

## THE ARCHAEOLOGICAL ATLAS OF COPTIC LITERATURE. A QUESTION OF METHOD

Julian Bogdani - Sapienza University of Rome

*PATHs project is aimed at creating an online archaeological atlas of Coptic literature by providing for the very first time a detailed catalogue of ancient books and their archaeological and cultural context, following a multidisciplinary approach and cutting edge methodologies.*

Keywords: Egypt; Coptic literature; GIS; archaeological atlas; online databases

### 1. INTRODUCTION: THE INSTITUTIONAL FRAMEWORK OF THE PATHS PROJECT

PATHs is the short name for “Tracking Papyrus and Parchment Paths: An Archaeological Atlas of Coptic Literature. Literary Texts in their Geographical Context. Production, Copying, Usage, Dissemination and Storage”, a project aimed at creating an online atlas capable of representing the diachronic development of the Coptic literature through the in-depth analysis of the Coptic manuscripts and their places of production, dissemination and discovery.<sup>1</sup> The project, funded by the European Research Council,<sup>2</sup> is directed by Prof. Paola Buzi<sup>3</sup> and is hosted at Sapienza University of Rome (Dept. of History Cultures Religions). An international network of collaborations with research institutions and projects in Europe and USA has already been developed.

### 2. THE COPTIC LITERATURE BETWEEN 3<sup>RD</sup> AND 11<sup>TH</sup> CENTURY

It is beyond the goal of this work – and far from my competence – to outline the history of Coptic literature, yet its highlights must be pointed out because their understanding is one of the main premises for the conception of the information system<sup>4</sup> described in the following paragraphs.<sup>5</sup> The Coptic language is partially an artificial language and represents the very last step of the millenary tradition of Egyptian language. At a first stage (3<sup>rd</sup>-4<sup>th</sup> centuries AD), it was used to translate the biblical works from Greek; in the following centuries new original works of different genres – monastic letters, rules, homilies, hagiographic texts, etc. – were conceived and written in Coptic language. The most important catalyst in the process of growth and maturation of Coptic literature was the inception of cenobitic monasteries – which turned rapidly into significant centres for text

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<sup>1</sup> “PATHs Project” 2017.

<sup>2</sup> ERC Advanced (2015) “PATHs – Tracking Papyrus and Parchment Paths: An Archaeological Atlas of Coptic Literature. Literary Texts in their Geographical Context. Production, Copying, Usage, Dissemination and Storage” directed by Paola Buzi and hosted by Sapienza University of Rome (project number 687567).

<sup>3</sup> At present (2017) the team is composed by Paola Buzi (Principal investigator, Coptologist), Julian Bogdani (archaeologist, GIS and IT applied to archaeology and humanities expert), Nathan Carlig (codicologist), Maria Chiara Giorda (historian), Agostino Soldati (philologist) and Angela Bernardo (project coordinator with technical tasks).

<sup>4</sup> “Information system” is used here following T. Orlandi’s definition (Orlandi 2010, in particular pp. 114-115).

<sup>5</sup> A concise yet complete overview of the Coptic literature will be soon published as part of a larger article in the first number of the *Bolletino del Museo Egizio* (by P. Buzi, J. Bogdani, N. Carlig, M.C. Giorda and A. Soldati). This paragraph is a brief abstract of the forthcoming text by Paola Buzi (§ 1).

production, replication and conservation – and the rupture of the Council of Chalcedon (451), which marked the starting point of the Coptic independent (and almost national) church. Important personalities – like Shenoute, archimandrite of an important monastery (the so-called White Monastery) near Panopolis – played a central role in the definition of a strong religious, national and cultural identity through literary production and dissemination.

The Arabic conquest did not, at first, influence the Coptic literary production, but, as time passed, Arabic language replaced slowly and progressively the Coptic one. At the beginning of the 11<sup>th</sup> century Coptic texts have begun to be translated into Arabic, marking the birth of the so-called Coptic-Arabic literature. For this reason, the 11<sup>th</sup> century was chosen as the lower chronological limit of the PATHs project.

### 3. THE ARCHAEOLOGICAL ATLAS OF COPTIC LITERATURE: PROOF OF CONCEPT OF A MULTIDISCIPLINARY GEOGRAPHICAL INFORMATION SYSTEM

The principal goal of the PATHs project is to sketch the geography of Coptic literary production diachronically, which will be analysed through an innovative and interdisciplinary approach, combining extensively and for the very first time in this field of study philology, archaeology and digital humanities. This methodology will allow exploring the process of production, copying, dissemination, usage, transmission and preservation of Coptic works – with a special focus on hagiography and monastic literature – in relation to the actual geographical contexts of provenance of both texts and related writing supports.

The main efforts will be spent on creating an interactive, versatile and rigorously scientific archaeological atlas of Late Antique and Early Medieval Egypt, searchable at different chronological, regional and thematic levels. This is a geographical information system (GIS) freely available over the Internet and able to contain, display and analyse data of different provenance and typology, collected and maintained by specialists of different disciplines: philologists, codicologists, historians, linguists, archaeologists, IT experts, etc. Even though geography based platforms (GIS) have been in use since long time in the archaeological field for collecting, organising and sometimes also publishing data, they have been only sporadically used in literary and linguistic studies.<sup>6</sup> Yet, geographical representations – or more simply maps – have always been used as a formidable tool to better explain studies about history, literature, linguistics, etc. Probably the first, and surely the most famous, Geographical Information System applied to linguistics, is the one developed by Adolph Kirchhoff and published in 1887,<sup>7</sup> where areas of same Greek dialect are rendered with the same colours (fig. 1). These colours give the name of the epichoric variants of Greek alphabet. The geographical representation of Greek dialects contains in embryo all the future research theory about spatial analysis, modelling and mapping of literature and linguistic data.<sup>8</sup> Furthermore, maps are something more than a powerful communication and visualization tool, they are an important research area of interest, first

<sup>6</sup> Gregory - Healey 2007; Gregory - Hardie 2011; Martí-Henneberg 2011a; Martí-Henneberg 2011b; Kretzschmar 2013; Murrieta-Flores *et al.* 2017; Bodenhamer - Corrigan - Harris 2010.

<sup>7</sup> Kirchhoff 1887.

<sup>8</sup> For a summary of GIS applications to Literature studies, see Kretzschmar 2013.

of all because “mapping constructs the world it represents, selectively, therefore shaping thought and guiding action”.<sup>9</sup>

As far as it concerns Coptic literature, the PATHs project stands on the shoulders of an important and pioneering project, i.e. Tito Orlandi’s *Corpus dei Manoscritti Copti Letterari* (CMCL)<sup>10</sup> (fig. 2). It is a leading work aimed at creating a digital archive of Coptic texts, providing – for the very first time – stable 4-digits identifiers for all Literary and Patristic works written in Coptic, at present known as *Clavis Coptica* or *Clavis Patrum Copticorum*.<sup>11</sup> Encoded texts, manuscript photos, a list of bibliographic records, a list of Coptic authors and other valuable information complete this archive that is continuously being updated. CMCL is not only a starting point, it is also an endless source of high-quality digital information and provides important theoretical basis for all the further steps of the PATHs project.

Representing Coptic literary works in their geographical and cultural context means that geography and positioning are key features of this project. Possibly, every single element should be somehow placed somewhere in the geographical landscape, i.e. *georeferenced*. Literary works have been conceived, transcribed, transmitted and copied in specific places – monasteries mainly – known to us by archaeological or literary sources (fig. 3). Sometimes the archaeological record gives us detailed information about the last place where certain manuscripts were stored, some other times the manuscript itself tells us through its text about the author of the work, the scribe who transcribed it, the place where it was copied or the persons who financed its copying, usually a rather expensive task and consequently beneficial to the salvation of soul of the payer and thus worthy to be reported. Typically, these information are contained in specific parts of the books, like titles and colophons, where also dating clues can be found. Textual and archaeological data help thus to define the place (or places) where a manuscript and the work (or works) it contains belong. These places must be then identified and located on the Earth’s surface and for each of them a couple of geographic coordinates should be acquired and stored. Once the manuscripts and literary works have been georeferenced, they can be analysed and used to dynamically create thematic maps, which can be of great help to better focus and identify important clusters of the Coptic literature production and dissemination.

Maps can as well be used as a basis for further analyses by connecting dots representing the *places* with lines representing series of relations – both physical and cultural – joining these places to each other to form a network capable of visually describing the creation and circulation process of the literature in Late Antique and Early Medieval Egypt. Hopefully, these analyses will help illustrating the broader cultural, social and religious frame of the country.

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<sup>9</sup> McCarty 2004.

<sup>10</sup> Orlandi 2003; for a full list of Orlandi’s works on Digital Humanities see Orlandi, n.d.

<sup>11</sup> Titles recorded in manuscripts are not apt to univocally distinguish different works. In many cases, they have been arranged at a later time to put order in the previous literary tradition (Buzi 2016, 205-206). In some other cases a work has been labelled with more than one title, and other times the title has been treated by modern editors as part of the work’s content. This is – very briefly – the main reason for the urgent need of a new and impersonal naming system. Tito Orlandi (2008) in his CMCL opted for a 4 digits numeric identifier namespaced by CC (*Clavis Coptica*), es. CC 0001.

This particular aspect can be further clarified by few and very simple examples. As far as the manuscripts are concerned, in the most fortunate cases, several places can be referred to them, such as the place where they were crafted and copied, the place where they were stored and the place where they were found. Their textual content could suggest as well other places related to the artefact, like temporary or permanent displacements from one monastery to another, or different cultural contexts perceivable by the contents, the dialects or palaeographic elements. It is true that, in most cases, all these “places” do coincide (which means that the manuscript has not “travelled” much), but the exceptions to this rule are of great importance, because they allow us to trace paths and connections through different ancient sites, scriptoria, monasteries and follow the book production and dissemination chain. Another meaningful example can be offered by considering the literary works that the manuscripts contain and carry.

Not only manuscripts but also literary works can receive a clearer light if represented in maps. Work, indeed, can be reproduced in multiple copies and versions (i.e. manuscripts), copied several times in several places and different periods. A geographical visualization and spatial analysis of the spread of a certain work in one or more reference chronological period will surely provide an important evidence and strong basis for any historical evaluation of the work itself, its antique circulation and appeal and by consequence its original and perceived meaning over time.

These two cases represent a valid and very immediate example of how literature and its principal vehicle – the books – can be georeferenced, and how vice-versa the geographical visualization can help to better understand and deeper analyse texts and their cultural context.

Books, manuscripts in our case, are a special kind of archaeological source because, in addition to standard information conveyed by their substance, the texts they carry provide an entirely new set of valuable elements for the reconstruction of the ancient landscapes. As far as “places” are concerned, texts – if carefully indexed – are tremendously useful either in better defining ancient landscape and geography or building a new one from scratch, be it real, plausible or entirely fiction. The geography of text can at a later time be overlapped and compared with the “real” one, the geography reconstructed by traditional archaeological means, in order to better analyse and comprehend the Egyptian physic and cultural landscape in Late Antique and Early Medieval era.

#### 4. TOOLS AND METHODOLOGY

The information system of the PATHs project is organised to have a tripartite structure at its core, formed by three online platforms: a centralised database, an atlas and a web portal. These three elements are strictly related: the database (DB) is a subset of the Atlas (A) and the atlas a subset of the web portal (P):  $DB \subseteq A \subseteq P$  (fig. 4).

Some more explanation is needed because each set is implemented differently and serves different purposes. The very hard core of the entire platform is an online relational database system, able to contain and analyse all primary data migrated from precedents projects – first and foremost the already mentioned CMCL project – or produced *ad hoc*. The principal entities of the database describe in details manuscripts, works, authors, places, people and bibliographical references, but the general ontology is open to further

enhancement that the research project might and will suggest. The different entities are strictly connected to each other by logical rules – the edges of an oriented graph – that have been made object of deep methodological analysis. This paper is not the most appropriate place to fully describe the general schema, but some few and not complete examples could provide a glimpse of the methodological issues involved.

The *Manuscripts* entity collects information about ancient books in their original form and records their history from the moment the book was crafted until the moment it became an archaeological (or archive) evidence. It follows that there is no inevitable or mechanical correspondence between the manuscript that we can leaf through today and the manuscript described in the database: the original manuscript – i.e. the *codicological unit*<sup>12</sup> – can be reconstructed by juxtaposition of fragments scattered in several archives or libraries, or the present manuscript we hold in our hands can be the result of the union of more than one ancient books. This consideration makes the first important point, i.e. that a detailed physical – codicological – description is an essential step in the effort of identifying the original codicological units and providing each of them with a unique stable identifier. This is why a detailed set of codicological attributes has been included in the manuscript description.

Moreover, a manuscript can contain one or more literary works and consequently entity *Manuscripts* is linked by one-to-many ‘contains’ relationship with entity *Works*. The relationship between *Manuscripts* and *Persons* is more articulated because many known or unnamed individuals can be involved in the manuscript creation, circulation, modification or discovery, as the copyist, the bookbinder, the person who financed or ordered the crafting of the book, the recipient and beneficiary of the precious gift, etc. – not to consider persons (we might say characters) mentioned in the text itself. These links are mapped as many-to-many qualified relationships between entity *Manuscripts* and entity *Persons*. I have already mentioned the problematic, but essential, linking system between *Manuscripts* and *Places*, a core issue for the georeferencing of the dataset and subsequently for the creation of the atlas. Links are therefore a fundamental focal point of the entire project and they are not only inward-looking: a series of external references to important projects are being set, in order to make the PATHs database a node of a broader network. Each object of the database will be linked to well known identifiers from other databases, if available, such as the already mentioned CMCL, *Trismegistos*, Leuven Database of Ancient Books (LDAB), *List of Coptic Biblical Manuscripts*, *Clavis Patrum Graecorum*, *Clavis Apocryphorum Novi Testamenti*, *Clavis Apocryphorum Veteris Testamenti*, *Bibliotheca Hagiographica Orientalis*, *Bibliotheca Hagiographica Graeca*, *Bibliotheca Hagiographica Latina*, *Pleiades*, Geonames, etc.. The ambitious goal of this structure is that of creating, for each database row – i.e. for each ‘object’ considered – a rich set of metadata and possibly of semantic triples able to turn the database into an open linked data repository. The above example is incomplete and representative of only a part of the entire information system, which is conceived as a decentralised platform where each node can be placed at the centre of the analysis and made object of a thorough study (fig. 5).

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<sup>12</sup> The term “codicological unit” is used here in perfect accordance to T. Orlandi’s definition in Orlandi 2008, 7-11.

It should be clear enough now that the geographical representation – the Atlas – is a fundamental goal of the project and an impressive visual and analysis tool, able to capture and depict the complexity of the collected and analysed data. Technically speaking, the Atlas will be built on top of the main database, wrapping it and extending it with geographical functionality and interfaces. Users should be able to display preset filters on data, but also build their own by using friendly search forms. Specific base maps can be used to better contextualise the data. Commercial online platforms, such as Google Maps, Bing Maps, Open Street Maps, or similar services, may provide a very simple to use and high quality basis for online cartographic projects, yet these tools do not refer to the ancient landscape and geography. New interesting research and collaborative projects are making available map tiles and ready to use GIS data specifically related to the ancient world. The most important among others are Pelagios,<sup>13</sup> available at <http://commons.pelagios.org>, the Digital Atlas of the Roman Empire by the Lund University (<http://dare.ht.lu.se/>) and the Ancient World Mapping Center of the University of North Carolina at Chapel Hill (<http://awmc.unc.edu/>).

By far, the most important output result will be the dynamic maps, where geographical data can be easily visualised and queried; other important non geographical data, as lists, authority files etc., will be showed in a more traditional tabular form. When possible, also diagrams, graphs, plain and tree-structured layouts will be made available to generic users in the web portal; these are powerful tools for data analysis and visualization, capable of providing easy access to rich and articulated datasets. The web site is, in fact, the most external layer of this structure; it wraps and contains the other layers and enriches their contents with general and practical information about the project and – most important – with metadata about the structure of the database and atlas and practical information on how to query and extract useful information and a complete and updated handbook, which is a tool of great importance for the correct use and comprehension of all available resources and tools. The web portal will also contain a complete formal statement of all the methodological issues encountered and of the solutions adopted.<sup>14</sup>

## 5. CONCLUSIONS

If the reconstruction of the Egyptian Late Antique and Early Medieval (or Coptic) physical (archaeological) and cultural (literary) landscape is the ultimate goal of the PATHs project, the archaeological atlas of Coptic literature is the instrument chosen to reach this important objective, while the interdisciplinary approach, the fruitful dialogue with similar and parallel projects and the collaborative aptitude are the most appropriate methodological approaches capable of keeping the research on the straight path towards this purpose. From this point of view, the PATHs project has the ambition to assume a pivotal position between past and ongoing peer projects, encouraging collaboration, data-sharing and partnership in order to provide a solid cornerstone on which to build a sound scientific research.

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<sup>13</sup> Simon *et al.* 2016; Simon - Barker - Isaksen 2012.

<sup>14</sup> A first version of the Mission statement has been recently made available for free download at the following address: <http://paths.uniroma1.it/download/?file=PATHs-Statement.pdf>.

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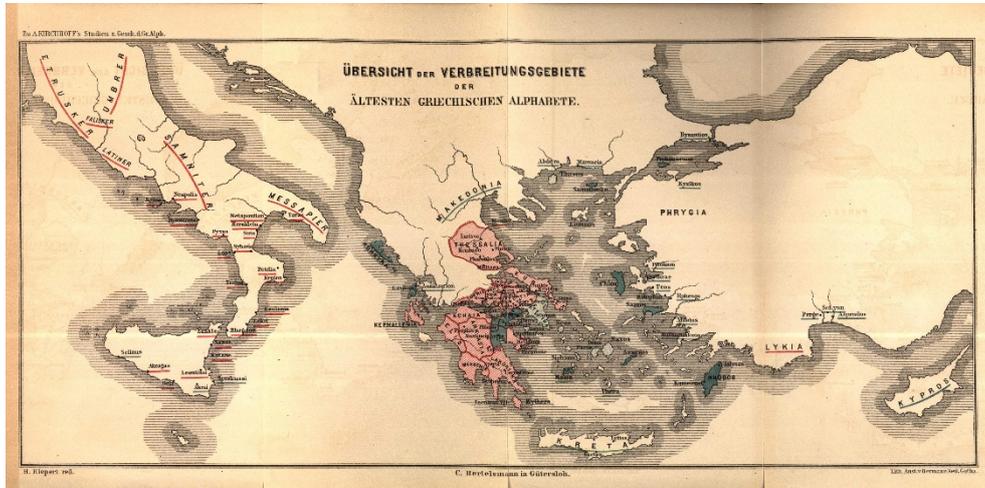


Fig. 1 - Map of Greek dialects (Kirchhoff 1887).

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**CMCL**  
**Corpus dei Manoscritti Copti Letterari**  
Projet patronné par l'Union Académique International

Enterprise dedicated to the study of Egyptian Christian culture  
in the I-XII centuries C.E., especially for the documents in Coptic language.  
CIM server  
Direttore: **Tito Orlandi**

Commissione scientifica: Edda Bresciani (Pisa), Paola Buzi (Roma), Alberto Camplani (Roma),  
Stephen Emmet (Münster), Bentley Layton (Yale), Manlio Simonetti (Roma)

Imprese collegiate: **PATh**: An Archaeological Atlas of Coptic Literature, Principal Investigator Paola Buzi, Roma.  
**Coptic Literature and Manuscripts**, Alia Suci (Göttingen AdWG, Hamburg HLZ).  
Critical Edition of the Works of Shenoute, Director Sigrún Ezzamel, Münster.  
Digitale Gesamtedition und Übersetzung des koptisch-sahidischen **Alten Testaments**, Director Heike Behlmer, Göttingen; Managing Director: Frank Feder, Göttingen.  
**Coptic Scriptorium**, created by Caroline T. Schroeder and Amir Zeldes.  
**Traces**, Changes in Ethiopic Style and Lexicon, Principal Investigator Alessandro Bausi, Hamburg.  
**Beta maasabell**: Manuscripts of Ethiopia and Eritrea, Principal Investigator Alessandro Bausi, Hamburg.  
**The Canons of Apa John the Archimandrite** (FWF Project P22641-G19), Dileana Anastasova (Göttingen).

**Free online Publications**

**Books**

Tito Orlandi, *Coptic Texts Relating to the Church Canons. An Overview*, ed. 2016 ([download pdf](#)).

Tito Orlandi, *Coptic Texts Relating to the Virgin Mary. An Overview*, ed. 2008 ([download pdf](#)).

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**Clavis Patrum Coptiorum**  
(List of the Coptic Literature)

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- Clavis Patrum Coptiorum**: list of the authors and works of the Coptic literature with information on manuscripts, content, and critical problems
- Manuscript**: list (a) of the individual collections, (b) of the Coptic codices either well preserved or reconstructed, especially from the Monastery of St. Shenoute, Atripe (White Monastery)
- Texts**: electronic edition of Coptic texts with Italian translation. A full edition consists of: reproduction of the manuscripts, diplomatic edition of the manuscripts, critical edition of the text, with translation, index of the words with grammatical explanation, linguistic analysis.
- History of literature**: chronological description of the development of the Coptic literature in 12 parts. Only parts 1, 4, 7 are currently available.
- Grammar**: a computational grammar of Sahidic with a list of words according to the grammatical categories.
- Bibliography**: Complete bibliography for Coptic studies. Some of the subjects are complete from the beginning of the studies: **Biblia**; **Gnosticism**; **Apocrypha**; **Letteratura**; **Agiografia**; **Storia**; **Generalia** (partially); **Manoscritti** (partially). The other subjects (Linguistica; Archeologia, and parts of **Generalia**, **Manoscritti** and **Storia**) start from 1980, and the previous titles will be completed in the future.

Fig. 2 - CMCL's homepage (<http://www.cmcl.it>).



Fig. 3 - Sketch map of Coptic monasteries in Egypt (data from <https://books.coptic-treasures.com>, basemap <http://from commons.pelagios.org>).

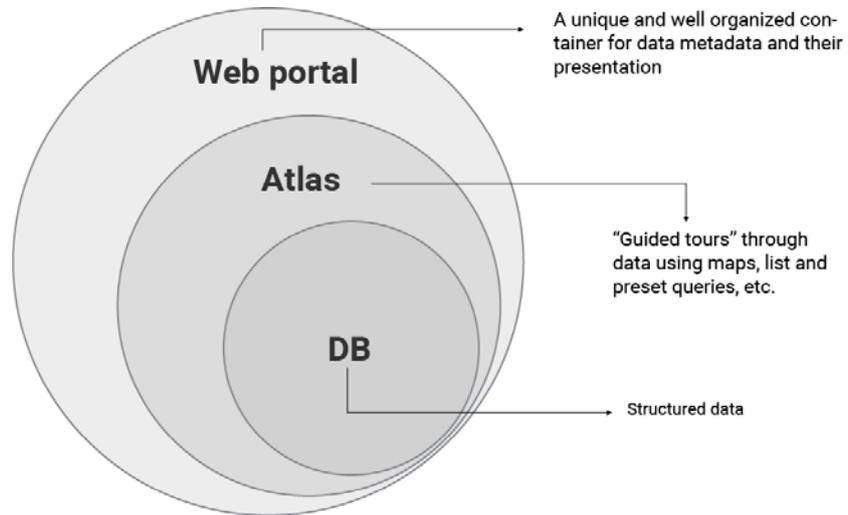


Fig. 4 - Venn diagram of the PATHs project information system.

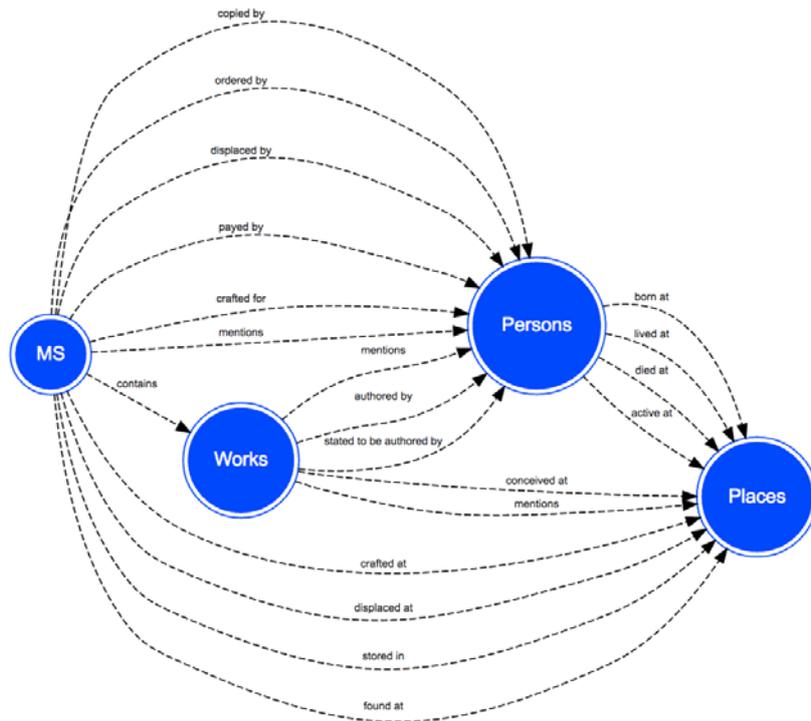


Fig. 5 - A simplified directed graph describing the database entity relations.