Outputs management and sharing

## Provide an outputs management plan

All Wellcome-funded researchers are expected to manage their research outputs in a way that will achieve the greatest health benefit, maximising the availability of research data, software and materials with as few restrictions as possible. Our guidance on developing an outputs management plan, which includes a link to some good examples, is available here.

If an outputs management plan is not required, please briefly explain why below.

## I . Research outputs

All experiments produce behavioural data, modelling results, and questionnaire data. Exp3 will generate fMRl and MEG datasets. Neural data will be stored as compressed files in modality-specific formats alongside tabular files containing task information. Code for the task and analysis will be largely experiment-specific but may still have value for other researchers. Sharing code additionally enables replication of plots, simulations, and statistics.

## 2. Metadata and documentation

All datasets will be accompanied by metadata detailing the methodology and meaning of variables, including readme files in each repository. Neuroimaging data will be shared according to the Brain Imaging Data Structure, an established structure for data and metadata. Behavioural data will include metadata such as variable details within the csv files. Documentation for analysis code will include comments in scripts, as well as guidance in readme files.

## 3. When the outputs will be available

The relevant outputs will accompany each preprint.

## 4. Where the outputs will be available

I will share neuroimaging data on Neurovault (http://neurovault.org/), other data through my Open Science Framework (https://osf.io/kvtfy/) and additionally host code on Github

(https://github.com/jocutler). I have experience using these platforms from my previous studies.

## 5. Discovery and access

Datasets and code will be detailed in data and code availability statements in publications, with hyperlinked DOIs allowing readers to easily locate them, and will be discoverable by using established and well-known data-sharing platforms. I will also publicise outputs through talks at conferences and institutions and through my website (www.jocutler.com) and social media (1 ,500+ followers).

## 6. Restrictions

All data will be obtained based on consent that explicitly allows anonymised data sharing and only anonymised data will be shared. Potentially identifiable information automatically recorded in online survey platforms (geolocation, IP address) or for recruitment (email addresses) will not be shared. As structural MRI data can potentially be identifiable, all scans will be de-identified using the automated defacing tool mri\_deface (https://surfer.nmr.mgh.harvard.edu/fswiki/AutomatedDefacingTooIs). Text files and image headers will be checked to ensure potential personal identifiers are removed.

## 7. Storage, back up and preservation

Raw data and metadata will be stored and archived on secure computing systems at I-JOB and UCSF, using existing backup procedures that comply with GDPR (I-JOB) and the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule (UCSF). Identifying data will be stored separately from experimental data and linked via anonymous codes, with hard copies in locked cabinets and digital data in password-protected files. Online experiments use Gorilla.sc, which provides GDPR-compIiant server storage. MRI and MEG data will be collected at CHBH (password-protected, encrypted machines). It will be transferred with all other data to the BEAR Secure Research Data Store, which is equipped to store the large volume data securely and backups each night to two locations ensure disaster recovery.

## 8. Resources for outputs management

Dedicated (JOB and UCSF specialists to monitor data quality are covered by access costs. Resources for storage are costed. Time of the Grantholder and RA to ensure data is findable, accessible, interoperable, and reproducible is accounted for in the schedule.

**Select the approach you will use to maximise the impact of your significant research outputs to improve health and benefit the wider research community. If an outputs management plan is not required, select 'Not applicable'. (Make research outputs available for access and re-use, Protect intellectual property and/or commercialise outputs, A combination of both approaches, Not applicable)**

Make research outputs available for access and re-use