

## Participant Information Sheet

**Researchers:** This research is the topic of the PhD thesis of Mr Nicholas Wyche, conducted under the supervision of A/Profs Stephanie Goodhew and Mark Edwards in the Research School of Psychology, College of Health and Medicine, at the Australian National University.

**Project Title:** Comparing measurements for the deployment of spatial attention

### General Outline of the Project:

- **Description and Methodology:** The spatial deployment of attention, defined as how the spatial allocation of attention changes over time, is a topic of major importance within the study of visual cognition. Spatial attention is a process that is vital to the daily functioning of most people, and is heavily implicated in tasks such as driving and reading. One widely used measure of the spatial deployment of attention is *attentional breadth*, defined as the spatial extent of attentional focus around a fixated point. However, attentional breadth has a basic limitation as a measurement of the spatial deployment of attention: by definition, it does not account for eye movements. This is an important problem because eye movements are the main strategy that we use to acquire information in our daily lives. Our research project aims to investigate a measurement of the spatial deployment of attention that is based on eye movements. We call this measurement *exploratory breadth*, and it is defined as the spatial extent of the region over which eye movements are made. We hope to compare exploratory breadth and attentional breadth as measurements of the spatial deployment of attention, to determine which measurement is a more useful representation of spatial deployment.

This study will be conducted in one session lasting around 60 minutes. You will be offered regular breaks where you can take a rest for as long as you like. During this study, you will repeatedly see brief presentations of visual stimuli (such as pictures, letters and numbers) on a computer screen, and your eye movements while you view these stimuli will be tracked using a camera. You will be asked to make responses about these stimuli using a computer keyboard. Some parts of the research may also entail completing memory-based tasks, which may involve components such as performing mental arithmetic and remembering information. You will also be asked basic demographic questions (e.g. age, gender, handedness, country of birth, and first language spoken). You may decline to answer any questions which you do not wish to answer.

- **Participants:** Participants will be adults between ages 18-40 (inclusive). Participants will be sourced from the ANU student body, mostly by advertisement of experiments on the SONA platform (the Research School of Psychology's recruitment platform). Some limited additional recruitment may take place via advertising on ANU-based social media groups, and posters placed on ANU campus. Participants must be able to perform computer-based work without wearing glasses, as glasses can interfere with the functioning of the eye tracker. Individual experiments as part of this project will typically consist of between 30-120 participants.
- **Use of Data and Feedback:** It is intended that the data collected in in this project will be presented at scientific conferences and published in scientific journals. The data will also be placed in open-science repositories, and may form parts of students' theses. You can access the study's findings after its conclusion at this link: <https://tinyurl.com/uesvbjsu>.

### Participant Involvement:

- **Voluntary Participation & Withdrawal:** Participation in the project is completely **voluntary** and you may decline to take part or withdraw from the research at any time during the study. There is no penalty for declining to participate or withdrawing from the research, and you do not need to provide an explanation for this choice. You may also refuse to answer any question in the study. If you wish to withdraw from the study, please notify the experimenter and the session will be ended immediately.

If you do not finish the study, your data will not be analysed. Given that participation is de-identified, we cannot remove your data from the study after you have completed the survey as we will not be able to identify which data is yours. De-identified data (i.e. data with all personal information except age, gender, handedness and country of birth) may be placed into online repositories, which other researchers may use for related research purposes. However, as data is de-identified, you will not be able to access or identify your individual dataset in these results, and you will not receive feedback about your individual performance during or after the study.

- **What does participation in the research entail?** You will complete one session that lasts about 60 minutes. You will be seated in front of a computer with your chin in a chinrest and asked to make responses about visual stimuli (e.g., pictures of objects) presented on the screen. Your eye movements will be tracked while you make these responses. You may also be asked to perform cognitive tasks, which may include mental arithmetic and remembering information. You will also be asked basic demographic information (e.g., your age, gender, handedness, country of birth).
- **Location and Duration:** The research will take place in a laboratory within the Research School of Psychology at the Australian National University. The experiment will take approximately 60 minutes, although the session may be longer or shorter depending on the length of the rest breaks you take.
- **Remuneration:** If you are enrolled in eligible ANU courses and you signed up to participate through the SONA platform, then you can choose to be compensated with 1 research participation credit (when completed in conjunction with course-specific written requirements). Alternatively, you may choose to accept cash (\$15). You must select only one of these compensation options (i.e. you cannot split your compensation between a partial payment, and a partial research participation credit).
- **Risks:** Some people may experience feelings of upset or distress when their performance on numeracy tasks (such as performing mental arithmetic or counting out loud) is being evaluated. If you believe this may happen to you, you should not agree to participate in this research.
- **Benefits:** The purpose of this project is to improve our understanding of how we measure the spatial deployment of attention, which may have important practical applications in fields such as driving safety research. It is hoped that this new knowledge might lead to important societal benefits in the future. However, it is unlikely that you will personally benefit from participating in this research (beyond the educational benefit if you are a student).

### Exclusion criteria:

- **Participant Limitation:** Participants must be able to complete computer-based work without wearing glasses. This is because glasses can affect the functioning of eye tracking software. Participants are required to be between the ages of 18 and 40 (inclusive), to avoid variation in task performance which is linked to the ageing process.

### Confidentiality:

- **Confidentiality:** Confidentiality will be maintained as far as the law allows. All data that forms part of the research will be stored electronically in de-identified format, where data about your performance on the tasks is not linked to your name (e.g. 'Participant 1'). A summary of this de-identified data, such as a spreadsheet of all participants' average scores on variables of interests may be placed into a publicly accessible repository (e.g. Open Science Framework; <https://osf.io>). This spreadsheet may include basic demographic information about participants where relevant (i.e., age, gender, handedness, country of birth), but participants will never be named in any way other than in a generic and de-identified way (e.g., 'Participant 1').

**Privacy Notice:** In collecting your personal information within this research, the ANU must comply with the Privacy Act 1988. The ANU Privacy Policy is available at

[https://policies.anu.edu.au/ppl/document/ANUP\\_010007](https://policies.anu.edu.au/ppl/document/ANUP_010007) and it contains information about how a person can:

- Access or seek correction to their personal information;
- Complain about a breach of an Australian Privacy Principle by ANU, and how ANU will handle the complaint.

### Data Storage:

- **Where and how long:** Datafiles will be kept indefinitely on ANU computers, and a summary of de-identified data will be made available indefinitely in online repositories, where it will be publicly accessible. This is because it is important for other researchers in the future to be able to access the data, to verify any statistical analyses performed or conclusions drawn from the research. Signed consent forms will be kept in locked filing cabinets on ANU campus.
- **Handling of Data following the required storage period:** Archived data will be stored indefinitely because it is important for other researchers in the future to be able to access the data, to verify any statistical analyses performed or conclusions drawn from the research. After 5 years has passed since completion of the study, signed consent forms will be securely destroyed (e.g., via shredding).

### Queries and Concerns:

- **Contact Details for More Information:** If you have any questions or concerns about this study, please contact Mr Nicholas Wyche by email: [nicholas.wyche@anu.edu.au](mailto:nicholas.wyche@anu.edu.au), or by telephone: (02) 6125 5585.
- **Contact Details if in Distress:** If you feel distressed at the end of the experiment, please note that you can contact ANU Wellbeing and Support Line (Ph: 1300 050 327, SMS text message service: 0488 884 170) (available to ANU students only), or Lifeline (131 114). These services are both available 24 hours a day. You can also access multiple services via this link: <https://mhaustralia.org/need-help>

### Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2022/119). If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager  
The ANU Human Research Ethics Committee  
The Australian National University  
Telephone: +61 2 6125 3427  
Email: [Human.Ethics.Officer@anu.edu.au](mailto:Human.Ethics.Officer@anu.edu.au)