



SILVIA ORLANDI-LUCA MARCO CARLO GIBERTI-RAFFAELLA SANTUCCI

EAGLE
EUROPEANA NETWORK OF ANCIENT
GREEK AND LATIN EPIGRAPHY
MAKING THE ANCIENT INSCRIPTIONS ACCESSIBLE

ABSTRACT: EAGLE is a project whose principal aim is to bring together the most prominent European institutions and archives in the field of Classical Latin and Greek epigraphy in order to provide a single free user-friendly portal to the inscriptions of the Ancient World. Financed by the European Commission, EAGLE was born to endow Europeana, the European digital library, with a comprehensive collection of unique historical sources. EAGLE will thus provide access to the majority of the surviving inscriptions of the ancient Greco-Roman world – a massive resource and a veritable pillar of European culture, made accessible for the first time to everyone, from the curious to the scholar.

KEYWORDS: EAGLE; Europeana; Digital Humanities; Digital Library; Classical Latin and Greek Inscriptions

1. *Brief description*

The cultural identity of the Western world is rooted in the Greco-Latin tradition: from philosophy to architecture, from geometry to law, from rhetoric to literature, the presence of the ancients still informs the way we think, live, and express ourselves. Only a small fraction of all ancient Greco-Roman texts has survived to modern times, leaving sizeable gaps in the historiographic record. An invaluable alternative source of historical evidence can be found in the form of ancient inscriptions. These veritable

‘time capsules’ provide a myriad of useful facts, allowing us to cast light on otherwise undocumented historical events, laws, and customs. Also, the dissimilarity of the readership to which they were addressed compared to other forms of writing makes inscriptions unique in the landscape of the texts that have survived from classicity.

EAGLE (Europeana network of Ancient Greek and Latin Epigraphy) is a Best Practice Network co-funded by the European Commission under the ICT policy of its Competitiveness and Innovation Programme (CIP – ICT PSP), which will allow for the virtual reconstruction of the inscriptions’ original archaeological and historical context, making the majority of the surviving inscriptions of the Greco-Roman world accessible, complete with the essential information about them.

The EAGLE Best Practice Network is part of Europeana and is gathering, in a single readily-searchable database, more than 1.5 million images and related metadata, regarding inscriptions currently scattered across 25 EU countries, as well as the east and south Mediterranean.

2. The Consortium-roles and synergies

The EAGLE Consortium comprises 19 partners from 13 European countries and the community is growing steadily. Participating institutions range in size from small to large and span a range of complementary competences and roles.

Fourteen partners are providers of inscriptions (so-called ‘content providers’ in European-project parlance) from leading European universities and research centers with long traditions of excellence and cooperation in the field of digital epigraphy. All content-providing partners play an active role in awareness-raising and the recruiting of new content providers from across Europe.

The four technology partners – CNR-ISTI, EUREVA, GOGATE and Leuven University (see Appendix) – are leading institutions in their respective fields, with strong connections to other European projects. CNR-ISTI is setting up the necessary service infrastructure, connecting Europeana and the EAGLE aggregator. CNR-ISTI also has expertise in the field of image indexing and recognition, and is providing EUREVA with

the technology underlying the Flagship Mobile Application (see below 6.2 The Flagship Mobile Application).

A strategic partnership with Europeana Foundation is meant to create synergies in best practice areas such as content harmonisation, interoperability, multi-linguality, semantics. The partnership also allows the EAGLE Consortium to participate in the decision making and dissemination activities of Europeana. The Consortium's other key collaboration is the one established with Wikimedia Italia. The EAGLE content that will be made available through Wikimedia Commons will massively increase the visibility of its collections, and serve as a foundation for the crowdsourcing of translations.

The Project Coordinator is Sapienza University of Rome, whereas the Technical Coordinator is the Italian company Promoter Srl.

3. The problems that EAGLE addresses

Only a small fraction of the total production of texts from ancient Greece and Rome has survived up to the present day, leaving many ample gaps in the historiographic record. Inscriptions are invaluable sources that provide us with a myriad of useful facts in this respect – for example, by allowing us to cast light on otherwise undocumented historical events, or to gain new knowledge of local laws and customs, and even to determine the date and producer of a given artifact. Epigraphy also documents the evolution of languages and scripts, albeit indirectly; in some cases, such as that of the Rosetta Stone, it can provide those key insights that allow for the successful deciphering of an unknown script.

As a field of study, classical epigraphy has evolved into three strictly separate disciplines, i.e. Greek, Latin, and Christian epigraphy, characterised by separate collections and corpuses used for reference, separate publications, separate populations of scholars and researchers. Inscriptions have traditionally been featured in geographically-separated archives, with the result that often various inscribed documents that should be collated because of thematic or historic commonalities are scattered across multiple collections. All these factors have so far seriously hindered research.

Given the nature of the archives, their disjointedness, and the lack of available translations, ancient inscriptions have for the most part remained

the preserve of the specialist, and their enjoyment by the general public has been impossible. This is true for schools as well, whose history syllabi would benefit from the possibility of accessing inscriptions online.

The current situation of inscription archives in Europe mirrors the geographical dispersion of classical works of art across our continent: centuries of unregulated amassing by disparate individuals and institutions in different EU member states have managed to produce an extremely fractioned landscape, whereby items pertaining to the same age, and/or geographical area, now lie scattered across several different, geographically-separated collections. This is why only a holistic, pan-European approach is conceivable in order to restore the lost unity that characterized our common past. EAGLE was born exactly to satisfy this need, with respect to inscriptions, which are primary historical sources of great importance. EAGLE aggregates for the first time the collections of some of the most important epigraphy archives and institutions in Europe.

4. The collections featured in EAGLE

The collections held by the EAGLE partners have been assembled with the two-fold criterion of historical-cultural significance and strong thematic unity. These collections feature a great variety of inscriptions written in Greek, Latin and other ancient languages, providing scholars with an authoritative resource with which to verify the reliability of historical reconstructions. Additionally, the unification of many such collections under a common user interface providing also contextual information allows the wider public to understand and appreciate the links between interesting and geographically dispersed inscriptions. The following archives are included in EAGLE:

- [Arachne](#)
- [Archaia Kypriaki Grammateia Digital Corpus - Inscriptions/STARC collection](#)
- [The British School at Rome digital collections](#)
- [Epigraphic Database Bari - Epigraphic Documents of Christian Patronage](#)
- [Epigraphic Database Heidelberg](#)

EAGLE: Europeana Network of Ancient Greek and Latin Epigraphy

- [Epigraphic Database Rome](#)
- [Hispania Epigraphica Online](#)
- [PETRAE](#)
- [The Last Statues of Antiquity](#)
- [VBI ERAT LUPA](#)

Taken all together, the EAGLE collections represent approximately 80% of the total amount of inscriptions in the Mediterranean area.

5. The EAGLE Working Groups

EAGLE's top priority is the establishment of strong links not only with the epigraphic and classical studies communities, but also with the general public. To this end, the Consortium is sharing knowledge and experience with institutions/experts whose interests are germane to the project, as well as with independent scholars, students, and lovers of culture. In order to do this, three Working Groups (WGs) have been established within the Consortium, focusing on:

- content curation and translation
- content harmonisation (including GIS and terminologies)
- IPR and user engagement

5.1 Content curation and translation

This Working Group is setting up a multilingual wiki for the enrichment of epigraphic images and texts (with special emphasis on translation) for the benefit of the general public. Translations that have already been completed are being published first. The objective of these efforts is to translate into a modern language the most significant epigraphic texts. The task is being brought to fruition in cooperation with the Wikimedia Foundation. Wikimedia Italia, the Italian chapter of Wikimedia, is sharing with EAGLE its unique skills, experience, and platform in preparation for the massive uploading of content to their Commons. Wikipedia contributors will be able to embed EAGLE images and other resources

directly into their articles, while Wikisource communities will be able to use them to populate their libraries.

5.2 Content harmonisation guidelines, including GIS and terminologies

The goal of this Working Group is to provide guidelines and recommendations to ensure the continuous addition of quality content produced by the EAGLE Best Practice Network. This includes the definition of vocabularies and terminologies for content harmonisation and the analysis of tools and practices for adequate georeferencing.

5.3 IPR and user engagement: best practices and guidelines

This Working Group's objective is to analyse and evaluate strategies and practices that foster the re-use of the epigraphic content provided by EAGLE. These include:

- studies of user behaviour
- identification of user groups
- analysis of the rights management issues and requirements to be taken into account

User groups addressed in this task include the general public (e.g., tourists), individuals with a special interest in cultural heritage and classical Greco-Latin culture, field specialists and academic experts (researchers, students, teachers).

6. Technology solutions

The technology that supports EAGLE is state-of-the-art and tailored to provide the user with the best and most intuitive possible experience.

In EAGLE, the word inscription is used to indicate the document engraved on non-perishable materials whose text, along with a rich set of metadata (on its history, dating, preservation, place of finding, present location, etc.), is stored in the collections of 14 partners, the Content Providers. Metadata also includes translations of selected texts for the benefit of the general public. The descriptions (the metadata) of this huge, Europe-wide collection of inscriptions are being integrated in an online

repository, both for ingestion to Europeana and for the provision of services to interested users and scholars directly from the EAGLE portal.

The main service provided by the portal is the ability to find information about inscriptions through a dedicated search engine. It will be possible to perform full-text searches over the entire body of text associated with the inscriptions, using a simple interface ‘à la Google’, or more advanced queries that will make use of the various fields describing an inscription. For the advanced search, EAGLE has developed seven controlled multilingual vocabularies related to the main fields describing an inscription (type of inscription, type of object, material, writing, decoration, state of preservation and dating criteria). Users registered to the EAGLE system will be able to store the results of a search in their ‘private area’, to avoid retrieving them again in a subsequent visit, and will also be able to store comments and notes about the retrieved items.

In addition to textual search, an important feature offered by EAGLE is the ability to find information about an inscription by doing image-based queries. Taking advantage of a developed image recognition technology provided by ISTI-CNR, EAGLE will search its database of images and return all the information associated with the recognized picture.

6.1 The EAGLE applications

Two computer applications have been conceived in order to allow full use of the vast EAGLE repository, as well as to promote EAGLE as widely as possible. Particular attention is being paid to the design and ergonomics of the two apps, so as to make them as intuitive and as easy-to-use as possible, thereby promoting their uptake.

6.2 The Flagship Mobile Application

The Flagship Mobile Application allows smartphone users to take pictures of inscriptions on site and immediately receive contextual information (including translations) about them. The picture is sent to the EAGLE servers. There, custom developed software will recognize the picture from within a database of selected inscriptions, and will provide all the information associated with that picture. The application will sort and display information based on content type (e.g. translation, history, related inscriptions, tourist information) as well as on ‘user level’ (e.g. epigraphy

scholar, interested casual user, tourist, child). The partners providing content will select relevant items within the EAGLE repository and further enrich them with additional information, which will be provided to ISTI-CNR. Here, the graphic features of the pictures of the selected inscriptions will be extracted and indexed. Upon receipt of an image, the application, using advanced image recognition technologies (developed and consolidated at ISTI-CNR), will select from the index the image that with the highest probability matches the received image, and will provide all the associated information.

The initial application will index only a few thousands inscriptions, chosen so as to ensure maximum visibility and usefulness for the target users – i.e. tourists and the casually interested. Scholars in this field (epigraphy specialists, historians, archaeologists, etc.) may also find the application interesting when visiting previously unknown places (cities, museums, archaeological sites), where new inscriptions can be found.

The EAGLE Mobile Application, multilingual and cross-platform (i.e. for Android, iPhones and Windows phones), will be designed and engineered so as to enable the inclusion in the GUI of targeted ads in the form of banners, with view to its future sustainability.

6.3 The Flagship Storytelling Application

A very large repository such as that which EAGLE will provide is meaningful insofar as a person accessing it can easily and fruitfully make use of it. Since different users have different skills and needs, it is important that the information contained in EAGLE can be accessed and retrieved through a variety of strategies. The two most trivial ones are keyword searches and browsing. However, less knowledgeable users would benefit greatly from approaches that take them a bit more by the hand, so to speak. This is because large repositories can all too easily appear like featureless landscapes to the novice user: a mass of records lacking any meaningful structure. As a matter of fact, good metadata provides context at the level of the single item, but there is a definite lack of ‘superstructures’ that might allow one to gain a panoramic view of the field.

This is the gap that the Storytelling Application was born to fill. The scenario we foresee is that expert users – chiefly teachers – will assemble epigraphy-based narratives through a dedicated software, modeled on the

Storify interface. These narratives will work as Ariadne's threads for the novice user, providing an introduction to themes and stories that link various apparently-unrelated inscriptions together. For example, a story could link all the epigraphs related to public works done by one emperor, thereby providing insights in his way of thinking. Another narrative could explain why so many inscriptions were commissioned by *liberti* – former slaves that have been freed – and their peculiar mindset and standing in the social scale of the Roman world. Apart from such collections of inscriptions, there are also single pieces that can provide meaningful stories that enlighten the past.

The author of one such narrative will be able to decide access and editing privileges for it. Hence, narratives might be constructed and shared as wikis (accessible and editable by anybody), as one-to-one lectures, as texts to be published on the web, and so on. File formats for export will be HTML, PDF, or even just text.

Conclusion

Inscriptions are among the most characteristic expressions of the ancient world, particularly the Roman world, and it is difficult to overestimate their importance for the knowledge of the cultures of which they are an expression. It is well-known that they provide us with invaluable information on the most diverse aspects of the ancient world, including those aspects that are underrepresented or not treated at all in other sources, such as literary ones, which lack epigraphics' advantage of being in continual, often impetuous growth. As it is, the digital recording of all their texts represents a new and important possibility offered to scholars of the ancient world and to the public at large, which until now has had to rely on traditional indices of the various corpora, born in diverse cultural climates and by interests at times different from ours, interests oriented more towards socio-economic history, which often make the indices that they produce inadequate. To be able to individuate all the attestations, in their contexts, with a simple click, clearly represents in itself an enormous advantage; yet that advantage grows tremendously if we are able to group them according to areas, periods, documentary and monumental typologies, as the structure of the EAGLE project will allow us to do.

Silvia Orlandi-Luca M. C. Giberti-Raffaella Santucci

Moreover, the availability of such a vast amount of content as provided by EAGLE opens up in turn many new possibilities for its creative re-use. The Storytelling Application was conceived precisely with this aim in mind. Indeed, the whole graphic line adopted for the dissemination of the project makes use – amongst other things – of a suitably modified detail of an image that comes from EAGLE itself.

APPENDIX

THE EAGLE PROJECT PARTNERS

[Sapienza, University of Rome](#)

[Promoter Srl](#)

[University of Bari "Aldo Moro"](#)

[Heidelberg University](#)

[Oxford University](#)

[Univesity of Alcalà](#)

[Paris Lodron University Salzburg](#)

[Babeş-Bolyai University](#)

[Eötvös Loránd University](#)

[Juraj Dobrila University of Pula](#)

[Scientific Research Centre of the Slovenian Academy of Sciences and Arts Institute of Archaeology](#)

[Institut de recherche sur l'Antiquité et le Moyen-Age "Ausonius", UMR 5607, University of Bordeaux 3 - CNRS](#)

[Katholieke Universiteit Leuven](#)

[Italian National Research Council – CNR-ISTI](#)

[German Archeological Institute](#)

[The Cyprus Institute](#)

[Eureva](#)

[The British School at Rome](#)

[Gogate Srl](#)

AFFILIATED PARTNERS

[Pontificia Commissione di Archeologia Sacra](#)

[The Israel Museum, Jerusalem](#)

[Attic Inscriptions Online](#)

COOPERATION AGREEMENTS

Università di Venezia

Split Archaeological Museum

Università di Trieste

Università di Foggia

EAGLE: Europeana Network of Ancient Greek and Latin Epigraphy

Cheshire West Museum
Archaeological Institut of Kosovo
Università di Palermo
Università di Pavia
University of Beograd
University Johannes Gutenberg (Mainz)
Università di Bologna
Università di Firenze
Università di Genova
Gloucester Museum
Università di Perugia
Università di Cassino

Memorandum of Understanding

[Perseus and Perseids](#)

[Pelagios](#)

[Athena Plus](#)

REFERENCES:

HISTORY OF THE EAGLE PROJECT

Documents collected in http://www.edr-edr.it/Italiano/Documenti_it.php

S. Panciera, "Notizie da EAGLE", *Epigraphica*, 75, 2013, p. 502-506.

GENERAL

- F. Feraudi-Gruénais, *Latin on Stone: Epigraphy and Databases*, in *Latin on Stone: Epigraphic Research and Electronic Archives*, ed. by F. Feraudi-Gruénais, Lanham, Maryland, 2010, p. 1-19.
- F. Feraudi-Gruénais, *An Inventory of the Main Electronic Archives of Latin Inscription*, in *Latin on Stone: Epigraphic Research and Electronic Archives*, ed. by F. Feraudi-Gruénais, Lanham, Maryland 2010, p. 157-160.
- A. Felle, *Esperienze diverse e complementari nel trattamento digitale delle fonti epigrafiche: il caso di EAGLE ed EpiDoc*, in N. Palazzolo (a cura di), *Diritto romano e scienze antichistiche nell'era digitale. Convegno di studio (Firenze, 12-13 settembre 2011)*, Giappichelli, Torino, 2012, p. 47-54.

ABOUT EDR

- S. Evangelisti, *EDR: History, Purpose, and Structure*, in *Latin on Stone: Epigraphic Research and Electronic Archives*, ed. by F. Feraudi-Gruénais, Lanham, Maryland, 2010, p. 119-134.
- G. Tozzi, *Bilingual Inscriptions of Rome and their Digital Edition in EDR (Epigraphic Database Roma)* – [poster presentato al 143° Annual Meeting dell'American Philological Association \(5-8 gennaio 2012, Philadelphia, PA\)](#).

Silvia Orlandi-Luca M. C. Giberti-Raffaella Santucci

ABOUT EDB

A. Felle, *La documentazione epigrafica della catacomba di Domitilla a Roma alla luce dell'Epigraphic Database Bari* (http://ciegl.classics.ox.ac.uk/html/webposters/30_Felle.pdf).

FURTHER STUDIES AND DEVELOPEMENTS

G. Bodard, *EpiDoc: Epigraphic Documents in XML for Publication and Interchange, in Latin on Stone: Epigraphic Research and Electronic Archives*, ed. by F. Feraudi-Gruénais, Lanham, Maryland, 2010, p. 101-117.

F.L. Álvarez García-E. García-Barriocanal-J.L. Gómez-Pantoja, *Sharing Epigraphic Information as linked data EPIDOC, in Metadata and Semantic Research. Proceedings of the 4th International Conference MTSR 2010 (Alcalá de Henares, October 2010)*, Springer, Berlin-New York, 2010, p. 223-234 (<http://uah.academia.edu/FernandoLAlvarezGarcia/Papers>).

FOR THE BROAD PUBLIC

C. Carletti, "Le antiche iscrizioni sulle ali di un'aquila", *L'Osservatore Romano*, 6 novembre 2008, p. 5.

F. Ghedini-M. Verzar-C. Zaccaria, "I progetti di schedatura informatizzata", *Forma Urbis*, XV, 12 dicembre 2010, p. 39-42.

SILVIA ORLANDI

Sapienza Università di Roma
silvia.orlandi@uniroma1.it

LUCA MARCO CARLO GIBERTI

Sapienza Università di Roma
lucagiberti@stx.oxon.org

RAFFAELLA SANTUCCI

Sapienza Università di Roma
raffaella.santucci@uniroma1.it