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Welcome! :-)

Please turn off your microphones and cameras.

We will start shortly.

Session will be recorded.

Introduction to Open Science and Research Integrity, Open for you! 18 January 2024

Univerzita Karlova

Universität Heidelberg
Zukunft seit 1386

Panthéon-Assas Université
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Introduction to Open Science and Research Integrity

Milan Janíček (CU)
Léa Gonnet (SU)

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- 4EU+ is a transnational strategic university association.
- Vision: to create one comprehensive research-intensive European University through a new quality of cooperation in
  - teaching
  - education
  - research
  - administration
- For more: https://4euplus.eu/

Open for you!

- 3rd series about Open Science – (01-07/2024)
- 11 webinars:
  - responsible publishing
  - research data management
  - advanced Open Science practices
  - citizen science
  - science evaluation
- Introduction of topics & interviews with experts
- Current series: https://4euplus.eu/4EU-768.html, materials from previous series here
- Do you see  in this presentation? → There will be specialized webinar about this topic!

Question for you:

Which **word** comes into your mind in relation to **open science**?

Please answer on wooclap

Open Science

- Open Science is the **practice** of science in such a **way** that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable **reuse, redistribution and reproduction of the research** and its underlying data and methods.

project FOSTER definition

Open Science

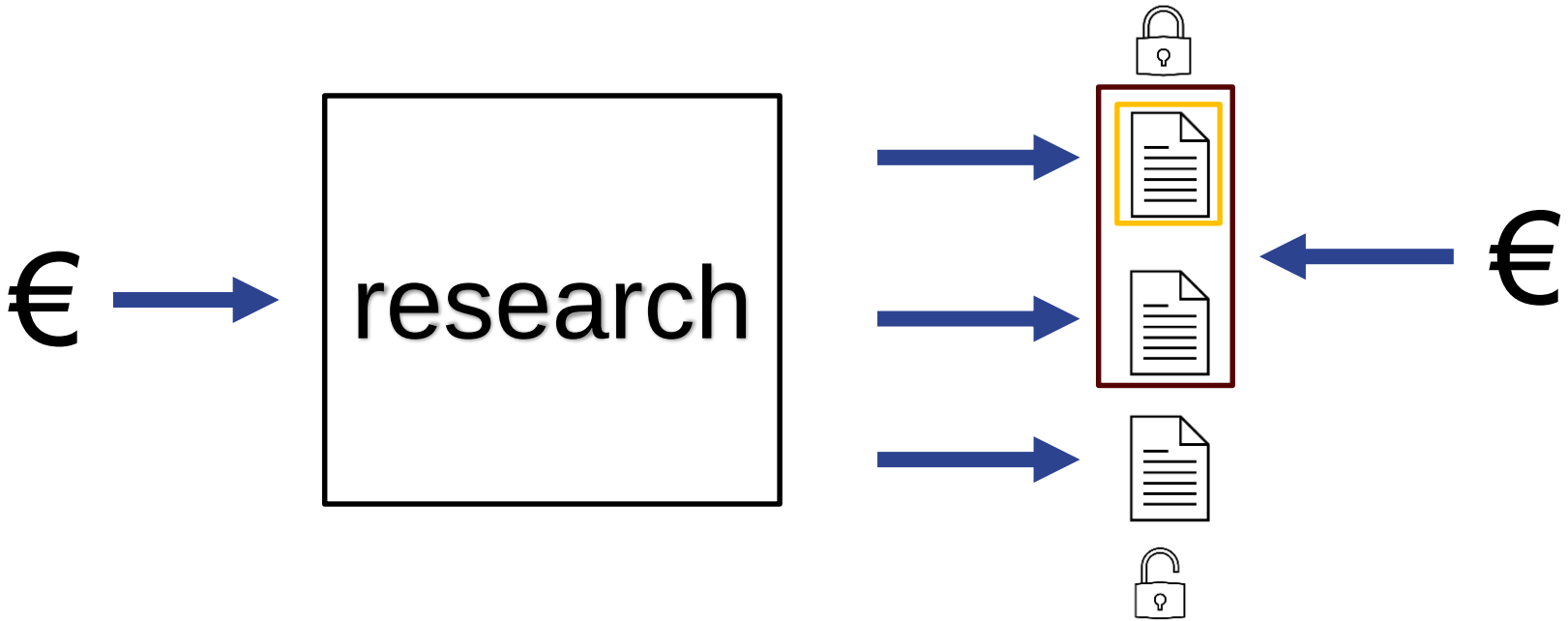
- Goals:
  - transparency (openness)
  - reliability / reproducibility
  - reusability
  - societal impact (trustworthiness, communication)
    - including Citizen Science
  - and effective use of public money...

Open Access (OA)

- Is a **publication model** that seeks to achieve **immediate**, **free**, **permanent** and **independent** online access to the results of publicly funded science and research.

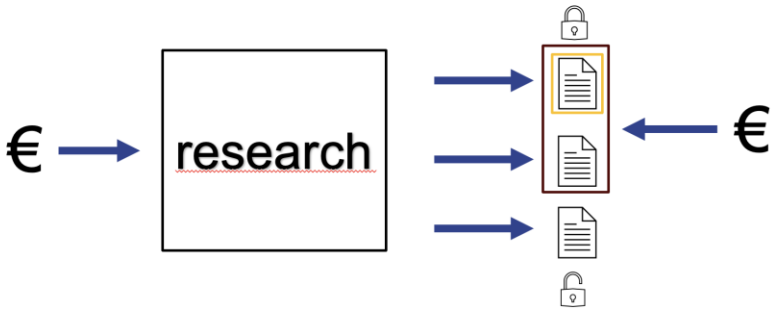
- Is reacting to problems with scientific publishing

Subscription model vs OA model



Academic publishing

- Researchers (for free)
  - write papers
  - review papers
- Publisher
  - provides infrastructure
  - reviewing, editing, publishing, distribution..
  - costs but also chance for profit
- Someone has to pay for researcher’s work and subscriptions...



Academic publishing

- Open Access eliminates subscriptions → better access, larger impact
- Someone has to pay for publisher's work...
  - APC (article processing charges) for publishing each article? Some other way?

Open Access ways

- Green – authors retain rights to their articles, publish them also in a repository
- Gold – authors pay APC, article is published as OA by publisher
- Diamond – journals are financed from different sources; publish OA and do not need APCs

Side note

- (Some) publishers are trying to make money in both systems
  - Prestigious subscription journal? Increase subscription fees!
  - Gold Open Access journal? Increase number of published articles and get more from APCs!

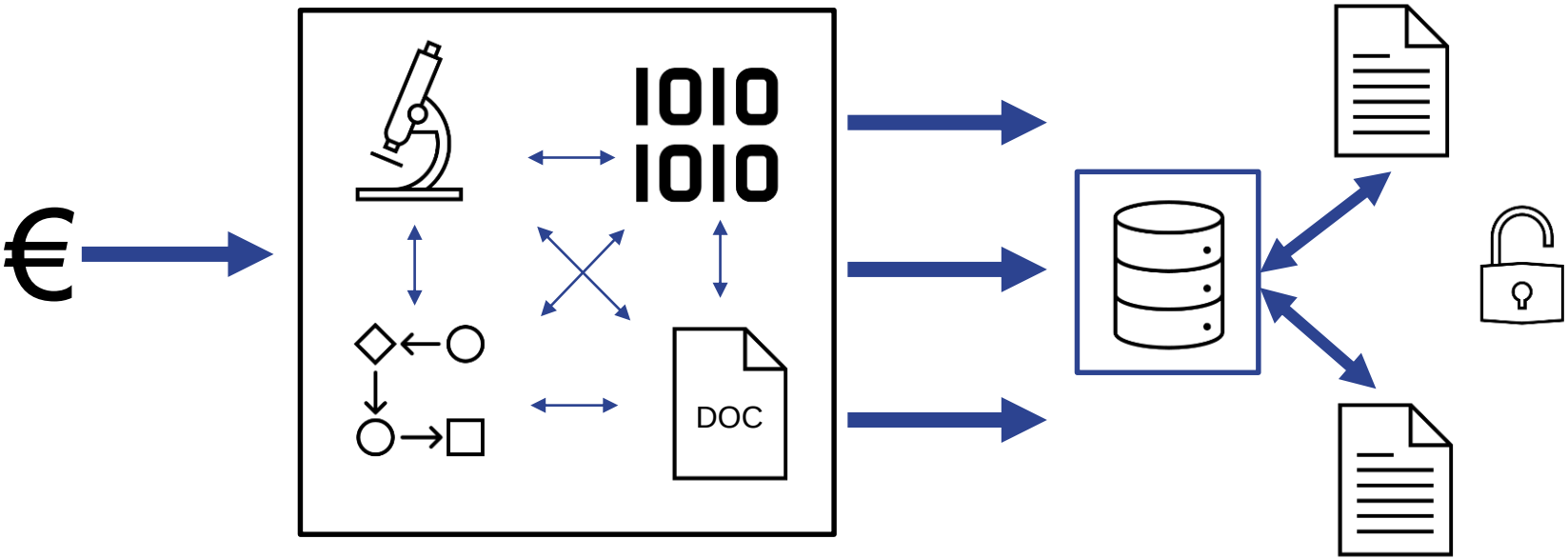
- Dependency on for-profit companies as part of research workflow is risky (especially in cases of possible vendor lock-in)

Open Science is much more than Open Access

- Science is not article shaped, paper should not be limit
- New technologies → new technologies in research

- Data, software, algorithms, workflows, protocols, models...
- ... can be shared and/or published

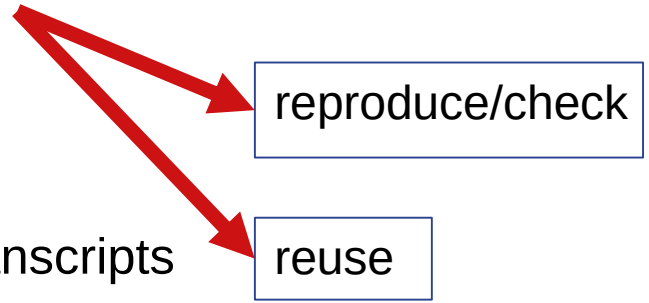
Science is not article shaped



Research Data

- **Research data** can be characterised as any information that has been collected, observed, generated, or created to validate or reproduce your research findings.

- Spreadsheets, documents
- Audio and video recordings
- Images, photographs
- Questionnaires, test responses, interview transcripts
- Laboratory notebooks, field notebooks, diaries
- Samples, specimens, artefacts



”Open Data”? Not always.

- According to the rule:
  - **”as open as possible, as closed as necessary”**.
- Not everything can/should be shared
  - personal data
  - intellectual property
  - ...

- Idealistic viewpoint: sharing as much as possible as soon as possible
  - example: COVID pandemics (faster progress but could be misunderstood)

How to share?

- Imagine just putting files from your computer on the web...

- There have to be some rules HOW & WHERE share the data

FAIR – Findable, Accessible, Interoperable, Reusable

- You (or anyone) should be able to
  - find the data
  - access or know how to access the data
  - combine data with their own data & services and understand them (using documentation)
  - reuse data confidently and in accordance with specified reuse rules

- FAIR - 15 principles

Research data management

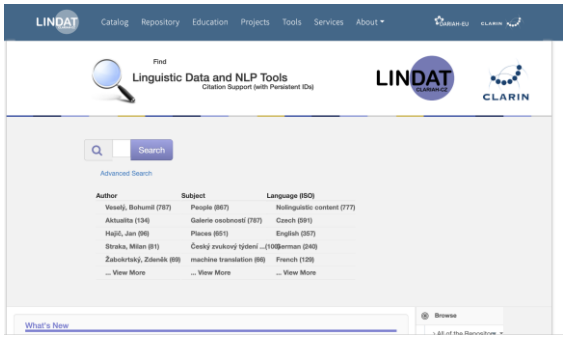
- Do you want to create FAIR data? → Work with them accordingly during the research process!
- There are many aspects of research data management
  - what kind of data, where, who, when, for how much, for how long, share with whom...

→ Create a structured document?

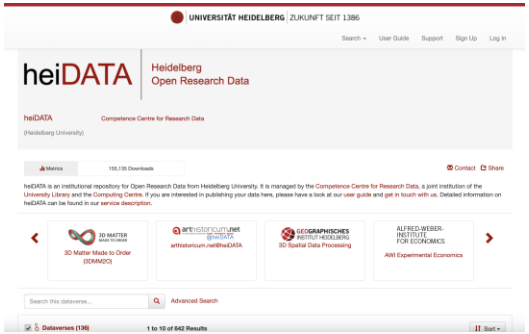
➔ Data Managment Plan (DMP)

Have you got your data ready? Publish them in a repository!

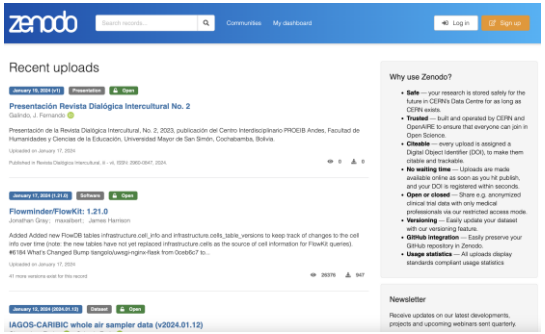
- Choose proper repository:



1) domain specific



2) institutional



3) generic/catch-all

Side note

- Some FAIR principles are fulfilled by repositories, others depend on the way you handle your data during research!

Other Open Science practices

- Sharing of other research outputs
  - software & scripts 
  - lab notebooks
  - protocols
  - ...
- Publishing earlier versions of manuscripts (pre-prints), taking part in open peer review 
- Preregistration of research

Rewards?

- This means more work... Will it be rewarded?

- OS tries to address this – it is looking for different approach to research evaluation.
  - not depending on impact factor and similar indicators
  - considering different research outputs
  - eliminating negative incentives of “publish or perish”

- Paris Call on Research Assessment (OSES 2022)
- CoARA Initiative (Coalition for Advancing Research Assessment)

Open Science practices as project requirements

- Open Science is already part of project requirements (Horizon Europe)
  - Open Access
  - FAIR Data
  - Data Management Plan
  - Open Science practices as integral part of research process

Research Integrity

- Important document: The European Code of Conduct for Research Integrity
- Describes appropriate conduct of research
- Guiding principles of Research Integrity
  - reliability
  - honesty
  - respect
  - accountability

Question for you:

Which **word** comes into your mind in relation to **research integrity**?

Please answer on wooclap

Good Research Practices

- Research Environment
- Training, Supervision, and Mentoring
- Research Procedures
- Safeguards
- Data Practices and Management
- Collaborative Working
- Publication, Dissemination, and Authorship
- Reviewing and Assessment

some parts of are very close to, or exactly same as Open Science requirements

some are closely related

Good Research Practices & OS

- Researchers share their results in an open, honest, transparent, and accurate manner, and respect confidentiality of data or findings when legitimately required to do so.

transparency

- Researchers, research institutions, and organisations ensure appropriate stewardship, curation, and preservation of all data, metadata, protocols, code, software, and other research materials for a reasonable and clearly stated period.

data management

- Researchers, research institutions, and organisations ensure that 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 Reusable) for data management.

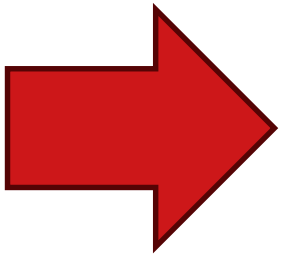
FAIR Data

- Researchers, research institutions, and organisations acknowledge data, metadata, protocols, code, software, and other research materials as legitimate and citable products of research.

outputs

Research Misconduct

- Fabrication
- Falsification
- Plagiarism



in proposing research
in performing research
in reviewing research
in reporting research results

Research Misconduct – some examples

- Misusing seniority to encourage violations of research integrity or to advance one's own career.
- Misusing statistics, for example to inappropriately suggest statistical significance.
- Delaying or inappropriately hampering the work of other researchers.
- Hiding the use of AI or automated tools in the creation of content or drafting of publications.
- Withholding research data or results without justification.
- Chopping up research results with the specific aim of increasing the number of research publications ('salami publications').
- Citing selectively or inaccurately.
- Expanding unnecessarily the bibliography of a study to please editors, reviewers, or colleagues, or to manipulate bibliographic data.
- Ignoring putative violations of research integrity by others or covering up inappropriate responses to misconduct or other violations by institutions.
- Establishing, supporting, or deliberately using journals, publishers, events, or services that undermine the quality of research ('predatory' journals or conferences and paper mills).
- Participating in cartels of reviewers and authors colluding to review each other's publications.
- Accusing a researcher of misconduct or other violations in a malicious way.
- Manipulating authorship or denigrating the role of other researchers in publications.

Question for you:

Are you familiar with any of situations mentioned on previous slide?

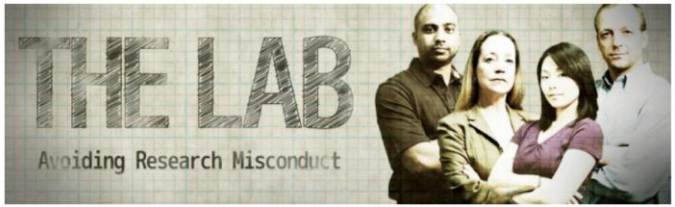
Please answer on wooclap

Don´t worry, answers anonymous and won´t be processed further in any way.

How to prevent violations?

- **Prevention** of misconduct and proper **training** are very important.
- example: Tha LAB by ORI

The Lab



Interactive Movie on Research Misconduct

https://ori.hhs.gov/the-lab

The Characters

You assume the role of four characters confronted with the pressures of working in a research laboratory:

	**HARDIK RAO**, a postdoctoral researcher, who deals with the competitiveness in an up-and-coming lab while balancing the responsibilities of a home life.		**KIM PARK**, a third-year graduate student, who questions the use of her data by another researcher.
	**AARON HUTCHINS**, a principal investigator, whose overwhelming responsibilities as a professor, researcher, and grantwriter lead to his decline as a responsible mentor.		**BETH RIDGELY**, a research administrator, who has accepted the role as the university's Research Integrity Officer and must quickly learn how to handle allegations of research misconduct.

How to handle violations?

- There should be process in place to allow to handle violations in fair, consistent, transparent way.

- These processes differ between institutions (and nations).
  - specific persons, commisions, rules, codes of ethics, codes of conduct

- France: Office français de l’intégrité scientifique [French Office for Research Integrity] – director Stéphanie Ruphy

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Interview with ...

Stéphanie Ruphy

Office français de l’intégrité scientifique

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Open for you!

- NEXT:
- **Preprint and Open Peer Review**
  - 15 February 2024, 4 pm
  - Open access began with preprints in the 1990s. Today, preprints remain a popular means of disseminating scientific results in certain disciplines. It also makes it possible to experiment with new ways of carrying out peer review and to build new publication models. The presentation will be followed by an interview with Daniela Saderi, neuroscientist, co-founder and director at PREreview.

- **"I'm signing a publishing agreement": intellectual property and publication (in open access) –** March 2024
- **Publishing in Diamond Open Access** – April 2024
- **Predatory publishers and identity fraud – how to identify dubious providers –** 17 April 2024

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Thank you!

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