

Theme: 6. Material culture studies and societies

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Format: Session with presentation of 6 slides in 6 minutes

The recent increase in projects based on large-scale digitization of archaeological material has made urgent a conversation which reflects critically on issues connected to cataloguing and classification of often ample amount of collected data. On the other side, studies more reliant on traditional methods often neglect digital approaches to test basic clustering in their data. Moreover whereas archaeological classifications, especially typology, have a long history behind them, being at the foundation of the discipline itself, on the other hand digital approaches seem still to be in a tumultuous developing phase. In the archaeological practice a detrimental disconnect between the two approaches, could be problematic, one way or another: by either leading to a positivist enthusiasm towards the new, dismissing well-matured archaeological methodologies, or by setting aside the opportunities digital archaeology can provide.

These issues will be the focus of this session, by discussing projects, approaches, and theories that are situated at the confluence of traditional classification and digital methods, with a specific focus on the practical and directly work-related issues connected with the classificatory work, as for instance reflection on the role of traditional classifications in the development of machine learning for the recognition or analysis of patterns or forms, geometric morphometrics, big data studies of artifacts and other archaeological material.

We are looking forward to receiving presentations from all periods, including pre- and protohistory, classical antiquity, and historical archaeology (e.g. lithics, ceramics, metal, art, burials, architecture, etc.), regardless of their geographical origin. The aim of the session will be to bring together and discuss practical experiences as well theoretical perspectives, linking classification and digital methods in a critical and constructive way, weaving together new and old methods of recording, analyzing, and interpreting the archaeological record into a more mutual-profitable interaction.

ABSTRACTS:

1 TRADIGITAL HUMANITIES. EXPERIENCES IN A CONTEXT OF CHANGE

Abstract author(s): Pérez González, Jordi (Universitat de Girona)

Abstract format: Oral

At the beginning of the 90's, Judith Moncrieff first coined the term Tradigital art to describe those artistic processes that combined traditional and computational techniques in the creation of an image (physical or digital). In this communication we will highlight, on the one hand, our experience in various projects that have gone from accumulated data to analyzed data and then we will talk about a series of new techniques used with increasing assiduity in the field of Humanities.

Although these computational techniques introduce new methods for the identification of patterns in the data, and promise to accelerate the processes of analysis of the growing mass of data, they diverge from the beginning of the traditional narrative and its methods. In this sense, recent experiences allow us to discuss the benefits and limits of the link between traditional methods and techniques with computational ones when preparing scientific papers. Thus, we believe that without losing sight of the historian's basic essence of continually immersing himself in the reading and analysis of sources, the paradigm shifts of Science can be assumed through the assumption of this new techné.

Consequently, among our main objectives is, first, to analyze the expert figure of the Data science or Chief Data Officer (CDO) within the organization chart of research development, second, to detail the processes of Data Cleaning and Data Quality of the bases of data analyzed and finally summarize the use of new tools such as Carto, Tableau, Flourish, etc. that serve to empower researchers in decision-making in their analysis processes.

2 AMULETS NEED ATTENTION! RETURNING TO THE CLASSIFICATIONS TO BETTER UNDERSTAND THE SMALL FINDS OF TELL EL-GHABA (NORTH SINAI, EGYPT)

Abstract author(s): Calomino, Eva (Instituto Multidisciplinario de Historia y Ciencias Humanas - IMHICIHU - Consejo Nacional de Investigaciones Científicas y Técnicas - CONICET; Universidad de Buenos Aires)

Abstract format: Oral

Much of the historical-archaeological approaches integrate conceptualisations and classifications for data management, database creation and their submission under qualitative and quantitative analyses. Throughout this classification process, the artefacts are included in categories that generally correspond to previously used names within disciplinary traditions specific to each area of study. In this sense, these categories sometimes have explicit definitions and sometimes do not, hence continuing with the lack of problematisation of the assumptions that said categories entail. In this way, concepts begin to work as "labels" that integrate social and functional assumptions and broader meanings. The categories tend to become diffuse, and, as such, their explanatory power decreases. Something similar has happened with the concept of "small finds" in the research from archaeological sites in Ancient

Near East. A way to remedy this situation is proposed here by presenting a definitive classification proposal for the small finds recovered from Tell El-Ghaba (north Sinai, Egypt, 10th century BC - 7th century BC). The specific and contextual study of the 964 small finds found in the domestic structures of this site seeks to describe and create ways of interpreting the activities carried out by the inhabitants and their beliefs. They were recovered in systematic excavations, and analyzed and recorded under controlled laboratory conditions (by the Argentine Archaeological Mission in Tell el-Ghaba since 1995). The analysis of this sample is carried out from the registration databases -field and laboratory registration sheets, photographs and drawings- and several related publications. This presentation proposes clear and operational tools to approach the study of the relationships between activities and material culture, presenting categories in which the sample can be organized without referring to the functional question as the primary level of object classification and hoping that this proposal can be applied at other archaeological sites in the eastern Mediterranean.

3 THE DISAPALE PROJECT: A 3D DATABASE OF PALAEO-LITHIC LITHIC TYPES

Abstract author(s): Di Maida, Gianpiero (Neanderthal Museum)

Abstract format: Oral

Hosted by the Neanderthal Museum, in the past 3 years, the DISAPALE project (a German acronym that stands for "Digital collection of Palaeolithic lithic types") has been digitally recording more than 1,000 lithic items, building thus quite an impressive 3D dataset of lithic artefacts from different periods and geographical regions.

As it is easy to imagine, the organization of the collected data required the implementation of a cataloguing system of a sort. The obvious choice - that of relying on the existing typological lists - did not come devoid of issues. Typology in fact while it constitutes a core part of the basics for students of prehistoric archaeology in colleges and universities around the world, at the same time it is far from being a fully accomplished field of study: and if this might be said for every field of study, in its case the problems run deeply to its own foundations. Contrary to other apparently similar fields (like cladistics in biology, for instance), the overall impression is that typology is still far from finding its balance.

In this paper, it will be briefly discussed the possibility that the digital recording and cataloguing of artefacts could provide a new renewed impetus to the typological analysis of lithic, with the hope to finally contribute to its more organic development in a fully, scientifically sound branch of study.

4 HYBRIDIZED METHODOLOGY IN CERAMIC SHAPE ANALYSIS: A CASE STUDY OF TYPOLOGY, GEOMETRIC MORPHOMETRICS, AND 3D DATA IN NEOLITHIC JAPAN

Abstract author(s): Loftus, James (Kyushu University; Japan Society for the Promotion of Science)

Abstract format: Oral

"Japanese archaeology is currently at a methodological turning point" has been a key phrase in the scholarship for more than two decades. With complex statistical analysis becoming the "standard" for modern analysis of shape in western scholarship, the traditional use of notions such as "attributes", and "typo-chronologies" has fallen out of favor. However, for a majority of modern archaeological study in Japan, these traditional aspects are still the favored process. While both have continued to illuminate important gaps in archaeological knowledge, this methodological gap has maintained an ever-growing wedge between Japanese archaeology and the international stage. International impact in the scholarship has continued to fall, with collaborations between domestic and international scholars few and far between.

This author believes that the solution to this precarious situation is not a complete elimination of 'traditional' methods, but instead a hybridization of methods in the analysis of shape. Utilizing a case study in the Jomon-Yayoi Neolithic transitional period, this study shows that a complex integration of typology, chronology, geometric morphometrics and 3D analysis in ceramic analysis can form not only statistically sound, but also holistically qualitative data for use in a variety of uni/multivariate analysis.

5 COMBINATION OF THE OLD AND THE NEW. CHALLENGES IN CONTEMPORARY ROCK ART STUDIES

Abstract author(s): Juszczuk, Karolina - Prusaczyk, Daniel (University of Warsaw)

Abstract format: Oral

The rock art study is one of the archaeological research areas with a wide range of possibilities in terms of the use of different research methods. Over the past years, with the development of technology, there has been an apparent dispute between the followers of traditional methods used in rock art studies and the supporters of the use of modern techniques. Currently, the prevailing trend is to combine these two approaches.

The aim of our paper is to present the research methodology we developed working on our projects in the Americas. We made an attempt to develop a new, coherent research strategy for rock art. The first project involved investigation at the Toro Muerto site in Peru, which is one of the largest repositories of rock art in the world. The second project was conducted at the Tetzcotzinco site in Mexico, where rock art is less abundant but geographically challenging to document. We will present the methods of documentation and classification of the iconography (based mainly on traditional methods), and its complementation by the use of different digital approaches, which include photogrammetry and scanning. We will also confront the traditional approach of making iconographic typologies with the method of creating digital databases. We will also present the possibilities of embedding the collected data in a GIS, taking into account the problems provided by working with big data (Toro Muerto) and synchronizing different types of data