Lab 8

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PsychoPy output files

Lab class

PsychoPy output files contain information about the experiment, including response times and accuracies for each trial. You need these files to statistically analyse the data, which will be our focus in the upcoming labs.

> ⚠ Warning
>
> The most important rule first: **Never ever edit an original PsychoPy output file.** Instead, make a copy and edit the copy. If you follow this basic rule, nothing terrible can happen.

Why should you not edit the original output files? The output files contain the raw data. You must not modify the raw data. If you still have the raw data, whatever goes wrong later in the analysis process, you will always be able to start from scratch.

Location of output files

PsychoPy puts output files in a folder called `data`.

- The `data` folder is automatically created when you first run an experiment.
- The `data` folder is located in the same directory as your experiment `.psyexp` file.

For each participant, there will typically be three types of files in this folder: `.csv`, `.log` and `.psydat` files. We will only focus on the `.csv` files. CSV stands for comma-separated values.

Output file name

By default, this is how the output file name is constructed: `<participant_ID>_<experiment_name>_<date>` (where the text between the angle brackets is a place-holder for the actual values)

The participant ID is what was entered in the `participant` field of the info dialogue. The experiment name can be found under *Experiment settings* → *Basic* → *Experiment name*. By default, this will be the name under which you saved your experiment.

You can change this output file naming convention under *Experiment Settings* → *Data* → *Data filename*. Some knowledge of Python is required to change this though.

Output file columns

You can find the following information in the output file columns:

- All the information from the input file.
- Information from the start-up dialogue window (e.g., participant ID).
- Information associated with your Keyboard components:
  - Key pressed: `<name_of_your_keyboard_component>.keys`
  - Response time: `<name_of_your_keyboard_component>.rt`
  - Accuracy: `<name_of_your_keyboard_component>.corr` (this column will only exist if you used "Store correct" in the Data tab of your Keyboard component)
- Information about the loops:
  - Separate loops are associated with separate columns in the output file.
  - The header of these loop-specific columns will start with the name of the loop, e.g. `trials`.
  - Each loop will have the following columns associated with it:
    - `<loopName>.thisRepN`: How often has this loop been run?
    - `<loopName>.thisTrialN`: What is the trial number in this loop? (Resets when the loop repeats.)
    - `<loopName>.thisN`: What is the overall trial number? (Does not reset when the loop repeats.)
    - `<loopName>.thisIndex`: The line number in the input file that was used to run the experiment.
  - You will not usually need information from these columns, but they are useful for identifying loops in the output file. Here is a simplified representation of how loops can be identified in output files:

	A	B	C	D	E	F	G	H	I	J
1	pracTrials.thisRepN	pracTrials.thisTrialN	pracTrials.thisN	pracTrials.thisIndex	trials.thisRepN	trials.thisTrialN	trials.thisN	trials.thisIndex	response.rt	response.corr
2	0	0	0	5					0.425	1
3	0	1	1	9		Loop "pracTrials"			0.368	0
4	0	2	2	12					0.531	1
5	0	3	3	7					0.475	1
6	etc.	etc.	etc.	etc.					0.423	1
7					0	0	0	4	0.569	1
8					0	1	1	3	0.523	1
9		Loop "trials"			0	2	2	11	0.463	0
10					0	3	3	9	0.487	1
11					etc.	etc.	etc.	etc.	etc.	etc.

- Information about the onset and offset of components:
  - `.started`: Onset time in seconds (relative to the start of the experiment).
  - `.stopped`: Offset time in seconds (relative to the start of the experiment).
  - Again, you will not usually need information from these columns.
- In addition, there will be columns for date, frame rate, experiment name and PsychoPy version. You will usually not need to look at these columns.

Output file rows

Apart from the header, each row in the output file corresponds to one trial. Rows are ordered chronologically (i.e., from first to last trial).

Note the following key details:

- Counting in PsychoPy (as in Python) starts with 0. Thus, the first trial will have the number 0, not 1.
- All times are in seconds. For example, a response time of 0.581 means that the response time was 0.581 seconds or 581 milliseconds (ms).

Summative PsychoPy assignment | A-S

The summative PsychoPy assignment instructions will be available in the Quizzes and Assignments section on Moodle from Thursday, 27 November at 3pm. **The submission deadline is Thursday, 11 December at 3pm.**

If you have a support plan and would like to apply for an extension, please submit a coursework extension request form.

If you do not have a support plan and need an extension, please submit an extenuating circumstances form.

Please make sure to submit extension requests before the deadline.

Submitting after the deadline without an extension will incur a penalty of 5% *per day* (i.e., a 5% reduction of the mark for submissions that are late up to one day, a 10% reduction for up to two days, etc.).

Feedback and marks will be released on Monday, 26 January (as per university policy no marks are released during the exam period).

Q: How difficult will this assignment be?

A: Over the past few years, the average mark has ranged between 67 and 74%.

Explore, apply, reflect

Lab class/ Self-study

Main exercise

Run the choice reaction time task from Lab 6. Upon completing the experiment:

- Go to the `data` folder.
- Open the `.csv` file using Excel.
- Save the `.csv` file as an `.xlsx` file.
  - Go to "File" and "Save As...".
  - Choose "Excel Workbook (.xlsx)" as file format.

> ⚠ macOS users
>
> If you're using macOS, by default `.csv` files will be opened with Numbers. To change this, right-click on a `.csv` file, then click on "Get Info" and then on "Open with". Now, choose Excel from the the dropdown menu and make sure to also click on "Change all".

Find the following columns in your output file:

- The response times from your choice RT trials.
- The accuracies from your choice RT trials.

When you have found them, answer the following questions:

- What was your fastest RT?
- What was your slowest RT?
- How many incorrect responses did you make?

Challenge exercise

Add 10 practice trials in your experiment, run the task again and observe how the new output file has changed as a result of adding the practice trials.

References