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	*Bart Boets - **Promotor** (0000-0002-4718-667X)*
Contributor name(s) (+ ORCID) & roles	*Stephanie Van der Donck – **Post-doc** (0000-0001-8838-4480)* *Laura Tibermont – **PhD student** (0000-0002-2609-7133)* *Simone Shamay-Tsoory – **co-promotor** (0000-0003-1088-5212)*
Project number[1] & title	*KU Leuven Research Portal:* - *3M220376; Boosting social attunement in autism via interpersonal sensorimotor synchronization therapy* - *3M220478; Enhancing social attunement in autism via interpersonal sensorimotor synchronization therapy combined with single-dose intranasal oxytocin administration* - *3M220692; Enhancing social attunement in autism via combined oxytocin and interpersonal sensorimotor synchronization therapy*
Funder(s) GrantID[2]	*Flanders Research Foundation (FWO), Belgium:* - *12C9723N* - *G023923N*
Affiliation(s)	☑ *KU Leuven* ☐ Universiteit Antwerpen ☐ Universiteit Gent ☐ Universiteit Hasselt ☐ Vrije Universiteit Brussel ☐ Other: Provide ROR[3] identifier when possible:

[1] "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.

[2] 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.

[3] Research Organization Registry Community. https://ror.org/

Please provide a short project description	*Humans are social beings by excellence. Almost all of our waking lives are spent in close company of others. Emotions, thoughts and physiological processes (e.g. heart rate, arousal) can therefore be easily transmitted from one individual to another, either by conscious verbal communication, or by unconscious and still poorly understood bodily signals (i.e. biobehavioral synchrony). Paradoxically, however, socio-affective neuroscience approaches typically examine individual humans in isolation, presenting social signals on a computer screen or via headphones. Yet, this is fundamentally not how social interaction works, as social interaction is intrinsically dynamic and interactive. In the current project, we will compare the biobehavioral attunement of 8-to-12-year-old children with autism spectrum disorder (ASD), who are characterized by severe difficulties in communication and interaction, with that of matched typically developing controls, using dual multimodal biobehavioral measurements throughout a series of innovative real-life dyadic interaction paradigms.* *Project 3M220376, funded with 12C9723N, additionally focusses on the unique effect of a single-session interpersonal sensorimotor synchronization therapy on biobehavioral synchrony measures in ASD.* *Project 3M220478, funded with G023923N, additionally focusses on the added, synergetic effect of a single-session interpersonal sensorimotor synchronization therapy combined with a single dose intranasal oxytocin administration on biobehavioral synchrony measures in ASD.*

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[4].

[4]Add rows for each dataset you want to describe.

				ONLY FOR DIGITAL DATA	*ONLY FOR DIGITAL DATA*	*ONLY FOR DIGITAL DATA*	*ONLY FOR PHYSICAL DATA*
Dataset Name	Description	New or Reused	Digital or Physical	Digital Data Type	Digital Data Format	Digital Data Volume (MB, GB, TB)	Physical Volume
Recruitment _log	*During the intake visit, participant's eligibility will be assessed based on inclusion and exclusion criteria*	☒ Generate new data ☐ Reuse existing data	☒ Digital ☐ Physical	☒ Observational ☐ Experimental ☐ Compiled/ aggregated data ☐ Simulation data ☐ Software ☐ Other ☐ NA	☐ .por ☐ .xml ☐ .tab ☒ .csv ☒ .pdf ☐ .txt ☐ .rtf ☐ .dwg ☐ .tab ☐ .gml ☒ other: .xlsx ☐ NA	☒ < 100 MB ☐ < 1 GB ☐ < 100 GB ☐ < 1 TB ☐ < 5 TB ☐ < 10 TB ☐ < 50 TB ☐ > 50 TB ☐ NA	*NA*
ICFs	*Informed consent forms*	☒ Generate new data	☒ Physical	☒ Observational	☒ NA	☒ < 100 MB	*NA*
SUBJECT_ID_log	*Names of included participants will be pseudonymized using codes.*	☒ Generate new data	☒ Digital	☒ Observational	☒ .csv ☒ .pdf ☒ other: .xlsx	☒ < 100 MB	*NA*
Demographics	*During the intake visit, data regarding, SUBJECT_ID, age, gender, concomitant medication or therapy will be collected.*	☒ Generate new data	☒ Digital	☒ Observational	☒ .csv ☒ .pdf ☒ other: .xlsx	☒ < 100 MB	*NA*

Questionnaires	*During the intake visit, the following interviews/questionnaires will be completed:* *- Wechsler Intelligence Scale for Children-V (WISC-V)* *- Social Responsiveness Scale (SRS)* *- Screen for Child Anxiety Related Disorders (SCARED)* *- Attachment Style Questionnaire (ASQ)* *- 3x3 Attachment questions*	☒ Generate new data	☒ Digital	☒ Observational	☒ .csv ☒ .pdf ☒ other: .xlsx	☒ < 100 MB	*NA*
Dual_ET	*During the social interaction paradigms, measures of dual eye-tracking will be collected from the participant as well as from the researcher*	☒ Generate new data	☒ Digital ☒ Physical	☒ Observational	☒ .csv ☒ .pdf ☒ other: .xlsx	☒ < 100 GB	*During the study visit, annotations regarding data collection (e.g. defect eye-tracker, participant movements, …) will be made on a designated worksheet (on paper)*
Dual_neurophysiology	*During the social interaction paradigms, measures of* *- Dual encephalography (EEG)* *- Dual electrocardiography (ECG)* *- Dual skin conductance* *will be collected from the participant as well as from the researcher*	☒ Generate new data	☒ Digital ☒ Physical	☒ Observational	☒ .bdf	☒ < 10 TB	*During the study visit, annotations regarding data collection (e.g. defect electrode, participant movements, …) will be made on a designated worksheet (on paper)*
Biological_samples	*During the study visit, participants will provide 3 saliva samples for hormonal assessment (i.e. endogenous oxytocin and cortisol levels)*	☒ Generate new data	☒ Digital ☒ Physical	☒ Experimental	☒ .csv ☒ .pdf ☒ other: .xlsx	☒ < 100 MB	*Tubes will be labelled with SUBJECT ID, date, and timepoint*
Video	*During the study visit, participants will be video recorded during the social interaction paradigms as well as during the sensorimotor synchronization session*	☒ Generate new data	☒ Digital	☒ Observational	☒ other: .mp4	☒ < 10 TB	*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[4] (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.* *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).*	
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.	*NA*
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.	☒ *Yes, human subject data* ☐ Yes, animal data ☐ Yes, dual use ☐ No If yes, please describe: *Only information relevant for the project's research questions will be collected. All measures will be collected from children, with and without a formal autism spectrum disorder (ASD) diagnosis. These sensitive personal data will be de-identified and pseudonymized, and will be stored and processed in coded form.*

[4] These data are generated by combining multiple existing datasets.

Will you process personal data[5]? If so, briefly describe the kind of personal data you will use. Please refer to specific datasets or data types when appropriate. If available, add the reference to your file in your host institution's privacy register.	☒ Yes ☐ No If yes: - Short description of the kind of personal data that will be used: *The project involves the collection of a broad range of multimodal data, including participant characteristics (phenotypical information, questionnaires, clinical ratings, …), dual (neuro)physiology recordings (pupillometry, skin conductance, heart rate, EEG), dual eye-tracking data, video and audio recordings of child and experimenter during interactions, behavioral data, saliva samples, etc. This 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.* - Privacy Registry Reference: *KU Leuven PRET: G-2023-6502* *S nummer: S67699*
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.	☐ Yes ☒ No If yes, please comment:
Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements, research collaboration agreements)?	☐ Yes ☒ No If yes, please explain:

[5] See Glossary Flemish Standard Data Management Plan

If so, please explain to what data they relate and what restrictions are in place.	
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 to what data they relate and which restrictions will be asserted.	☐ Yes ☒ No If yes, please explain:

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).	*We will create a separate folder on the KU Leuven L-drive (xxx) that contains the following information:* ***1. Readme.xlsx**: In this document, the first tab will contain a table of content, furthermore we will note which researchers were involved in the collection of the data (e.g., master students), information regarding the ethical approval (reference number & institution), a short overview of the respective study experiments or questionnaires.* ***2. visit_overview.xlsx**: In this document, we will provide pseudonymized information about all participants that were enrolled in the study, visit dates, and whether they completed all experiments/questionnaires or dropped-out/whether there was equipment failure.* ***3. Folder with all the study documents**: Ethical application and approval, study protocol, study manual with the instructions that were given to participants, informed consent, as well as the PDF of all questionnaires.* ***4. Pre-processing documents:** Comprise the very raw data (pseudonymized) and a manual with instructions to clean and (pre-)process the data. These documents will never contain sensitive (identifiable) participants information such as names, contact details, etc.*

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. *REPOSITORIES COULD ASK TO DELIVER METADATA IN A CERTAIN FORMAT, WITH SPECIFIED ONTOLOGIES AND VOCABULARIES, I.E. STANDARD LISTS WITH UNIQUE IDENTIFIERS.*	☐ Yes ☒ No If yes, please specify (where appropriate per dataset or data type) which metadata standard will be used: If no, please specify (where appropriate per dataset or data type) which metadata will be created: *The metadata standard which can be found via www.FAIRsharing.org will not be used. However, within the lab, Readme files can be consulted to gather all relevant information. Regarding data sharing repositories, metadata will be provided according to guidelines provided by the respective platforms.*

4. Data Storage & Back-up during the Research Project	
Where will the data be stored?	*All data collected throughout the project is documented via a secure web-based application (Research Electronic Data Capture, REDCap), running on the protected servers of the University Hospital. Data will be transferred to the researcher's OneDrive, linked to their KU Leuven account, for data analysis. The promotor will be given access to these files, to ensure data access at all times.* *Upon finalizing data processing, data will be stored on BIOMED K-Drive (secure KU Leuven facility for archiving) for at least 10 years (crf. Infra).* *Paper data will be stored in the office of the primary researcher, at KU Leuven, in a locked drawer or cupboard that can only be accessed by the researcher.*

How will the data be backed up? *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.*[6] *REFER TO INSTITUTION-SPECIFIC POLICIES REGARDING BACKUP PROCEDURES WHEN APPROPRIATE.*	*Digital documents will be digitally backed up on BIOMED L-Drive for large volume storage (secure KU Leuven facility for archiving).* *Paper documents will be scanned and digitally backed up on BIOMED L-Drive for large volume storage (secure KU Leuven facility for archiving).*
Is there currently sufficient storage & 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.	☒ Yes ☐ No If yes, please specify concisely: *All data, except for the video recordings, will stored on the KU Leuven One Drive and L-drive. The video data will be stored on the secured KU Leuven ManGo platform. In case storage space should not be sufficient, additional space will be purchased.* If no, please specify:

[6] Source: Ghent University Generic DMP Evaluation Rubric: https://osf.io/2z5g3/

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons? *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.* [6]	*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.* *The 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.*
What are the expected costs for data storage and backup during the research project? How will these costs be covered?	*The OneDrive (2TB) comes 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 project-related funding (12C9723N and G023923N).*

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...).	*All digitally generated data, as well as all biological material, will be archived for minimally 10 years after study completion, in line with the KU Leuven RDM policy. This ensures the possibility of reuse of these collected data within our own lab.*

Where will these data be archived (stored and curated for the long-term)?	*These data will be stored at a restricted area of the K: archive drive, which can only be accessed by the involved researchers and the unit's data manager. All drives are managed by KU Leuven personnel, bound by the KU Leuven general and ICT codes of conduct.*
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.*

6. 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. *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 & RESTRICTED ACCESS. FOR MORE INFORMATION: HTTPS://WIKI.SURFNET.NL/DISPLAY/STANDARDS/INFO-EU-REPO/#INFOEUREPO-ACCESSRIGHTS*	☐ Yes, in an Open Access repository ☒ Yes, in a restricted access repository (after approval, institutional access only, …) *Only 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 responsible person (prof. Bart Boets). Non-published data will remain confidential until a final decision on publication of the data has been taken.* ☐ No (closed access) ☐ Other, please specify:
If access is restricted, please specify who will be able to access the data and under what conditions.	*Data can be reused by direct colleagues, after consultation and approval of the head of CDP (prof. bart Boets). External researchers will have to motivate why they want access to the data. When this data it is being used by other researchers, they are required to give credit to the original data creators.*
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 ☐ Yes, intellectual property rights ☐ Yes, ethical aspects ☐ Yes, aspects of dual use ☐ Yes, other ☐ No If yes, please specify: *We work with confidential data (e.g., name, sex, age, physiological data, etc.)*
Where will the data be made available? If already known, please provide a repository per dataset or data type.	*A specific repository will be chosen based on the publication strategy, as some journals request specific repositories.*

When will the data be made available? *This could be a specific date (dd/mm/yyyy) or an indication such as 'upon publication of research results'.*	*Upon publication of the research results.*
Which data usage licenses are you going to provide? If none, please explain why. *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.* *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."* [7]	*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.*
Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, please provide it here. *Indicate whether you intend to add a persistent and unique identifier in order to identify and retrieve the data.*	☒ Yes ☐ No If yes: *Depending on the data repository and the type of data that would be made available, a unique identifier will be added to the data set*
What are the expected costs for data sharing? How will these costs be covered?	*Given that most data repositories are free of charge, no costs are expected for data sharing.*

[7] Source: Ghent University Generic DMP Evaluation Rubric: https://osf.io/2z5g3/

7. Responsibilities	
Who will manage data documentation and metadata during the research project?	*The PhD researcher (Laura Tibermont) and postdoctoral researcher (Stephanie Van der Donck) will be responsible for data documentation & metadata, under supervision of the PI (Bart Boets).*
Who will manage data storage and backup during the research project?	*Data management, storage and back up will be performed by the PhD researcher (Laura Tibermont) and postdoctoral researcher (Stephanie Van der Donck), under supervision of the PI (Bart Boets) and with delegation to the dedicated data manager Dr. Wampers of the Psychiatry Research Group.*
Who will manage data preservation and sharing?	*The PI (Bart Boets) will be responsible for ensuring data preservation and sharing, with delegation to the dedicated data manager Dr. Wampers of the Psychiatry Research Group.*
Who will update and implement this DMP?	*The PhD researcher (Laura Tibermont) and postdoctoral researcher (Stephanie Van der Donck) will be responsible for updating and implementing this DMP, under supervision of the PI (Bart Boets).*