University of Sussex
Psychology

Title of Project: Learning Conceptual Maps in the Brain

Dear Participant

You are invited to take part in a research study. Before you decide whether to take part or not it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish.

- Part 1 informs you about the purpose of this study and what will happen to you if you take part.
- Part 2 gives you more detailed information about the imaging component of the study.

Please ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Part 1

1. **What is the purpose of the study?**
   We aim to understand the mechanisms that allow our brains to learn new concepts and apply conceptual knowledge to solve new problems.

2. **Why have I been chosen?**
   You have been chosen because you responded to information given to you about this study, either from an email advert, from the SONA participation database, from a poster that you have seen or from information provided by one of the research team.

3. **Do I have to take part?**
   No. It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason.

1. What will happen to me if I take part?

Screening:

First, you will be asked to complete a short questionnaire to check that it is safe for you to have an MRI brain scan.

In-scanner task

The scanning sessions will take place at the Clinical Imaging Science Centre (CISC) on University of Sussex Campus. Before going in the scanner, we will explain the task that you will be asked to do. After this, a radiographer will go through the questionnaire with you and then ask you to remove all metal from your body. The radiographer may ask you to remove your make-up and it is possible that you will be asked to change into MRI compatible clothing which will be provided. When you are ready, the radiographer will position you in the brain scanner, so the experiment can begin.

You will be asked to perform an adapted version of the online training task that you have been practicing over the past few weeks. On each trial, you will be shown a short sequence of one symbol and two sparks. Following this, you will have to select the spark that you think should come next. This task will run for about 40 minutes but will be split into two phases so that you may have a break half-way through. After the task ends, you will be asked to stay in the scanner for additional scans that will be used to analyse the scanning data. You will be in the scanner for no more than 45 minutes.

When you come out of the scanner you will also be able to ask any questions you may have about the scanning experience. Once the experiment has been completed, we will explain our expected findings.

2. What do I have to do if I want to take part?

Please note that you must fulfil following criteria if you want to take part in the study: You must be

- 18-40 years old
- Right-handed

You cannot participate in the study if you:

- Do not fulfil the above criteria
- Have a medical condition which makes you unsuitable for MRI
  - You must not have a pacemaker, cochlear implant, or other metallic implants
- Have colour blindness
- You must not be at risk of having any metallic fragments in your body (e.g. if you have a history of metal work)

3. Are there any risks to having an MRI scan?

The MRI and fMRI techniques have been used for over 20 years in medicine and every year approximately 10 million people are scanned worldwide. There are no known side effects and MRI causes no pain or damage.

4. What are the other possible disadvantages and risks of taking part?

Unless you are afraid of small spaces or loud noises, there are none. Please note that the images that will be acquired are not for diagnostic purposes and that the examination should not be considered an alternative to a proper medical consultation. Very rarely something of concern may be found in the images and an expert opinion sought. This is only done in the cases where it is believed there is a clear need. If there are any unexpected findings that need further tests, your GP will be contacted in the first instance. The GP will then contact you directly if further tests are required. This is why your GP details are required on the safety questionnaire form.

5. **What are the possible benefits of taking part?** We will pay you £50 after each scanning session, £100 in total if you complete both sessions. These payments will compensate you for the time you have spent inside the scanner (at a rate of £10 per hour), and the time spent practicing the task ahead of each scanning session (at a rate of £6 per hour). If you withdraw from the study before your first scanning session, we will be unable to pay you anything. If you withdraw from the study during or after your first scanning session, you will be granted a partial payment of £50. Apart from the modest financial compensation for you time, there are no immediate benefits to you in taking part. However, you will be helping research involved in understanding how our brains learn new concepts and help us intelligently solve problems.

6. **What if there is a problem?**
   Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. Please contact Dr Sam Berens in the first instance (contact details in section 11).

7. **Will my taking part in the study be kept confidential?**
   Yes. We will anonymise your data in the way specified in the consent form.

8. **Contact Details:**
   If you have any queries about this project or your participation in it please contact:

   Sophie Johnson (sj483@sussex.ac.uk)

   Sam Berens (s.berens@sussex.ac.uk)

brighton and sussex medical school

Part 2

1. **What can I expect in the MRI scanner?**
   The MRI examination is performed in a special room that houses the MR system or "scanner". The scanner consists of a circular magnetic tunnel which contains the radio coils. During your scan you will lie on a padded bed, which will move slowly into the scanner.

   In preparation for the MRI examination, you will be asked to wear headphones or earplugs to protect your hearing as the scanner produces loud noises. These loud noises are normal and should not worry you.

   

   A number of scans will be taken with a pause in between so do not be alarmed if the scanner goes quiet. The most important thing is to relax and try to keep still. It is not dangerous if you move, but the resulting pictures may be blurred. Some minor movement of your body is possible between the scans. The radiographer will be able to hear and see you throughout the session and you will be provided with a call button to alert them if you have any concerns. The scanning session will take approximately 1 hour.

2. **Complaints**
   If you have a concern about any aspect of this study, you should ask to speak with the researchers who will do their best to answer your questions (contact details are in part 1, section 11).

3. **What will happen to the results of the research study?**
   The results of the research study will be written up and published in a scientific journal. An option is available on the consent form for you to provide your email address and we will send you a summary of the experimental findings as soon as they become available.

4. **Who is organising and funding the research?**
   The research is funded by the School of Psychology and the School of Life Sciences, University of Sussex. The study is carried out as part of PhD research project.

5. **Who has reviewed the study?**
   This study was approved by the Research Ethics & Governance Committee, Brighton and Sussex Medical School (ref [to be inserted when approved]).

6. **Insurance**
   The University of Sussex has insurance in place to cover its legal liabilities in respect of this study.

Thank you for taking the time to read this information sheet.