

Participant information sheet

Learning Conceptual Maps in the Brain

Researchers: Sophie Johnson and Sam Berens

Reference number: ER/SJ483/1

Invitation to take part

You are being invited to take part in a research study. Before you decide whether or not to take part, 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. You can save a copy of this page for your records by clicking on [this link](#).

What is the purpose of the study?

This study aims to further our understanding of how we learn new concepts and apply past experience to solve new problems. The study will run over the course of several weeks and involves a period web-based training before two fMRI scanning sessions.

The study is being conducted by researchers Sophie Johnson (sj483@sussex.ac.uk), and Sam Berens (s.berens@sussex.ac.uk). They are based within the School of Psychology at the University of Sussex (UK) and are happy to be contacted if you have any questions.

Why have I been invited to participate?

We anticipate recruiting around 60 participants. You will be asked to take part if you meet the following inclusion criteria:

- 18-40 years old.
- Right-handed.
- Do not have a medical condition which makes you unsuitable for MRI.
- Do have colour blindness.

Do I have to take part?

No. Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. If you are a student please note that by choosing to either take part or not take part in the study will have no impact on your marks, assessments or future studies.

What will I have to do?

In this study, we are investigating how people can learn new concepts and limited past experiences to predict the best course of action in a new situation or problem.

Over the course of several weeks, you will be invited to periodically log into a web-based system and engage in a trial-and-error learning task. You are encouraged to do this at least 4 times a week and spend a minimum of 15 minutes on the task each time. As part of the study you will be invited to take part in two fMRI scanning sessions, one half way through the study, one towards the end of the study.

Whilst in the scanner, you will be asked to perform an adapted version of the online training task. Easy scanning session will last approximately 45 minutes.

Task structure: On each trial, you will be shown a short sequence of one symbol and two images. This an [example](#) of the images you will be presented with, which we will refer to as ‘Sparks’. Following the short sequence, you will have to select the spark that you think should come next. You will select your answer by clicking on your choice from several different sparks presented together onscreen. A simple set of hidden rules determines which spark is the "correct" answer, although you will not know what these rules are at first.

Each question will be repeated many times. Learning through trial-and-error feedback, your aim will be to consistently select the correct image in correspondence with each spark pair and preceding symbol.

After several weeks of training, you will be provided with a new training task to complete alongside the old task for the remainder of the experiment. The new task will follow the same question-structure but the sparks shown in the questions will be different.

Compensation

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.

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

There are no significant risks to taking part unless you are afraid of small spaces or loud noises. Please note that the MRI 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.

What are the possible benefits of taking part?

Apart from the modest financial compensation for your 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.

What will happen to the results and my personal information?

The results of this research will be written into a scientific report for publication, and will be presented to other research scientists during academic conferences. We anticipate being able to provide a summary of our findings on request from 1st August 2025. Please contact Sophie Johnson (sj483@sussex.ac.uk) if you wish to receive a copy of this report.

Will my taking part in the study be kept confidential?

Yes. We will anonymise your data in the way specified in the consent form.

What should I do if I want to take part?

Please carefully read and fill out the consent below.

What will happen to the results of the research study?

The findings of the research will be used in the student's (Sophie Johnson) PhD thesis. We anticipate publishing the results of this research. You will be able to obtain a summary of our research after the results have been analysed (01/08/25). Data will be retained for 3 years after collection. Please see the University's [Records Management Policy and Master Records Retention Schedule](#) for further details.

Who is organising and funding the research?

This research is being conducted by student and staff members at the University of Sussex, School of Psychology.

Who has approved this study?

The research has been approved by the Sciences & Technology Cross-Schools Research Ethics Committee (C-REC). Ethical review application number: ER/SJ483/1.

Contact for Further Information

If you have any queries or concerns about this project or your participation in it please contact: Sophie Johnson (sj483@sussex.ac.uk) or Sam Berens (s.berens@sussex.ac.uk) and/or The Chair of the Science and Technology Cross Schools Research Ethics Committee (crecscitec@sussex.ac.uk).

Insurance

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

Thank you

Thank you for taking time to read this information sheet.

Consent form

Please read this information carefully. If you decide to take part, please tick the checkbox and type your initials in box below to show that you have fully understood all of the information provided, and that you wish to participate in the study.

- I understand that by signing below I am agreeing to take part in the University of Sussex research described here, and that I have read and understood the information sheet.
- I understand that my participation is entirely voluntary, that I can choose not to participate in all or part of the study, and that I can withdraw at any stage without having to give a reason and without being penalised in any way (e.g., if I am a student, my decision whether or not to take part will not affect my grades).
- I understand I can request without penalty that my data be withdrawn and deleted even after the data collection is complete, any time up until the results are analysed (31st August 2024).
- I understand that my personal data will be used for the purposes of this research study and will be handled in accordance with Data Protection legislation.
- I understand that the University's [Privacy Notice](#) provides further information on how the University uses personal data in its research.
- I understand that my collected data will be stored in a de-identified way (e.g. using ID numbers not names), and kept separate from other details about me (e.g. from the consent form). Electronic data will be stored securely on a University managed system, and hardcopies will be stored behind a locked door.
- I understand that my identity will remain confidential in any written reports of this research, and that no information I disclose will lead to the identification in those reports of any individual either by the researchers or by any other party, without first obtaining my written permission.
- I understand that my name and data will not be shared with any third party outside the research group, unless I later provide written permission.
- I agree to take part in the above University of Sussex research project.

By ticking the following checkbox and typing my initials below, I understand that I am agreeing to take part in this research project, and that I have read and understood the information provided: *

☐

Your initials

Submit