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# Mapping Manuscript Migrations: Digging into Data for the History and Provenance of Medieval and Renaissance Manuscripts

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# Mapping Manuscript Migrations: Digging into Data for the History and Provenance of Medieval and Renaissance Manuscripts

## **Abstract**

*Mapping Manuscript Migrations* is a new two-year project funded by the Trans-Atlantic Platform in the fourth round of its Digging into Data Challenge. The project is a collaboration between four international partners: the University of Oxford, the University of Pennsylvania, the Institut de recherche et d'histoire des textes (IRHT) in Paris, and Aalto University in Helsinki.

The project aims to combine data from various different sources to enable the large-scale analysis of the history and provenance of medieval and Renaissance manuscripts.

## **Keywords**

manuscript studies, provenance, linked open data, data analysis, databases

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*Special Issue:*

*The Syriac Galen Palimpsest*

Editors: William Noel and Ralph M. Rosen

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# Mapping Manuscript Migrations

## *Digging into Data for the History and Provenance of Medieval and Renaissance Manuscripts*

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**M**APPING MANUSCRIPT MIGRATIONS IS a new two-year project funded by the Trans-Atlantic Platform in the fourth round of its Digging into Data Challenge. The project is a collaboration between four international partners: the University of Oxford, the University of Pennsylvania, the Institut de recherche et d'histoire des textes (IRHT) in Paris, and Aalto University in Helsinki.

The project aims to combine data from various sources to enable the large-scale analysis of the history and provenance of medieval and Renaissance manuscripts. As new digital data sets continue to emerge—catalogs and databases as well as digital editions and digital images—and sources of



information continue to proliferate, there is a growing need for ways to harness all these data into a coherent framework. In these circumstances, carrying out manuscript research on a large scale is becoming an ever more complex and time-consuming process. Broad research questions about medieval and Renaissance manuscripts are very difficult, if not impossible, to pursue.

The project will bring together data from different sources into a consistent and connected framework. Manuscript research cannot be done satisfactorily in either North America or Europe alone. But there has been no systematic linkage between manuscript databases in North America and similar databases in Europe. The transatlantic collaboration in this project will bring together data about these manuscripts regardless of their physical location—a pool of data that has not previously been combined. Linking data sets from Europe and North America will provide an international view of the history and provenance of these manuscripts. In its initial phase, the project is aiming to link more than 450,000 records from four different sources.

The combined data will be made available within a software platform that enables searching and browsing across the whole body of evidence about manuscript history. Researchers will be able to navigate a single Linked Data graph to find connections and insights, from the level of individual manuscripts and actors through to exploration and analysis at regional, national, and international levels. The project will also make possible large-scale visualizations of the history of these manuscripts, incorporating geographical and chronological presentations as well as network graphs and maps. We will be able to show how these manuscripts have traveled across time and space to their current locations, where they continue to find new audiences.

The partner institutions are contributing a mixture of different skills, knowledge, and experience. In Oxford, the Oxford e-Research Centre is providing expertise in Linked Data and software design, while the Bodleian Libraries are contributing data sets and expertise in manuscript research. In Philadelphia, the Schoenberg Institute for Manuscript Studies in the University of Pennsylvania Libraries is contributing data, technical knowledge, and manuscript provenance expertise, drawn from the Schoenberg Database of Manuscripts. The IRHT is a national center of excellence in manuscript studies, and will also supply data from manuscript databases like Bibale and

Medium. The Semantic Computing Group at Aalto University is contributing its internationally recognized expertise and knowledge in Semantic Web computing and the development of Linked Data publishing services.

The results of the analyses made possible by the project cannot be definitive in a quantitative sense, given that the data do not cover *all* the surviving medieval and Renaissance manuscripts in contemporary collections. But the data sources being used by the project are sufficiently large and varied to form the basis for large-scale analysis of the kind envisaged. The project will be aiming to test the methodology and demonstrate the validity of this approach, and to lay the groundwork for further development and analysis based on increased coverage and the linkage of more data sets in the future.

The project is also addressing a group of research questions around knowledge representation: how to represent and process the inherent complexity of metadata relating to manuscript histories; the ontological modeling of this knowledge; publishing, aligning, and reconciling this knowledge through Linked Data; and developing appropriate methods for digital scholarship using this data. The project aims to produce new theoretical insights into the computational representation of the history and provenance of manuscripts, as well as semantic and quantitative approaches to manuscript research. The data model and the visualizations developed by the project—both maps and network graphs—will provide the impetus for new ways of thinking about manuscript histories and provenance.

The project is of particular relevance and value to libraries and other collecting institutions. The results of its analyses will help to situate their manuscript collections in the broader historical context of patterns and trends in collecting, while its methodology and its body of data will provide an important resource for further linkage and exploration in the future. The data linkage techniques and visualization methodologies deployed by the project are expected to be of wider applicability to all kinds of cultural heritage objects and collections as well as manuscripts. We are also aiming to demonstrate the value and importance of institutions making their collections data available for reuse by other services and research projects.

In summary, then, this project is aiming to add significantly to our knowledge of the history of medieval and Renaissance manuscripts by enabling systematic analysis across combined data from a variety of sources.

It intends to demonstrate new approaches to this kind of provenance research, based on the transformation of existing data sources into a Linked Open Data environment. It should enable us to tackle large-scale research questions around the movement and ownership of these manuscripts over the centuries, and to set an agenda for future developments.

Mapping Manuscript Migrations officially got under way with a meeting of the project partners in September 2017 at the Oxford e-Research Centre. You can follow the subsequent progress of the project on Twitter (@MSMigrations) and through its website: [mappingmanuscriptmigrations.org](http://mappingmanuscriptmigrations.org).