Effort Expenditure for Rewards Task

SYSTEM REQUIREMENTS:

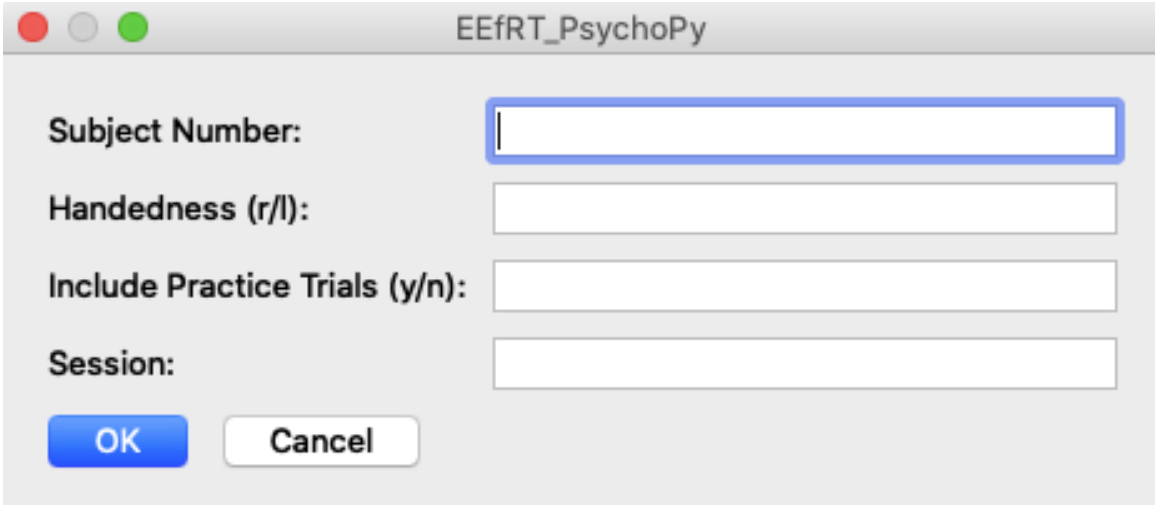
- Standard Mac or PC computer
- PsychoPy 3.2.4 or later installed on computer
- Python 3.0 or later installed on computer

INSTALLATION

- Download the "EEfRT_PsychoPy" folder to a location on your computer from which you want to run the task

START TASK

- To launch the task, open "EEfRT_PsychoPy.py" in PsychoPy
- Open the "Runner view" and click on the green play button
- This will launch a dialogue window with prompts for the following information:



Subject number: Enter a unique identifier for each subject. Numbers only.

Handedness: Enter 'r' or 'l' to indicate subject handedness.

Practice Trials: Enter 'y' or 'n' to have subjects read instructions and complete 3 practice trials. This should ALWAYS be 'y' when participants are completing the task for the first time in a given session. It can be 'n' if the task is re-administered within a session.

Session: Enter a number to identify session number. Numbers only.

INSTRUCTIONS AND PRACTICE:

If you selected 'y' for practice trials, the subjects will then be presented with a series of instructions. The experimenter should be available while these are read to answer any questions. When these are finished, the screen will display "Wait for the experimenter" and the experimenter should to ask following:

Do you have any questions about the task?

Do you feel clear on what the different probabilities signify?

[If No] *They signify the probability that you will win money on a given trial if you complete either the easy or hard task for that trial. Every trial will either have an 88% a 50% or a 12% probability of winning.* [EMPHASIZE THAT PROBABILITY APPLIES TO EASY AND HARD TRIALS].

Are you clear on how you will be paid for trials on this task?

[If No] *So even though you are playing for money on each trial, only some of the trials that you win money for will actually be paid to you at the end. Those trials will be chosen randomly at the end of the experiment. So we want you to treat every trial as if it <u>could</u> count. ?* [NB: THIS MAY NEED TO CHANGE DEPENDING ON YOUR STUDY]

After the instructions are explained, begin practice trials.

You will now play four practice trials. For the first two trials, I will tell you which to choose. For the last two, you will have an opportunity to choose.

[Have the subject press any key to advance to practice trials.]

Tell subject get their hands in position.

For the first trial, instruct the subject to choose the easy task. As they begin to complete the task say:

This is the easy task. You want to press the [l or s] *key until the bar gets to the top before the timer runs down. Afterwards you get feedback on whether you completed the task, and the feedback on whether you won money for that trial.*

For 2nd practice trial, instruct subject to choose hard task, and walk them through completing the hard task. As before, make sure to point out each step of the task.

This is the hard task. You want to press the [l or s] *key until the bar gets to the top before the timer runs down. Afterwards you get feedback on whether you completed the task, and the feedback on whether you won money for that trial.*

Then instruct subjects to make a choice for each of the last 2 trials. If the subject takes a long time, you may need to remind them that the choice period lasts only 5 seconds.

After they have completed the practice trials, there will be a pause. Ask the subject if they have any questions. If not, proceed as follows:

Ok. Good. A few final things to keep in mind:

You only have five seconds to make a decision, if you do not make a decision in that time you will be randomly assigned to either the easy or hard task for that trial.

We may check-in on you periodically to make sure you are performing the task correctly. If you do this, we won't be able to give you [credit/money] for participating. Make sure you do not switch fingers for the hard task, and make sure you do not intentionally fail to perform any tasks that you chose.

You will now play the game for 20 minutes. How many trials you get through in that time will be up to you, as the hard-task takes twice as long as the easy task. On the one hand, the more hard trial choices you make, the more likely it is that your incentive trials will be worth more than $1. On the other hand, the more hard-task trials you choose the fewer trials you will get through overall, and so you may miss out on some high-value, high-probability trials that come later on.

MAIN TASK

After the practice trials have been completed (or if you selected 'n' for practice trials) the task will again display "press any key to continue". The program will then initiate the 102 trials of the actual task. In a 20-minute session, most subjects complete between 48-70 trials, depending on how many hard-task choices they make.

STOPPING/RE-STARTING

If you need to interrupt the task at any point, simply press the escape key.
This should close the task window and return you to the PsychoPy command window.

COMPLIANCE/CHEATING

The experimenter **MUST** be able to monitor the participant occasionally to make sure that s/he has not switched fingers and is otherwise complying with the task. As described in the instructions, common types of cheating are switching fingers, letting the computer choose, and intentionally failing trials.

OUTPUT

After the task is completed, the script will write a file call "EEfRT_PsychoPy_[SUBJ#]_[SESSION#].csv". to the EEfRT_PsychoPy/data directory.

It will also write a text file with the subject's earnings based on two randomly selected trials.