Open Research Data

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Overview

16:00 - 16:30 | ORD Groundwork
What type of RD do you deal with?
Should you make research data open?

16:30 - 17:00 | Finding & Using ORD
Which ORD could you use?

17:00 - 17:15 | Break

17:15 - 17:45 | Making ORD
Which ORD could you contribute?

17:45 - 18:00 | Wrap-up: You and ORD

ORD Groundwork

Defining Research Data

… any information that has been collected, observed, generated or created to produce research insights

What types of RD do you deal with?

Defining Research Data

… any information that has been collected, observed, generated or created to produce research insights

- Data (narrowly defined)
  a. data files
  b. documents, spreadsheets
  c. database contents (video, audio, text, images)
  d. notebooks, notes, diaries
  e. audio recordings, videotapes
  f. photographs, films
  g. test responses
  h. slides, artefacts, specimens, samples
  i. collections of digital outputs

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- Materials
    a. contents of an application (input, output, logfiles for analysis software, simulation software, schemas)
    b. standard operating procedures and protocols
    c. questionnaires, transcripts, codebooks
    d. methodologies and workflows

- Analyses
    a. models, algorithms, scripts

Defining Research Data

Quantitative

... concepts expressed as measurable values, counts, numbers

... *how many, how much, what proportion*

Qualitative

... concepts expressed as belonging to a category or type, having a certain nature

... *what type, how*

Defining Research Data

Quantitative

Qualitative

Defining Research Data

Raw

... as it occurred

... *paper-pencil responses to questionnaire, voice recording of court case*

Processed

... handled

... *digitized, anonymized, transformed*

Research Data is the Basis of Research

Defining Open Research Data

… any information that has been collected, observed, generated or created to produce research insights

… and is made available for secondary use

Making Research Data Open
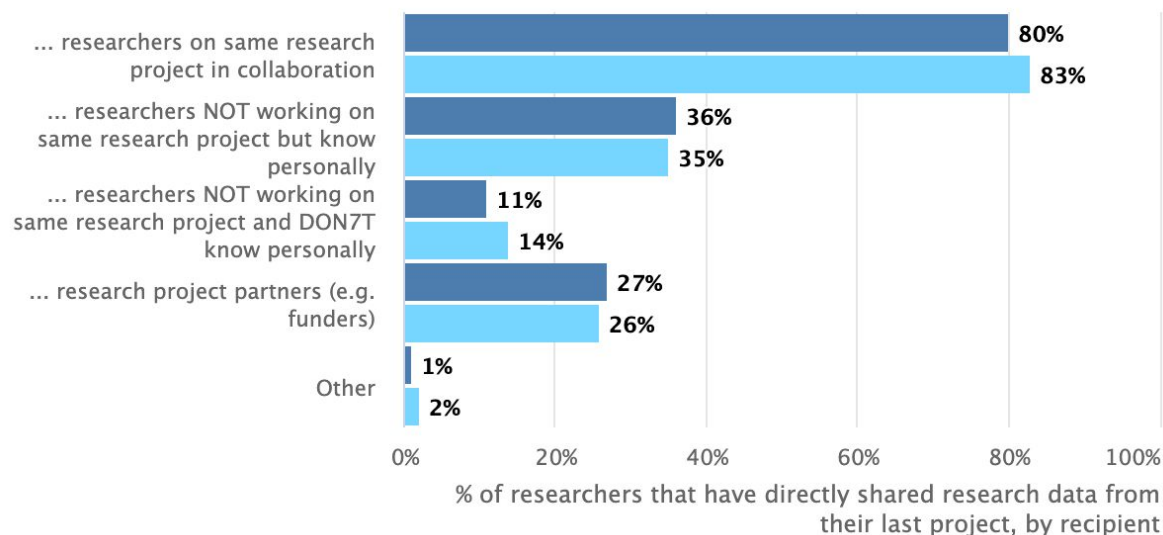
https://forms.gle/QRUkZ92PCDYFtcqXA

Making Research Data Open

Sharing of research data: % of researchers that have directly shared research data from their last project, by recipient

Reference dates: 2016 and 2018

... researchers on same research project in collaboration — 80% / 83%

... researchers NOT working on same research project but know personally — 36% / 35%

... researchers NOT working on same research project and DON7T know personally — 11% / 14%

... research project partners (e.g. funders) — 27% / 26%

Other — 1% / 2%

% of researchers that have directly shared research data from their last project, by recipient

2018 (n = 506)   2016 (n = 699)

Should you Make Research Data Open?

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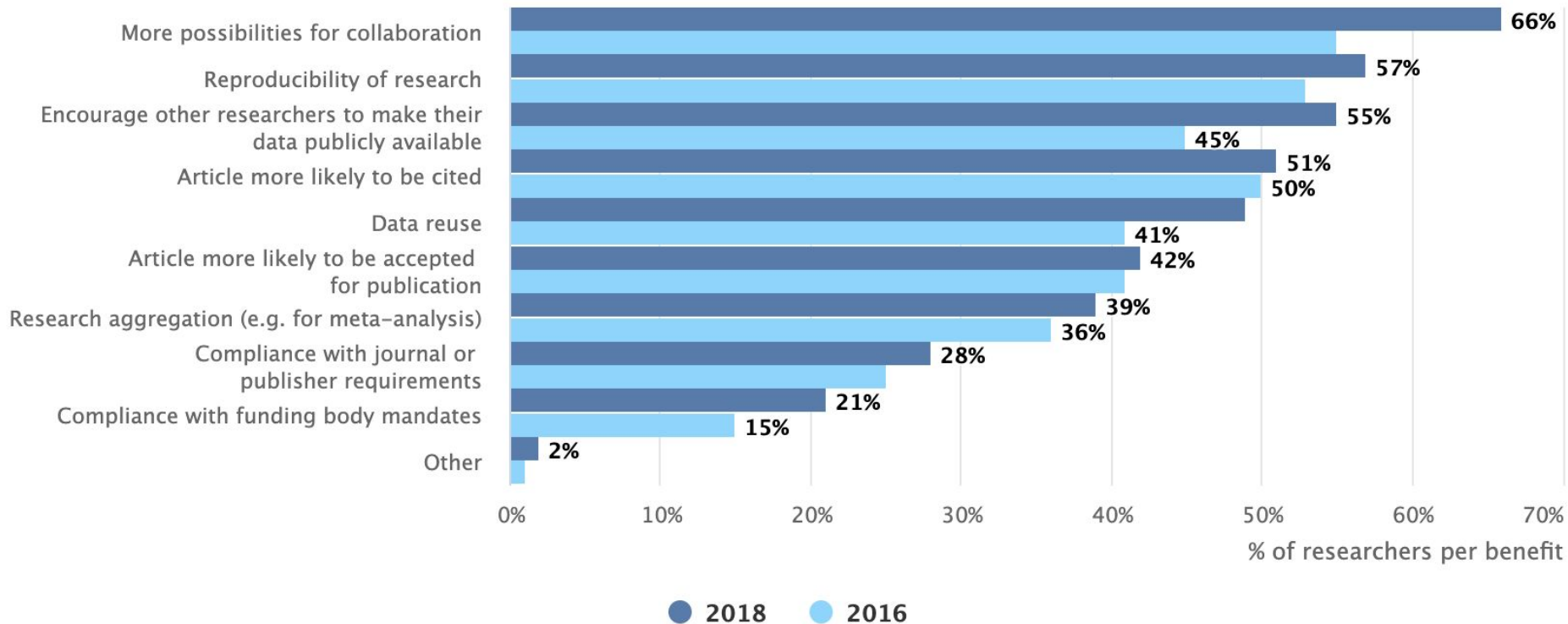**Pro**

- Personal benefit: type of publication
- Research benefit:
    - Using data that already exists
        - Save research resources
        - Protect participants
    - Comparing existing data with new data
        - Longitudinal
        - Cross-sectional
- Public benefit:
    - Data paid for by public funding
- Moral benefit:
    - Sharing is caring
- Researcher's Duty
- UNESCO Recommendation on Open Science, 2021

Benefits of sharing research data: % of researchers per benefit

Reference dates: 2016 and 2018

Benefit	2018	2016
More possibilities for collaboration	66%	
Reproducibility of research	57%	
Encourage other researchers to make their data publicly available	55%	45%
Article more likely to be cited	51%	50%
Data reuse		41%
Article more likely to be accepted for publication	42%	
Research aggregation (e.g. for meta–analysis)	39%	36%
Compliance with journal or publisher requirements	28%	
Compliance with funding body mandates	21%	15%
Other	2%	

% of researchers per benefit

● 2018   ● 2016

Should you Make Research Data Open?
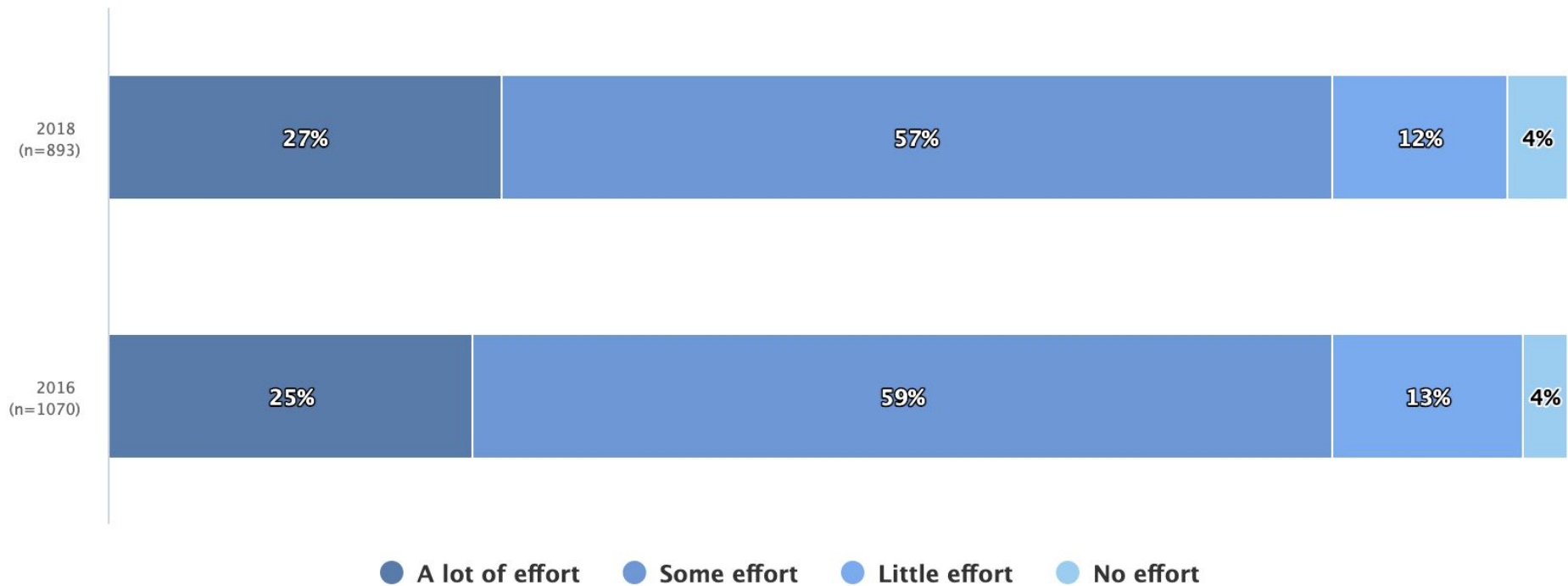
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Con

- Sensitivity of data
- Intervention into the research process
- Costs resources, too

Making research data available: Effort required to make research data re–usable by others, % of researchers per amount of effort

Resource dates: 2016 and 2018

	A lot of effort	Some effort	Little effort	No effort
2018 (n=893)	27%	57%	12%	4%
2016 (n=1070)	25%	59%	13%	4%

Legend: ● A lot of effort ● Some effort ● Little effort ● No effort

Finding & using ORD

(Open) Research Data live in Repositories

… (digital) storage space for data

Run by

- Research institutions (universities, libraries)
- Research outlets (journals)
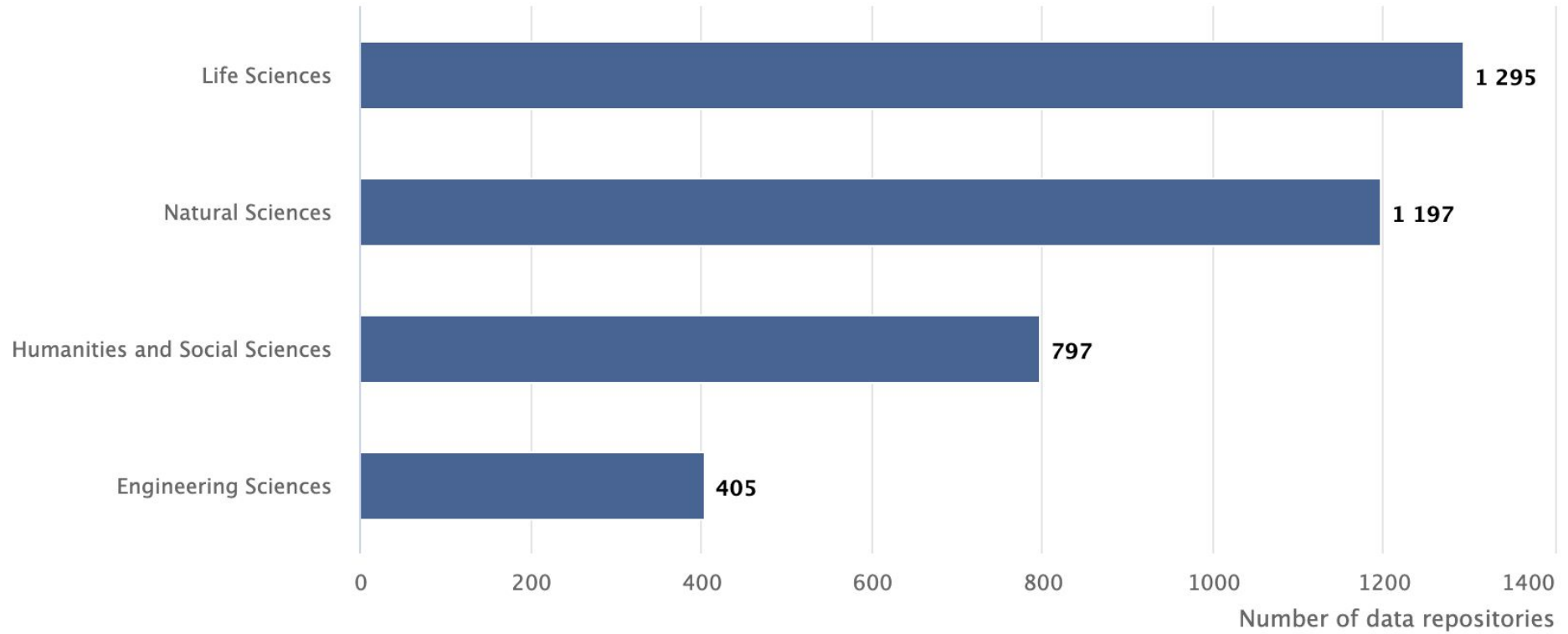- Professional organizations or societies

Examples:

Zenodo, Open Science Framework, SocArxive, Google Data Search, Science Open, Open Aire, Open Knowledge Maps, Research Data Centers (Forschungsdatenzentren)

Number of data repositories, by subject

Source: re3data.org – Reference date: October 21st, 2019

https://tinyurl.com/3nfa3xxh

(Open) Research Data live in Repositories

Which (O)RD could you use?

Using (Open) Research Data

"we are no friends of 'data free-riding,' by which we mean the unfortunate tendency of some scientists to completely rely on data generated by others", AY2020, p. 3

Alós-Ferrer, C., & Yechiam, E. (2020). At the eve of the 40th anniversary of the Journal of Economic Psychology: Standards, practices, and challenges. Journal of Economic Psychology, 80, 102309. https://doi.org/10.1016/j.joep.2020.102309

Using (Open) Research Data

... give credit where credit is due

- Reference data source and/or original publication
- Invite primary data authors to join your research
- Change the way we cite – inherit citations for reused data (Schönbrodt, 2019)

Making ORD

Making ORD: Informed Consent

… about how the data will be handled

- **necessary according to the GDPR**
    - Lower hurdles for anonymously given or anonymized data
    - Explicit consent necessary
    - Right to withdraw (limited once data is anonymized)
- **required from a perspective of research ethics**
- **but may interfere with the research process**

Making ORD: Contextualization

... outline the scope in which the data was generated and handled

- **Project structure** (e.g., research question, research design)
- **Project details** (e.g., research funders, members of the research team and professional background)
- **Method** and the instruments/ materials
- **Procedure** (e.g., how were participants recruited, who carried out the data collection, location and circumstances of the data collection, disturbances during the data collection)
- Details on **participants** (e.g., status, function, socio-demographic data, inclusion of respondents in the research process through sharing the results with them)
- Data for **connecting data points,** e.g., chronological order in the case of several sessions with the same person
- **Anonymization** procedure
- **Transcription** and **transformation** rules, data **exclusions**

Making ORD: Template

https://bit.ly/ordtemplate

Data

https://bit.ly/ord0922

Making ORD: Sharing on a Repository

https://osf.io/va2fs/

Which (O)RD could you contribute?

Wrap up: You and (O)RD

Opportunities for you and (O)RD

Consider if you can:

- Share data from an existing project (remember GDPR)
- Make a data management plan for a new project
- Use existing data for your research

SSOAR

Open Access Repository
www.ssoar.info

Opening up and Sharing Data from Qualitative Research: A Primer

Steinhardt, Isabel; Fischer, Caroline; Heimstädt, Maximilian; Hirsbrunner, Simon David; Ikiz-Akinci, Dilek; Kressin, Lisa; Kretzer, Susanne; Möllenkamp, Andreas; Porzelt, Maike; Rahal, Rima-Maria; Schimmler, Sonja; Wilke, René; Wünsche, Hannes

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