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From Green Deal to Cultural Heritage: FAIR Digital Objects and European Common Data Spaces

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Abstract

This talk outlines a vision for Common European Data Spaces, proposed by the European Commission, where FAIR principles (Wilkinson et al. 2016) and FAIR Digital Objects (FDOs) (De Smedt et al. 2020, Schwardmann 2020) can play a role in bringing together research infrastructures, data aggregators and other stakeholders working with curated objects in museums, herbaria, libraries and archives. The organisations and stakeholders involved represent a wide range of disciplines and data types including biodiversity, ecology, anthropology, archaeology, cultural history, digital storytelling, art conservation, and history of science among others (ICEDIG 2020, Ortolja-Baird and Nyhan 2021). The context and the history of the curated objects also span the natural sciences and cultural heritage domains (Nadim 2021, Weber 2021). Despite this heterogeneity, various common themes in the area of digital curation, open access, and data usage (Tasovac et al. 2020) appear where FDOs and Common European Data Spaces can be a useful venue for supporting the European Strategy for Data. In particular, FDOs, as an abstraction mechanism to structure and describe digital artefacts from a specific domain yet at the same time provide interoperability (De Smedt et al. 2020), can help realise the vision behind a common data space to "bring together relevant data infrastructures and governance frameworks in order to facilitate data pooling and sharing" (European Commission 2022:2).

A [May 2022 report](#) on the challenges and opportunities of European Common Data Spaces highlights the following points:

1. Open data holders have extensive experience in data publishing, metadata management, data quality, dataset discovery, data federation, as well as tried-and-tested standards (e.g. DCAT) and technologies. There seems to be very little knowledge/technology transfer from the open data community to the data spaces community, which is a missed opportunity. Data space implementations should not reinvent wheels that the open data community has already developed, tested, and used extensively.

2. Whether the data is private, shared, or open, using data from multiple sources requires interoperability at several levels, from identifiers to vocabularies. The question of which data intermediaries will act as neutral agents to ensure interoperability is underexplored in the data space context. Public administrations, building on their experience of publishing open data, are best placed to take on such roles

Building on previous conversations facilitated by [DiSSCo](#), [DARIAH](#), [Europeana](#), and [Archives Portal Europe Foundation](#), (Europeana Conference 2021, DARIAH Annual Event 2022), this talk will address the above points from the perspective of bringing together the domains of natural history museums, cultural heritage, and digital humanities. Within our collaboration, we have identified several common areas such as data discoverability, linking, and providing contextual information, which align with the goal of FDO implementation. DiSSCo and DARIAH as European infrastructures, on the one hand, and Europeana and Archives Portal as data aggregators, on the other hand, are involved in improving access to data and the researchers' capacity to work with heterogeneous data sources. One of the biggest shared challenges across the diverse workflows in the arts and humanities and natural history domains is that the data curation processes form a natural continuum between a range of different actors working either in cultural heritage institutions or in academia. In reality, these different layers of curation, enrichment and analysis are separated by legal, institutional, infrastructural and even funding silos (as in many countries, these institutions belong to different ministries, and fall under different legislative frameworks). How can this continuum, from a scholarly point of view, be supported within common data space and FDO framework? At the same time, implementing a common data space requires not just interoperability but stewardship and strategy for sharing resources (Keller 2021).

The data infrastructure and FAIR related activities explored in our collaboration are of strategic importance to help Europe and the rest of the world deal with important societal issues. Therefore, bringing this collaboration within the context of FDO provides an ideal avenue to explore potential data, policy, and implementation matters, in order to address the two gaps outlined above for Common Data Spaces. Furthermore, the ideas expressed in Common European Data Space for Cultural Heritage (with Europeana as the core stakeholder) and Green Deal Data Spaces need further clarification concerning implementation planning and most importantly, how multiple commons would work

together. With DARIAH coming from the humanities and DiSSCo from the natural sciences side, such collaborations and synergy should align with the Common Data Spaces vision. The philosophy and ideas behind data and digital commons are not new (Fuchs 2020, Kashwan et al. 2021). However, it is crucial to contextualise the implementation strategy and benefits within data intensive, multidisciplinary research and FAIR principles.

Given that curated objects are informational resources for the researchers, but can also provide contexts, and make visible the relationships between artefacts, people, publications, organisations, provenance, and events, it is important to think of them as much more than just records in a database. Additionally, FDOs as the digital representations of the curated objects have the potential of fostering cross-disciplinary collaborations (such as between biology, history, art or anthropology) and of providing a wider lens for understanding materiality and the role of data (Ribes 2019). As interdisciplinarity and data-driven foci are gaining traction via applications of artificial intelligence and machine learning, it is vital to understand what FDO adoption and implementation can contribute to common data spaces. We believe FDOs can be a successful foundation for Common European Data Spaces because they can can connect multiple commons -- from Green Deal to Cultural Heritage -- in order to drive forward the vision for interdisciplinary collaboration.

Keywords

Data Commons, Interdisciplinary Collaboration, Natural History, Digital Humanities, DiSSCo, DARIAH, Europeana, Archives Portal

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