The reward of absent danger: Parsing the liking, learning and wanting of relief

A Data Management Plan created using DMPonline.be

Creator: Anne Willems

Affiliation: KU Leuven (KUL)

Template: KU Leuven BOF-IOF

Grant number / URL: PDMT2/23/014

ID: 204720

Start date: 13-12-2023

End date: 31-10-2024

Project abstract:

In this PDM project, I will strengthen my profile to improve my chances of being awarded an FWO junior postdoctoral fellowship. To this end, I will continue to generate output (international publications as well as other kinds of output) based on my doctoral research. Specifically, I will focus on finishing an ongoing pharmacological fMRI study (studying the role of mu-opioid receptors in the generation of relief) and lab-based study (studying the predictive performance of the EVA task for fear extinction learning) of which the data collection is completed. Furthermore, I will write a systematic review on relief; which is also the topic of the proposed proposal (submitted to FWO).

Last modified: 12-03-2024

The reward of absent danger: Parsing the liking, learning and wanting of relief

Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
NTX fMRI study	subjective, physiological and fMRI data collected as part of a pharmacological fMRI study where N = 60 participants received naltrexone or placebo and filled out the EVA task in the MRI scanner. Data includes source data, processed data, extracted results and processing and analysis scripts.	**E** (data have been collected as part of my PhD)	**D**	**I**mages **N**umerical **T**extual	.tab/txt files; .acq files; dicom and .nii files; R-scripts and matlab scripts	100GB - 1TB	1 folder of informed consent and exclusion criteria forms
Lab-based EVA extinction study	Subjective and physiological data collected as part of a lab-based study where N = 70 participants performed the EVA task and an avoidance-extinction task on two consecutive days. Data includes source data, processed data, extracted results and processing and analysis scripts.	**E** (data has been collected as part of my PhD)	**D**	N(umerical) T(extual)	.tab/.txt files; .acq files; R-scripts and matlab scripts	1 GB - 100 GB	1 folder of informed consent and exclusion criteria forms

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

The existing data consist of data that was collected by master students I supervised and by myself as part of my PhD. The data have not been made available online.

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- Yes, human subject data (Provide SMEC or EC approval number below)

NTX fMRI study: EC approval number: S63852
Lab-based EVA extinction study: SMEC approval number: G-2021-2923-R4

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- Yes (Provide PRET G-number or EC S-number below)

Yes, personal data (demographic data and identifiable images of the skull/face recorded during MRI scanning) have been collected in

accordance with GDPR and KU Leuven guidelines.

NTX fMRI study: EC approval number: S63852
Lab-based EVA extinction study: SMEC approval number: G-2021-2923-R4

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- Yes

The participants themselves are the only 3rd party. Agreements are part of the informed consent, mentioning the publication of anonymized results in scientific communications, the publication of anonymized data on OSF and the (re)use of data by other researchers.

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

Raw source data files will be kept in a “sourcedata folder” with individual data-files stored within participant sub-folders per dataset. Extracted and aggregated data will be stored in a “processed folder” with separate participant sub-folders. All preprocessing and analysis scripts that were used to create the extracted data and to analyze the results will be saved within a “code folder”.
Metadata will include: information about experimental design, procedure, and measurement characteristics; specification of the raw data file names (which measures they refer to); information that describes the variable codes (referring to type and time of specific measurements) in the aggregated data files. For the NTX MRI study, metadata are included in the BIDS file format.

Will a metadata standard be used to make it easier to find and reuse the data?
If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- Yes

For personal storage, metadata will be stored as Microsoft Word/pdf, .txt or .csv file under each experiment parent-folder. We are currently not using a metadata standard (except the BIDS file format for the MRI data), but will provide the relevant metadata in a structured manner and are currently exploring the usefulness of the free Colectica tool (Data Documentation Initiative) to annotate our Excel files.
Whenever data is deposited on OSF or OpenNeuron, we will use their metadata standard to describe the datasets.

Data Storage & Back-up during the Research Project

Where will the data be stored?

- OneDrive (KU Leuven)

All digital data (questionnaire answers, subjective ratings, behavioral data, physiological recordings, and neural recordings, extracted data and code) will be stored on the KU Leuven onedrive. Copies can be made and kept on KULeuven managed personal devices (e.g. laptops, hard drives). All drives and devices are password-protected and encrypted.
Data in paper format (informed consent forms, inclusion/exclusion criteria forms) will be stored separately in a key-locked cabinet in a dedicated archive room of the research group).

How will the data be backed up?

- Standard back-up provided by KU Leuven ICTS for my storage solution
- Personal back-ups I make (specify below)

Source data are backed up on an external hard drive of the PhD student and an external hard drive of the PI. All digital data is stored on the KU Leuven onedrive.

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

The researcher's free onedrive environment has 5TB capacity, and the researcher and the PI each have an external hard drive with 3T capacity to store and backup the data.

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

All digital data will be stored on password-protected and/or encrypted drives, and all personal laptops will be password-protected and encrypted. Additional security for onedrive is provided by using multifactor authentication with the KU Leuven Authenticator app.
Data in paper format (informed consent forms, inclusion/exclusion criteria forms) will be stored separately in a key-locked cabinet in a dedicated archive room of the research group).

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

During the project, data will be stored in the free onedrive environment of the researcher (which has 5TB space); and on password-protected and encrypted external hard drives. No additional cost is expected.

Data Preservation after the end of the Research Project

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- All data will be preserved for 25 years according to CTC recommendations for clinical trials with medicinal products for human use and

for clinical experiments on humans

Where will these data be archived (stored and curated for the long-term)?

- Other (specify below)

Until 25 years after the end of the project, all anonymized digital data will be stored on a central archive PC that is shared among the PIs of the Laboratory of Biological Psychology and that is located in a separate building of the Faculty (Van den Heuvel Institute); and on a dedicated (encrypted and password protected) external hard drive of the PI.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

We expect no additional costs

Data Sharing and Reuse

Will the data (or part of the data) be made available for reuse after/during the project?
Please explain per dataset or data type which data will be made available.

- Other (specify below)

- For the lab-based study all anonymized data, preprocessing and analysis scripts will be made available.
- For the fMRI study: preprocessing and analyses scripts will be made available. Defaced and anonymized data will be made available on request.

If access is restricted, please specify who will be able to access the data and under what conditions.

Only the researcher and PI have direct access to the data. Anonymized data will be made available on request.

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Please explain per dataset or data type where appropriate.

- Yes, privacy aspects

Per request of the ethical committee, participants of the NTX fMRI study could indicated whether anonymized data could be shared on open source repositories. Because some of the participants indicated that their data could not, the entire dataset will only be made available upon request. Obviously, restricted personal data will never be shared beyond the researchers involved in the study.

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- Other data repository (specify below)

Open Science Framework (OSF)

When will the data be made available?

- Upon publication of research results

Which data usage licenses are you going to provide?

If none, please explain why.

- CC-BY 4.0 (data)
- Data Transfer Agreement (restricted data)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- No

What are the expected costs for data sharing? How will these costs be covered?

Public repositories are free of charge.

Responsibilities

Who will manage data documentation and metadata during the research project?

The researcher working on this project

Who will manage data storage and backup during the research project?

The researcher and PI (Prof. Bram Vervliet) of this project.

Who will manage data preservation and sharing?

The PI (Prof. Bram Vervliet) of this project

Who will update and implement this DMP?

The researcher and PI (Prof. Bram Vervliet) of this project.