
Investigating Visual Search using Rapid Frequency Tagging

A Data Management Plan created using DMPonline

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Project abstract:

The rationale of the proposed MEG study is to apply rapid rhythmic stimulation (Rapid Frequency Tagging; RFT) in a visual search paradigm, to investigate the role of upstream (passing on sensory information) and downstream (implementing control based on task) brain regions in guiding attention. Brain responses to RFT have been shown to be stronger when stimuli are attended, and therefore serve as an indicator of sensory-driven allocation of attentional resources. Furthermore, RFT has been shown to leave endogenous oscillatory brain activity at ~10 Hz (alpha oscillations) unperturbed, which have been repeatedly linked to functional inhibition of unattended objects.

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Data description

What types of data will be used or created?

- Demographic data
 - age
 - sex
 - handedness scores (<https://www.brainmapping.org/shared/Edinburgh.php>)
- MEG & MRI safety questionnaire
 - history of mental illness
 - metal items in the body
 - history of cardiovascular disease, epilepsy, tinnitus
- Informed consent to MEG and MRI
- Magnetoencephalography (MEG)
- Eye-tracking data
- Behavioural data (response time and accuracy)

How will the data be structured and documented?

- MEG & MRI safety questionnaire and informed consent will be stored centrally at the Centre for Human Brain Health (CHBH), following the local protocols
- On the project's RDS, data folders will be created for each participant, containing the MEG data (at least 6 .fif files), eye-tracking data, and a MATLAB file including the demographic data and response time

Data storage and archiving

How will your data be stored and backed up?

The University of Birmingham provides a Research Data Store (RDS); access to the RDS is restricted to project members. Backup copies of data are taken on a daily basis and data is stored in separate buildings from the live data. The RDS has a backup and retention policy on how it looks after the data including archiving of primary data here : <https://intranet.birmingham.ac.uk/it/teams/infrastructure/research/bear/research-data->

service/RDS/BackupRetentionPolicy.aspxdata will be stored on the project's RDS (provided by the University of Birmingham)

Is any of the data of (ethically or commercially) sensitive nature? If so, how do you ensure the data are protected accordingly?

Any forms linking the participant's name and experimental session code will be stored at the CHBH, with no third-party access.

Where will your data be archived in the long term?

At the publication of a paper, a subset of the data that underpins the paper will be transferred to the UoB Research Data Archive (RDA). Once transferred the data will be set to read-only to prevent any inadvertent additions or deletions of the dataset. Any changes will result in a new dataset, which will be archived separately. The RDA solution has been created to be highly resilient and is located at two data centres in two different sites, with a backup placed in a third site. Data will be stored for 10 years, should access to the data be requested within a 10 year period, the 10-year clock is then reset from the point of last access. After the 10 year period, the data will be deleted.

Data sharing

Which data will you share, and under which conditions? How will you make the data available to others?

Participants will be asked to consent to their data being shared inside and outside the University of Birmingham. At the publication of a paper, the data will be uploaded to a research repository, providing access to the data for scientific and educational purposes, such as the Open MEG Archive (OMEGA). Anatomical scans will be anonymised. Personal information and brain recordings will not be linked.