Plan Overview

A Data Management Plan created using DMPonline

Title: PLAsticity of perception in real and virtual spaCES

Creator:FIRST NAME LAST NAME

Principal Investigator: Szonya Durant

Contributor: Johannes Zanker

Affiliation: Royal Holloway, University of London

Funder: Engineering and Physical Sciences Research Council (EPSRC)

Template: Royal Holloway - Institutional approval template

Project abstract:

Space is fundamental to physical and perceptual reality, but physical and perceptual space are not the same. Perceptual space is created by the brain and plastically formed by the sensorimotor interactions of our body with physical reality. In the digital future, these two spaces are joined by novel spaces experienced in virtual (VR) and extended (XR) reality as these new technologies massively expand in work, pleasure and social interaction. The first aim of PLACES is to understand how sensorimotor interactions in virtual environments shape perceptual space and how this interacts with virtual (VS) and real (RS) space. Secondly, deep and improved
knowledge of perceptual mechanisms is essential for the future development of VR as a key digital technology for Europe. To work for the people, VR and XR need to be effective, comfortable, transparent and fair. These aims can only be reached by understanding and accounting for perception in a human-centric manner. Based on these premises, the highly interdisciplinary consortium of PLACES pursues five key objectives: to (1) use cutting-edge VR technology to advance scientific knowledge of the mechanisms of sensorimotor perception and plasticity; (2) use our understanding about spatial perception, gaze control and sensorimotor plasticity
to advance VR technology and enhance VR applicability; (3) predict action intentions of users in VR and employ these predictions in advanced user interfaces; (4) understand how long-term usage of VR interacts with perceptual and sensorimotor states in real space and in virtual space; and (5) translate research findings into applied fields in vision aids and social telepresence. Reaching these objectives will put the EU on the map as a leader in perception research and its application in VR. PLACES aims for new frontiers in
perception science and its applications and for a significant impact on the people of the EU.

ID: 120892

Start date: 01-05-2023

End date: 30-04-2027

Last modified: 24-03-2023

Grant number / URL: EP/X038521/1

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PLAsticity of perception in real and virtual spaCES

Administrative Data

Please define an ID for your DMP.

EP/X038521/1

Which funder are you applying to?

EPSRC

What is the title of your project?

PLAsticity of perception in real and virtual spaCES

Briefly describe your project.

This research project involved research into human perception, cognition and action, making use of virtual reality and eye tracking. The aim is to (1) use cutting-edge VR technology to advance scientific knowledge of the mechanisms of sensorimotor perception and plasticity; (2) use our understanding about spatial perception, gaze control and sensorimotor plasticity to advance VR technology and enhance VR applicability; (3) predict action intentions of users in VR and employ these predictions in advanced user interfaces; (4) understand how long-term usage of VR interacts with perceptual and sensorimotor states in real space and in virtual space; and (5) translate research findings into applied fields in vision aids and social telepresence.
The data are created to be able to analyse human behaviour and infer underlying neural mechanisms.

Who is the primary investigator on the project? Please also name any co-investigators on the project.

Szonya Durant (PI)

Who is the project data contact?

Szonya Durant
szonya.durant@rhul.ac.uk
01784 276522

Data Collection

What data will you collect or create?

Output data form the virtual reality headset including head and eye coordinates, recordings of the experience and coordinates and button presses on the controllers.
Questionnaire data about previous experience of VR, age and gender and questions about the task undertaken in the lab.

How will the data be collected or created?

The data will be collected using Unity software virtual reality headset with eye tracker. It will be named according ppt ID that will be randomly generated. Quality of eye tracking will checked ensured through calibration and pre-processing checking for proportion of untracked samples. Final processed data will be peer reviewed.
Questionnaire data will be collected by a local html form saved only on the lab computer and then backed up (see methods for backing up). It will be identified with the same number as above and be anonymous.
Signed paper consent forms will be stored separately in a locked filing cabinet that only the PI has access to.

Documentation and Metadata

What documentation and metadata will accompany the data?

The data will be made available on openscience framework (osf.io), which we will link to from any publication. Code for analysing the output files will be saved on github. Information including who created or contributed to the data, its title, date of creation and under what conditions it can be accessed will be available on osf.io.

Ethics and Legal Compliance

How will you manage any ethical issues?

The experimental protocol (including data storage plan and informed consent) will undergo review from the Royal Holloway University of London ethics committee. All data will be collected anonymously using a randomly allocated ID. There is no sensitive data collected.
Signed consent forms will be collected and stored securely, but these will no be linked to the data, instead participants are given a randomly generated ID so there is no chance of re-identification.
No personally indentifiable information will be available to anyone.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

The code and data will be made publicly available under a GNU GENERAL PUBLIC LICENSE https://www.gnu.org/licenses

Storage and Backup

How will the data be stored and backed up during the research?

It will be stored on secure local computers, password protected hard drives and backed up daily on the secure storage offered by dropbox.com. There will be sufficient storage space. The research assistant on the project will be responsible for backup and recovery. Data up the last 24h will be able to be recovered from dropbox.com.

How will you manage access and security?

The data collected will be stored on password protected drives that only the research team will have access to.

Selection and Preservation

Which data should be retained, shared, and/or preserved?

All the original data collected will be stored indefinitely on a local hard drive and dropbox.com.

What is the long-term preservation plan for the dataset?

The data will be uploaded onto osf.io after preparing for sharing, which is costed for in the time of the PI. The original collected data will be stored for 5 years minimum.

Data Sharing

How will you share the data?

We will make the data available upon publication via the osf.io repository after it is prepared for sharing. Potential users will have a link to the data in the publication. The data will receive a DOI.

Are any restrictions on data sharing required?

No restrictions on data sharing will be required.

Responsibilities and Resources

Who will be responsible for data management?

The PI is responsible or implementing the DMP, and ensuring it is reviewed and revised. The research assistant will be responsible for collecting the data and daily back up. It is all on one site. The PI will make the data available archiving and for sharing and ensuring relevant policies will be respected.

What resources will you require to deliver your plan?

The PI and research assistant will receive data management training and the hard drives and access to dropbox.com is provided through Royal Holloway, University of London.