CHECKLIST FOR EXPERIMENTS
8.6.2018

This is a general checklist for an experiment. The details will vary from experiment to experiment, but this should provide you a general idea of the different phases.

- [ ] **Review the experimental design with principal researcher.**
- [ ] **Write experimenter's manual**
- [ ] **Get rewards for participants**
- [ ] **Start recruiting participants**
- [ ] **Schedule participants**
- [ ] **Prepare the experimental setup**
- [ ] **Prepare and print out all paperwork**
- [ ] **Run a pilot experiment**
- [ ] **(Tweak if necessary)**
- [ ] **Conduct the experiments**
- [ ] **Prepare all paperwork and forms for the participant to fill out**
- [ ] **Prepare the experiment hardware & software such that it is ready to use**
- [ ] **Greet the participant**
- [ ] **Ask to turn off / silence their mobile device**
- [ ] **Handle the paperwork: consent form etc.**
- [ ] **Give instructions, either verbally or on paper**
- [ ] **Ask if there are any outstanding questions or concerns**
- [ ] **Perform the experiment**
- [ ] **Collect possible post-experiment questionnaire data**
- [ ] **Reward and thank the participant**
- [ ] **Fetch and store data in a mutually agreed location**
- [ ] **Store data and/or consent forms and other paperwork in a secure place.**
- [ ] **Document data processing after completing the study**

1. **Review the experimental design with principal researcher.**
   By going through the experiment step-by-step, including the goals, hypotheses, independent and dependent variables, you both gain a shared understanding of the experiment. This helps you answer potential questions participants may have, as well as respond to various problem situations.

   This is also a good opportunity to remove possible bugs and experimental faults, by asking a lot of questions, especially *why.* Make sure there is a possibility to take breaks, and that the experimenter knows when it is allowed (if not at any given moment).

At this point you should consider what data you are going to collect, who will control it and how it will be processed. If you are going to collect sensitive personal information or especially large data sets, GDPR requires a documented data impact assessment.

2. Write experimenter's manual

This document should include all of the instructions needed for an outsider to conduct the experiment. It begins with the first preparatory task before a participant arrives and ends with instructions for storing / passing on the data. The documentation has to be detailed because it ensures that all participants get the same instructions and treatment. Even if you run the experiment, this document allows reproduction of the experimental setting, in support of the open science methodology.

As an example see *Manual_MovementStrategies* on the network drive: *Projects > How We Type.*

3. Get rewards for participants

The usual compensation is 12 euros or one movie ticket / starting hour. Movie tickets are more convenient as money rewards require additional paperwork. At this point, you should also know how many participants you are going to have.

4. Start recruiting participants

Check for any restrictions on participants. The most common include: normal (or corrected) eyesight, no cognitive deficits, and generally healthy. There may be restrictions on age, motor abilities, specific experience with a given device or a field, etc. All of these limit the population you can draw participants from.

Participants are usually students recruited by sending an e-mail ad to various mailing lists. You can get help writing the ad and more information about the mailing lists from the group's research assistants. However, note that recruitment ads and e-mails should contain the project name, professor in charge and funding information.

Participants should usually be over 18 years old. If participants are under the age of 15, you need parental consent and/or a positive review from an ethical board.

5. Schedule participants

If you're using Doodle for signing up to the study, it's easy to transfer the reserved times to the lab calendar. **Make sure you keep the lab calendar updated** according to your own schedule to avoid double bookings. Also, confirm the experiment time to the participant. Send a reminder if the scheduled time is far away from the present moment.

6. Prepare the experimental setup

Prepare the lab for the experiment. Make sure there are no other devices turned on that may distract the experiment. Prepare for the pilot as you would for a normal experiment. It is useful to take a picture of the setup to document the experimental process.

7. Prepare and print out all paperwork

This includes the consent form, reward sheet, experiment instructions and other possible forms. If there are electronic questionnaires, make sure those are preloaded in a browser.

8. Run a pilot experiment

The purpose of the pilot experiment is to test the experimental setting and notice any flaws in the experiment design. **Every experiment should begin with a pilot**. By doing this,

you can make sure your data looks like they are supposed to look and the experimenter doesn't run into any trouble during the experiment. Every study is unique, and while some aspects become routine, there's a lot to remember.

It is very unprofessional to invite participants to the lab only to wait while you are fixing a bug they found. That's why we need to test the experiment with an 'outsider' first. This can be someone from the group, but preferably someone without any knowledge of what the experiment is about.

Run also test analyses for the pilot data. This is to check your experimental procedure works and there is no bugs in the experimental or analysis software.

9. (Tweak if necessary)

Most experiments need small improvements, some need more refinements. Make all the necessary changes before running the first actual experiment whose data you're going to use. If you make big changes to the procedure, it is advisable to do the pilot again before going into the actual experiment. Iterate until the experiment is ready to run.

10. Conduct the experiments

Conduct the experiments according to the experimenter's guide. Here is a skeleton of what it usually should look like.

a. Prepare all paperwork and forms for the participant to fill out
b. Prepare the experiment hardware & software such that it is ready to use
c. Greet the participant
d. Ask to turn off / silence their mobile device
e. Administer the paperwork: consent form etc.
f. Give instructions, either verbally or on paper
g. Ask if there are any outstanding questions or concerns
h. Perform the experiment
i. Collect possible post-experiment questionnaire data
j. Reward and thank the participant
k. Fetch and store data in a mutually agreed location

11. Store data and/or consent forms and other paperwork in a secure place.

Avoid cloud services and store all paperwork in a locked place. Store only the data you are going to need later and delete the rest. For more information, refer to the ethical guidelines and restrictions on data privacy on the network drive: *Official documents > Research ethics and data policies > scientific research data form*

12. Document data processing after completing the study

If you transfer non-anonymous data to other researchers or process the data in some other way, keep a document describing these procedures. If the party you are transferring data is going to use the data in a new, separate research, agree on the sharing of the responsibilities of the data controller in writing. Transferring data outside the EU always requires special attention to data protection and it must have a justified reason. Remember to inform participants if you are using the data in some other way than specified to them before collecting the data.

For questions, please contact:

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