Looking to the Future: Data Reuse

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The ‘R’ in FAIR

TO BE RE-USABLE: meta(data) have a plurality of accurate and relevant attributes.

- **R1.1.** (meta)data are released with a clear and accessible data usage license.
- **R1.2.** (meta)data are associated with their provenance.
- **R1.3.** (meta)data meet domain-relevant community standards.

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R1.3. (meta)data meet domain-relevant community standards

Easier to reuse data sets if they are similar: same type of data, data organised in a standardised way, well-established and sustainable file formats, documentation (metadata) following a common template and using common vocabulary.
A submitter may have valid and specified reasons to divert from the standard good practice for the type of data to be submitted.
The data's reliability lies in the eye of the beholder and depends on the intended application. What does that mean for archaeology?

https://www.go-fair.org/fair-principles/r1-3-metadata-meet-domain-relevant-community-standards/

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CHANSE.

CHANSE

Collaboration of Humanities and Social Sciences in Europe

- A joint initiative of 27 research funding organisations from 24 countries.
- Goal is to finance high-quality international research projects and inspire collaboration between researchers and various stakeholder groups, such as: NGOs, cultural institutions, legislators, policy makers, schools, etc.
- Has received a co-funding of EUR 10 M from the European Union's Horizon 2020 research and innovation programme.

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CHANSE.

Transformations:
Social and cultural dynamics in the digital age

CHANSE will support new and innovative research into the workings, meaning and consequences of transformations and innovations in the present digital age, viewed through the lens of the social and cultural dynamics.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

A central tension exists between the need to preserve cultural resources, and the dynamic potential for their use and re-use in democratic, just and compelling ways. At the same time, the introduction of the ***tetrarchy*** of FAIR Guiding Principles (Findable, Accessible, Interoperable, Reusable) for scientific data management and stewardship as set an important challenge: that each of the four principles is of equal importance and must therefore be engaged with equally.

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Much work has been done over the last 20 years to make data Findable, Accessible and Interoperable, but little is understood about whether data are Reusable–and by whom. The impact of this gap is profound, as cultural heritage data are increasingly drawn into divisive debates, compromising solidarity and social cohesion.

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Transforming data rE-use in ARCHaeology (TEtrARCHs)

TEtrARCHs will provide those who capture, curate and apply cultural heritage data with critically aware methodologies to prepare their data for enhanced re-use, then experiment with reuse through storytelling scenarios involving cross-European audiences. As both an early adopter and user of a wide range of digital methods, archaeology is an ideal lens through which to develop and test these methodologies and scenarios.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

Co-Design and User-Centred Development and Evaluation

- Realise user-centred approach via an overall design methodology and values framework which surfaces human values and is responsive and accountable to our target audiences, especially creative practitioners, memory institutions and their constituents.
- Provide a comprehensive set of resources (e.g., personas, journey maps) to Partners and to deploy co-design, storyboarding, think-aloud and ethnographic approaches across key WPs, ensuring specific user requirements are embedded into all outputs.
- Facilitate Knowledge Exchange activities across WPs, organising and overseeing user testing, and constituting a Critical Friends' User Group.
- Consider outcomes for users via audience mapping and evaluate success of in achieving these outcomes.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

Data Mapping Strategy

- Evaluate expressiveness of a variety of existing metadata standards (including formal ontologies, controlled vocabularies, metadata schemas) commonly applied to archaeological data sets, focusing on how well these standards afford archaeological data reuse in the context of storytelling.
- Critique sessions and user testimonials will allow the data mapping strategies to keep track of user needs, expanding existing metadata standards to improve their compatibility with storytelling applications.
- Mapped resources linked with extensible transcription and annotation capabilities using an annotation server.
- Storytelling functionalities will be added to the platform.

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Data Capture Strategies

- Create workflows for collaboratively created experimental open data capture strategies. These workflows may include experimentation at the landscape, site or artefact level (or a combination) and focus on key data acquisition technologies: airborne LiDAR, 3D scanning, digital drawing and photography.
- Evaluate users' interpretative needs connecting the archaeological value of a site or data source to these present-day interests, and design a range of case study "experiments" where data are captured specifically to be used in creative practice, storytelling and other types of emotionally compelling communication.
- Design an ethically informed, reuse centred, persistent "virtuous circle" for the ongoing management and stewardship of archaeological data, supporting best practice for collaboratively created digital data.

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Data Experimentation

- Implements the experiment designs to test a variety of methods and workflows to generate digital content optimised for reuse and explores how existing legacy data might be incorporated into these experimental data capture workflows.
- Activities will be implemented within projects where Project Partners are already collaborators, including but not limited to ongoing landscape-scale investigations at Knežak (Slovenia), and the sites of Uppåkra (Scania, South Sweden) Johannishus (Blekinge, South Sweden), Toumba Serres (Northern Greece) and Malton (Yorkshire, UK).
- These sites allow access by local communities and thus provide an opportunity to invite their input and perspectives directly through participatory activities.

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Repository Experimentation

- Focuses on resolving the point of central tension between the need to preserve cultural resources, and the dynamic potential for their use and reuse. Using the Archaeology Data Service as a test bed, this WP aims to determine how data optimised for co-designed and user-centred reuse can be incorporated into digital preservation workflows.
- Dynamic archive dissemination interfaces will also be explored.

Transforming data rE-use in ARCHaeology (TEtrARCHs)

Quality in Use Analysis for Archaeologists

- Creation and implementation of a methodology to evaluate re-usability of data by professional and non-professional archaeologists. Early testing by members of COST Action SEADDA has shown the “Quality in Use” (ISO/IEC 25022:2016 2021) conceptual approach is appropriate for this evaluation.
- Approach enables qualitative and quantitative assessment of the degree to which a digital resource can be used by archaeologists to achieve specific goals with effectiveness, efficiency and satisfaction.
- Assess community practice leading to a research design using the “Quality in Use” conceptual approach applied to the use cases. It will result in recommendations and refinements to better serve the archaeological research community.

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Storytelling and Creative reuse

- Use Data Model to create new controlled vocabulary/thesaurus/ontology.
- Recruit creative practitioners to work alongside partners in the form of Digital Residencies, according to their creative interests. Residents provide input and perspective to project partners and generate at least one creative output based on their reuse of archaeological data optimised by the project.
- New user interface will be developed to allow interaction with the Storytelling Vocabulary/Thesaurus, alongside customisations to 3D visualisation and annotation interface to enable experimentation with the use cases.
- Additional resources created will include guidance documents for authors and practitioners in memory institutions, and peer-reviewed publications for scientific communication.

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Thank You!

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