there is a short break every 40 trials. The participant can choose to move and then jump into Eytracking recalibration or to stay still and avoid recalibration. At the end of a block the same, but a longer break and recalibration is encouraged.

At every trial, when response has to be provided, the participant (or the experimenter) can press ESC to abort the present trial OR the present block OR the whole module/experiment. An interface will guide you in this choice.

To test the experiment in absence of Eyetracking you can simply set

in root\_exp\_EB/control\_exp\_VWM/functions/RUN\_module.m

15- out.eyelinkconnected = **false**;

**Parameters to be set before starting in the new experimental setup**

At least 2 things should be adjusted in the script: distance subject-screen and screen size.

*distance subject-screen (in mm)*

in root\_exp\_EB/control\_exp\_VWM/functions/do\_PARAMS.m

20- % subject distance from screen (mm)

21- P.dist\_subj = 860;

*screen size (in mm)*

in root\_exp\_EB/control\_exp\_VWM/functions/do\_PARAMS.m

200- P.m\_width = **???**;

201- P.m\_height = **???**;

On top of that, the refresh rate of the screen should be set to **100 Hz.** It might be necessary to add the folder containing the Psychtoolbox functions:

in root\_exp\_EB/control\_exp\_VWM/start\_EXP.m

9- addpath(genpath('/home/ebalestr/toolboxes/Psychtoolbox-3-Psychtoolbox-3-9b2e154/ Psychtoolbox')) % add ptb -unnecessary in LAB -?-