

PART V

PANELS

1. Assessing the Role of Digital Libraries of Squeezes in Epigraphic Studies. Digitization, visualization, and metadata

*Eleni Bozia**

Keywords: Squeezes, Online Libraries, 3D Visualizations, Contextuality

1.1. Description

This panel discussed issues and research questions regarding the use and efficiency of digital libraries of squeezes of inscriptions—structure of online libraries, nature of the metadata, 3D digitization, and visualization methods. The panel that consisted of epigraphists, digital epigraphists, and computer engineers engaged in a dialogue, addressing the above issues from different perspectives.

Digital libraries of squeezes have become an integral part in epigraphic studies and research. Whether it is the issue of collecting data for more efficient use, increasing their accessibility, or simply digitally preserving them, digital libraries are a new scholarly medium. Such projects confront the challenge of having to determine the types of data that should be included—traditional information, digital metadata, formats and tools for articulating all the specificities of the metadata—as well as decide whether the type of the project should predetermine the ontology of the data.

The aforementioned primary issue begs also the question of the need for interoperability of e-libraries in an attempt to combine, contrast, and comparatively appraise and study the artifacts themselves and their metadata. Thus far several projects, including but not limited to the EAGLE consortium, the Center for Epigraphical and Palaeographical Studies, the Aleshire Collection at the University of California, Berkeley, and the US Epigraphy Project among others feature

digital libraries of squeezes; however, how should one proceed about perusing them? Issues that need to be addressed include: whether their use would be facilitated by means of homogeneity of the libraries, or whether the variegated nature of the material could potentially increase the number of users and the amount of information that is available.

However, one should consider the limitations of e-libraries that focus solely on squeezes. When discussing the nature of the digital libraries' content and the implication that the metadata may have in the interpretation of a squeeze, we need to consider its contextuality—whether the absence of the inscription bearer from a squeeze's record may prove reductive with regards to the holistic approach to the text. However, notwithstanding that high-resolution digitization of squeezes opens the possibilities for enhanced study on a level that until now could not be achieved, techniques that focus solely on the digitization of the squeezes usually fail to deal with the inscription bearer. Furthermore, there are other types of data—geo-spatial, prosopographic, linguistic—that would not only enhance our understanding of any one particular squeeze, but also contribute to our overall apprehension of classical, archeological, and epigraphic studies. This panel discussed how the digital records of squeezes could be augmented to encapsulate their contextual information.

Questions that were addressed:

1. How to preserve the traditional nature of the data—specificity, terminology—while retaining the possibility of keyword search?
2. Have we started thinking/searching/researching differently. Is it the database that determines the type of research that one conducts?
3. Do we create authenticity via our digitization selections? In turn does this mean that we validate?
4. How can computer scientists and humanists communicate to find a common point of reference between creating efficient algorithms and databases while retaining the nature of epigraphic and archaeological studies?
5. TEI has created a common form of expression and advanced the homogeneity of data. Could we proceed with a similar trajectory for other forms of data?
6. Would such a scenario also resolve the issue of contextuality. One database need not be an artifact's concordance, but interlinked

databases could preserve their individuality while advancing search possibilities?

7. What are other aspects of the artifact (inscription bearer etc.) that could enhance the record of the squeeze?
8. What kind of information would produce a more holistic record for the squeezes.

Eleni Bozia gave a brief introduction to the history of online databases of squeezes. She presented the type of data and metadata that they favor and proceeded to furnish the problems that surface when research groups do not opt for interlinked databases or structure the metadata according to the tools available, rather than according to the research needs and the nature of the database. Prof. Bozia also argued in favor of flexibility of databases and projects with the intent to consider the needs of each database rather than favor an existing ontological structure that restricts the content, and contextuality of the database, thus limiting its effectiveness. Adeline Levivier presented the collaboration between Université Lyon 2, UMR HiSoMA & Ecole française d'Athènes and the Digital Epigraphy and Archaeology Project at the University of Florida. The project involves the digitization of approximately 9000 squeezes in 3D as well as the creation of an online library with metadata of the collection. The squeezes date from Archaic Greek period to the Roman Imperial era and originate from Delos, Thasos, Delphi, and Asia Minor. The group pursues dematerialization for long-term preservation, remote consultation of data, standardization for interoperability with other resources related to cultural heritage and digital epigraphy, and creation of a new resource for research: a big data corpus to be queried by advanced systems. Issues of selection were brought forward—how do research groups make choices—as well as the usability of 3D models of squeezes that give the option of advanced visual manipulations and automatic measurements. The major matter in question that the group intends to address in this project is the need to create a database that fits the researcher's needs instead of merely reusing existing expertise and ontology.

Manuel Sánchez and Jose Pablo Suárez-Rivero advanced the discussion by presenting options for the enhancement of the digital libraries of squeezes. They presented their project titled *Epigraphia 3D* in which they perform 3D digitization of the entire artifact/inscription bearer. This admittedly provides a more holistic record of the squeeze

and a context for the inscription itself. Profs. Sánchez and Suárez-Rivero presented their methodology that employs photogrammetry, their results, and their online database with the artifacts. An issue that was brought forward is how one can combine within the same project a detailed 3D digitization of the letters of the inscription/squeeze as well as a large-scale artifact/inscription bearer. The advantages, however, of a more complete record of the artifact and the squeeze became apparent.

Finally, Angelos Barmpoutis concluded the panel with a discussion on the Digital Epigraphy Project and its metadata perspective, arguing in favor of a collected record as well as the flexibility to incorporate fields and metadata particularities as needed in its case. He discussed the need to treat both the physical squeeze as well as the digital artifact as objects that require metadata. He presented the sandbox upon which the Digital Epigraphy project functions with regards to the addition of metadata information. Prof. Barmpoutis also discussed the significance of considering every user's unique perspective should one wishes to increase the usability and importance of their research database.

In conclusion, the panel discussed theoretical issues that derive from the exigency to communicate and consider the advancements of technology alongside the needs of traditional research and presented current projects, databases, and actual case scenaria that deal with such issues. The intent of this multifarious cohort of scholars was to emphasize the importance of transdisciplinary collaboration and the pivotal role of the individual researcher/user. The panel considered ways to utilize traditional knowledge with the advantageous flexibility of digital tools that will ultimately not only facilitate, but also ultimately enhance epigraphic studies.

1.2. Panelists

Michèle Brunet *Université Lyon 2, UMR HiSoMA & Ecole française d'Athènes* Email: Michèle.Brunet@univ-lyon2.fr Prof. Brunet has been the Chair of Greek and Latin Epigraphy at the Université Louis Lumière Lyon 2 since 2006. She has been a member of l'École Normale Supérieure de Paris (1979-1984) and l'École française d'Athènes (1984-1988).

Adeline Levivier *Université Lyon 2, UMR HiSoMA & Ecole française d'Athènes* Email: adeline.levivier@gmail.com Adeline is a doctoral candidate in l'École française d'Athènes - Université Lyon 2. She works

on the digitization of squeezes. She collaborated on the project ANR E-pigramme (Épigraphie et Muséographie - Édition numérique et valorisation de la Collection des inscriptions grecques du Musée du Louvre). She is currently the program manager of the project E-stampages (Numérisation et diffusion web en 3D des collections de l'UMR 5189 HiSoMA et de l'École française d'Athènes).

Manuel Ramírez Sánchez *Universidad de Las Palmas de Gran Canaria*
Email: manuel.ramirez@ulpgc.es Prof. Sánchez is a Professor of Historiographic Sciences and Techniques at the Department of Historical Sciences. He works on the 3D digitization and advanced visualizations of inscriptions and has published extensively in the area of inscriptions from Ancient Hispania.

Jose-Pablo Suárez-Rivero *Universidad de Las Palmas de Gran Canaria*
Email: Josepablo.suarez@ulpgc.es Prof. Suárez-Rivero is the Director of Política Informática at the Cartography and Graphic Engineering Department. He has a Ph.D. in Applied Mathematics and works on mesh generation, algorithms and data structures, and computational geometry.

Angelos Barmpoutis *University of Florida* Email: angelos@digitalworlds.ufl.edu Prof. Barmpoutis is an Associate Professor in the On-line Institute and the Digital Worlds Institute at the University of Florida. He is also the coordinator of research and technology at the Institute and affiliate faculty at the Computer Science and Engineering Department. His research focuses on interdisciplinary applications of computer science to the service of broad areas of learning and training.

2. EAGLE Featured Panel

*Vittore Casarosa**

Keywords: epigraphic database, 3D epigraphy, storytelling, virtual epigraphic exhibitions, mobile application, image recognition

2.1. Description

The EAGLE project is really a multidisciplinary project, which can be looked at from three different perspectives, each one with many different facets.

- The epigraphy dimension, (inscriptions, transcriptions, critical editions, translations, historical context, geographical context, materials)
- The technology dimension (data model, data aggregation, search engine, 3D representations, disambiguation, image recognition)
- The application dimension (mobile application, storytelling, virtual reality, epigraphy in schools)

In this panel, we will touch on some of those facets, focussing more on the ones that are not going to be presented during the conference. Our aim is to stimulate some discussion and exchange of ideas, to try and understand what we have missed, what could have been done better, and what you (the audience) see as the strong points of EAGLE.

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2.2. Panelists

Anita Rocco *University of Padova and IDEA (International Digital Epigraphy Association), Email: anitarocco74@gmail.com*. Anita Rocco is an archaeologist and an epigraphist specialised in late antique and early Christian studies, with a Licentiate degree at Pontificio Istituto di Archeologia Cristiana and a PhD in Post Classical and Early Medieval Culture. After a period at the University of Bari as a Research Fellow, she is currently Adjunct Professor of Christian Archeology at the University of Padova. She has participated in several archaeological excavations in Apulia and in Rome and has gained solid experience in digital epigraphy working, since graduation, at the Epigraphic Database Bari as compiler, editor and administrator. In the epigraphic field, she studies the executive technique of the inscriptions from catacombs of Rome and deals with the close interconnection between epigraphical and archaeological data.

Valentina Vassallo *Science and Technology in Archaeology Research Center (STARC) of the Cyprus Institute, Email: v.vassallo@cyi.ac.cy*. Valentina Vassallo is a Research Assistant STARC, in the field of Digital Libraries. She is also a PhD candidate in Classical Archaeology at Lund University (Sweden) and in Science and Technology in Cultural Heritage at The Cyprus Institute (Cyprus). Her interest is the definition of a knowledge communication framework for data management and communication process of digital cultural heritage assets through new ways of reasoning with information technologies and metadata.

Andrea Mannocci *Knowledge Media Institute (KMI) of the Open University of Milton Keynes, UK, Email: andrea.mannocci@isti.cnr.it*. Andrea Mannocci holds a PhD in Ingegneria dell'informazione (Information Engineering) from the University of Pisa, a BSc and an MSc in Computer Science Engineering from the University of Pisa and a MSc in Telematic Engineering from the University of Carlos III of Madrid. Andrea Mannocci is presently a Research Associate at KMI, as a member of the Data Science Group, working on machine learning applied to scholarly big data and research analytics. Previously he has worked as a Research Assistant at ISTI-CNR in Pisa, focusing on the design and development of data infrastructures and data engineering solutions in support of research communities.

Francesco Mambrini, *Deutsches Archäologisches Institut (Berlin) and the Humboldt Chair for Digital Humanities at the University of Leipzig, Email:*

f.mambrini@gmail.com. Francesco Mambrini obtained his PhD in Classical Philology at the University of Trento (Italy) and EHESS (Paris) and is presently a Research Assistant at DAI. His main research interest lies in computational tools and methods for the study of the Ancient Greek language and literature. He has cooperated with a number of leading digital projects for the ancient languages, including the Ancient Greek and Latin Dependency Treebank and the Index Thomisticus Treebank. He is one of the founders of the bi-annual conference “Corpus-based Research in the Humanities”.

Giuseppe Amato *Institute for Science and Technology of Information of the Italian National Research Council (ISTI-CNR), Email: giuseppe.amato@isti.cnr.it*. Giuseppe Amato graduated in Computer Science at the University of Pisa, Italy, in 1992 and was awarded a PhD in Computer Science at the University of Dortmund, Germany, in 2002. Since 1994 he is a member of the research staff at ISTI-CNR in Pisa, working in the area of Multimedia Information Systems. He is the leader of the Multimedia Information Retrieval research group of the Networked Multimedia Information Systems laboratory at ISTI-CNR. His main research interests are content-based retrieval of multimedia documents, access methods for similarity search of multimedia documents, smart camera networks.

Pietro Liuzzo *Hiob Ludolf Centre of Ethiopian Studies at University of Hamburg, Email: pietro.liuzzo@gmail.com*. Pietro Liuzzo holds a PhD in Ancient History from the University of Bologna and presently is the technical lead of the project Beta maṣāḥəft: Manuscripts of Ethiopia and Eritrea (Schriftkultur des christlichen Äthiopiens: eine multimediale Forschungsumgebung). He was previously associated with the University of Heidelberg, where he participated in the EAGLE project. He is also a counsellor of the International Association for Digital Epigraphy.

Luca Giberti *director, producer, and cinematographer. Email: lucagiberti@gedproductions.co.uk*. After graduating in Physics at Genoa University and at Oxford University, he apprenticed under Abbas Kiarostami and Marco Bellocchio. His theatre shows have been performed in many venues worldwide – including the Piccolo in Milan, the Oxford Playhouse, the Teatro Stabile in Genoa, the Edinburgh Fringe. He has won prizes as a director, as a screenwriter, as a cinematographer, as a video artist, including accolades from the Italian Academy of Arts

in Rome (Accademia Nazionale di San Luca) and from several film festivals (Berlinale Talents, Venice Biennale Cinema, et al.). For two years he was also full-time producer-director for the Italian Council for the Physics of Matter (INFN), responsible for the media output in its entirety – comprising short documentaries and promos for the public understanding of science. He has lectured on directing at Sapienza - University of Rome, at Middlebury College (Vermont, USA), and at the Film Academy Of Performing Arts (FAMU) in Prague.

3. Epigraphic Echoes in Epigrams

*Marion Lamé**

Keywords: interoperability between editions, epigram, traditional and digital epigraphy, cross-disciplinary studies of inscriptions

3.1. Description¹

For several years, the Memorata Poetis project (PRIN 2010/11) aims at studying the intertextual relationships between literary and epigraphic epigrams in several languages (Ancient Greek, Latin, Italian, Arabic and English). In order to identify some patterns that echo across space, time, culture and languages, one of the main activity consists in manually identifying Themes & Motifs within the corpus of poems. Such Themes & Motifs are organized, for now, as a hierarchical index of metadata that are associated with the text of the poem only. However, part of this corpus is composed of epigraphic primary sources. This means that such epigrams were set up in a deliberate context of communication and that part of their message is based on linguistic and non linguistic elements of their contextual, textual and writing systems. Some examples are iconographic programs and relationships with other poems, type of verses, inscriptions, themes and motifs (ex. AE, 1967, 85; De Hoz 2014, No 355; Banti, No 5 and 51). In this panel, participants would like to discuss convergences and divergences between textual editing that tends to follow philological methods, and document editing, that focuses on the unicity of the materiality of the carrier (Pierazzo 2015) and that appears more adapted to epigraphic edition. Both types of edi-

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tion would facilitate cross-disciplinary studies of epigraphic epigrams. Panelists will focus on how connecting both types of edition thanks to digital technologies, i.e. integrating digital edition of epigraphic epigrams in the wider context of digital philology on one hand (e.g.: giving access to high quality images thanks to computer graphics tools) and in the one of public history on the other hand (e.g.: crowdsourcing with historical method).¹

3.2. Panelists

Marion Lamé *Centre Camille Jullian, MMSH, CNRS, France* Email: mlame@mmssh.univ-aix.fr Collaborates with the Laboratorio di Cultura Digitale of the University of Pisa. She has worked and works on several digital epigraphic projects (IGLouvre, TSS, Memorata Poetis...) and collaborates to collective dissemination of digital practices (EpiDoc). Her researches are dedicated to Digital Epigraphy applied especially to complex epigraphical situation and device (multilingualism, multi-alphabetism...).

Paolo Mastrandrea *University of Venice* Email: mast@unive.it P. Mastandrea is specialized in Latin Philology. He is the Project Coordinator of important national projects in digital humanities: Memorata Poetis and Musisque Deoque.

Flavia De Rubeis *University of Venice*. Email: flavia.derubeis@unive.it Specialized in Latin Paleography and is in charge of the epigraphic epigrams of the Middle Ages in Memorata Poetis Project.

Mia Trentin *University of Venice* Email: trentin.mia@unive.it Mia Trentin is specialized in Medieval Epigraphy and Latin Palaeography, focusing on medieval ways of communication and expression through the analysis of historical graffiti writing. She collaborates with prof. Flavia De Rubeis for the project Memorata Poetis.

Massimo Manca *University of Torino* Email: massimo.manca@unito.it Researcher specialized in Latin Language and Literature, his interests are Latin literature in Late antiquity, didactics of Ancient Greek and Latin, training of teachers, digital tools for classics.

Alfredo Morelli *Università degli Studi di Cassino* Email: alfmorel@unicas.it Professor of Latin language and literature at the University

¹ The texts of authors are open to discussion on the blog *Épigraphie En Réseau*: <http://eer.hypotheses.org>.

of Cassino (Italy), he works on the history of Greco-Roman literary and epigraphic epigram of Hellenistic period until the age of Martial, the Roman elegy at the time of Augustus and the tragedies of Seneca. He has been active for years on the *Carmina Latina Epigraphica* in cooperation with Epigraphic Database Roma.

Enrica Salvatori *University of Pisa* Email: enrica.salvatori@unipi.it Specialized in Medieval history and Director of the Laboratorio di Cultura Digitale of the University of Pisa. She works in the digitization process of inscriptions of Pisa, included epigrams, and in projects of public history concerning the valorization of epigraphs. [<http://pisaeislam.humnet.unipi.it/> - <http://epigrapisa.humnet.unipi.it/>]

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