

Information for Participants

UCL Research Ethics Committee Approval ID Number: 5975/003

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Project title:	The human interaction study: Inclusive Street Lighting
Department	UCL Institute of Cognitive Neuroscience, Social Neuroscience Group
Lead Researcher	Dr Navaz Davoodian
Principle Investigator	Prof Antonia Hamilton

You are invited to take part in a research project investigating inclusive street lighting that benefits everyone. Before you agree to take part, it is important for you to understand why the research is being done and what it will involve for you. Please read the following information carefully. You can discuss it with a friend or family member if you wish. Please take your time and ask the lead researcher if you have any questions.

What is the purpose of this research?

The purpose of this study is to determine whether street lighting benefits different groups of people equally. We aim to understand how different groups of people perform tasks under various street lighting conditions, as well as their brain activity.

Who can participate?

We have invited you to take part in this study because you are on one of our participants mailing lists or have responded to one of our advertisements. We are recruiting healthy adults aged between 18 and 39 years or between 65 and 85 years old including some autistic people, to take part in this study. In this study, participants will walk around a space while wearing brain monitoring equipment and motion tracking equipment. This means that you cannot take part if any of the following exclusion criteria apply –

- If you do not speak fluent English
- If your hairstyle or head covering means you cannot wear the brain imaging cap (e.g. hair extensions).
- If you have difficulties with hearing,
- If you do not have healthy eyes with corrected or normal vision
- If you have previously had cataract surgeries
- If you are colour blind
- If you are not able to walk independently for at least 20 minutes at a time.

Information about your visit to the lab

What does this study involve?

This study is designed to find out how different people experience different environments. To take part, you will need to visit our lab at UCL PEARL in Yew Tree Avenue, Dagenham RM10 7FN. You will be asked to

- Put on monitors which track your eye-gaze (eyetracker).



- Put on a near-infrared spectroscopy cap which records your brain activity patterns using infrared light.
- Walk around a large space in our lab and avoid treading on particular patterns on the floor.
- Perform a simple listening task where you sit down in a dimly lit room and listen out for different beeps.
- Complete a questionnaire on paper or on a computer about your experiences.

Please note that all these tasks use everyday items and situations (not emotionally stressful or scary situations). The testing session will take around 1 hour. You will not be completely alone at any point during the test.

What kinds of recordings do we make? And what does this involve?

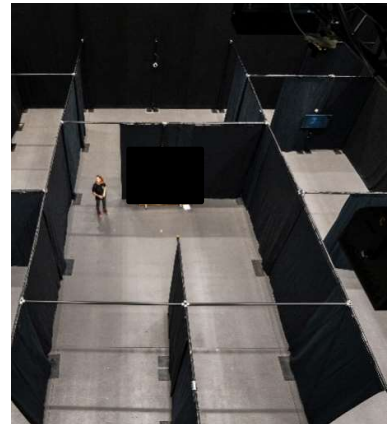
We use several different pieces of equipment to track your movements and brain activity while you do these tasks. You can choose which ones you will wear on your visit when you arrive at the lab and see the equipment. You can change your mind if you want and you do not have to wear all of them if you do not want to.

1) Near-infrared spectroscopy brain imaging

Near-infrared spectroscopy (NIRS) is a new technology that measures your brain activity using an optical cap. The sensors that are placed on your head will shine light into your head. Some of the light passes through the skull to your brain and is scattered back to other sensors that can detect it. By measuring the light that is picked up by the sensors, we can measure brain activity. This technology is safe and is most commonly used to monitor new-born babies in hospitals. It is now also being used for adult neuroscience research.

For this study, we will place the NIRS cap on your head and secure it with a chin strap. We will then fix the light probes to the cap. You will need to stay sitting down while the cap is in place. When the cap is turned on, the computer will record your patterns of brain activity. The NIRS system is silent and painless.

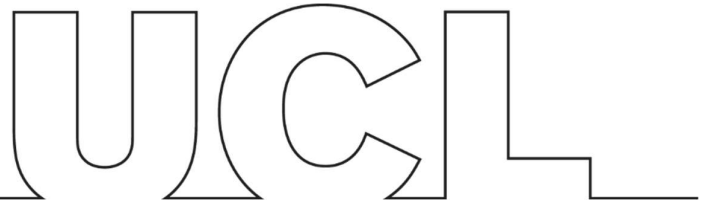
If you wear the NIRS cap for a long time, it can become tight and uncomfortable. For this reason, we limit our NIRS testing sessions to 30 minutes with the cap on. If you find the cap is uncomfortable, you can remove it as soon as you like. Just tell the researcher and he/she will help you take the cap off.



The space where you will walk around will be similar to the picture above, but not exactly the same



NIRS brain imaging



2) The eyetracking glasses

The eyetracker is a pair of plastic glasses with two cameras which record what you can see and where your eyes are moving. You wear these in the same way as a pair of glasses. The researcher will give you the glasses to put on and will adjust the cameras to get a good image.



Eyetracking glasses

The eyetracker is hard to use if you wear prescription glasses or if you have mascara or other dark eye makeup (e.g., eye liner, dark eye shadows). If you are able to attend the testing session wearing contact lenses (instead of glasses) and without any dark eye makeup, this would be helpful. We do have prescription lenses up to -3 diopters which you can use with the eyetracker glasses if that is helpful.

3) Audio and video recordings

Audio and video recordings will be made of all the experimental tasks. You can find out more about how we use these recordings and all your data below.

What are the possible benefits of taking part in this research?

There are no immediate benefits to you. In the long term the research will help to develop more inclusive street lighting catering for the needs of majority of road users. You can learn more about these topics by participating and having the opportunity to ask questions. You can receive a copy of the final report once it has been published in a peer-reviewed journal should you wish. Please note that none of the data we collect in this study (questionnaires, video recordings, etc.) is a clinical assessment and we are not able to provide any clinical evaluations. This study is designed to provide data to analyse a specific research question, and these data are not informative for any other purposes (e.g., not suitable for sharing with a GP).

What are the possible disadvantages and risks of taking part?

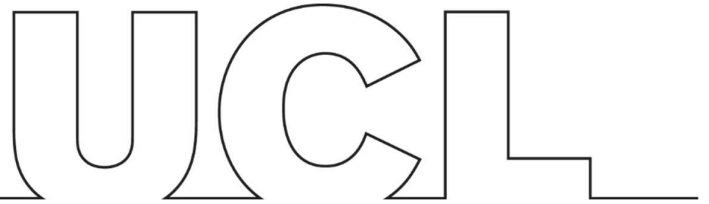
Some of the recording equipment we use can be uncomfortable:

- The NIRS cap may feel tight if worn for an extended period, and some people may experience an itchy sensation or some pressure on their head after 40 minutes. To prevent this discomfort, all tasks are designed to last no longer than 40 minutes. If you find the NIRS cap uncomfortable at any point, just tell the researcher and they can help you take it off immediately.
- The eye trackers are similar in weight to normal glasses. They should not cause any sort of discomfort.

There are no direct disadvantages or risks in participating. If you are uncomfortable with any task, you can communicate it to the researchers.

Do I have to take part?

We would like to emphasize that participation in this research is voluntary. If you choose not to participate, you will not be penalised in any way or lose any benefits to which you are otherwise entitled. If you decide to take part, you will be given a copy of this information sheet to keep and be



asked to sign a consent form. Even if you decide to take part, you can withdraw at any time, without giving a reason.

What if something goes wrong?

In the first instance, you should contact the researcher who gave you this form, or the Principal Investigator. If one of these people is the object of complaint, you may wish to contact the UCL Ethics Chair. Participation in this study is covered by the UCL Public Liability Policy for indemnity.

Researcher:

Dr Navaz Davoodian
n.davoodian@ucl.ac.uk

Principal Investigator:

Dr Antonia Hamilton
Email a.hamilton@ucl.ac.uk
Telephone 020 7679 4640

Ethics Committee:

Chair of the UCL Research
ethics@ucl.ac.uk

Information about how we use your data

Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept confidential. You will not be able to be identified in any ensuing reports or publications. Please note that confidentiality will be maintained as far as it is possible, unless during our conversation the researchers hear anything which indicates that someone might be in danger of harm; in such a case, we might have to inform relevant agencies of this.

What will happen to my data in this project?

When you take part, we collect different types of data and we use this data in different ways, as described here:

1) Contact details and health data

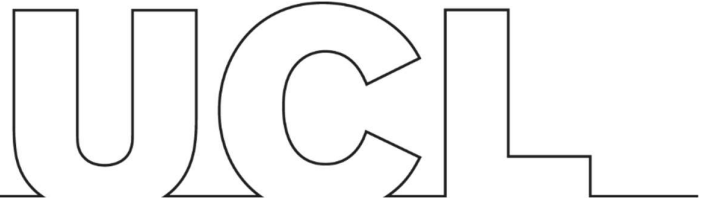
When you first complete our online form to join the study, we ask you for your name, contact details and some health information. This data is stored in our high-security data system which has been certified to the ISO27001 information security standard and conforms to NHS Digital's Information Governance Toolkit. Information within this system is used to arrange your visit to the lab. Your health information will be anonymised and linked to the core scientific data.

2) Core scientific data

The core scientific data in this study includes the patterns of brain activation, body motion and eye movements, together with the things you do in the tasks and your responses on questionnaires. This data will be stored with a participant code (not your name) and will be kept on our secure servers in ICN (Institute of Cognitive Neuroscience). This data is pseudonymous because it is stored and processed with a participant code, but those codes could potentially be linked back to your name via the high-security data system by an authorised member of the Social Neuroscience Group. This data does not show your face or voice, so people who work with this data cannot identify who you are without accessing the secure database. It will be analysed by researchers linked to our group. Fully anonymised results based on this data will be reported in MSc or PhD theses and in professional scientific journals and at scientific conferences.

3) Video and audio data

Video and audio data cannot be anonymised because a person who knows you can recognise your face and voice. We store our video and audio data on a separate secure server for processing. On



this server, we will use a computer algorithm to process the files and remove identifying information. For example, the algorithm will detect if you are talking or not, but does not know who you are. The outputs of this algorithm will form part of our core scientific data and will be stored and shared as above. We may use automated online systems (machine learning) to help us analyse video and audio under a formal data-sharing agreement. Data will not leave the UK/EU and will not be used for any purposes outside this research project. We may also ask trained researchers from our group to view the videos and note down what they see. The original video and audio files will be archived on a secure server and will not be shared outside the Social Neuroscience Group unless you give explicit permission.

4) Possible sharing of video outside the research group (with additional consent)

Within the scope of this research project, we may ask a group of other participants unknown to you to note down what they observe in the videos. This is done to get more objective ratings of how a conversation goes from people who are not directly involved in it. Although your personal information (name, contact information) will not be available in the videos, your face and voice could be identified, so these videos are not anonymous. You can choose on the consent form if you want to allow video clips to be used in this way. You can also choose to allow short video clips to be shown in academic talks and teaching. You do not have to agree to this video sharing to take part in the study, and your choice will not affect your participation in the study in any other way.

5) Personal data

When you sign the consent forms and complete the project paperwork, your name and signature are stored for auditing purposes at ICN. This personal data is kept entirely separately to your research data and will not be linked back to your research data.

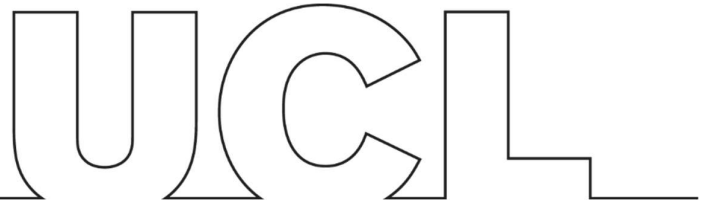
What happens to my data after the study is complete?

Many researchers find data from studies like this very valuable in future research. When the study is complete, we will fully anonymise the *core scientific data* by removing all participant codes so that the data can never be linked back to an individual. We will then share the anonymised *core scientific data* with other researchers via the UCL data repository. There it can be accessed by all UCL researchers and by researchers from other universities with suitable academic credentials, including researchers from outside Europe. This data is fully anonymised such that it is not possible for anyone to link the data back to your name, face, or voice.

Occasionally, participants wish to access their own data after the data collection session is complete. The data we collect is not clinically relevant and should not be used to inform a diagnosis or treatment of any conditions. However, we can provide copies of individual data files if they are requested within 1 month of data collection. After this point, data is anonymised and cannot be linked to an individual.

Will my video/audio data ever be shared?

Sometimes, it is useful to use short video clips showing these tasks in scientific talks, presentations, and lectures. If you wish, you can give permission for the researchers to use your data in this way. Note that this data is NOT anonymous because your face and voice can be recognised but your name will not be used.



You can choose on the consent form if you want to allow video clips to be used in this way. If you select NO, your video/audio data will remain securely stored within ICN and researchers outside this group will not have access. Your choice on video sharing will not affect your participation in the study in any other way.

What will happen to the results of the research project?

The summary results of this study will be published in scientific journals and will be available on the Social Neuroscience Group website, www.antoniahamilton.com. These results include data from many participants and you will never be identified in any report or publication.

What if I want to withdraw from the study after my visit to ICN?

If you want to withdraw from this project at any time, just tell Dr Navaz Davoodian. We will delete all your data and information linked to your name.

It will not be possible to remove anonymised data from research analyses which have been completed and submitted for academic publication (e.g. PhD theses or research papers). Analyses are typically completed 2 or 3 months after a testing session.

Data Protection Privacy Notice

Notice:

The data controller for this project will be University College London (UCL). The UCL Data Protection Office provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk. UCL's Data Protection Officer can also be contacted at data-protection@ucl.ac.uk

Your personal data will be processed for the purposes outlined in this notice.

The legal basis that would be used to process your personal data will be *performance of a task in the public interest*. The legal basis used to process special category personal data will be for *scientific and historical research*.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonymise the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, please contact UCL in the first instance at data-protection@ucl.ac.uk. If you remain unsatisfied, you may wish to contact the Information Commissioner's Office (ICO). Contact details, and details of data subject rights, are available on the ICO website at:

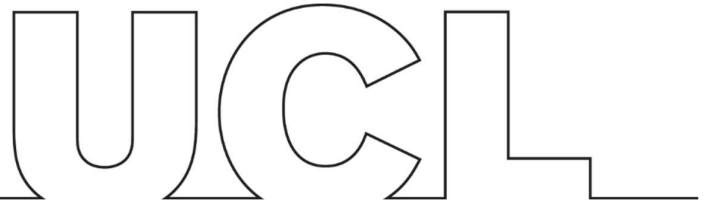
<https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/>

UCL's full privacy notice is at

<https://www.ucl.ac.uk/legal-services/privacy/participants-health-and-care-research-privacy-notice>

The autism@icn group privacy notice is at

https://autism-icn.weebly.com/uploads/1/1/1/5/111599297/autism_privacy_notice_gdpr.pdf



General information

What should I do now?

- If you want to take part, please complete the consent form on the following page. You will then see our short background screening questionnaire. When you have completed this, a researcher will contact you to schedule a visit to the lab.
- If you do not want to take part, you do not need to do anything. We will not contact you about this study again.
- If you have any questions about the study, please contact Dr Navaz Davoodian.

We hope that you feel able to help us with this study. If at any time you decide that you do not want to continue to take part in the study, you are free to withdraw. Please simply inform the researcher about your decision.

Further project information

This study is part of the “720° human interaction project”, organised by Antonia Hamilton at the ICN. This project is funded by UCL and by research grants awarded to the project leaders.

This proposal was reviewed by the UCL ethics board. If you have any comments or concerns about this study, you should discuss these with the project leaders (Antonia Hamilton: a.hamilton@ucl.ac.uk) or the UCL ethics committee (ethics@ucl.ac.uk)

Thank you for reading this information sheet and for considering taking part in this research study.