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Information Sheet: Back-of-Device sensing study

The purpose of this study is to investigate the use of hand grip and skin conductance level to infer error in interaction with mobile device.

The experiment is very straightforward and consists of two main parts that would take about 50 minutes to complete. In this experiment, you will be interacting with a mobile phone. During this time, your handgrip contact will be recorded using capacitive sensors placed at the back and sides of the phone while your hand movement will be recorded using phone's built-in accelerometer. Besides that, your skin conductance and resistance levels also will be recorded during this experiment using separate sensors attached at intermediate phalange section of your index and middle fingers.

Test	Flanker Figure 1 (a)	Stroop Figure 1 (b)	Sustained Attention Response Test (SART) - Figure 1 (c)
Stimuli	Arrows	Words/colours	Numbers
Instruction	• Determine the direction of the middle arrow • Do not respond when non-arrow objects are shown	• Determine if the word matches the colour • Do not respond when the word is not a colour	• Determine if the required number is used in the series
Required responses (refer Figure 1)	• Swipe to the right (middle arrow is pointing right) – Figure 1 (a)	• Swipe to the right (the word 'Blue' is indeed in blue) – Figure 1 (b)	• Swipe to the left (7 is not in the series) – Figure 1 (c)

Table 1: Cognitive tests used in the experiment

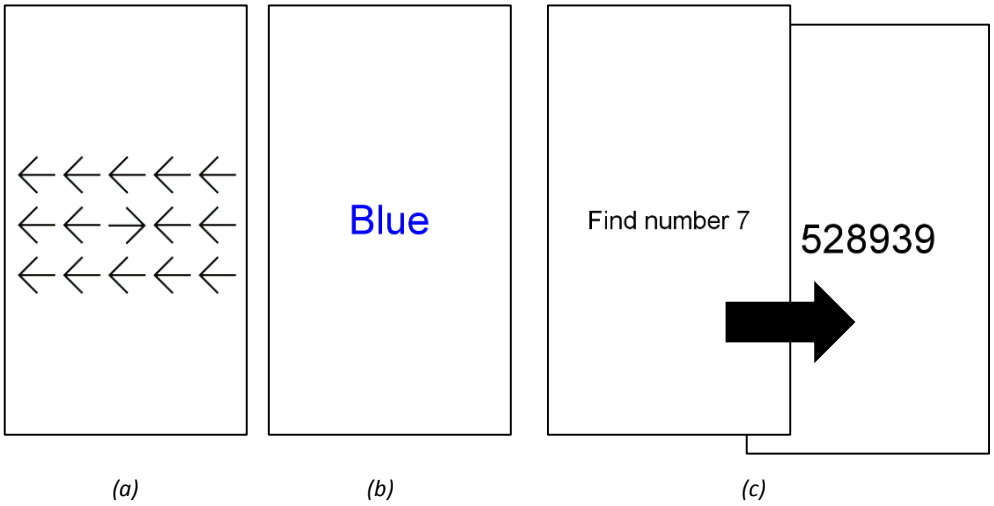

Figure 1: Example of stimulus in (a) Flanker (b) Stroop and (c) SART tests.

During the first task, you will be asked to respond to a series of cognitive tests as shown in Table 1. For each

test, you are required to respond within a designated time. You will be notified if your response is correct or incorrect after every trial. You will be performing the test in 3 sessions. There are 30 trials in each test, totalling 270 trials altogether.

In the second part of the experiment, the task is to select 15 random contacts from a phonebook. You will perform this selection by swiping and scrolling the touchscreen. You will be performing this task in two sessions, resulting in 60 contact selections in total. You can perform this task at you own pace. Similarly, you will be notified if your selection is correct or incorrect after every selection trial.

You will be given a practice session prior to every task of the experiment to help you to familiarise with the application and its required responses. Your data will not be recorded during this time.

You are free to navigate the way you feel comfortable using either your left or right or both hands. You will be seated in front of a desk during the experiment. You also will be debriefed and given a practice session prior to performing every part of the experiment. The experiment can be interrupted at any time by you and this will not affect the data being captured. You also may withdraw completely at any time without penalty.

If you have any further questions regarding this experiment, please contact:

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The study has been approved by the University of Glasgow, College of Science and Engineering Ethics Committee.
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