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1 The A.G.A.T.H.O.C.L.E.S. Project and Beyond: Archaeology of Gesture and Material Consciousness in Ceramic Studies

The hand is the window on to the mind (Immanuel Kant)¹

People make objects, but objects make people (Daniel Miller)²

In Kant's quote above on how the gestures of hand is a window into the creative process of humans and on Miller's statement on how creation is a consciously dialectic process between objects and people, the concepts of gesture and material consciousness take center stage, as are in the current volume. More than words, a creative adjustment in a famous Renaissance statue help us visualize such mental processes. In 1564, more than twenty years after completing the statue of Moses which still stands in San Pietro in Vincoli in Rome, the famous master Michelangelo Buonarroti (better known simply as Michelangelo) revisited his work, making a major change: he turned the head (!) of Moses from its original frontal position so that it would face left (Fig. 1). Thus, what we can see today does not correspond to the great sculptor's original version of the statue. Both recent conservation activities on the statue and personal correspondence from Michelangelo's circle of friends have confirmed independently this artistic modification,³ allowing us to conclude that, as this prominent example demonstrates, artistic creation and recreation are dynamic processes that sometimes continue even when an artifact is finished.

The selection of a Renaissance marble statue to introduce this book on ceramics from the ancient Greek and Roman worlds may at first seem an odd choice, but the shared idea of crafting and re-crafting an artifact is central to the conceptualization of this volume as well. It helps us understand the continuous intellectual spectrum of archaeology of gesture and how artifacts acquire a certain material consciousness as they move through production, distribution, and consumption. These two concepts—archaeology of gesture and material consciousness—are useful for anchoring the genesis of the conference and the proceedings that are presented here.

The concept of “material consciousness”, proposed by R. Sennett, refers to the “craftsmen's proper conscious domain” and argues that “people invest thought in things they can change.” According to him, such thinking revolves around three key issues that are related, to a certain extent, to the concept of movement: metamorphosis, presence, and anthropomorphosis.⁴ In his analysis, he argues that “the long history of crafting clay shows three ways of becoming aroused consciously by materials, in altering, marking, or identifying them with ourselves”.⁵

Artifacts from all periods and places are intrinsically related to the concept of movement in different ways: crafting procedures, human manipulation and gestures on them, displacements in certain locations and spaces (e.g., productive, domestic, ritual), import/export, and restorations or modifications over time. Thereby, movements can generate networks and crucial relationships: links among different geographical areas, cultures, and ideas; links between artisanal knowledge, dynamics of apprenticeship, and artistic collaborations; and links between specific or general contexts of learning experience. All these movements and networks in antiquity need to be investigated through an interdisciplinary approach that aims to focus on a (reconsidered) “material consciousness” involving the exploration of ancient materiality from multiple perspectives.

Even if we deal with a distant world—chronologically, geographically, materially—the technical adjustments of Michelangelo's modified Moses could be considered as a proof to invisible to the naked eye ‘movements’ of raw material and of artisanal gestures involved in rendering the new position of the head, as well as evidence of ‘movements’ of

1 Tallis (2003) 4.

2 Miller (2005) 18.

3 Frommel (2014) 54–58. The statue was begun in 1506, later modified in 1532, and completed in 1544. The reference to the Moses' turned head was discovered in a letter dated in 1564 and written by Tommaso Cavalieri. It was addressed to Giorgio Vasari since he was collecting memories of Michelangelo's friends for the second edition of his book on the lives of the artists: see Vasari (1550). Concerning the crafting and technological aspects related to the modification of the Moses' head, see Forcellino (2014) 295.

4 Sennett (2008) 120.

5 Sennett (2008) 144.



Fig. 1: Statue of Moses by Michelangelo Buonarroti in San Pietro in Vincoli, Rome (Wikimedia Commons / Jörg Bittner Unna, “‘Moses’ by Michelangelo JBU140”, CC BY 3.0; https://it.m.wikipedia.org/wiki/File:%27Moses%27_by_Michelangelo_JBU140.jpg [last access 15.07.2024]).

Michelangelo’s own cultural, philosophical, and religious beliefs.⁶ Moreover, Michelangelo’s Moses is extremely fascinating as inspiration for understanding the “embodied humanity”⁷ of ancient artisans, their techniques, their movements, their invisible—at least, for us today—gestures, and their relationship with the finished object itself.

Archaeology of artisanal gesture is central to the project A.G.A.T.H.O.C.L.E.S., the acronym for “Archaeology of Gesture: Apprenticeship, Tools, Hands, Organization, Collaborations, Learning Experience and Social Network Analysis”. This three-year project has been funded by the Marie-Sklodowska Global Individual Program at the European Commission and performed at the University of Turin (beneficiary) and the University of Arizona (host for outgoing phase).⁸ A.G.A.T.H.O.C.L.E.S. was the driving force for the international conference entitled *Technology, Crafting and Artisanal Networks in the Greek and Roman World: Interdisciplinary Approaches to the Study of Ceramics*, which was held in hybrid format in Turin in 2022, and which led to the creation of this volume.

Our main goal in this volume is to present a number of important case studies relating to ceramics and the people behind them,⁹ with a special focus on new methodological approaches, their efficacy, and how they can be combined to better understand ancient craft manufacturing and the societies that lay behind these crafting dynamics. We have included most of the papers presented during the conference and in the international webinar series held in 2022 and 2023.¹⁰ These two types of settings for scholarly exchange, conference and webinar series, had a shared objective: to

⁶ On the Michelangelo’s religious beliefs and his connection with the Neoplatonism, see Frommel (2014) 22.

⁷ Dobres (2014) 203.

⁸ Grant Agreement no. 893629: Principal Investigator: Marco Serino, University of Turin (Supervisor: Diego Elia, Department of Historical Studies); University of Arizona (Supervisor: Eleni Hasaki, School of Anthropology and Department of Religious Studies and Classics).

⁹ Inspired by the title of Stissi’s (2002) dissertation: *Pottery to the People. The Production, Distribution and Consumption of Decorated Pottery in the Greek World in the Archaic Period (650–480 BC)*.

¹⁰ The A.G.A.T.H.O.C.L.E.S. International Webinar Series—organized by Eleni Hasaki and Marco Serino—were entitled, respectively: *Technology, Craft Connections and Digital Humanities in Classical Archaeology* (March–April 2022), and *Present and Future of Red-figure Pottery Studies: Thematic and Methodological Approaches* (February–March 2023).

address all of the topics mentioned above, and to create fruitful occasions for discussing past and current methodological approaches and how it might be possible to combine them all in order to better understand craftspeople of the ancient world. This volume centers on *téchne*, the powerful ancient Greek word which emphasizes the inseparability of art, skill, craft, process, knowledge, understanding, and awareness, as well as material consciousness.

The intensely revised scholarship of red-figured production of Southern Italy and Sicily in recent decades has provided a beneficial gestation period for the A.G.A.T.H.O.C.L.E.S. project. The analysis of archaeological context became – finally! – increasingly important for better understanding functions, symbolical meanings, workshop dynamics, and the possible migration of artisans.¹¹ In addition to a renewed attention to the stylistic aspects of artifacts, their iconographic themes, and their distribution patterns, the technological features of the raw materials for these artifacts have now been recognized as essential elements within current scholarship.

A.G.A.T.H.O.C.L.E.S. focuses on craft traditions related to red-figured vase production in Southern Italy during the 5th and 4th centuries B.C. It examines the manual skills and gestures which are the most powerful learning-medium provided by those members of society who would transmit their knowledge through the expert use of their hands. The acronym of the project, A.G.A.T.H.O.C.L.E.S., encompasses the various angles for studying South Italian ceramics, but it is also a reference to Agathocles, the tyrant of Syracuse and self-proclaimed *basileus* of Sicily (between 316 and 289/288 B.C.).¹² But he was not only the tyrant of the Greek polis Syracuse: according to the ancient literary sources, he was the son of a potter named Carcinus of Rhegion, another Greek polis in Southern Italy. The project therefore refers to Agathocles as a son of a craftsman, and the acronym aims to evoke the curiosity and the typical behavior of children, who are used to learning by observing the intangible actions of their elders.

In this project material science is embedded from a network perspective exploring links between ancient people and landscapes in various ways, such as raw materials and artisans, apprenticeship between masters and pupils, links between individuals and communities. From the individual level the project moves towards a macroscale economic dynamic.¹³ It serves more broadly as a model case study to better visualize and embrace the effectiveness of such methodological intersections. But data from technology studies, anthropological approaches, archaeometric analyses, and computational imaging can become even more useful when integrated into a wider picture – and this picture is more fully captured as a network. As M.-A. Dobres has argued, only when the “communities of craftspeople [. . .] are taken as central to understanding how technical activities unfolded” can gestures and artisanal relationships become visible in the archaeological record.¹⁴

It is from precisely these premises that the idea for developing an archaeology of (artisanal) gesture was born, supported by the realization that we could overcome some serious challenges (as we cannot witness an ancient artisan performing such gestures) thanks to new diagnostic modern technologies. These can really help and support us in our efforts to find the material clues – often invisible to the naked eye – to the various steps behind the completed item, as a result of specific sequences of artisanal gestures.

Scholars have increasingly focused on technology in Classical Archaeology in the last few decades, adopting the concept of *chaîne opératoire* promoted by anthropological studies,¹⁵ and combining it with the advances in archaeometry, especially chemical and petrographic analyses of clay.¹⁶ Archaeometric studies focused their attention not only on the clay provenance, but also on the technological dynamics related to the quality of black gloss, to the kiln temperature reached during the three-stage firing process, and to some crucial issues related to the conservation of these archaeological materials.¹⁷

¹¹ For some general and recent overviews of early South Italian red-figured workshops, see Denoyelle/Iozzo (2009) 97–136, 165–170; Todisco (2012) vol. II. To mention some post-Trendall studies related to Sicilian workshops: de Cesare (2009); Madella (2010); Barresi (2013), (2018); Elia (2012), (2014), (2019); Serino (2014), (2019); Santostefano (2020). For a brief overview of the last two decades of studies, see Soleti (2012) 66–71.

¹² Polyb. 15 35.2; Diod. 19 (*passim*), Diod. 20 63.4.; Plut. *Regum et imperatorum apophthegmata*, 176, and *De laude ipsius*, 544; Iustin. 22.1.1; Amm. 14. 11.30; Aus. Epigr. 2, 5–6.

¹³ Dobres (2014) 203: “As knowledgeable but imperfect agents, people must never be an afterthought in technology studies, no matter how hard it is to find them in the archaeological record”.

¹⁴ Dobres (2014) 201.

¹⁵ Delage (2017).

¹⁶ For a complete and comprehensive recent overview, see Roux (2019) 1–14.

¹⁷ Concerning archaeometric studies related to black gloss, kiln temperatures and other technological, see some recent papers (with previous bibliography): Aloupi-Siotis (2020); Gliozzo (2020); Jones (2021).

Recently, the relationship between archaeology and technology has also been investigated both from an ontological point of view and from that of the history of technology. M.-A. Dobres has emphasized the “mutual becoming” of people and products, focusing on the distinction between “cultural reason” and “practical reason” and highlighting how “people” need to be the ontological starting point of concrete research on ancient technologies.¹⁸ A.M. Pollard and C. Gosden have more recently explored from a diachronic and theoretical perspective how technology is a social product as it “represents a socially embedded set of activities sustained by the transmission of relevant bodies of knowledge and practices”.¹⁹

The strong, interdisciplinary frameworks of A.G.A.T.H.O.C.L.E.S characterize both the academic institutions where the project was performed and also the broader scholarly trends in the study of ceramic production in the Greek and Roman world. The outgoing phase of the project was performed at the University of Arizona, the School of Anthropology and its Laboratory for Traditional Technology (LTT) together with the Department of Religious Studies and Classics.²⁰ At the LTT ongoing projects by E. Hasaki and her collaborators pertaining to craft apprenticeship, technology and organization of ancient workshops, experimental archaeology, and the social networks of ancient communities of practice provided a stimulating environment for A.G.A.T.H.O.C.L.E.S. to further refine its research angle with regard to the South Italian vase industry.²¹ The LTT offers semester-long instruction on potting techniques through its Ceramics Resident Instructor program, while also hosting short-term residencies by local and international ceramic artists. These artists instruct students and also participate in the laboratory’s research projects concerning forming, decorating, and firing techniques within the A.G.A.T.H.O.C.L.E.S. framework, such as that of Roberto Paolini in 2023.²²

Similarly, during the incoming phase at the University of Turin, in its Department of Historical Studies, the A.G.A.T.H.O.C.L.E.S. project capitalized on a long tradition of archaeological and material culture studies—started by M. Barra Bagnasco and C. Preacco Ancona, and continued by D. Elia, especially in the field of figured pottery—²³ which has significantly expanded interdisciplinary collaborations in a wide range of research areas in recent years, both within and beyond the Classical world. At the University of Turin, an important institution for collaboration and research planning has been the Structure in Sciences for Conservation, Restoration, Valorization of Cultural Heritage (SUSCOR): within its framework, training and research activities have been developed in relation to the Master’s Degree in Conservation and Restoration of Cultural Heritage, created in agreement with the Conservation and Restoration Center “La Venaria Reale”. This institution involves a close collaboration between colleagues from the Department of Historical Studies – archaeologists and art historians – and those from the Departments of Chemistry, Physics, Earth Sciences, Life Sciences and Systems Biology. Although the focus is on restoration and conservation, the interest in materials and techniques has led to other synergies and collaborations on various subjects related to cultural heritage, from archaeology (e.g., the House of the Ancient Hunt in Pompeii),²⁴ to contemporary art.

Advancing interdisciplinary perspectives in the field of cultural heritage studies, the University of Turin has also launched Tech4Culture (T4C), an innovative research and training doctoral program in Heritage Sciences.²⁵

¹⁸ See Dobres (2010), with previous bibliography.

¹⁹ Pollard/Gosden (2023) 1.

²⁰ See litt.arizona.edu (last access 24.04.2024).

²¹ Hasaki (2016), (2019), (2021), (2024); Hasaki/Harris Cline (2020); Harris Cline/Hasaki (2023).

²² Hasaki this volume; Serino this volume; Hasaki/Serino/Elia this volume.

²³ For the first archaeometric analyses of Western fine wares carried out at the University of Turin, see Mirti *et al.* (1995), (1998), (2004a), (2004b). An early application of RTI is shown in Bovero *et al.* (2012). For the use of microscopy, see Elia *et al.* (forthcoming).

²⁴ The project *Da Pompei a Venaria. Per un progetto di conoscenza, valorizzazione, divulgazione: la Casa della Caccia Antica*, directed by D. Elia, adopts an interdisciplinary perspective with a multidisciplinary team to promote the knowledge, conservation and valorization of a Pompeian domus through archaeological, historical, scientific and technical studies. The results from the first phase of this project were presented to the public in the exhibition *Pompeiana Fragmenta. Conoscere e conservare (a) Pompei*: see Elia/Meirano (2018); a second phase of the project is now underway.

²⁵ See <https://www.tech4culture2020.unito.it/do/home.pl> (last access 01.05.2024). This program (Technology Driven Sciences: Technologies for Cultural Heritage), which involves 35 national and international partners, both academic and non-academic, aims to train the next generation of Cultural Heritage professionals, to equip them with technological solutions and services for the restoration, protection, diagnostics and valorization of cultural heritage, while also offering a complementary scientific training in socio-economic disciplines and humanities.

A non-Mediterranean project, *BeArChaeo* (2019–2023), focusing on the archaeological exploration of the Tobioticsuka Kofun and other Kofun burial mounds in Japan (see *Beyond Archaeology*: https://www.facebook.com/BeArChaeoProject/?locale=it_IT [last access 01.05.2024]), has also contributed significantly to the scientific growth of researchers at the University of Turin, as well as the development of methodological and instrumental approaches: many collaborations started in the framework of this project continue to this day, supporting the study of archaeological sites and materials (ceramics, glass, metal and stone artifacts).

At the University of Turin, the experimental archaeological sessions in the framework of the A.G.A.T.H.O.C.L.E.S. project continued as along with extensive analyses using RTI (Reflectance Transformation Imaging) and photogrammetry. Moreover, a large number of microscopic, archaeometric, SEM (Scanning Electron Microscope) and Laser Ablation analyses have been undertaken in collaboration with the Department of Chemistry and the University “Aldo Moro” in Bari.²⁶

Both the Universities of Turin and the University of Arizona have very strong traditions in the study of ceramics from different but highly complementary perspectives. All of the research environments noted above have created a perfect combination for allowing the project to integrate different methodological approaches. The resulting interdisciplinary study is characterized by the integration of traditional studies with innovative diagnostic techniques in search of ancient artisanal gestures and the craftspeople behind them.

Some of the key methodologies employed by the A.G.A.T.H.O.C.L.E.S. project and by several contributing authors in this volume are visual archaeology, experimental archaeology, and network studies. Visual Archaeology, especially the computational imaging techniques, when applied to the study of technological and artisanal procedures developed in ancient times, is deeply changing the way archaeological studies can approach the technological aspects of ancient materials.²⁷ Computational imaging has emerged as an incredible tool in archaeology and cultural heritage. It can capture, process, and analyze images, unlocking hidden details and restoring artifacts virtually. It enables us to better follow the gestures, skills, and movements of raw materials, as well as the ‘movements’ of peculiar artisanal *savoir-faire*.

Experimental studies have progressed both for Bronze Age archaeology in the Mediterranean and for Classical studies, and there is great potential for further integration of experimental projects in the investigation of craft technologies.²⁸ Pre-historic figurine marble sculpting, stone cutting technology, and textile technology have been studied alongside making attempts to replicate Roman hairstyles and Roman concrete.

Network Studies, both in the broader sense of interconnectedness and in its Social Network Analysis variation, have progressed significantly, but the combination between technology and networks is far from being systematically explored, especially for the ancient Greek and Roman worlds.²⁹ In particular, Social Network Analysis—mostly applied in “pure” historical studies, and less in archaeology—in the last few years has been revealed to be a very useful instrument for investigating the materiality of the ancient world.³⁰ Social Network Analysis, as applied on red-figured vases, can also shed new light on the mobility³¹ of ancient craftspeople and the possibility of following their movements through their specific technological procedures.³²

But the case study of red-figured pottery is just one of the instances where such interdisciplinary approaches can be applied in the ceramic world. Thus, we decided to go beyond the A.G.A.T.H.O.C.L.E.S. project itself, and include a large spectrum of ceramic artifacts and to focus on some key-concepts: technology, crafting procedures, and artisanal networks as anthropological, historical and archaeological evidence for both material and cultural metamorphosis in artisanal productions related to the Greek and Roman worlds. Taking inspiration from the concept of “material metamorphosis”, we intended to investigate how “material consciousness” developed for the ceramics of the Greek and Roman world.³³

²⁶ Thanks to the collaboration of Annarosa Mangone, (Department of Chemistry, University “Aldo Moro” of Bari).

²⁷ See the annual *Proceedings of the International Conference on Cultural Heritage and New Technologies*, held in Vienna, Austria (<https://ojs.chnt.at/index.php/proceedings> [last access 24.04.2024]) and the *Annals of the Photogrammetry, Remote Sensing, and Spatial Information Sciences* by the International Society for Photogrammetry and Remote Sensing (<https://www.isprs.org/publications/annals.aspx> [last access 24.04.2024]). For some case studies applied on clay materials, see: Bechtold *et al.* (2010); Karl *et al.* (2018); Mara/Portl (2013); Kipke *et al.* (2022). More specifically, concerning RTI applied to red-figured pottery see: Artal Isbrand/Klausmeyer (2013); Saunders/Collmann/Borda (2017); Balachandran (2018).

²⁸ For Early Cycladic figurines, see Papadatos and Venieris (2017); for the Mycenaean pendulum saw, see Blackwell (2018), and for the Bronze Age textile technology, see Jones (2015); for Classical archaeology especially of the Roman world one can mention the replication of Roman hairdos—Stephens (2008)—or the technology of the Roman concrete—Brandon *et al.* (2014). See also some recent attempts of experimental archaeology related to figured pottery in the Classical world: Balachandran (2019) on firing process; Aloupi-Siotis (2020) on coatings and painted parts; Neth/Hasaki (2021) on the potter’s wheel; all with previous bibliography.

²⁹ Attempts of combining technology and network perspectives have been adopted in various studies on the Bronze and Iron Ages: see, for example, Brysbaert (2011), and Rebay-Salisbury/Brysbaert/Foxhall (2014). In particular, they focused on material crossover and enhanced how cross-craft can help to find more nodes among people, their artisanal processes and performances, and their interactions with materials and spaces.

³⁰ See Mills/Fowles (2017); Mills/Peeples (2019); Brughmans *et al.* (2023).

³¹ Horden/Purcell (2000) 342–400; Rouillard (2007), (2009), (2010); Jockey (2009); Archibald (2011) 53–55; Isayev (2017).

³² For artisanal mobility in the prehistoric Mediterranean, see Kiriati/Knappett (2017); for the Classical world, see Armstrong/Cohen (2022).

³³ See *supra*, note 4.

In this volume, essays by more than fifty authors representing different fields of study – such as archaeology, chemistry, physics, geology, computational imaging techniques and digital humanities, conservation science, network studies, and statistics – highlight how interdisciplinary approaches on ceramics can be crucial to better defining artisanal and social networks in the Greek and Roman world. Each section has two different parts: longer essays come first and correspond to oral presentations delivered at the Turin conference and the webinar series. The second part consists of shorter essays, which correspond to poster presentations at the Conference.

Case studies presented in **Section I** focus on the different shapes of clay and their related crafting local traditions. Starting from the raw material, archaeological research can investigate in many ways how ancient technology and craft procedures have shaped the clay, creating artifacts with specific functions in everyday life. Thus, those papers focus on workshop organization, artisanal skills, the relationship between different types of pottery, and the movements of these ceramics based on some specific technological features.

Section II is about the communities of the ancient pottery workshops and their relationship with workspace, workflow, timing, qualitative and quantitative standards, and tools.

Section III collects archaeometric and petrographic studies on ceramics and shows how they can be combined with other approaches to better define specific workshops' recipes, workflow protocols, and technological solutions.

Section IV is related to ceramics and the invisible features that can become visible: diagnostic analyses of artisanal gestures through computational imaging techniques, development of ceramic databases and the ontology behind them, and new ways of visualizing ceramics networks thanks to network studies.

Section V focuses on craftspeople's mobility and knowledge transfer, especially in relation to the new advances in distribution analyses and statistics, which are often generated from well-developed databases as the ones treated in Section IV.

The book certainly does not claim to be exhaustive and complete, but it is meant to offer stimulating insights for future research on related topics, especially by encouraging the use of new technologies and renewed hermeneutic approaches in relation to ancient material culture, in an integrated analytical framework. All contributions taken together emphasize how crafting dynamics allow us to deal with “[. . .] the issue of technique – but technique considered as a cultural issue rather than as a mindless procedure [. . .]”.³⁴ Investigating artisanal gestures, transfer of knowledge, and the adoption of specific tools³⁵ can really pave the way to re-humanizing the craftspeople's world and the entire cultural system behind them.

Abbreviation

CVA Corpus Vasorum Antiquorum.

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³⁴ Sennett (2008) 8.

³⁵ Knappett (2006) 241. He even points out that tools are used to such an extent that they are almost part of the individual, as an organism, an agent and a person.

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