

# Conducting online experimental research in Applied Linguistics: What do you need to know?

Nurul Aini Mohd Jelani

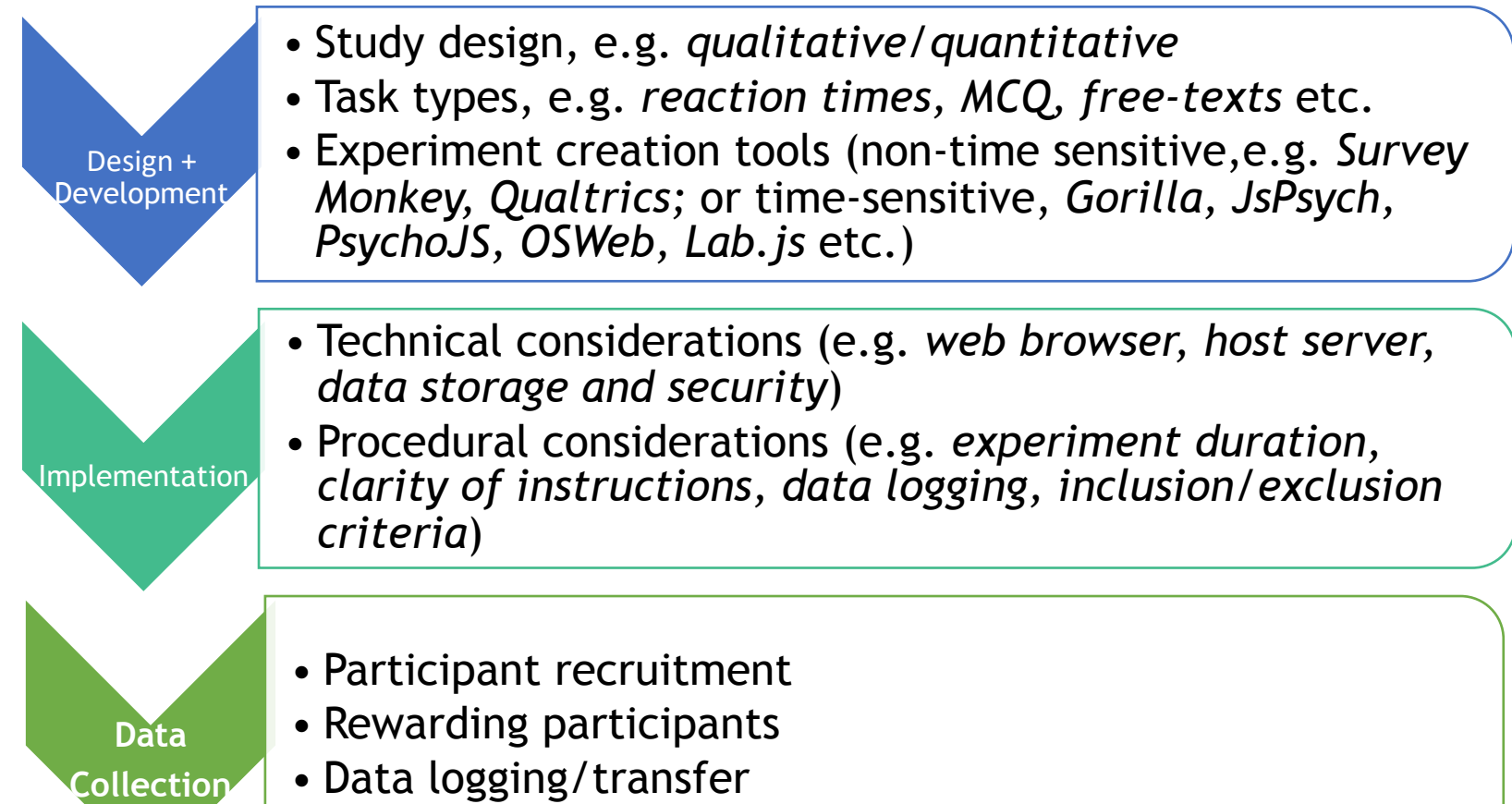
School of Linguistics and Applied Language Studies,  
Victoria University of Wellington, Wellington, New Zealand

## Background

The year 2020 has proven to be a uniquely challenging year for researchers. With the rampant spread of Covid-19 and the enforcement of social distancing measures, researchers are forced to think of ways to carry on with their work with limited and/or no face-to-face data collection. This includes breaking free from the confines of lab-based experiments and shifting to the online mode of data collection. In comparison to the conventional data collection methods, online data collection can potentially be a promising platform as it offers several distinct advantages including faster data collection, larger samples, and diversity of samples. Several studies comparing the data collected in labs and online have also shown that the results between the two methods are relatively comparable<sup>1</sup>. This poster outlines the steps to follow and issues that need to be addressed when designing, developing and running an online experiment.

## Workflow

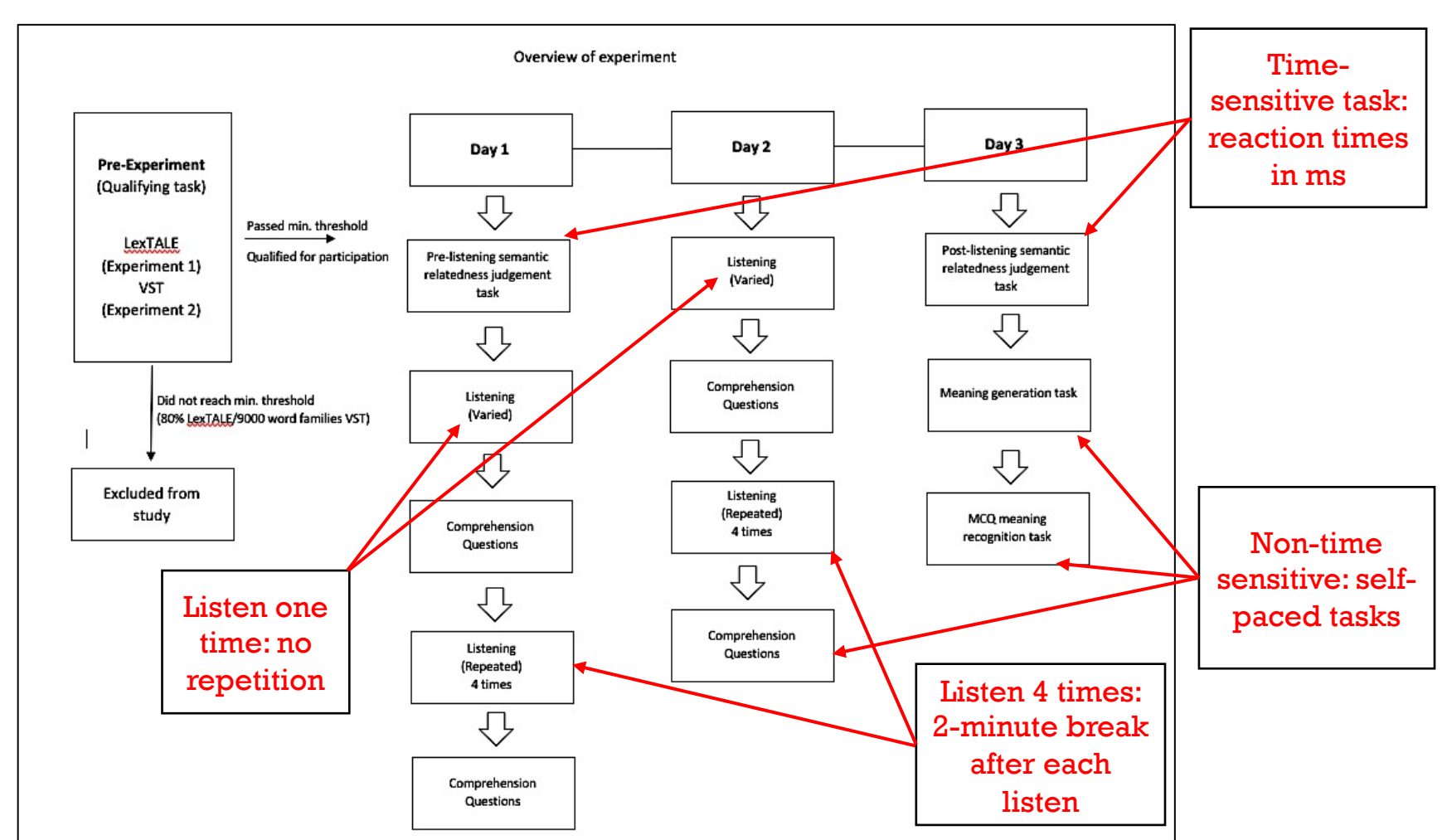
When it comes to online experiments, there are many aspects that need to be taken into consideration. These aspects are grouped into three main steps, i.e. design, development, and implementation:



### Example:

My experiment (A listening study looking at incidental acquisition of secondary meaning of words with multiple unrelated meanings)

- Is incidental acquisition of secondary meaning better under varied or repeated contexts?
- Does acquisition of a new (unrelated) meaning affect access to old meaning?



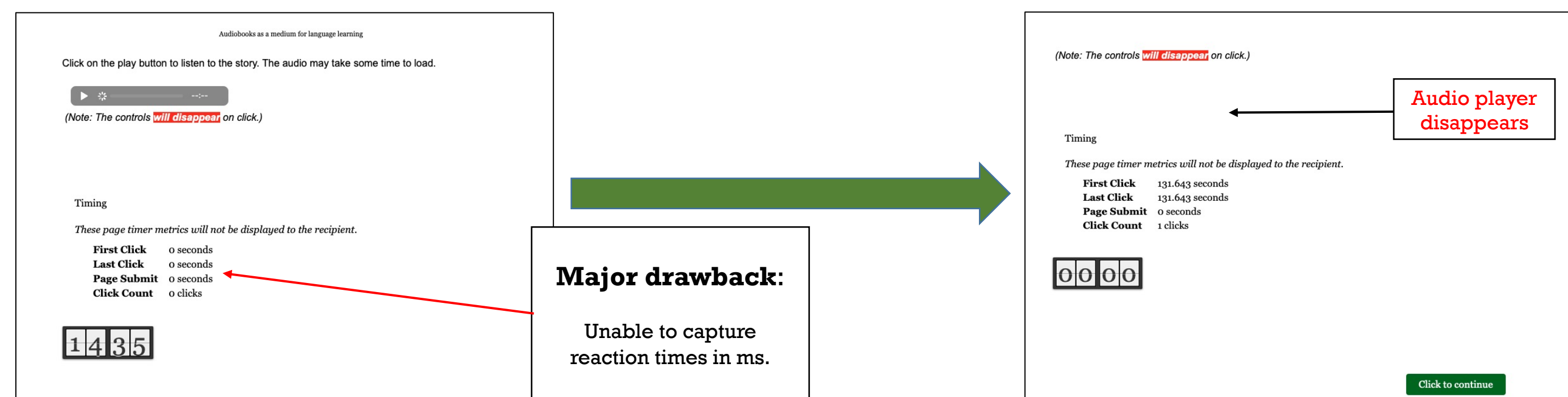
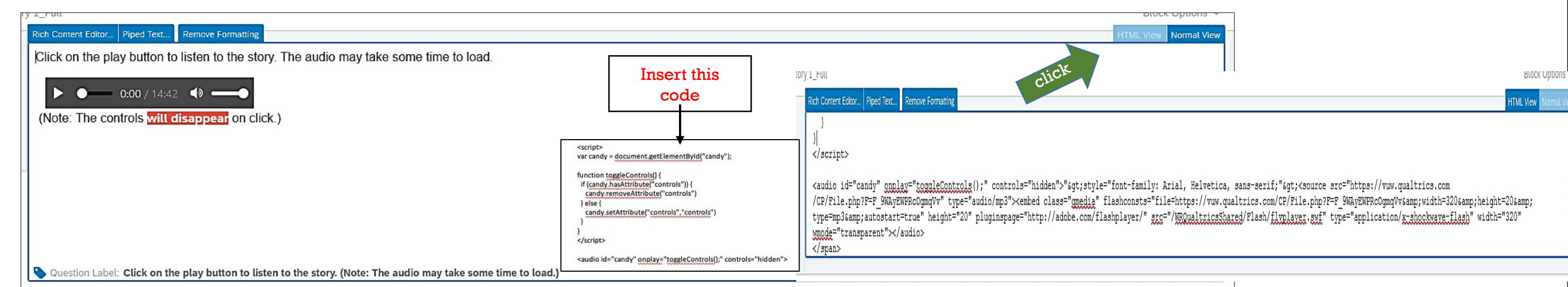
## Step 1: Design & Development

### Part 1: Listening tasks and non-time sensitive tasks: Qualtrics

#### Affordances:

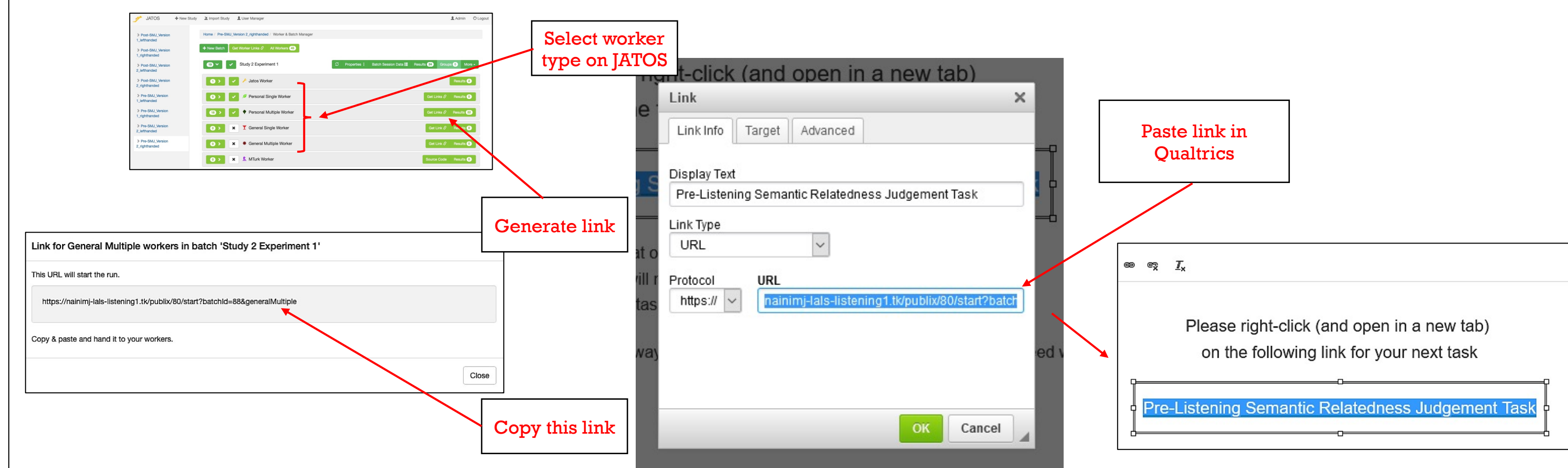
- Numerous functions to suit various experimental needs
  - various answer elicitation types, e.g. multiple choice, text entry, rank order etc.
  - randomisation tools
  - timing features and auto-advance
- With some JavaScript knowledge, researchers can adjust HTML codes in the question box on Qualtrics to suit the needs of their experimental conditions.

e.g. the following code is used to make the media player disappear when it is clicked. This is to prevent participants from repeating the audio (they are supposed to listen to the story once)



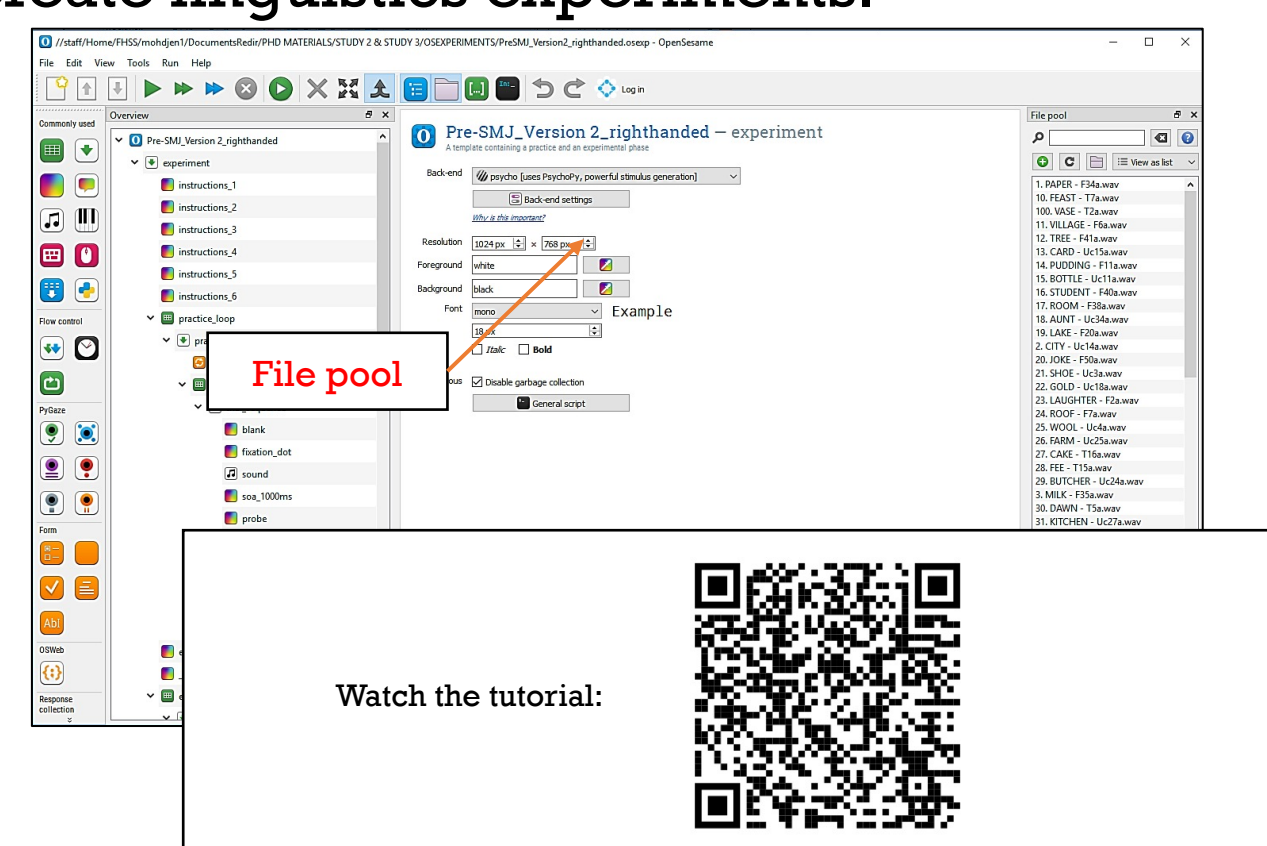
### Part 2: Developing time-sensitive tasks using OSWeb

- If your experiment involves time-sensitive tasks, e.g. semantic relatedness judgement tasks, *OpenSesame*<sup>4</sup> is one of the software programmes that allow you to generate a *link* that can be embedded in Qualtrics (or emails) to be disseminated to study participants.



- OpenSesame is a program<sup>3</sup> to create experiments for psychology, neuroscience and experimental economics. It has also widely been used to create linguistics experiments.
- Some of the advantages of using OpenSesame are:

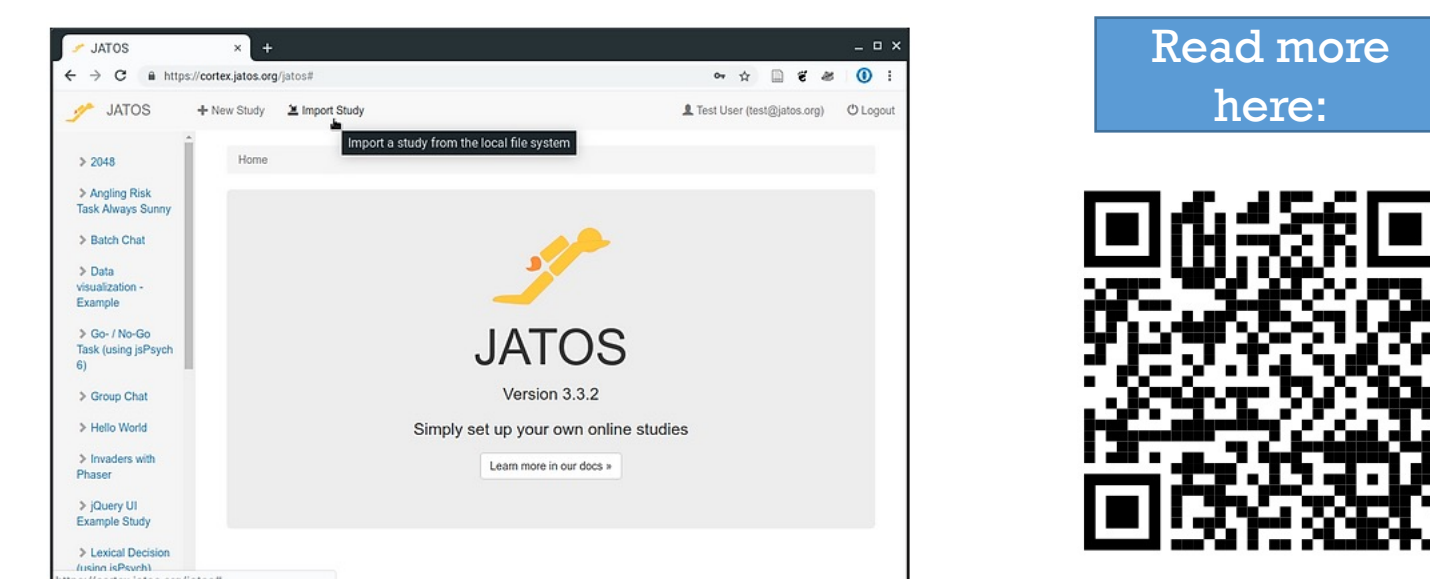
- Features**
- A user-friendly interface** — flexible yet easy-to-use
- Includes Rapunzel**, a standalone code editor for numerical computing
- Python** — add the power of *Python* to your experiment
- Use your devices** — use your *eye tracker*, *button box*, *EEG equipment*, and more.
- Free** — released under the GPL3
- Crossplatform** — Windows, Mac OS, Linux, and Android (runtime only)
- Run your experiments *online*



## Step 2: Implementation

### Part 1: Technical considerations: Hosting and data storage

- Once you have developed your experiment, you need to export you experiment to a **JATOS** system.

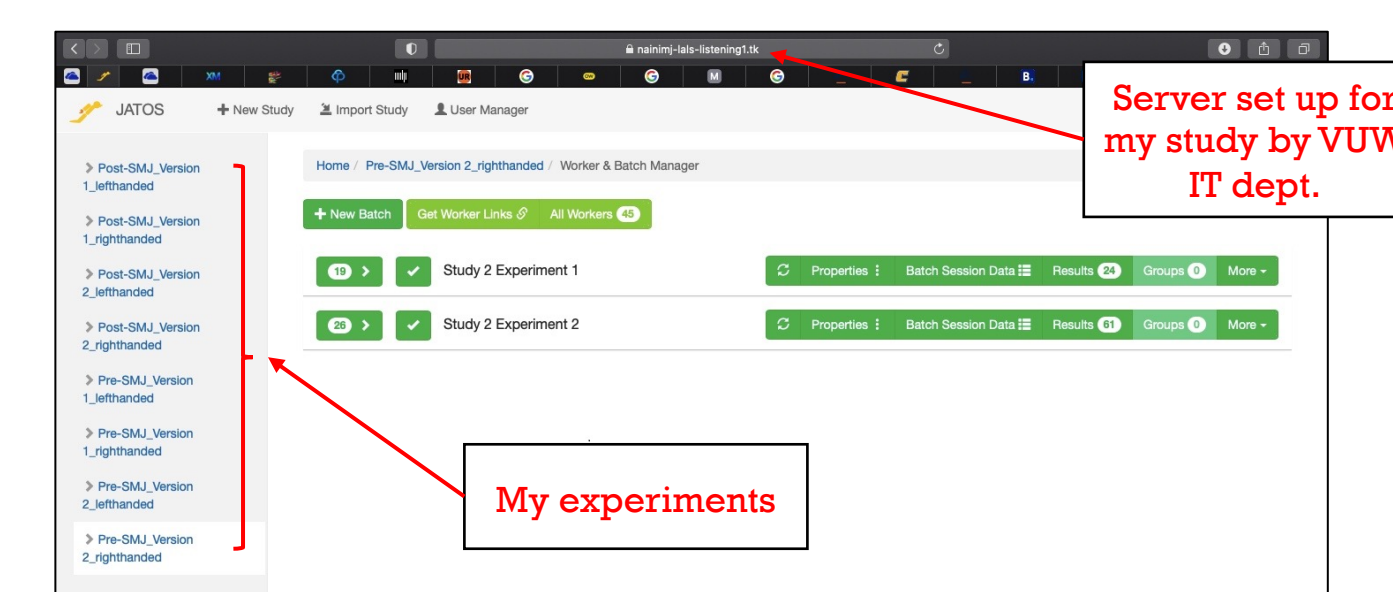


- To run your experiment online, you have to bring JATOS system online, i.e. you need a server to host JATOS and for data storage!

- There are two ways to do this:
  - Ask your IT department to set up a server for JATOS to run your study, either with:
    - Digital Ocean, or
    - Amazon Web Services (AWS)



- It will look something like this:



The next step is to test run your experiment!

### Part 2: Procedural considerations: Piloting

Make sure:

- links work properly when clicked
- experiment runs smoothly on browser:

Not recommended:



- Experiment does not load/takes too much time to load esp. audio files

Recommended browsers:



- instructions are clear and comprehensible
- experiment does not cause extreme fatigue or stress
- data are logged accordingly

## Step 3: Data Collection

### 1. Recruitment tools:

- Social media posting – Facebook/Twitter
- Flyers around campus
- Emails

### 2. Rewarding participants

- There are a number of e-reward systems available, e.g. Amazon giftcards, GiftPay
- Go with one that keeps delivery reports
- Some e-vouchers are redeemable only within country of issue, e.g. GiftPay
- Read more here:



### 3. Data logging and transfer

## Summary

- Recent advancements have made it easier to get complex studies up and running on various online platforms.
- However getting an online experiment running requires familiarization with the tools as well as implementation of proper procedures.
- Some important issues that need to be taken into consideration include:
  - data storage and security
  - technical and procedural protocols
  - reliability and validity of data

## References

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