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Contents

EAGLE: PAST, PRESENT AND FUTURE	ix
0.1. Past and Present [Silvia Orlandi]	ix
0.2. The Future [Silvio Panciera]	xiii
Conference committee	xviii
KEYNOTE SPEAKERS	1
Where Eagles Dare. <i>Charlotte Roueché</i>	3
Putting ancient inscriptions in the limelight. <i>Mary Beard</i>	5
Infrastructures for Digital Research: New opportunities and challenges. <i>Lorna Hughes</i>	7
DIGITAL EDITIONS OF INSCRIPTIONS: METHODS, PROBLEMS, APPROACHES	9
AXON. A Selection of Greek Historical Inscriptions. A Database for Research and Teaching. <i>Stefania De Vido, Ivan Matijašić, Silvia Palazzo</i>	11
The digital edition of the archaic Latin inscriptions (7th-5th century B.C.). <i>Giulia Sarullo, Giovanna Rocca, Marta Muscariello</i>	21

I.Sicily: an epidoc corpus for ancient Sicily. <i>Jonathan Prag, James Chartrand, James Cummings</i>	37
Towards the Publication of ICI Siracusa: General Data and Previews. <i>Mariarita Sgarlata</i>	51
EDB 2.0. How EAGLE improved the Epigraphic Database Bari. <i>Anita Rocco</i>	71
Visual features of Inscriptions. An issue for EDB (and EAGLE). <i>Antonio Felle</i>	89
Working with Text and Images: The Graffiti of Herculaneum. <i>Rebecca Benefiel, Holly Sypniewski, Sara Sprenkle</i>	105
COLLABORATING IN DIGITAL EPIGRAPHY	119
The EAGLE Data Aggregator: Data Quality Monitoring. <i>Andrea Mannocci, Vittore Casarosa, Paolo Manghi, Franco Zoppi</i>	121
The EAGLE portal. <i>Claudio Prandoni</i>	135
Mapping Databases to EpiDoc. <i>Pietro Maria Liuzzo</i>	149
Trismegistos Places, a geographical index for all Latin inscriptions. <i>Herbert Verreth</i>	163
Augmenting the workspace of epigraphists: An interaction design study. <i>Angelos Barmpoutis, Eleni Bozia</i>	171
TIGLIO. Translations and Images of Greek and Latin Inscriptions Online. <i>Pietro Maria Liuzzo, Bridget Almas, Ryan Baumann, Marie-Claire Beaulieu, Hugh Cayless, James Cowey, Finlay Mc Court, Joshua Sosin</i>	183
A Virtual Research Environment to Document and Analyze Non-alphabetic Writing Systems.. <i>Katja Diederichs, Sven Gronemeyer, Christian Prager, Elisabeth Wagner, Franziska Diehr, Brodhun Maximilian, Nikolai Grube</i>	195

Integration of Multimedia Collections and Tools for Interaction with Digital Content. The case study of the Archaia Kypriaki Grammateia Digital Corpus. <i>Uros Damnjanovic, Valentina Vassallo, Sorin Hermon</i>	209
USERS, EPIGRAPHY AND THE SOCIAL WEB	223
Free Reproduction of Cultural Heritage for Research Purposes: Regulatory Aspects and New Prospects for Project EAGLE. <i>Mirco Modolo</i>	225
Digital enhancement of the “Paolo Orsi” museum: a Google Street View 360 pilot project tour. <i>Elisa Bonacini</i>	235
Latin Epigraphy for the Visually Impaired. New Technologies to Favour Universal Accessibility. <i>Francesca Licordari</i>	249
Teaching (Digital) Epigraphy. <i>Marion Lamé, Federico Ponchio, Ivan Radman-Livaja, Bruce Robertson</i>	267
Epigraphy in Italian High Schools. <i>Enrico Zuddas</i>	283
DIGITAL APPROACHES TO CROSS-DISCIPLINARY STUDIES OF INSCRIPTIONS	297
Romans 1 by 1. Documenting a population database for the Roman world. <i>Rada Varga</i>	299
Towards a Universal Facebook of the Ancient World. <i>Yanne Broux</i>	309
Epigraphy and Onomastics in the Hesperia Database. <i>Noemí Moncunill, Javier Velaza</i>	319
The Power of Images at Aphrodisias: How Digital Resources Can Transform our assessment of Palaeography. <i>Abigail Graham</i>	333

Deixis and Frames of Reference in Dedicatory Epigrams. <i>Flavia Licciardello</i>	359
PANELS	371
Assessing the Role of Digital Libraries of Squeezes in Epigraphic Studies. <i>Eleni Bozia</i>	373
EAGLE Featured Panel. <i>Vittore Casarosa</i>	379
Epigraphic Echoes in Epigrams. <i>Marion Lamé</i>	381
POSTERS	385
1. List of Posters presented	387

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AXON. A Database for Greek Historical Inscriptions.

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Abstract

The AXON Project has developed a database of Greek historical inscriptions, from the birth of the *polis* in the Archaic Age to 31 BC. Each entry is provided with the object's description, a complete lemma, Greek text with critical apparatus, Italian translation and commentary with keywords and indexes, and updated bibliography. New insights for data-inclusion have been developed. The database supports enlargement and offers a high degree of searchability. Our aim is to illustrate the structure, the contents and the solutions we have come up with in the development of the AXON Project. We will also offer some suggestions for teaching and academic research purposes.

Keywords: Online epigraphic editions; interoperability of digital editions of Greek historical inscriptions; images of Greek historical inscriptions; digital epigraphy in teaching and research

1. The AXON Project

AXON. A Selection of Greek Historical Inscriptions is a project conceived within the Greek Epigraphy Lab (Director, Prof. Claudia Antonetti), and has been brought into existence with the financial support of the University Ca' Foscari of Venice (University Project 2013, Project Coordinator, Prof. Stefania De Vido; Scientific Team: Ivan Matijašić, Silvia Palazzo, Michela Socal, Luigi Tessarolo [IT Project]).

Since October 2014 the members of the AXON Project have been developing a database which includes a great variety of Greek inscriptions of different chronology, typology, and territory of origin. The most recent advances of traditional epigraphy as well as the scientific acquisitions in the Digital Humanities have been taken into account.

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The selection of texts has been made according to a broader notion of ‘historical’ inscription, including not only significant military, political, and institutional texts, but also those inscriptions which are essential for the social and cultural understanding of the Greek world.

AXON includes texts from the birth of the Greek *polis* in the Archaic Age¹ to 31 BC, a chronological frame traditionally related to Greek History (though a future extension of this chronological limit is not excluded). The epigraphic entries have been prearranged in order to allow a wide and well-structured description of each document. At the same time, a common and coherent lexicon has been produced, which will permit an easier indexing of significant words and will make future searches much quicker.

2. A unique model-entry for a great diversity of inscriptions: taxonomy and categorisation

2.1. Entry description

2.1.1. Object’s description

The model-entry has been created with an eye on the object’s thorough description. Here is the object’s categorisation:

- a. Object type
- b. Material
- c. Object’s dimensions
- d. State of preservation
- e. Further descriptive elements
- f. Date and context of finding
- g. Finding site (modern nation, ancient region, ancient and modern name of the city, if known)
- h. Actual location (modern nation, city, museum/archaeological context, inventory number)

The great majority of these categories can be selected from a given number of options from a pull-down menu. Some categories – such

¹ See the *Introduction* in [HANSEN AND NIELSEN \(2004\)](#); [HANSEN \(2006\)](#).

as Object type, Material, or State of preservation – are directly linked with the corresponding sections in the EAGLE Vocabularies (see <http://www.eagle-network.eu/resources/vocabularies/>). Furthermore, a hyperlink has been created between the AXON-entries and Pleiades website (<http://pleiades.stoa.org>): where the finding site is known, each entry offers the geographic coordinates and a Googlemaps visualisation. This gives the possibility of rapidly gathering the information for any single ancient location and allows for searches directly from an interactive map.

2.1.2. Chronology

The chronological delimitation of each text is supported by many options, as you can see in Fig. 1:

The image shows a web interface titled 'CRONOLOGIA' for entering chronological data. It is divided into two main sections: 'Inizio intervallo' (Start interval) and 'Fine intervallo' (End interval). Each section has a 'DATAZIONE' (Dating) area with the following elements: radio buttons for 'a.C.' (checked) and 'd.C.'; a dropdown menu for 'Secolo' (set to '-- secolo --'); a dropdown menu for 'Parte' (set to '-- porzione --'); an input field for 'Anno'; and checkboxes for 'Post' and 'Circa' (under 'Inizio intervallo') or 'Ante' and 'Circa' (under 'Fine intervallo'). A red question mark icon is present below the 'Anno' field in both sections. At the bottom, there is a field for 'EVENTUALE DATAZIONE ALTERNATIVA'.

Fig. 1. Window for the input of data, section Text/Chronology

2.1.3. Alphabet & language

Each entry provides all the necessary information on the alphabet and language of each inscription:

- a. Type of Inscription (with link to EAGLE's Vocabularies: <http://www.eagle-network.eu/resources/vocabularies/typeins/>. The categories are those used by GUARDUCCI (1967-1980))
- b. Text's structure
- c. Writing (Execution technique²; different types of epichoric alphabets according to Kirchhoff's colour-coded map; Local script³;

² With link to <http://www.eagle-network.eu/resources/vocabularies/writing/>.

³ Following the categorisation in JEFFERY (1990).

Palaeographic features and letters' form⁴; letters' heights, description and layout of the text field; Direction of Text)

d. Language (with an option for any dialect's peculiarities)

2.1.4. Genetic lemma & apparatus criticus

The text of each inscription is preceded by a hierarchically arranged lemma (the so called *genetic lemma*, according to Louis Robert's definition⁵) and is followed by the apparatus criticus.

2.1.5. Italian translation & commentary

Each entry corresponds to an Italian translation and commentary (in .pdf).

2.1.6. Abstract

The Abstract – with a WYSIWYG interface – includes all the keywords for indexing and lemmatisation:

The screenshot shows a text editor interface. On the left, a paragraph of text is displayed with various words highlighted in different colors: red for 'Personaggi', blue for 'Divinità ed eroi', green for 'Luoghi, regioni, popoli', yellow for 'Nomi geografici', purple for 'Lessico politico e istituzionale', and pink for 'Parole importanti'. On the right, there is a sidebar titled 'Inserisci nel commento' with a list of these categories and two buttons: 'Modifica voci inserite' and 'Ripulisci dopo incolla'.

Fig. 2. Example of Abstract in AXON. The different colours allow a selection of words from a drop-down menu.

The Keywords are divided into the following categories (these categories are based on EpiDoc Community Guidelines as well as on the

⁴ The letter-form and glyph-form are based on the symbols of the font Cardo (<http://scholarsfonts.net/cardofnt.html>), but many have been developed by the AXON Team on the examples of letter-form given in JEFFERY, 1990 (see also <http://poinikastas.csad.ox.ac.uk/browseGlyphs.shtml>).

⁵ ROBERT AND ROBERT (1954).

indexes of the Supplementum Epigraphicum Graecum, SEG):

- a. Persons and names (mainly for 'historical' characters)
- b. Gods and heroes
- c. Place names
- d. Geographical names
- e. Significant words regarding the history of politics and institutions
- f. Other relevant keywords
- g. Ancient sources

2.1.7. Bibliography

Finally, an updated bibliography highlights any previous edition for each entry, as well as all the appropriate secondary sources. SEG abbreviations have been used for epigraphic *corpora* and other publications (the section "materiali" on the website gives access to a list of all abbreviations, useful for students, as well⁶).

2.2. Internal & external interoperability of the AXON database

Each entry is related – whenever it seems appropriate – to other entries in the AXON database. A hyperlink connects the entry with other digital editions of the same text (if available), or with other useful websites, possibly containing images. Wherever possible, images and/or apographs and/or squeezes of inscriptions have been included. The creation of a digital archive of images as part of the AXON website is also desirable.

2.3. A simple website interface for the input of data

Since the contributors to the project (i.e. the authors of the entries) are experts from different Italian and European universities (and not all of them are familiar with the Digital Humanities), and given the great number of entries planned in the near future, the necessity of a simple and easily understandable interface for the input of data was an essential issue to the project from the very beginning. Guidelines to EpiDoc have

⁶ <http://virgo.unive.it/venicepigraphy/axon/public/axon/pagine/materiali> (still being processed).

been taken into account in order to produce a clear structure for the input of data.

Our aim is to establish a growing community of experts, students, and enthusiasts to increase the number of contributors through lists of inscriptions which have not yet been assigned. At the same time it will be possible to suggest other texts which are not included in the lists. To achieve these aims, the project follows an EpiDoc-friendly structure and is compatible with Europeana EAGLE Project, especially in the use of a common terminology.

3. Searchability

The website is designed to allow for many search options. Beyond the “full text” search and another based on the number, title and author of the entry (see Fig. 3), three other search-possibilities will also be available:

Fig. 3. Search based on “Full text”, number, title, and author of the entry.

- a. browse all the entries according to the inscriptions’ a) typology, b) chronology, and c) area of origin;
- b. access the entries through an interactive map;
- c. perform an advanced search based on different categories:

- (a) bibliography
- (b) keywords
- (c) object's description and preservation (see Fig. 4)
- (d) chronology
- (e) text (single words or phrases, typology, dialect, alphabet, letter-form, etc.) (see Fig. 5).

The screenshot displays the search interface for the AXON database. At the top, there are two buttons: "Ricerca" (Search) with a magnifying glass icon and "Cancella tutto" (Cancel all). Below these is a search bar with the text "RICERCA FULL-TEXT" and a search prompt "Cerca le schede che contengono" followed by a dropdown menu set to "tutte le parole" (all words) and a help icon. The interface is organized into several expandable sections: "DATI GENERALI", "BIBLIOGRAFIA", "PAROLE CHIAVE", "SUPPORTO", "CRONOLOGIA", and "TESTO". The "SUPPORTO" section is currently expanded, showing several filters: "Tipologia" (a dropdown menu with "-- seleziona --"), "Luogo antico di ritrovamento", "Regione antica", "Luogo moderno di ritrovamento", and "Luogo di conservazione". Each of these location filters has a text input field with the placeholder "Inserire uno o più caratteri iniziali".

Fig. 4. Different searching categories.

Other filters will be employed for each search result. A section entitled “tools” is also available, and it includes information on the entries’ structure, tables with the contents of different categories, links to Vocabularies and websites, etc.

4. The AXON Project for teaching and academic research

4.1. Teaching

The AXON Project, as an example of a digital edition of inscriptions (see esp. genetic lemma and *apparatus*) with a high degree of clarity for

► SUPPORTO

► CRONOLOGIA

▼ TESTO

Cerca nel testo tutte le parole

α	β	γ	δ	ε	ϛ	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ/ς	τ	υ	φ	χ	ψ	ω	
a	b	g	d	e	v	z	h	q	i	k	l	m	n	c	o	p	k	r	s	t	u	f	x	y	w

Tipologia

Struttura

Tecnica di scrittura

Colore alfabeto

Alfabeti regionali

Lettere particolari AND

Andamento

Dialetto

Ricerca

Fig. 5. Advanced text search

contributors and users, is a useful tool for teaching Greek epigraphy as well as ancient history. Many contributors are university lecturers / professors of Greek Epigraphy, and the scientific committee includes high school teachers and instructors in classical languages, making AXON especially well-suited for educational purposes and for use by students: for engaging them, for example, in the composition of entries. The interoperability of the AXON website and the cross-references to other Digital Humanities projects are essential elements in the development of this discipline.

4.2. Significance for the academic community

Each entry is created by an expert contributor and is subject to double-blind peer review, thus assuring an important contribution to the scholarly community. At the same time, the hyperlinks to other websites and digital editions will make it easier for the user to check immediately all similar projects. Finally, the indexing allows for the easy discovery and use of specific information, and will be of fundamental importance for gather together groups of documents according to particular research needs.

In conclusion, the AXON Project aims at a collaboration of expert scholars from different fields: epigraphy, ancient history, dialectology, archaeology, digital humanities. It can produce valuable results in the domain of the digital editing of inscriptions and, more generally, contribute to the advancement of classical studies, opening them up to a broader audience through the world-wide web.

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