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FINNISH SOCIAL SCIENCE DATA ARCHIVE

OPEN ASIA
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Open Science, data archiving and FSD, important legal aspects in data archiving

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Contents

- Finnish Social Science Data Archive (FSD) & CESSDA ERIC
- Data Archiving, Harmonisation & Open Science
- SSH & Open Science
  (+ legal aspects concerning research data)
- Data Archiving in Practice & Examples
- F.A.I.R. & T.R.U.S.T.

Finnish Social Science Data Archive (FSD)

- Separate unit of the Tampere University since 1999
- National Research Infrastructure
- Finland's national service provider for CESSDA
- CTS-sertified (CoreTrustSeal) = trustworthy data repository
- Services free of charge
- Expert organisation: data and IT specialists (~20 persons)

CORE TRUST SEAL

Findable
Accessible
Interoperable
Reusable

cessda

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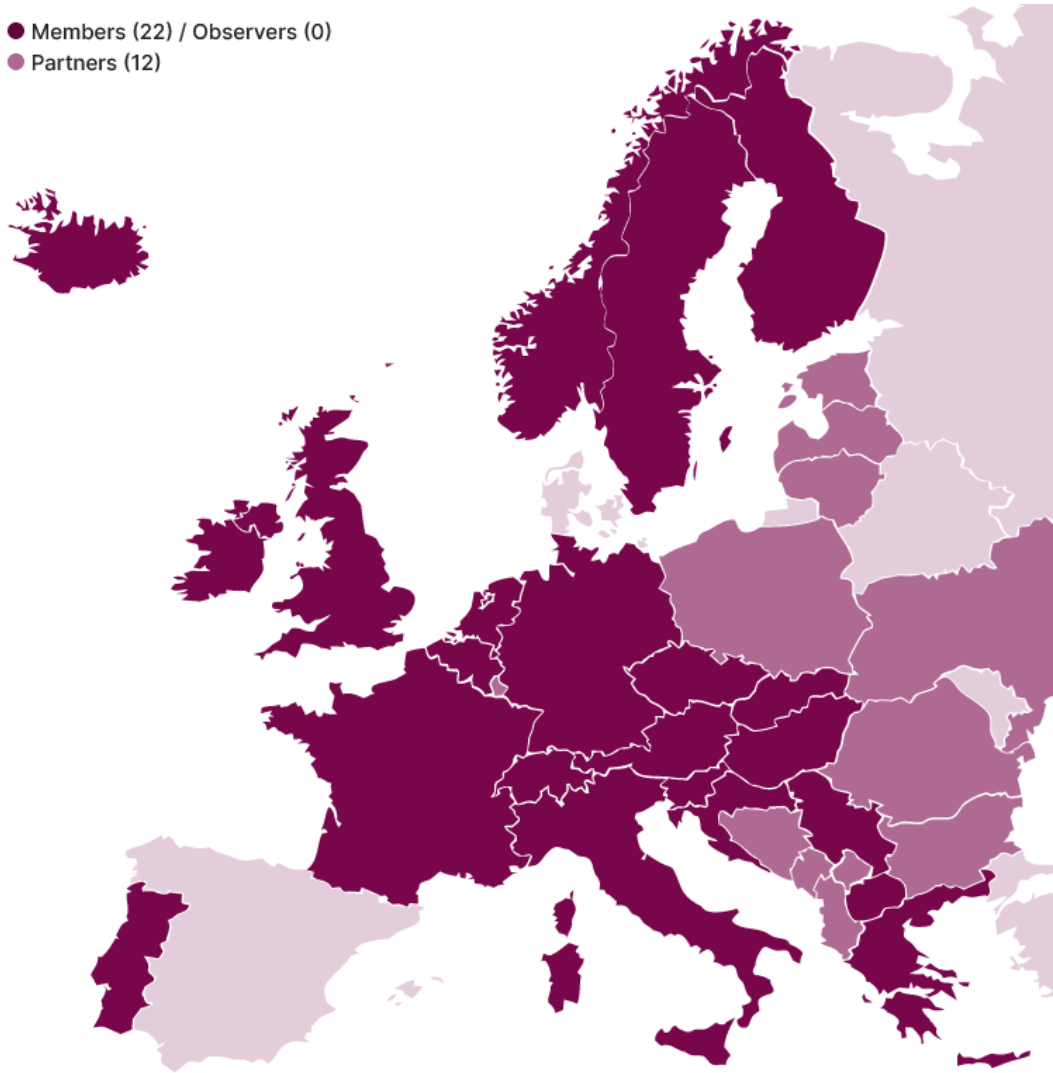
Consortium of European Social Science Data Archives (CESSDA ERIC)

cessda

- CESSDA provides large-scale, integrated and sustainable data services to the social sciences.
- Service Providers in member countries provide national services.
- Aim to promote the results of social science research and support national and international research and cooperation.

https://www.cessda.eu/



Sevices

FSD

- Aila
  - Data Ingest/Deposit
  - Data dissemination
- Data Management Guidelines
  - Management Instructions for data life cycle -> improved quality
- Information service on the archived research data
- ...
- https://www.fsd.tuni.fi/en/services/

CESSDA ERIC

- Data Catalogue (CDC)
  - Search and browse data
  - Share metadata: for reusers in CDC & for harvesting into other catalogues
- Tools for the Service Providers:
  - Vocabulary service
  - ELSST Thesaurus
  - ...
- https://www.cessda.eu/Tools

Data Archiving, Harmonisation & Open Science

- Shared Metadata Models/Standards e.g.
  - DDI: https://ddialliance.org/
  - CESSDA Metadata Model
- Vocabularies & Thesauri
- PIDs: URN, DOI, ORCID, ROR … (+ data PID resolvable to a metadata record that is kept long term)
- Versioning (data/metadata)
- Harmonised research data: questionnaires, background variables, (hierarchical) concepts (classification of occupations, education level…)
- Objective: data understandable to humans and machines: enhanced findability, reusability, comparability, interoperability
- Need to be understandable and reusable to the main target audience

SSH data & Open Science & Legal Aspects

- Data gathered from human subjects by interviewing, measuring, observing, or the research subjects' own creation (written accounts, photographs, recordings...)
- Research Subjects should not be identifiable (GDPR & national law)
  - anonymisation
  - Pseudonymisation
- Data ownership & licensing: data belongs to the depositors or meets the threshold of originality
- Restricted access supports openness =>
  data is as open as possible, as restricted as necessary
- Read more in Data Management Guidelines

Archiving process in practice

- Researcher plans the data collection and informs the respondents about archiving
  - Dataset's availability class affects the informing
  - Researcher documents every phase of the data collection and modification
- Researcher delivers anonymised "raw" data, and documentation that should be preserved
  - Data matrices, interview transcriptions…
  - Questionnaires, interview themes… (instrument)
  - Description of data and data collection (check on Aila which information is needed for DDI metadata)
- After FSD has processed the dataset and the researcher has confirmed it, metadata is published on Aila and data is ready for dissemination

Example I: Aila Data Service

Aila

- Search and browse data
- Licensing: A, B, C, D
- Quantitative & Qualitative
- Metadata goes deep into the content
  - Dataset description
  - Variable description
  - Metadata is published (CC BY 4.0)
- Downloading: A CC by 4.0, restricted B – D.
  - Haka for (most) Finnish users
  - FSD's identifications service for foreign customers

Example II: CDC & Topical/Multidisciplinary catalogues

- CESSDA Data Catalogue
  - Covid-19 datasets in Aila
  - Covid-19 datasets in CDC
- COVID-19 Data Catalogue
  - CDC data in COVID-19 data catalogue
- Google Datasetsearch (searching Kansalaispulssi)

What is needed?
Harmonised metadata
+ OAI-PMH interfaces
+ expert personnel
(IT & SSH content)

FAIR Principles

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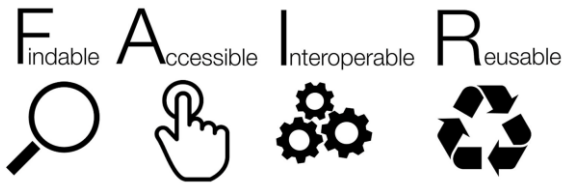
What is FAIR?

- Findability
- Accessibility
- Interoperability
- Reusability

- Support good data management and research quality, reproducibility and impact.
- As an idea, FAIR is ~10 years old and have developed from an article (Nature 2016) into an "ideal/ideology".

- Intended for **all data**, both quantitative and qualitative.
- Apply **also to metadata**, which is used to describe the data and make it discoverable.
- Also applies to software, tools, code, algorithms and workflows that generate data*
- The goal is always **machine actionability** and interoperability of the data.
- FAIR data is understandable to humans and, to a certain extent, can be processed programmatically.
- Discoverable, **accessible,** and interoperable data that is **reusable** facilitates reproducibility.



Why FAIR?

FAIR ≠ Open (data)

- For the (digital) data to be usable from the beginning and remain usable in the long term.
- To guarantee the scientific reproducibility, the discovery of new knowledge and the transparency of the conducted research by opening access to data and/or the metadata describing them.
- FAIR is **not a goal or standard** for open science or data sharing, but a principle-level framework of how research data, methods, code and other related material should be organised so that their understandability and reuse and programmatical processing are possible.
  - Provides a framework for data management: what to consider, when and what services are needed.
- Research funders or publishers may require that the FAIR principles (or openness of data) are implemented.
- Research (data) cannot be FAIR without research community / domain-relevant perspective or approval.
  - Data will not "open up" if the designated community does not understand it.
  - Combining data/methods/code also requires discipline-specific knowledge.
  - Therefore discipline-specific repositories are also needed (e.g., FSD).
- But the purpose of FAIR is to promote interdisciplinary solutions.

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Examples of implementing FAIR

- How to FAIR (Danish National Forum for Research Data Management)
  - https://howtofair.dk/
  - Six central topics for FAIR accompanied with videos:
    1. Documentation
    2. File formats
    3. Metadata
    4. Access to data
    5. Persistent identifiers
    6. Data licenses
  - Approx. two hours of learning material

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TRUST Principles

- **T**ransparency
- **R**esponsibility
- **U**ser Focus
- **S**ustainability
- **T**echnology

A common framework to facilitate discussion and implementation of best practice in digital preservation.

See Lin, D., Crabtree, J., Dillo, I. *et al.* The TRUST Principles for digital repositories. *Sci Data* **7**, 144 (2020). https://doi.org/10.1038/s41597-020-0486-7

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Statistics – Responsibly Open Data in Practice

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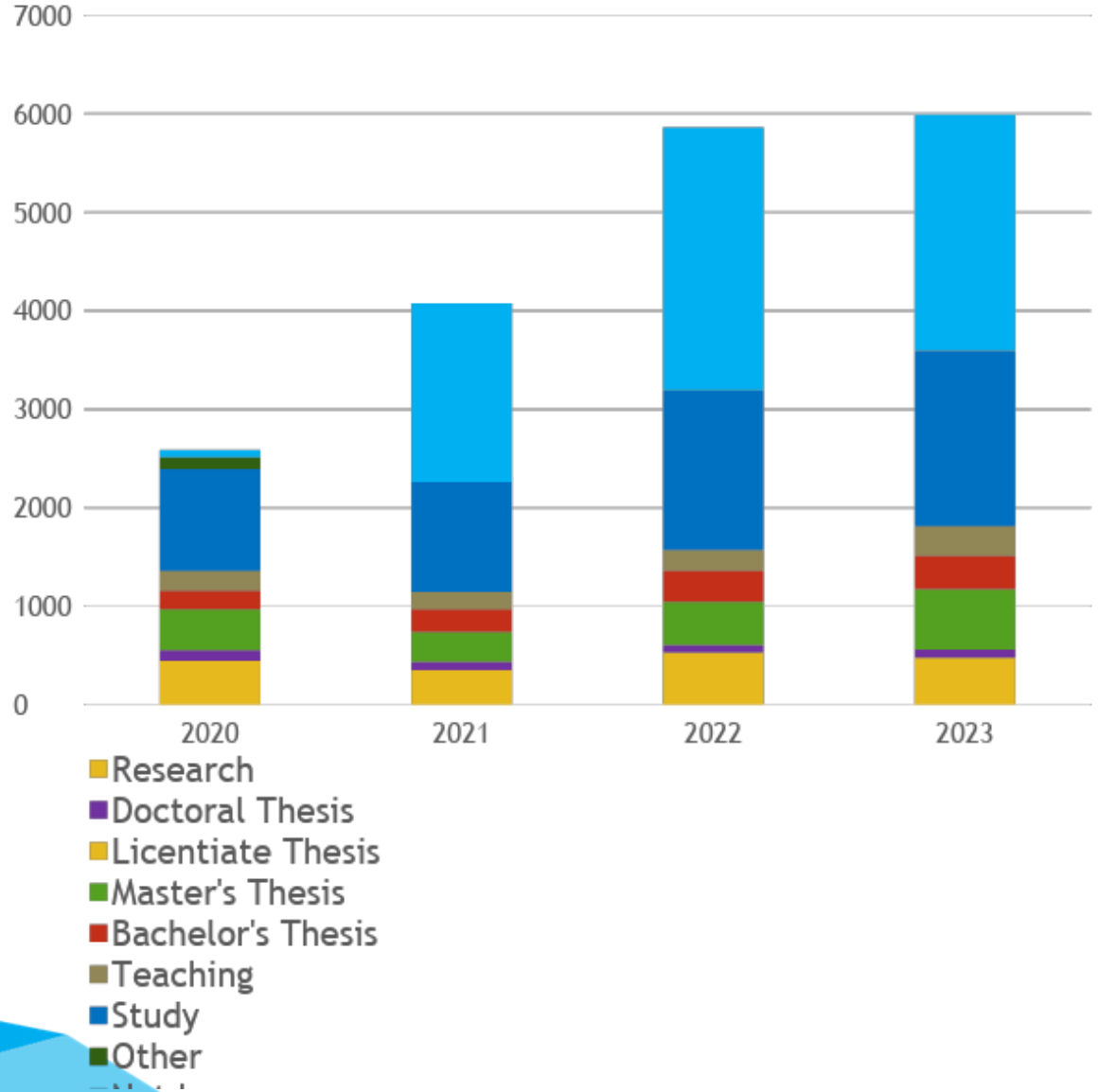
Access applications in Aila



Purpose of use	2020	2021	2022	2023
Not known (A-data)	76	1813	2672	2395
Other	119	0	1	1
Study	1035	1117	1622	1784
Teaching	202	175	205	299
Bachelor’s Thesis	188	231	316	339
Master’s Thesis	415	303	441	614
Licentiate Thesis	1	2	0	2
Doctoral Thesis	108	83	79	80
Research	444	351	527	477
Sum	**2588**	**4075**	**5863**	**5991**

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Added after the presentation

FSD & CSC

- CSC provides bit-level long-term preservation for the archived data; FSD maintains usability of the archived data
- FSD's metadata is pushed into Etsin (the general national data catalogue). An example. (~35 % of the metadata in Etsin)
- FSD's metadata is harvested into Finna catalogue as well.
- Neither of the catalogues provides the functionalities Aila does. The metadata is limited on a very general level.

Functionalities in Etsin:

- provides Citations for the datasets in several formats
- Possible to browse metadata in FSD by depositor organization.
- Please, see also the notes page of this slide.

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Thank you!

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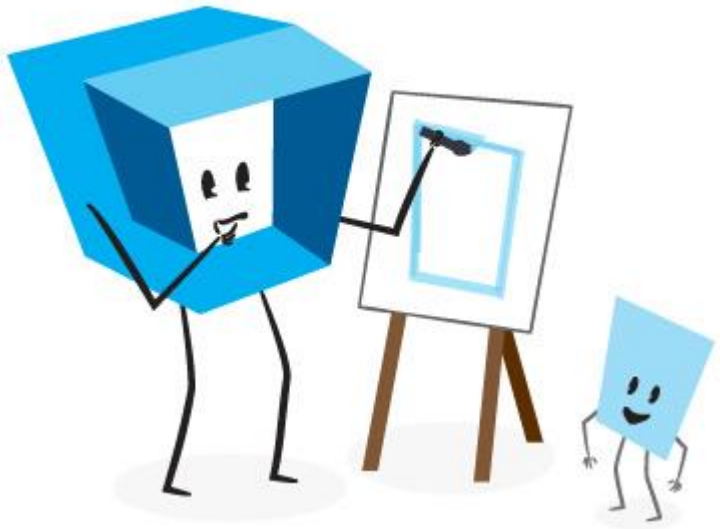

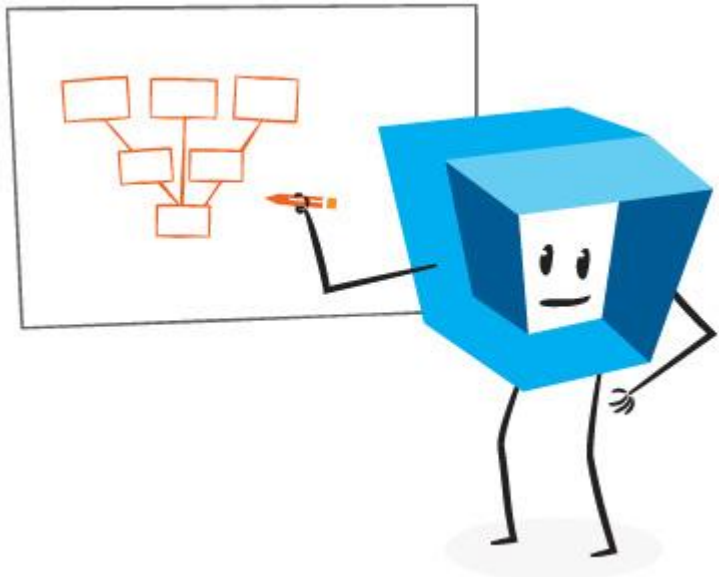

Slides #8, 12 – 14, 18 by Henna Juusola & Tuomas J. Alaterä

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