

The equipment listed in this information sheet will be used in the Perceptual Crossing experiment. The use of these equipments are required to obtain detailed understanding of the processing done by human minds, brains, and bodies during the experiment.

Please read this information carefully if you consider participating in the Perceptual Crossing experiment.

Electroencephalogram (EEG)

Brain electrical activity can be measured by electroencephalography (EEG). An EEG device consists of amplifiers and a number of electrodes which will pick up the brain's electrical signals non-invasively from the surface of the scalp.

The EEG measurement requires some amount of preparation, both by yourself at home and in the laboratory before the experiment. The procedure is safe and the EEG recording itself does not induce any pain to you.

Preparation at home

To make the EEG-measurement run more smoothly, you should:

- Wash your hair with shampoo and dry it. Do not use hair conditioner, foam, gel, or hairspray. Do not braid your hair (we would have to undo the braids otherwise).
- Wear clothes that you do not mind getting dirty if some electrode gel gets on them.
- If you use face cream or make up, areas that the electrodes will come in contact will be cleaned with alcohol based abrasive gel.



Preparation in the laboratory

An EEG cap (as seen in the photo) will be put on to your head. In this cap, 64 of measuring electrodes will be attached. Your eyes, nose, and mouth will remain uncovered. However, a strap must be fastened under the chin to secure the electrode in place.

A small amount of conductive gel will be applied between the electrodes and the scalp to maintain conductivity between the electrodes and the scalp. The gel will be inserted by a syringe with a blunted needle. You might feel the contact with the needle, but it will not pierce the skin.

The preparation will take about 1 hour. After the completion of the experiment, the experimenter will remove the EEG cap and electrodes from your head. If you want, you can wash and dry your hair in a shower room near the experimental laboratory. You can use shampoo, towel, and a hair dryer available in the laboratory, or bring your own if you wish.

Electrocardiogram (ECG)

An electrocardiogram measures the electric current generated when the heart is active on the surface of the body. Before conducting the experiment, we will ask you to wipe the area circled in red in the photo with alcohol and apply the electrode patches by yourself. We will provide assistance if needed.



Electrodermal activity (EDA)

Skin has electrical properties that can be recorded as EDA. EDA also can give indications of mental and physiological states of the person. Because EDA is not under conscious control, it is often used in psychological research.

The most typical way to record EDA is by placing electrodes on two fingers. Before attaching the electrodes, we will clean your hands with water and dry them. Then an electroconductive gel will be applied and the electrodes attached to your hand with a medical tape. Typically, a non-dominant hand will be used.

You will not feel any pain or discomfort as recording is made. However, it is theoretically possible for the electrodes and cables to heat up. In extremely rare cases skin irritation might develop. You are encouraged to stop the experiment and signal to the experimenter should anything unexpected occur.



Respiration belt

Respiratory rate can be affected by psychological state. Therefore, it can be used as an indicator of psychological state. For this measure, we attach a respiration belt in the location that seems most correlated with your breathing pattern: typically, around the chest or the waist. The belt contains a stretch-responsive sensor. The breathing movements stretch the device enabling the researcher to record the breathing rhythm.

The belt is worn over the clothing and no special preparation is required. However, in order to prevent the signals from being distorted, cell phones must be out of your reach during the experiment. There is no risk or pain during the measurement.



Perceptual Crossing device

The Perceptual Crossing device will be used to navigate the experiment and is operated using both hands. You will use this device to move your avatar around in a virtual circle and interact with the partner's avatar. The experimenter will show you how to use it before starting. The device is safe to use and there are no risks or pain when using this device.

