

Hi Jeffery

Here is the experiment as given by Fabio.

This is to show that there is an effect so that we can do the full experiment.

Peter

Dear Peter, dear colleagues,

after such clarification I think that we could move further in the experiments along the issues you mentioned before.

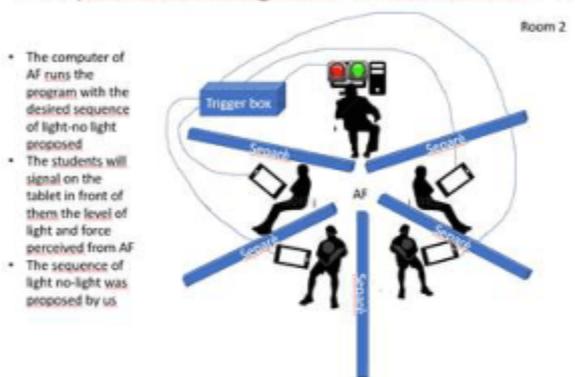
We have studied solutions for the two step experiments (e.g. behavior+GSR+HR or full neurometric+behavior). We have also conducted the analysis of the hw requirement for the full neurometric + behavioral phase. While the raw amount for such hw (for 5 identical EEG systems for 20 days) is about 20K, I do not move forward the analysis on that since we do not know if such experiment will be properly performed in the future. We focus instead now on the first phase.

First step experiment (behavior+GSR+HR)

1. Logistic

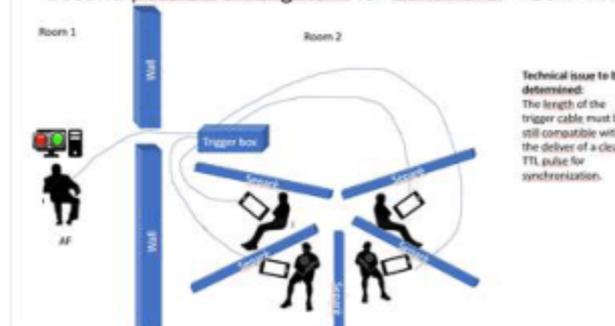
In Rome we could run the experiments. We will have a space in which AF could be physically and visually separated by the participants to the experience. For this we could have 2 solutions. In fact, we will purchase 5 different separè for the 5 people, planned to stay in a pentagon arrangement,

First possible arrangement for behavioral + GSR+HR



Or we have a very thin plastic-fiber wall that divided two separate rooms. The wall has a thickness of 5 cm and we could put AF from one side and the other 4 on the other side of the wall having a door between the two rooms.

Second possible arrangement for behavioral + GSR+HR



Time for the data collection will be probably early days of October (see below why). A hotel is available very close to the data collection place in the University.

2. Experimental setup proposed for behavioral + HR + GSR phases

In this first phase, we need to collect the hypothesized correlation between the behavioral activities proposed to AF and the students, as well as HR + GSR. Apart the issues of how many runs needed and how many subjects, that will be subjected to a separate email, here I will describe the solutions to be realized by our team for this experiment.

Devices required

- a. 1 screen used to show to AF the sequence to be provide to the students (e.g. light green or red for transmission or not) connected to a computer that will send the trigger out related to the situation proposed to AF.
- b. 4 tablets with Windows + ad-hoc board adaptors, able to receive sync triggers. These devices will run an ad-hoc software we prepared that will present two sliders (perceived light and perceived strengths) for all the participants to the study but AF. In such a way there will be able to report any moment the level of perception they have during the experiment. Such tablets have a software that will synchronize with the external triggers and it will store such information for the successive analysis. We need to purchase the 4 tablets Windows based and the related board adaptors to receive triggers for an approximate cost of 3K€ , plus we need to write down the software for the synchronizing data and run the appropriate tests before real data collection.
- c. A triggerbox for the delivery of TTL triggers from the computer to the tablets and the GSR and HR amplifier. This triggerbox is needed to provide synchronization across tables as well as in the future for the acquisitions systems for the neurometrics. Such triggerbox is actually under construction and testing by an electronic company. Estimated hardware cost by the company is 2K€.
- d. 5 Shimmer amplifiers for HR and GSR detection. Each Shimmer device needs to be coupled with a card for share synchronization across them. We already have in the lab the 5 Shimmer devices, we need to purchase only the card related for a cost of around 200 euro all included.
- e. Please note that respiratory belts are not available at this stage since no EEG machines are required for these tests and the respiratory belts are located on the EEG devices. If needed they will pose additional issues on the acquisition setup.

3. Time for the execution of the experiments

We need all September to run all the tests between the devices in order to be sure that all the equipment and software (assembled and created for these tests) will work accordingly. Some examples of the problems to solve are linked to the max length of TTL cable to the trigger box, the synchronization devices (trigger box) to realize and test etc etc. Thus, we will suggest October as the month to proper run all the experiments for this behavioral and GSR+HR phase.

4. Hardware Budget required

The hardware budget required for run the first phase of the experiments are related to the setup of the first hardware and software that will be at the base also of the second phase (if any). Thus, it will be related to the purchase of the following materials (approx.) and related software

- Triggerbox (2k€)
- 4 tablet Windows + cards (3k€)
- 5 cards for Shimmer (250€)
- 5 separè for subjects (500€)
- Cables for TTL triggering and connection (about 100€)

This will result in an expense only for the standard hardware about 5.5-6K€, plus the work to write down the software of synchronization and behavioral data collection and testing the system settings.

5. Total Budget required for proper run phase 1

As far as I understood, there are about 33.8K€ but on 12K€ taxes are to be included. I will ask for 6K for the hardware for phase I, plus 14K as anticipation on the full amount to pay the people for writing software, performing the series of behavioral + GSR + HR recordings, setup the experiments along the week that will be needed. Thus, a total of 20K€ for the proper execution of multiple data collection along a week with AF and couple of students and "normal" people.

This will leave about 12K for travel and permanence of people here (e.g. AF, PF, 4 students of AF) for a week.

However, this is a raw estimate and I do not want to suggest my view on this issue. I just stated the it could be possible for me with 20K to provide the hw and sw for the data collection for the first phase, by having the data collected and analyzed within the end of October.

All the best from Rome
Fabio

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