

Language, executive function, and social participation across the adult lifespan: An EEG study

Participant Information Sheet (PIS)

You are being invited to take part in a PhD research study investigating error-related age differences in language and executive function on social participation. Before you decide whether to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read the following information carefully before deciding whether to take part and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Thank you for taking the time to read this.

About the research

➤ **Who will conduct the research?**

The research will be conducted by PhD candidate **Josie Kearney**.

Under the supervision of:

Dr Jason Taylor, Lecturer in Cognitive Neuroscience, Division of Neuroscience and Experimental Psychology (DNEP), School of Biological Sciences, University of Manchester.

Prof Pamela Qualter, Professor of Education, Manchester Institute of Education, School of Environment, Education and Development

Dr Anna Woollams, Reader in Cognitive Neuroscience, Division of Neuroscience and Experimental Psychology (DNEP), School of Biological Sciences, University of Manchester

➤ **What is the purpose of the research?**

This study aims to investigate the relationship between producing and understanding spoken language, executive functions (a broader range of cognitive faculties that govern direction of attention, inhibition of responses, memory and mental flexibility) and social interaction in later life. We want to look at brain activity (measured by EEG) related to making mistakes when performing language and executive function tasks, and what individual differences are associated with social participation in different age groups.

➤ **Why have I been chosen?**

You have been sent this information sheet because you have expressed interest in the study after seeing it advertised on a research participation system, online or in your local community. We aim to recruit 60 participants total.

To participate in this study, you must meet the following criteria:

Aged 20-40 or 60-80 years old

Normal or corrected-to-normal vision

Normal Hearing

Fluent English speaker

NO present experience or history of neurological or psychiatric illness (e.g., clinical depression, anxiety disorder)

NOT taking any psychoactive medication (e.g., antidepressants)

If you are unsure about any of these criteria, please get in touch with the research team first (contact details can be found at the end of this document).

➤ **Will the outcomes of the research be published?**

The findings of the study will be described in the researchers PhD thesis, and presented at research conferences and/or published in an academic journal.

➤ **Who has reviewed the research project?**

This project has been reviewed by the University of Manchester Research Ethics Committee 27/08/2021. Ref 2021-12350-20455

What would my involvement be?

➤ **What would I be asked to do if I took part?**

If you decide to participate, you will be asked to attend a session lasting approximately 2.5 hours at the DNEP EEG Lab (Zochonis Building, on the UoM campus), where we will present you with a copy of this Participant Information Sheet and a Consent Form to sign.

We will then set up the EEG recording. You will sit in a comfortable chair while a stretchy cap (like a swimming cap, but containing many holes lined by plastic discs – see the images below) is fitted to your head. An electrolyte gel will then be inserted into each hole using a blunt plastic syringe tip, and electrodes will then be inserted into the gel-filled holes. Further electrodes will be placed near your eyes to monitor eye movements and blinks, and on your neck to monitor your speech. This initial setup process takes about 30 minutes.



Once the EEG setup is complete, we will record EEG whilst you perform tasks using language and an executive functions. The language tasks will include both comprehension and production of spoken language, the executive function tasks will require you to respond to cues on the computer screen.

We will ask you to remain as still and relaxed as possible during the tasks because movement and muscle tension come through as noise on our recordings. The task will take about 90 minutes total, and you will be given breaks at regular intervals. At the end of the testing session, we will remove the cap and electrodes, and you will be able to wash the gel out of your hair using a salon-style sink.

You will then be asked to complete questionnaires about loneliness, social contact and social support, as well as occupation, education and income and a brief cognitive test.

NOTE: The questionnaires used in the study include questions about social inclusion and loneliness which may cause distress. These are concepts that you probably come across every day in newspapers, social media, television, etc. However, **if you would rather not be exposed to questions about these topics in an experiment, please do not participate in this study.**

You may also wish to seek support from the **UoM Counselling Service** (<https://www.counsellingservice.manchester.ac.uk/> or phone 0161 275 2864). You can also contact the Samaritans on 116 123, Greater Manchester Mental Health on 0800 953 0258 or any of the **crisis** contacts listed here: <https://www.counsellingservice.manchester.ac.uk/help-in-a-crisis/>

Additionally, if the study raises concerns for you about your cognitive health you should contact your GP.

EEG is passive and non-invasive, so there are very few risks associated with the technique. The gel used is hypo-allergenic, and over hundreds of testing sessions, none of our participants have reported any reaction to it. To ensure the electrode cap fits comfortably, we will measure your head and use an appropriately sized cap. If the setup becomes uncomfortable during the session, we can adjust the cap and attempt to restore your comfort. You may stop the procedure and quit the experiment at any time and for any reason.

➤ **Will I be compensated for taking part?**

You will receive either 10 SEPS credits if you are a UoM Psychology/Cognitive Neuroscience student or £20 for participating (for 2.5 hours), plus £5 towards travel or parking (please provide receipt).

➤ **What happens if I do not want to take part or if I change my mind?**

It is up to you to decide whether or not to take part. If you choose not to participate you can simply cancel the session you signed up for or email the researchers to let us know. If you do decide to take part you will be given this information sheet to keep and will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without detriment to yourself. However, it will not be possible to remove your data from the project once it has been anonymised (at the end of the EEG session) as we will not be able to identify your specific data. This does not affect your data protection rights. If you decide not to take part you do not need to do anything further.

Data Protection and Confidentiality

➤ **What information will you collect about me?**

In order to participate in this research project we will need to collect information that could identify you, called “personal identifiable information”. Specifically we will need to collect:

- Name and email address
- Age
- Sex
- Occupation
- Educational Background

➤ Income

➤ **Under what legal basis are you collecting this information?**

We are collecting and storing this personal identifiable information in accordance with data protection laws which protect your rights. These state that we must have a legal basis (specific reason) for collecting your data. For this study, the specific reason is that it is “a public interest task” and “a process necessary for research purposes”.

➤ **What are my rights in relation to the information you will collect about me?**

You have a number of rights under data protection law regarding your personal information. For example you can request a copy of the information we hold about you.

If you would like to know more about your different rights or the way we use your personal information to ensure we follow the law, please consult our [Privacy Notice for Research](http://documents.manchester.ac.uk/display.aspx?DocID=37095) (<http://documents.manchester.ac.uk/display.aspx?DocID=37095>).

➤ **Will my participation in the study be confidential and my personal identifiable information be protected?**

In accordance with data protection law, The University of Manchester is the Data Controller for this project. This means that we are responsible for making sure your personal information is kept secure, confidential and used only in the way you have been told it will be used. All researchers are trained with this in mind, and your data will be looked after in the following way:

Only the researchers will have access to your data, and data will be anonymised as soon as possible. Your name and email address will be used for scheduling and assignment of SEPS credits and will not be associated with your EEG data, task data, or questionnaire responses. The consent forms containing your name and signature will be stored separately from the data in a locked filing cabinet.

EEG, task, and questionnaire data will be associated with a study ID number that will not be linked to your identity. These anonymised data will be transferred via encrypted portable media and stored and analysed on encrypted hard drives on UoM computers and securely backed-up on the UoM Research Data Storage servers. Anonymised data will be stored for 5 years from the point of last use/publication.

These data may be used in future research, and/or combined with data from similar studies, by the research team and their collaborators at UoM or other academic institutions. Fully anonymised data from this study will be shared with other researchers via an online research data repository such as OpenNeuro. This information will not identify you and will not be combined with other information in a way that could identify you.

Please also note that individuals from The University of Manchester or regulatory authorities may need to look at the data collected for this study to make sure the project is being carried out as planned. This may involve looking at identifiable data. All individuals involved in auditing and monitoring the study will have a strict duty of confidentiality to you as a research participant.

What if I have a complaint?

If you have a complaint that you wish to direct to members of the research team, please contact:
DR JASON TAYLOR; EMAIL: jason.taylor@manchester.ac.uk; TEL: 0161 306 0454.

If you wish to make a formal complaint to someone independent of the research team or if you are not satisfied with the response you have gained from the researchers in the first instance then please contact:

The Research Governance and Integrity Officer, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester, M13 9PL, by emailing:
research.complaints@manchester.ac.uk or by telephoning 0161 275 2674.

If you wish to contact us about your data protection rights, please email
dataprotection@manchester.ac.uk or write to The Information Governance Office, Christie Building, The University of Manchester, Oxford Road, M13 9PL at the University and we will guide you through the process of exercising your rights.

You also have a right to complain to the [Information Commissioner's Office about complaints relating to your personal identifiable information](https://ico.org.uk/concerns) (<https://ico.org.uk/concerns>), Tel. 0303 123 1113

Contact Details

If you have any queries about the study, please contact the researcher(s):

JOSIE KEARNEY: josephine.kearney@manchester.ac.uk

Or the supervisor:

DR JASON TAYLOR: jason.taylor@manchester.ac.uk

Additional information in relation to COVID-19

Due to the current COVID-19 pandemic, we have made some adjustments to the way in which this research study will be conducted that ensures we are adhering to the latest government advice in relation to social distancing as well as taking all reasonable precautions in terms of limiting the spread of the virus. You should carefully consider all of the information provided below before deciding if you still want to take part in this research study. If you choose not to take part, you need to inform research team. If you have any additional queries about any of the information provided, please speak with a member of the research team.

Are there any additional considerations that I need to know about before deciding whether I should take part?

There are a number of additional COVID-19 risks potentially posed to yourself by taking part in this research, which we have attempted to mitigate to the largest degree possible. These risks include:

- Increased chance of exposure to COVID-19 through travel.
- Coming into contact with research staff who have been in contact with other participants.
- Coming into contact with equipment which other participants have touched.

What additional steps will you take to keep me safe while I take part?

As a result of these increased risks, we have enacted a number of measures to reduce the risk of transmission as much as possible, these include:

- Limiting the number of research staff and participants in the lab at any one time.
- Wearing PPE at all times during the experiment
- Reducing the amount of close contact between participants and research staff during equipment set-up.
- Using single-use equipment wherever possible.
- Regular cleaning and disinfecting of all non-disposable equipment and surfaces between participant sessions and throughout the day.
- Using the NHS Track and Trace service.
- Research staff will undergo regular lateral flow tests.

Is there any additional information that I need to know?

Please bring a comfortable facemask to wear during the session. If possible, please bring a smartphone with the NHS Test and Trace app installed. Hand sanitiser will be available throughout the session.

Additional data use

If you do not have access to the NHS Track and Trace app, we will have to record your contact details to provide to them ourselves if it becomes necessary.

What if the Government Guidance changes?

If government policy regarding lockdown status changes between you expressing your interest in this study and your participation, we will send you updated material and may have to reschedule or postpone the planned session.

What if I have additional queries?

If you have any queries about the COVID measures in place, please contact the researcher:

Josie Kearney

josephine.kearney@manchester.ac.uk