

# Investigating Autism in the Uncanny Valley through Subjective Ratings and Eye-tracking.

My name is Jack Laird and I am an undergraduate student from the School of Applied Sciences at Edinburgh Napier University. As part of my degree course, I am undertaking a research project for my Honours dissertation. The title of my project is: Investigating Autism in the Uncanny Valley through Subjective Ratings and Eye-tracking.

The aim of the study is to investigate if adults with autism experience the uncanny valley effect. This study will investigate a phenomenon called the Uncanny Valley Effect. It is an effect that you may have experienced yourself when watching robots, androids, or even animated characters such as the ones found in The Polar Express. It is theorised that as a robot (or subject) becomes increasingly human-like our affinity (how much we like something) increases until there is a steep drop or valley where we all of a sudden no longer like it. The Polar Express is a good example of this effect where we can tell something is off or strange with the characters, but we can't quite put our fingers on what it is. This effect has been found in neurotypical individuals, but little is known about it amongst individuals with autism.

The study may have implications for the design of socially assistive robots (SARs) and may aid in future research on the uncanny valley as well as providing more clarity as to whether the effect does take place in adults with autism.

**I am looking for volunteers to participate in the project.** Participants must be over the age of 18, have good to corrected vision (glasses wearers) and must have prior clinical diagnoses of autism. It is recommended that you bring a support worker, family member or relevant other with you to the study. However, if you feel that you do not need to bring a support worker/ family member with you and can attend Edinburgh Napier's Sighthill campus on your own then that is acceptable.



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If you agree to participate in the study, you will be invited to the Edinburgh Napier Sighthill Campus to attend a study session.

You will be presented with a consent form to read and sign, and any questions or concerns will be answered.

You will initially fill out a short autism screening questionnaire which consists of 10 items. Depending on how this is scored your data may not be used in the study.

Then we will proceed to the next phase in the study where you will view a series of images of a robot, human or android whilst your eye movements are tracked by a camera mounted on the computer. You will need to focus on a point in the middle of the computer screen for about a minute to allow the camera to track your eyes. This procedure is non-invasive. In the second phase, you will be presented with the images and will have to sort them into categories by selecting an option which corresponds to the image (robot, android or human). Lastly, you will then be presented with images on your screen and will be asked to rate them on a series of scales.

At the end of the study, you will be debriefed and reminded of the aims and what occurred in the study and you will then be asked to re-consent. The study shouldn't take longer than 30 minutes and if you feel the need to take a break then you can. If you wish to leave at any point during the study, you may do so, and any data generated to that point will be destroyed. There is a risk that you may feel 'weirded' out due to the eerie feeling that the images of the robots/ androids can produce but this is not expected to affect your wellbeing. You will be free to withdraw from the study at any point up until the submission of the draft honours project on the 6th of March 2024, you will not have to give a reason, and it will not affect your treatment.

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All data will be anonymised as much as possible. Your name will be replaced with a participant number and it will not be possible for you to be identified in any reporting of the data gathered. All data collected will be kept in a secure place, consent forms and information sheets will be kept in a secure locker and data will be kept on a secure password-protected hard drive to which only myself and my supervisor will have access. Data will be destroyed at the end of the examination period, unless the data substantiate a research finding (e.g., findings are published in a journal article or presented at a conference), in which case, in accordance with the University Research Data Management Policy, anonymised data will be retained for at least 10 years. You should also be aware that anonymised data from this study may be made available to other researchers to aid future research and knowledge.

Thank you for taking the time to read this information sheet. If you still have any questions about the research, please ask now or contact me or my supervisor (contact details are shown below). If your questions have been answered, and you would like to be a participant in the study, please now see the consent form.

If you are worried about this research, or if you are concerned with how it is being conducted, please contact:

Convenor for the School of Applied Sciences Research Integrity  
Committee  
School of Applied Sciences  
Edinburgh Napier University  
Sighthill Campus, Edinburgh  
EH11 4BN  
or email: [ethics.sas@napier.ac.uk](mailto:ethics.sas@napier.ac.uk)

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## Contact details

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Although participation in this study is not expected to have any impact on your well-being there are support services available if required. Click either of these logos to visit.

**AMASE**  
*Autistic Mutual Aid Society Edinburgh*



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Autistic  
Society**