

Data management as part of good research practice

Data Management Plan – Why write one and how to do it

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Data management as part of good research practice

- Data management in central documents of good research practice
- How good data management is related to ethics
- Two examples
- Dilemma and caution from an ethics perspective

General rules of good research practice

(Swedish Research Council (2017): *Good research practice*, p. 10)

- 1) You shall tell the truth about your research.
- 2) You shall consciously review and report the basic premises of your studies.
- 3) You shall openly account for your methods and results.
- 4) You shall openly account for your commercial interests and other associations.
- 5) You shall not make unauthorised use of the research results of others.
- 6) You shall keep your research organised, for example through documentation and filing.
- 7) You shall strive to conduct your research without doing harm to people, animals or the environment.
- 8) You shall be fair in your judgement of others' research.

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Data Practices and Management

(ALLEA: *The European Code of Conduct for Research*, section 2.5)

Researchers, research institutions and organisations

- ensure appropriate stewardship and curation of all data and research materials, including unpublished ones, with secure preservation for a reasonable period.
- ensure access to data is as open as possible, as closed as necessary, and where appropriate in line with the FAIR Principles (Findable, Accessible, Interoperable and Re-usable) for data management.
- provide transparency about how to access or make use of their data and research materials.
- acknowledge data as legitimate and citable products of research.
- ensure that any contracts or agreements relating to research outputs include equitable and fair provision for the management of their use, ownership, and/or their protection under intellectual property rights.

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Ethical underpinnings for good data management

- Condition for the review of research, the validity of results, robustness of science and the generation of knowledge
- The reputation and credibility of science
- Responsible use of resources
- Protection from accusations of misconduct

Two examples

- The Uppsala University study on fish and microplastics
- The Göteborg University study on children with MBD (DAMP/ADHD)

The Uppsala University study

- Microplastics affecting fish larvae and fry, published in *Science*
- Results questioned, accusation of misconduct

Grounds for criticism:

- Lack of ethical approval for animal experimentation
 - Results judged to be incompatible with methods described
 - Lack of original data
- Researchers found guilty of research misconduct

The Göteborg University study

- Children with neuropsychiatric conditions, and their families
- Results questioned, access to data requested but denied

Arguments against giving access:

- Ethical guidelines
- Research subjects' privacy
- Negative impact on research

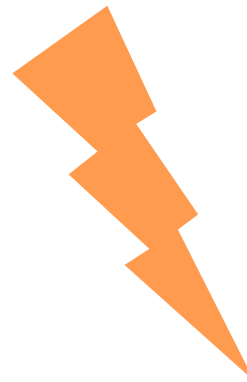
Arguments for giving access:

- Access to official documents
- Data is University property
- Law trumps ethical guidelines
- Restricted access possible

- Data was destroyed, researchers and university representatives found guilty of malpractice

The ethical dilemma

Openness



Privacy protection

A well-considered balance must be struck

Cautionary notes on personal data

- Only make promises you are able to keep.
- Protect your data from unauthorized access.
- Learn what personal data is and when such data is "sensitive", note that data taken together may turn it into personal data, and remember that pseudonomized data is personal data.

Suggested resources

- Swedish Research Council (2017): [*Good practice in research*](#)
- ALLEA: [The European Code of Conduct for Research Integrity](#)
- [CODEX](#)
- The Research Support Office [web pages on ethics](#), or contact us at etik@fs.su.se