

Information Sheet: Electrotactile Feedback

Purpose of the Experiment

Haptic feedback has become much more prevalent in recent years due to its advantages compared to visual and auditory feedback or when paired with them. The most popular form of haptic feedback is vibrotactile; most people will have experienced this type of feedback with their phone or smart watch. A new developing form of haptic feedback is electrotactile feedback, where an electric signal is sent through electrodes to a user's skin to create a sensation.

The aim of this experiment is to investigate how changes in skin conductivity (called electrodermal activity (EDA)) affect the perceived strength of an electrotactile signal. This experiment requires the user to find a maximum and minimum strength of feedback. You will be able to set the strength using the software to adjust the voltage amplitude of the device

- the minimum value is the voltage before you cannot feel the feedback
- the maximum value is the voltage before it becomes uncomfortable.

The feedback is designed to be comfortable; it should feel similar to your phone on vibrate or smart watch, it should not feel like an electrical ab workout machine or a TENS machine.

What to Expect

- The experiment will take approximately 30 minutes to complete.
- A short demonstration on how to use the software will be provided.
- Sticky patches will be placed on the palm of your non-dominant hand.
- A window containing either a keypad or a text input widget will appear on the screen. Interacting with the widget will trigger an electrotactile pulse.
- You will enter 10 numbers (via keypad) and 10 phrases (via keyboard) with and without feedback. The time taken and the number of keystrokes will be recorded.

Data Handling, Confidentiality and Your Rights as a Participant

No personal information will be asked of you; any data recorded will be anonymised, and all data collected will be held on a password-protected computer and the secure University of Glasgow servers.

Participation is voluntary, if you choose to participate then you will be asked to sign a consent form before the experiment and complete a quick survey after the experiment. You are free to withdraw at any time without giving a reason. You can also withdraw after completing the experiment if you don't want your data to be used.

Potential Risks

There is a chance that due to the nature of the experiment, you may experience discomfort during the re-calibration phases of the experiment. If you experience discomfort, the researcher will be able to stop the stimulus and reset the experiment.

Contact Information

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This study adheres to the BPS ethical guidelines and has been approved by the SoCS ethics committee of The University of Glasgow. Should you wish to speak to someone not involved in the study, please contact the chair of the School of Computing Science Ethics Committee: Prof Matthew Chalmers.