

## FWO DMP Template - Flemish Standard Data Management Plan

Project supervisors (from application round 2018 onwards) and fellows (from application round 2020 onwards) will, upon being awarded their project or fellowship, be invited to develop their answers to the data management related questions into a DMP. The FWO expects a **completed DMP no later than 6 months after the official start date** of the project or fellowship. The DMP should not be submitted to FWO but to the research co-ordination office of the host institute; FWO may request the DMP in a random check.

At the end of the project, the **final version of the DMP** has to be added to the final report of the project; this should be submitted to FWO by the supervisor-spokesperson through FWO's e-portal. This DMP may of course have been updated since its first version. The DMP is an element in the final evaluation of the project by the relevant expert panel. Both the DMP submitted within the first 6 months after the start date and the final DMP may use this template.

The DMP template used by the Research Foundation Flanders (FWO) corresponds with the Flemish Standard Data Management Plan. This Flemish Standard DMP was developed by the Flemish Research Data Network (FRDN) Task Force DMP which comprises representatives of all Flemish funders and research institutions. This is a standardized DMP template based on the previous FWO template that contains the core requirements for data management planning. To increase understanding and facilitate completion of the DMP, a standardized **glossary** of definitions and abbreviations is available via the following [link](#).

### 1. General Project Information

Name Grant Holder & ORCID	<b>Xena Serifova (0000-0002-1836-1694), PhD student</b>
Contributor name(s) (+ ORCID) & roles	<b>Prof. dr. Bart Boets (0000-0002-4718-667X), promotor</b> <b>Prof. dr. Chris Bervoets (0000-0001-9842-2823), co-promotor</b> <b>dr. Stephanie Van der Donck (0000-0001-8838-4480), co-promotor</b> <b>dr. Laura Luyten (0000-0001-5380-0851), co-promotor</b>
Project number <sup>1</sup> & title	3M220594: Pinpointing obsessive-compulsive symptom severity: Assessing hypersensitivity for symptom-eliciting visual cues using (frequency-tagging) EEG, eye tracking and physiological stress measures
Funder(s) GrantID <sup>2</sup>	11M4623N
Affiliation(s)	<input checked="" type="checkbox"/> KU Leuven <input type="checkbox"/> Universiteit Antwerpen <input type="checkbox"/> Universiteit Gent <input type="checkbox"/> Universiteit Hasselt <input type="checkbox"/> Vrije Universiteit Brussel <input type="checkbox"/> Other: Provide ROR <sup>3</sup> identifier when possible:
Please provide a short project description	Obsessive Compulsive Disorder (OCD) is a disabling psychiatric disorder affecting 2-2.5% of the population. It is characterized by anxiety-provoking obsessions and time-consuming compulsions. The clinical expression of OCD is highly heterogenous and available assessment tools entail many limitations. In addition, OCD is associated with numerous comorbidities, which complicate diagnosis and personalized treatment. Against this background, there is a great need for objective and quantifiable tools to determine the presence and severity of OCD, monitor its severity throughout therapy and support the choice for invasive interventions. In the present project, newly designed symptom provocation techniques will be combined with innovative multimodal assessment measures to objectively quantify OCD-related symptomatology. We will investigate overt attention via eye tracking, neural sensitivity via (frequency-tagging) EEG and intracranial recordings and bodily arousal and autonomous physiological stress responses via heart rate and skin conductance. We expect that especially FT-EEG will offer an objective, quantifiable and robust index, sensitive at the individual subject-level. We will compare OCD patients vs healthy controls, and monitor symptom severity throughout exposure therapy and deep brain stimulation. This project constitutes a crucial step towards developing a biomarker of OCD severity, which may support diagnosis and reflect clinical state and treatment response.

<sup>1</sup> "Project number" refers to the institutional project number. This question is optional since not every institution has an internal project number different from the GrantID. Applicants can only provide one project number.

<sup>2</sup> Funder(s) GrantID refers to the number of the DMP at the funder(s), here one can specify multiple GrantIDs if multiple funding sources were used.

<sup>3</sup> Research Organization Registry Community. <https://ror.org/>

## 2. 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<sup>4</sup>.

Dataset Name	Description	New or Reused	Digital or Physical	ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR PHYSICAL DATA
				Digital Data Type	Digital Data Format	Digital Data Volume (MB, GB, TB)	Physical Volume
ICFs_POSSS	Informed consent forms	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Physical	<input checked="" type="checkbox"/> NA	<input checked="" type="checkbox"/> NA	<input checked="" type="checkbox"/> NA	Document of 9-11 pages for each participant. For 120 participants: 1080-1320 pages.
Logbook_POSSS	During the study visit, annotations regarding data collection will be made on a designated worksheet (on paper).	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Physical	<input checked="" type="checkbox"/> NA	<input checked="" type="checkbox"/> NA	<input checked="" type="checkbox"/> NA	2 documents of 1 page for each participant. For 120 participants: 240 pages.
DigitalLogbook_POSSS	Experiment logbook (digital version).	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 1 GB	NA
Pseudonymisati on_POSSS	Names of included participants will be	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf	<input checked="" type="checkbox"/> < 1 GB	NA

<sup>4</sup> Add rows for each dataset you want to describe.

	pseudonymized using codes.				<input checked="" type="checkbox"/> other: .xlsx		
Demographics_POSS	During the first visit the necessary information for administration as well as demographics will be collected (address, phone number, email, date of birth, gender, laterality, educational level, bank account number, OCD diagnosis)	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 1 GB	NA
Data collected_POSS	Overview of completed sessions and collected data per participant.	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 1 GB	NA
Questionnaires_POSS	The following interviews/questionnaires will be completed via REDCap: - Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), - Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS), - Padua Inventory-Revised (PI-R),	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf	<input checked="" type="checkbox"/> < 100 GB	NA

	- Depression Anxiety Stress Scale (DASS), - Global Assessment of Functioning scale (GAF)						
Biosemi_POSSS	During the test sessions, measures of - encephalography (EEG) - electrocardiography (ECG) - skin conductance will be collected via Biosemi	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .bdf	<input checked="" type="checkbox"/> < 5 TB	NA
NP_POSSS	Behavioural data of non-periodic stimulation task	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 100 GB	NA
Sinstim_POSSS	Sinstim output of provocation tasks	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 100 GB	NA
EyeTracking_POSSS	Eye tracking recordings	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 100 GB	NA
Rating_POSSS	Subjective ratings of presented visual stimuli	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> .csv <input checked="" type="checkbox"/> .pdf <input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 100 GB	NA
MOCSS	The Maudsley Obsessive-Compulsive Stimuli Set	<input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .jpg	<input checked="" type="checkbox"/> < 100 GB	NA

NAPS	Nencki Affective Picture System	<input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .jpg	<input checked="" type="checkbox"/> < 100 GB	NA
IAPS	International Affective Picture System	<input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .jpg	<input checked="" type="checkbox"/> < 100 GB	NA
BOCD-PS	Berlin Obsessive Compulsive Disorder-Picture Set	<input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .jpg	<input checked="" type="checkbox"/> < 1 GB	NA
Images_ALL	Set of images selected for provocation tasks from various databases, supplemented with neutral images that are freely available in the public domain.	<input type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input checked="" type="checkbox"/> Observational	<input checked="" type="checkbox"/> other: .xlsx	<input checked="" type="checkbox"/> < 100 GB	NA

***GUIDANCE:***

*DATA CAN BE DIGITAL OR PHYSICAL (FOR EXAMPLE BIOBANK, BIOLOGICAL SAMPLES, ...). DATA TYPE: DATA ARE OFTEN GROUPED BY TYPE (OBSERVATIONAL, EXPERIMENTAL ETC.), FORMAT AND/OR COLLECTION/GENERATION METHOD.*

*EXAMPLES OF DATA TYPES: OBSERVATIONAL (E.G. SURVEY RESULTS, SENSOR READINGS, SENSORY OBSERVATIONS); EXPERIMENTAL (E.G. MICROSCOPY, SPECTROSCOPY, CHROMATOGRAMS, GENE SEQUENCES); COMPILED/AGGREGATED DATA<sup>5</sup> (E.G. TEXT & DATA MINING, DERIVED VARIABLES, 3D MODELLING); SIMULATION DATA (E.G. CLIMATE MODELS); SOFTWARE, ETC.*

*EXAMPLES OF DATA FORMATS: TABULAR DATA (.POR, .SPSS, STRUCTURED TEXT OR MARK-UP FILE XML, .TAB, .CSV), TEXTUAL DATA (.RTF, .XML, .TXT), GEOSPATIAL DATA (.DWG, .GML, ..), IMAGE DATA, AUDIO DATA, VIDEO DATA, DOCUMENTATION & COMPUTATIONAL SCRIPT.*

*DIGITAL DATA VOLUME: PLEASE ESTIMATE THE UPPER LIMIT OF THE VOLUME OF THE DATA PER DATASET OR DATA TYPE.*

<sup>5</sup> These data are generated by combining multiple existing datasets.

<p>PHYSICAL VOLUME: PLEASE ESTIMATE THE PHYSICAL VOLUME OF THE RESEARCH MATERIALS (FOR EXAMPLE THE NUMBER OF RELEVANT BIOLOGICAL SAMPLES THAT NEED TO BE STORED AND PRESERVED DURING THE PROJECT AND/OR AFTER).</p>	
<p>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.</p>	<p>Provocative images are selected from:</p> <ul style="list-style-type: none"> <li>- IAPS: International Affective Picture System Lang PJ, Bradley MM, Cuthbert BN. International Affective Picture System (IAPS): Technical Manual and Affective Ratings NIMH Center for the Study of Emotion and Attention. 1997.</li> <li>- NAPS: Nencki Affective Picture System Simon D, Kischkel E, Spielberg R, Kathmann N. A pilot study on the validity of using pictures and videos for individualized symptom provocation in obsessive-compulsive disorder. Psychiatry Res. 2012;198(1):81</li> <li>- MOCSS: The Maudsley Obsessive-Compulsive Stimuli Set Mataix-Cols D, Lawrence NS, Wooderson S, Speckens A, Phillips ML. The Maudsley Obsessive-Compulsive Stimuli Set: Validation of a standardized paradigm for symptom-specific provocation in obsessive-compulsive disorder. Psychiatry Res. 2009;168(3):238–241.</li> <li>- BOCS-PS: Berlin Obsessive Compulsive Disorder-Picture Set Simon D, Kischkel E, Spielberg R, Kathmann N. A pilot study on the validity of using pictures and videos for individualized symptom provocation in obsessive-compulsive disorder. Psychiatry Res. 2012;198:81–88.</li> </ul> <p>Neutral freely available public domain images are selected from the internet (<a href="http://www.pexels.com">www.pexels.com</a>, <a href="http://www.unsplash.com">www.unsplash.com</a>) and supplemented with self-generated images.</p>
<p>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, please describe these issues further and refer to specific datasets or data types when appropriate.</p>	<p><input checked="" type="checkbox"/> Yes, human subject data  <input type="checkbox"/> Yes, animal data  <input type="checkbox"/> Yes, dual use  <input type="checkbox"/> No</p> <p>If yes, please describe:          In function of our research question, only relevant information will be collected from OCD patients and healthy volunteers and this is limited to what is necessary in the context of the research question. All data will be treated confidentially, de-identified and pseudonymized, and will be stored and processed in coded form. Information via which participants are directly identifiable is stored separately from other data collected: a separate password-protected document links participant numbers to this participant-identifying information and is only accessible by the researchers who need to know this information for the purpose of conducting the study.</p>
<p>Will you process personal data<sup>6</sup>? If so, briefly describe the kind of personal data you will use. Please refer to specific</p>	<p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p>

<sup>6</sup> See Glossary Flemish Standard Data Management Plan

<p>datasets or data types when appropriate. If available, add the reference to your file in your host institution's privacy register.</p>	<p>If yes: /</p> <ul style="list-style-type: none"> <li>- Short description of the kind of personal data that will be used: This project involves the collection of a broad range of multimodal data, including participant characteristics (phenotypical information, questionnaires, clinical ratings, ...), (neuro)physiology recordings (skin conductance, heart rate, EEG), eye tracking data, behavioral data, etc. These data will all be pseudonymized. Personal data used for organizing the research (i.e. name, phone number, e-mail address) will not be included in the analysis and will be stored separately from the research data.</li> <li>- Privacy Registry Reference: KU Leuven PRET: G-2021-4649-R2(AMD) S nummer: S66124</li> </ul>
<p>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.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please comment:</p>
<p>Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements, research collaboration agreements)? If so, please explain to what data they relate and what restrictions are in place.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain: We have permission from the authors of the stimuli databases (IAPS, NAPS, MOCSS, BOCS-PS) to use them provided that:</p> <ul style="list-style-type: none"> <li>- They are used for research and academic non-commercial use only.</li> <li>- They are not shared, distributed or otherwise provided to third parties, especially to profit-making legal entities or persons.</li> <li>- They are not distributed to other individuals or laboratories.</li> <li>- They are not exploited, used or otherwise distributed for any kind of commercial activity.</li> <li>- They are not made available to media organizations (television, magazines, etc.), nor make it publicly available on the Internet.</li> </ul> <p>Furthermore, we are requested to inform the authors of any work performed using the databases and submitted for publication in an academic journal. Inclusion of the images in a scientific publication is not allowed, except with permission from the authors. If the manuscript is accepted for publication we are kindly asked to share with the authors any collected behavioral ratings as well as the names of the pictures used in the research project.</p>
<p>Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:</p>



<p>If so, please explain to what data they relate and which restrictions will be asserted.</p>	<p>See previous answer. Also, we have permission from the authors of the stimuli databases (IAPS, NAPS, MOCSS, BOCS-PS) to use them provided that the correct papers are cited:</p> <p>NAPS:</p> <ul style="list-style-type: none"> <li>- Marchewka A., Żurawski Ł., Jednoróg K., Grabowska A. (2014) The Nencki Affective Picture System (NAPS): introduction to a novel, standardized, wide-range, high-quality, realistic picture database. Behavior Research Methods, 46(2), 596–610. doi:10.3758/s13428-013-0379-1</li> <li>- Riegel M., Żurawski Ł., Wierzba M., Moslehi A., Klocek Ł., Horvat M., Grabowska A., Michalowski J. Jednoróg K., Marchewka A. (2016) Characterization of the Nencki Affective Picture System by discrete emotional categories (NAPS BE). Behavior Research Methods, 48(2), 600-612. doi:10.3758/s13428-015-0620-1</li> <li>- Wierzba M., Riegel M., Pucz A., Leśniewska Z., Dragan W. Ł., Gola M., Jednoróg K., Marchewka A. (2015) Erotic subset for the Nencki Affective Picture System (NAPS ERO): cross-sexual comparison study. Frontiers in Psychology, 6:1336. doi: 10.3389/fpsyg.2015.01336</li> <li>- Michałowski J. M., Drożdżel D., Matuszewski J., Koziejowski W., Jednoróg K., Marchewka A. (2016) Set of Fear Inducing Pictures (SFIP): The development and validation in fearful and non-fearful individuals. Behavior Research Methods, doi:10.3758/s13428-016-0797-y</li> </ul> <p>IAPS:</p> <ul style="list-style-type: none"> <li>- Lang, P.J., Bradley, M.M., &amp; Cuthbert, B.N. (2008). International affective picture system (IAPS): Affective ratings of pictures and instruction manual. Technical Report A-8. University of Florida, Gainesville, FL.</li> </ul> <p>MOCSS:</p> <ul style="list-style-type: none"> <li>- Mataix-Cols D, Wooderson S, Lawrence N, Brammer MJ, Speckens A, Phillips ML. Distinct neural correlates of washing, checking, and hoarding symptom dimensions in obsessive-compulsive disorder. Arch Gen Psychiatry. 2004;61(6):564–756.</li> <li>- Mataix-Cols D, Lawrence NS, Wooderson S, Speckens A, Phillips ML. The Maudsley Obsessive-Compulsive Stimuli Set: Validation of a standardized paradigm for symptom-specific provocation in obsessive-compulsive disorder. Psychiatry Res. 2009;168(3):238–241.</li> </ul> <p>BOCD-PS:</p> <p>Simon, D., Kischkel, E., Spielberg, R. &amp; Kathmann, N. (2012). A pilot study on the validity of using pictures and videos for individualized symptom provocation in obsessive-compulsive disorder. Psychiatry Research, Volume 198, Issue 1, p. 81–88.</p>
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### 3. 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).

Through a clear folder structure located on the KU Leuven One Drive, data and other documents regarding the study will be organised in order to simplify retrieving and consulting the overall documentation. This folder contains:

- Readme.docx: a word-document including the following information:
  - o the researchers that were involved in data collection
  - o the ethical approval (reference number & institution)
  - o a short overview of the study course and protocol
  - o the questionnaires that we administer
- Demographics.xlsx: an excel-document including the following information:
  - o pseudonymized baseline information about all participants that were enrolled in the study (e.g., age, gender, which phases of the study they completed and when, whether they completed the entire study or dropped-out, their compliance, other remarks, etc.)
  - o basic summary statistics (e.g., gender and age distribution, overall study compliance, etc.)
- Folder with other study documents:
  - o ethical application and approval
  - o informed consent forms
  - o The PDF of all questionnaires
  - o ...
- Pre-processing documents:
  - o the raw pseudonymized data
  - o short written manual on the data (pre-)processing steps

<p>Will a metadata standard be used to make it easier to <b>find and reuse the data</b>?</p> <p>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.</p> <p><i>REPOSITORIES COULD ASK TO DELIVER METADATA IN A CERTAIN FORMAT, WITH SPECIFIED ONTOLOGIES AND VOCABULARIES, I.E. STANDARD LISTS WITH UNIQUE IDENTIFIERS.</i></p>	<p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p> <p>If yes, please specify (where appropriate per dataset or data type) which metadata standard will be used:  No.</p> <p>If no, please specify (where appropriate per dataset or data type) which metadata will be created:  All relevant experimental information for reproducibility (instrument settings, experimental conditions, software information etc.) will be collected and stored with the data in Readme files on a shared drive and can be consulted to gather relevant information.</p>
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#### 4. Data Storage & Back-up during the Research Project

Where will the data be stored?	All digital data collected throughout the project will be documented via a secure web-based application (Research Electronic Data Capture, REDCap), running on the protected servers of the KU Leuven and the University Hospital and the BIOMED L-Drive for large volume storage (secure KU Leuven facility for archiving). Data will be transferred to the researcher's OneDrive, linked to their KU Leuven account, for data analysis. The PI (Prof. dr. Bart Boets) has access to all data repositories (REDCap, L-Drive folder, OneDrive folder) at all times. Physical data (paper versions) will be stored at KU Leuven, in the office of the PhD- student, in a locked drawer that can only be accessed by the researcher. After finishing data collection, paper data will be stored in the office of co-promotor Prof. Dr. Chris Bervoets, located at the University Hospital.
<p>How will the data be backed up?</p> <p><i>WHAT STORAGE AND BACKUP PROCEDURES WILL BE IN PLACE TO PREVENT DATA LOSS? DESCRIBE THE LOCATIONS, STORAGE MEDIA AND PROCEDURES THAT WILL BE USED FOR STORING AND BACKING UP DIGITAL AND NON-DIGITAL DATA DURING RESEARCH.<sup>7</sup></i></p> <p><i>REFER TO INSTITUTION-SPECIFIC POLICIES REGARDING BACKUP PROCEDURES WHEN APPROPRIATE.</i></p>	<p>Digital documents will be backed up on BIOMED L-Drive for large volume storage (secure KU Leuven facility for archiving). Paper documents will be digitalized or scanned and backed up on the same BIOMED L-Drive.</p>

<sup>7</sup> Source: Ghent University Generic DMP Evaluation Rubric: <https://osf.io/2z5g3/>

<p>Is there currently sufficient storage &amp; backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.</p>	<p><input type="checkbox"/> Yes  <input checked="" type="checkbox"/> No  If yes, please specify concisely:   If no, please specify:  Sufficient storage space will be purchased and will be available when needed.</p>
<p>How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?</p> <p><i>CLEARLY DESCRIBE THE MEASURES (IN TERMS OF PHYSICAL SECURITY, NETWORK SECURITY, AND SECURITY OF COMPUTER SYSTEMS AND FILES) THAT WILL BE TAKEN TO ENSURE THAT STORED AND TRANSFERRED DATA ARE SAFE. <sup>7</sup></i></p>	<p>Data, and results of analyses are de-identified, stored and processed in coded form. This code contains no elements that could lead to identification. The codes will be kept in a separate and encrypted file, which is only in the possession of the promoter(s) and the students involved.</p> <p>Data are stored via :</p> <ul style="list-style-type: none"> <li>- A secure web-based application (Research Electronic Data Capture, REDCap), running on the protected servers of the KU Leuven,</li> <li>- The University Hospital and the BIOMED L-Drive for large volume storage (secure KU Leuven facility for archiving). KU Leuven network drives (e.g. L-drive) are incorporated within secured KU Leuven environments, are password-protected (including smartphone-based multi-factor identification) and are only accessible by registered collaborating researchers. Only the PI can request access to the network drive for study personnel.</li> <li>- The researcher's OneDrive, linked to their KU Leuven account. The personal nature of OneDrive ensures that files that are not explicitly shared, are not accessible to anyone else. As such, a separate folder will be created and encrypted for the current dataset. Only the PI and registered collaborating researchers will have access to this folder via the encryption key.</li> </ul>
<p>What are the expected costs for data storage and backup during the research project? How will these costs be covered?</p>	<p>The KU Leuven OneDrive is free of charge for students and personnel of KU Leuven. The Department of Neurosciences provides our research group (Center for Developmental Psychiatry) with an L-drive. As such, costs will be covered by the department. Any additional costs regarding storage and backup will be covered by the FWO bench fee of the PhD student.</p>

### 5. Data Preservation after the end of the Research Project

Which data will be retained for at least five 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...).	After finishing data collection, all digitally generated data will be archived for at least 10 years after which it will be re-evaluated whether it is considered useful to store the data for a longer period of time.
Where will these data be archived (stored and curated for the long-term)?	These data will be stored on the KU Leuven K-drive for archive storage. This restricted area can only be accessed by the involved researchers and the unit's data manager.
What are the expected costs for data preservation during the expected retention period? How will these costs be covered?	The yearly cost for network share storage on the K-drive is €11.384 euro per 100 Gb. The Group Biomedical Sciences sponsors 50% of this cost price. So the price paid by the lab will be: €5.69. For the amount of data we want to store (max. 6000 Gb), this will be max. €341.4 euros.

## 6. Data Sharing and Reuse

<p>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.</p> <p><i>NOTE THAT 'AVAILABLE' DOES NOT NECESSARILY MEAN THAT THE DATA SET BECOMES OPENLY AVAILABLE, CONDITIONS FOR ACCESS AND USE MAY APPLY. AVAILABILITY IN THIS QUESTION THUS ENTAILS BOTH OPEN &amp; RESTRICTED ACCESS. FOR MORE INFORMATION:</i> <a href="https://wiki.surfnet.nl/display/STANDARDS/INFO-EU-REPO/#INFOEUREPO-ACCESSRIGHTS">HTTPS://WIKI.SURFNET.NL/DISPLAY/STANDARDS/INFO-EU-REPO/#INFOEUREPO-ACCESSRIGHTS</a></p>	<p><input checked="" type="checkbox"/> Yes, in an Open Access repository  <input checked="" type="checkbox"/> Yes, in a restricted access repository (after approval, institutional access only, ...)  <input type="checkbox"/> No (closed access)  <input type="checkbox"/> Other, please specify:</p> <p>Published data and associated scripts will be available in the form of publications or other dissemination of scientific work. All data will be pseudonymised when disseminated. More data can be made available or shared after permission of the PI (Prof. dr. Bart Boets).</p> <p>Non-published data will remain confidential until a final decision on publication of the data has been taken.</p>
<p>If access is restricted, please specify who will be able to access the data and under what conditions.</p>	<ul style="list-style-type: none"> <li>- Direct colleagues can reuse the data after consultation and approval of the PI (Prof. dr. Bart Boets).</li> <li>- External researchers have to motivate why they want access to the data and need approval of the PI (Prof. dr. Bart Boets). External researchers are required to give credit to the data creators.</li> </ul>
<p>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.</p>	<p><input checked="" type="checkbox"/> Yes, privacy aspects  <input type="checkbox"/> Yes, intellectual property rights  <input type="checkbox"/> Yes, ethical aspects  <input type="checkbox"/> Yes, aspects of dual use  <input type="checkbox"/> Yes, other  <input type="checkbox"/> No</p> <p>If yes, please specify:          We work with sensitive and confidential data (e.g., name, sex, age, physiological data, health-related data etc.)</p>
<p>Where will the data be made available? If already known, please provide a repository per dataset or data type.</p>	<p>A specific repository will be chosen based on the publication strategy, as some journals request specific repositories.</p>
<p>When will the data be made available?</p> <p><i>THIS COULD BE A SPECIFIC DATE (DD/MM/YYYY) OR AN INDICATION SUCH AS 'UPON PUBLICATION OF RESEARCH RESULTS'.</i></p>	<p>The data will be made available upon publication of the research results.</p>

<p>Which data usage licenses are you going to provide? If none, please explain why.</p> <p><i>A DATA USAGE LICENSE INDICATES WHETHER THE DATA CAN BE REUSED OR NOT AND UNDER WHAT CONDITIONS. IF NO LICENCE IS GRANTED, THE DATA ARE IN A GREY ZONE AND CANNOT BE LEGALLY REUSED. DO NOTE THAT YOU MAY ONLY RELEASE DATA UNDER A LICENCE CHOSEN BY YOURSELF IF IT DOES NOT ALREADY FALL UNDER ANOTHER LICENCE THAT MIGHT PROHIBIT THAT.</i></p> <p><i>EXAMPLE ANSWER: E.G. "DATA FROM THE PROJECT THAT CAN BE SHARED WILL BE MADE AVAILABLE UNDER A CREATIVE COMMONS ATTRIBUTION LICENSE (CC-BY 4.0), SO THAT USERS HAVE TO GIVE CREDIT TO THE ORIGINAL DATA CREATORS."</i><sup>8</sup></p>	<p>Data from the project that can be shared will be made available under a Creative Commons Attribution-NonCommercial license (CC BY-NC 4.0), so that users have to give credit to the original data creators and may not use the material for commercial purposes.</p>
<p>Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, please provide it here.</p> <p><i>INDICATE WHETHER YOU INTEND TO ADD A PERSISTENT AND UNIQUE IDENTIFIER IN ORDER TO IDENTIFY AND RETRIEVE THE DATA.</i></p>	<p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No  If yes:  Depending on the data repository and data type that would be made available, a unique identifier will be added to the data set.</p>
<p>What are the expected costs for data sharing? How will these costs be covered?</p>	<p>Most data repositories are free of charge. Therefore, no costs are expected for data sharing.</p>

## 7. Responsibilities

Who will manage data documentation and metadata during the research project?	The PhD researcher (Xena Serifova) will manage data documentation and metadata, under supervision of the PI (Prof. dr. Bart Boets).
Who will manage data storage and backup during the research project?	Data storage and back up will be managed by the PhD researcher (Xena Serifova), under supervision of the PI (Prof. dr. Bart Boets) and with delegation to the dedicated data manager of the Psychiatry Research Group (dr. Martien Wampers).
Who will manage data preservation and sharing?	The PI (Prof. dr. Bart Boets) will be responsible for ensuring data preservation and sharing, with delegation to the dedicated data manager of the Psychiatry Research Group (dr. Martien Wampers).
Who will update and implement this DMP?	The PhD researcher (Xena Serifova) will update and implement this DMP, under supervision of the PI (Prof. Dr. Bart Boets).

<sup>8</sup> Source: Ghent University Generic DMP Evaluation Rubric: <https://osf.io/2z5g3/>

