A brief guide to running an experiment using PsychoPy, Pavlovia, and Prolific

Overview

This is a brief summary of how we ran a study online using PsychoPy (to build the experiment), Pavlovia (to host the experiment) and Prolific(to recruit participants). Once the experiment is built, PsychoPy will translate the code into PsychoJS (a hybrid between Python and JavaScript) and will move the study from your computer to Pavlovia. The translation of Python to PsychoJS occurs when you tell PsychoPy to upload it to Pavlovia. For the most part, this will work smoothly but when it doesn't it *can* be a real pain. Once the study is on Pavlovia, you can use Prolific to recruit participants. You can also use mTurk and Sona, but the focus of this document is on Prolific. Qualtrics was also involved in our study (see below for order of events).

Order of the study events for SH lab:
1) Participants were recruited from Prolific (where they have a unique Prolific ID).
2) The study link on Prolific redirected participants to Qualtrics (for consent, task instructions, and task instructions quiz).
3) From Qualtrics, participants were directed to Pavlovia where they completed the task. Data is stored on Pavlovia.
4) After the task, participants were directed back to Prolific where they entered a completion code.
   *throughout these steps, participants' Prolific IDs were transferred from site to site without the participants needing to copy and paste.

Coding the experiment using PsychoPy (uses Python)

First, download PsychoPy (make sure you are using the latest version!).

There are two ways to build the experiment:

1) Coding interface - all coding, no point and click. I first built the experiment using the coding interface and it would run just fine on my computer. However, when it came time to upload the project to Pavlovia, a lot of my code could not be translated to PsychoJS. (See here for more on the development of PsychoJS: https://www.psychopy.org/online/psychojsCode.html). My suggestion is to just use the builder interface (see below).

2) Builder interface - mainly point and click, not a lot of coding involved. If you use the builder, you have the option to insert snippets of code for things like randomizing the location of stimuli on the screen from trial to trial. You will likely have to use the code feature at least once because the builder interface does not have a button for everything. If you have some coding experience this should not be a big problem. If you have little to no coding experience, google is your best friend.

- When you do use a code snippet in the builder interface, you have the option to code in Python, JS, or both. I would highly recommend coding in both for two reasons. 1) I have no experience with JavaScript, but once I had the code snippet typed out in Python, it was relatively easy to google the JavaScript equivalent. 2) If the snippet is also coded in JavaScript (as long as the code is correct), there should be no issues when PsychoPy translates that code snippet to PsychoJS.
- In the builder interface, you can also include a completion link (where participants should be directed if they complete the study) and a non-completion link (where participants should be directed if they quit the study or something else goes wrong). For adding the completion link: https://www.psychopy.org/online/onlineParticipants.html

Getting the study online
Follow these steps to move your study from PsychoPy (on your computer) to Pavlovia: https://www.psychopy.org/online/usingPavlovia.html

The code for the study on Pavlovia will be stored on a repository (similar to Github), called 'Gitlab'. It will create an 'html' folder where you can find all of your code translated into PsychoJS (**the experiment will be in a .js file**). Also, in the 'html' folder will be any resources that your experiment needs (e.g. images, spreadsheets, etc). See our experiment for an example: https://gitlab.pavlovia.org/hrb/vniv2

Once your study is on Pavlovia, you will be able to "pilot" your study to make sure that it works. When you do pilot, the data from your experiment will be automatically downloaded to your computer. When you run the study for real, the data will be saved to Pavlovia where you can download the results whenever you want. It costs somewhere around 25 cents to run a single participant on Pavlovia.

It is possible that once you have uploaded your study to Pavlovia that it does not run exactly how you want. The reason is that there are certain things that are available in PsychoPy (on your computer) but cannot (yet) be translated to PsychoJS (e.g. circles). This can be frustrating because the experiment will work fine on your computer but once online, it can look a little wonky. When this happens, you may need to make changes to the .js files on the Gitlab repository (which is not ideal). PsychoPy is working on a better way for experimenters to test their code online and make changes without directly editing the .js files.

Because PsychoPy + Pavlovia is a relatively new thing, there are often new updates and a lot of people experiencing similar issues. The PsychoPy forum is usually helpful: https://discourse.psychopy.org/ and the developers seem to be very responsive and helpful.

Linking all the websites together (Prolific→ Qualtrics→Pavlovia→Prolific)
Using Prolific is pretty straightforward. Prolific will generate a study completion link that you can add to your study in the builder interface on PsychoPy. (See above for the link with more information on this)

Since we used Qualtrics for the consent process, instructions, and task instructions quiz, the link that Prolific participants clicked on sent them to Qualtrics (not Pavlovia). Our study link was the following:

https://udenver.qualtrics.com/jfe/form/SV_9F73F7PYBZiYOC9?PROLIFIC_PID={{%PROLIFIC_PID%}}&STUDY_ID={{%STUDY_ID%}}&SESSION_ID={{%SESSION_ID%}}.
- If you are interested, you can click on this link and put in a fake 24-digit Prolific ID to see how our survey worked.

With this link, the Prolific ID was automatically stored on Qualtrics and participants did not have to copy and paste it.

From Qualtrics, participants were directed to Pavlovia with something like: https://run.pavlovia.org/username/studyname/html?participant=${e://Field/PROLIFIC_PID}

Adding the '?participant=${e://Field/PROLIFIC_PID}' to the link allowed the Prolific ID to be passed from Qualtrics to Pavlovia. Here is more information on how to do this: https://www.qualtrics.com/support/survey-platform/survey-module/survey-flow/standard-elements/passing-information-through-query-strings/

After they completed the experiment on Pavlovia, participants were directed back to Prolific. Again, see the following link for information on how to do this: https://www.psychopy.org/online/onlineParticipants.html