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What came first, the phoenician or the egg?

Examining the geographic distribution and artistic evolution of decorated ostrich eggs in the Mediterranean 1st Millennium BCE.

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What Came First, the Phoenician or the Egg?

Examining the geographic distribution and artistic evolution of decorated ostrich eggs in the Mediterranean 1st Millennium BCE.



A decorated ostrich egg with a hole in the shell. Photo credit: Dr. Tamar Hodos, the University of Bristol.

A dissertation submitted to the University of Bristol in accordance with the requirements for award of the degree of Archaeology and Anthropology (MPhil) in the Faculty of Arts.

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Abstract

Evidence from the Near Eastern Bronze Age establishes precedence for decorated ostrich eggs as a luxury and artistic medium, continuing into the Mediterranean Iron Age (c. 1,200 – 400 BCE). From the mid-1st Millennium BCE, their distribution is primarily across the western half of the Mediterranean in areas of Phoenician cultural influence. Throughout this period, they occur mostly in funerary contexts. Individual finds often display decoration that hybridises local fashions of the time with broader Mediterranean cultural traditions.

Current evidence places the impetus for the eggs' stylistic development and distribution on Phoenician-Punic culture. However, the globalised nature of the 1st Millennium Mediterranean economy requires us to consider their diachronic development and distribution from the perspective of demand by consuming cultures. Therefore, this paper creates the first comprehensive catalogue of its kind to assesses the eggs' geographic distribution and stylistic evolution within the 1st Millennium Mediterranean to reconsider socio-economic dynamics across the Mediterranean during this period.

Dedication and Acknowledgements

To Dr. Tamar Hodos, who I owe a great deal of thanks to, for not only the supervision of this research but guidance in the wider academic field and support in my personal development. Thank you for everything.

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To my partner, Elizabeth, for your patience and unwavering support no matter my personal misgivings about research.

To my friends and family who put hours into reading and re-reading my many drafts and hearing my various complaints.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's *Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: ALFIE GARLAND DATE: 20/09/2022

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Introduction

Luxury goods have long occupied a place of importance in the public perception of archaeology. Precious metal treasures, jewelled accessories, and other trappings of wealth underpin facets of ancient society as far as suggesting what had importance to people several millennia removed from us. The decorated ostrich egg is a luxury good of the 1st Millennium BCE that is valuable not only from a pecuniary standpoint but also from the view of a modern archaeologist examining the developing 1st Millennium Mediterranean. Economics, migration, cultural hybridisation, and the growth of globalisation can all be traced in these refined eggshells.

The narrative surrounding decorated ostrich eggshell has long focused on the nature of their decoration, asking questions of who and where. This is a problematic approach, as there is little agreement as to whether the artisans are Phoenician, Egyptian, or of another origin, or whether they are working in the Levant and Eastern Mediterranean, or in Etruria and Iberia in the West. The artisans of the eggshells are not the primary focus of this thesis – instead, a simpler paradigm will take centre stage. The location and chronology of deposition will here on out be studied and displayed to provide a visuospatial record of how these luxuries were distributed throughout the Mediterranean and what this means for understanding trends in the 1st Millennium Mediterranean. By applying a mixture of quantitative and qualitative analysis on the data to hand, this thesis intends to highlight how chronological and geographical peaks in our catalogue may reflect a changing socio-cultural picture in the Mediterranean. Finds for assessment were drawn from a wide range of sources, such as unpublished excavation notes, summary catalogues of known sites, secondary sources discussing the ostrich eggshell medium, and primary site reports.

This paper will begin by outlining the historical context of ostrich eggshells and a summary of cultures from the 1st Millennium Mediterranean involved in their use and trading networks (Chapter 1). Next, I will outline the range of styles involved in decorated ostrich eggs and how these are impacted by the phenomena of hybridisation and globalisation (Chapter 2). Together, these two chapters will demonstrate the need for a new approach to our understanding of the role of ostrich eggs as social indicators across ancient Mediterranean cultures. Then, a summary of the catalogue used for this

study, the methodology, and range will follow (Chapter 3). This will be succeeded by an overview of the data and results with a range of visualisations of the data (Chapter 4). The following chapter will then break down the results and provide analysis and early inferences (Chapter 5). Finally, I will offer a summary of our findings, conclusions from the current study, and next stages in research (Chapter 6).

Chapter 1 - Historical Context

Contextualising the study

This study explores the distribution of decorated ostrich eggs in the 1st Millennium BCE. The stylistic elements, motifs, methods of and variance in distribution, and the *chaîne d'opératoire* - the chain of production, decoration, and other input that goes into creating a worked good - must be considered to provide a fulsome investigation of the decorated ostrich egg phenomenon and its impact on the Mediterranean.

Decorated ostrich eggs are a complex and fascinating facet of study. The 1st Millennium BCE is an equally lucrative period for study, alive with change and interaction across the Mediterranean such that it may be regarded as a globalising period (Hodos, 2020b). As such, this paper will be exploring change in the 1st Millennium BCE through the medium of decorated ostrich eggs. The ostrich eggs are a case study through which to examine broader cases of globalisation. They are useful for this kind of study as they cannot be easily replicated due to the geographic confinement of ostriches, and therefore necessitate a globalised network of distribution. This crucial factor separates them from pottery, which can be imitated in a much more complete way than ostrich eggs - which can see their decorative style imitated, but not the material for the vessel itself. The need for a distributive network ties the ostrich eggs to a mappable context rich for analysis - the trading networks of the Mediterranean.

The study of decorated ostrich eggs, as with any archaeological discourse, is not without its issues. This research is not intending to resolve any of the issues listed below - indeed, it is beyond the scope of this paper. Instead, I will acknowledge here the issues within the field of study and how they have contributed to the understanding of decorated ostrich eggs and the wider state of the Mediterranean at the time, and how my paper intends to contribute to the corpus of knowledge while acknowledging these issues.

Issues of Scholarship

The 1st Millennium sees a great deal of change in the Mediterranean. Powers rise and fall, trading contacts are established, and colonies are installed. The landscape of the Mediterranean - social, cultural, political, and physical - changes entirely throughout the Millennium. This paper does not seek to answer questions regarding large-scale

cultural or political change. For example, while the Phoenicians feature in our study as an agent of trade, this paper is not equipped to discuss the nature of their identity and how that may influence their taste in ostrich eggshell decoration.

Understanding and evaluating the distribution of decorated ostrich eggshell does not come with a guarantee of certainty. Scholarship in the area, such as catalogues by Astruc (1950) and Savio (2004), evaluations of case studies by Rathje (1986), or discussions of symbology (Pieraccini, 2013) and forms (Pisano, 2006) are all insightful. Equally, however, they incorporate a range of debate and argument that complicate the field of study. Positioning ostrich eggs as a symbol of rebirth or apotropaic ward provides helpful ties to funerary contexts. Acknowledging the existence of Iberian, Corinthian, and Egyptian styles in a singular context proves the pan-Mediterranean nature of the eggs' style. This paper is not suited to settling or answering these debates – instead, they have provided a solid foundation upon which the charting of the diachronic distribution and stylistic evolution of decorated ostrich eggs can be built.

The Mediterranean of the 1st Millennium is, as discussed, a rich and lively landscape that changes throughout the period and is most importantly more “globally” connected than ever before. The range of cultures involved in the production, distribution, and display of these eggs are vast, and covers the entire Mediterranean. Phoenicians are one of the foremost involved cultures, operating trading networks throughout the Mediterranean and colonising regions that give rise to areas of significant ostrich eggshell finds (Savio, 2004, Quinn, 2018, 82-83). They are, however, far from the only involved culture. The Etruscans of Northern Italy are present in the first chronological half of the catalogue, with commercial attachments to the Punic and Greek worlds demonstrating their contribution – or at least presence – in the globalising Mediterranean (Rathje, 1986, 398). The Greeks, by turn, are ever present. The 1st Millennium is a crucial time for development around the Aegean and in Greek cultures, and they remain involved in the processes of the decorated ostrich egg distribution – albeit on the fringes. Beyond these key movers, the Cypriots and Egyptians are also involved, although in slimmer numbers than the cultures mentioned above. Ostrich eggshells are found in sites in their regions, and the influence of Egyptian iconography is evident on ostrich eggshell decoration throughout the Mediterranean (Rathje, 1986,

397). The degree to which that these cultures are actively contributing to the process of distribution, however, remains to be seen.

The cultures discussed above are all historically rich and have left a legacy of contribution to the catalogue of this study. However, records of the Etruscans and the Phoenicians are limited in historic texts, especially from an emic perspective.

Throughout this paper, consideration will be given to the lack of written texts from the perspective of these cultures and to the historic biases that have framed archaeological discourse around other areas of the Mediterranean. It is not within the scope of this paper to effectively redress the balance of focus in Mediterranean studies to cultures that lack representation due to the destruction of their records and materials. However, it is appropriate to acknowledge the imbalance as an issue within the field of study and to take this information into account when exploring the remaining material and corpus of literature.

Chronology for the 1st Millennium Mediterranean is complicated. As a region of many cultures that are discovering art and technologies separately has led to several fractured chronological terms being used at various times across the Mediterranean. A key term and attached argument to expand upon here is that of the term “orientalising/Orientalisation.” This term has a range of meanings; culturally, it refers to the adoption of eastern Mediterranean practices within the Greek world and wider western Mediterranean (Hodos, 2020b, 17-18). Furthermore, there has historically been an “orientalising” period, referring to a period of art-history wherein predominantly Greek art adopts elements of “eastern” iconography, drawing from the Levant, Egypt, and the Near East (Markoe, 1996, 47). This period occurs in the latter half of the 8th Century and runs into the first quarter of the 7th Century BCE (Markoe, 1996, 47). Furthermore, the orientalising period is a concept that has seen pushback in academia with the publication of postcolonial works, starting with Said’s 1978 publication of *Orientalism*. The change in view towards the notion of the “Orient” as a monolithic other and inspiration to Greece, rather than a dynamic region of disparate cultures with a range of stylistic influences on their neighbours is integral to understanding the living nature of the Mediterranean in the 1st Millennium BCE (Hodos, 2017, 18 (Footnote 76)). As chronological terminology, this term will not be used in this paper. As the study encompasses the entire Mediterranean, referring to relative dating

such as the orientalising period is not suitably clear. Instead, absolute dating will be used when discussing periodisation. In addition, usage of the term orientalising or orientalism in this paper refers to the form of artistic expression, rather than the historical assignation to a geographically confined chronology. This usage exists to characterise key stylistic aspects of the egg, not as a means of chronological definition. As such, this use intends to provide an understanding of the art-historical use of the term to describe artistic styles and iconography and remain grounded in existing terms. This paper will not be attempting to re-categorise iconographies in a new postcolonial paradigm.

Understanding of the historical assignation of the “Oriental” in the Mediterranean underpins the work of this paper. As earlier mentioned, this paper is not suited to resolve the imbalance of attention given to historical cultures that have suffered from an Occidental bias. Hellenocentric perspectives would suggest that Greece is the lynchpin of trade in the early 1st Millennium Mediterranean, wherein a substantial portion of our study takes place (López-Ruiz, 2021, 6 (Footnote 7)). This paper will be exploring the sources and cultures beyond this perspective and engaging with the trading networks that arise from broader colonial relations across the Mediterranean. As such, consciously decoupling the Phoenicians – and in turn, the Levant – from a separate “other” in the east and bringing it into the Mediterranean is essential for understanding the influence they bring into this study.

Definitions

With understanding of this discourse and the knowledge that this paper will not resolve them, we can move onto definitions. The understanding of these terms in the context of this paper will illuminate the rest of the study.

Chaine d'operatoire is a term that refers to the operational chain of technical processes and social acts involved in the production, use, and disposal of artifacts (Darvill, 2021). In this context, it examines the processes of harvesting, modifying, decorating, transporting, and displaying the decorated ostrich eggs. This in turn informs our understanding of the cultural facets that influence the artifact at every stage of its life cycle.

This paper is studying what is being termed the “ostrich egg phenomenon.” This phrase refers to the 1st Millennium BCE Mediterranean exchange and display of decorated ostrich eggs according to the data represented in the catalogue in Appendix A.

As discussed above, this paper is not ascribing to relative periodisation found in art-history terms such as geometric and orientalising. These terms will however be used in describing iconography and stylistic expression regarding items from the catalogue. The use of the terms under this definition strictly denotes forms and style within existing terms, as re-categorising these motifs is beyond the categorical scope of this paper.

Methodology

This study is grounded in the exploration of decorated ostrich eggs and their distribution across the 1st Millennium BCE Mediterranean. Decorated ostrich eggs are, for the purpose of this study, ostrich eggs that have been modified in terms of shape to form a different item – whether a bowl, jug, or another item. The vast majority of these have some form of painted decoration and many also feature incision, akin to historically contemporaneous ivories. Ostriches are only found in the Levant, Mesopotamia, Arabia, and North Africa in this period, and yet the eggs range across the length of the Mediterranean. As such, the decorated ostrich eggs provide a unique and fascinating medium with which to study the cultural practices and expression that underpins the eggs’ symbolic and practical meaning. In addition, they offer a valuable alternative lens with which to view wider social phenomena in the Mediterranean that influence their distribution.

Evaluating the quantities and relative distribution of these eggs is more fundamental to the assessment of this catalogue than the understanding of how these eggs were distributed. The visualisation of our data and our understanding of Mediterranean trade in the 1st Millennium BCE makes it plain that the eggs were circulated via sea-based trade, as does our understanding of the geographical locations of ostrich populations. As such, an understanding of which regions and periods have larger quantities of decorated ostrich eggshell finds will further inform our understanding of trade, luxury good exchange, sea trading routes, and cultural interfacing, adoption, and hybridity over the period.

This paper will make use of several sources to inform this catalogue. Key ones, however, are earlier existing catalogues such as Astruc (1957), Savio (2004), and use of unpublished material from David Reese and Tamar Hodos. These collections have been invaluable in informing my understanding of the range of material available in Iberia, North Africa, and the Aegean. In addition, a range of less summary sources have been used to investigate the range of finds in Etruscan Italy, such as Rathje (1986), Pisano (2006), and unpublished material from Yvonne Gönster. This range of sources has been invaluable in ensuring a well-cultivated and well-informed catalogue that synthesises information from 70 years of scholarship. These sources were gathered through a combination of personal research in archives, sifting through secondary bibliographies, and communication with my supervisor to gather textual recommendations.

Getting Around; Extant Evidence for Ostrich Egg Trade

The spread of decorated ostrich eggs has been attached loosely to a potentially Phoenician vessel by associating an ostrich-egg stand to a sunken vessel on the Iberian coast (Polzer, 2014, 237). While interesting, the existence of a singular stand used for ostrich eggs in the inventory of a Phoenician trading vessel does not represent a solely Phoenician enterprise. There is not enough evidence to suggest that this was the ubiquitous style of display, nor that Phoenicians were the only movers of ostrich eggs. To examine this argument further, more evidence examining the movement of ostrich eggs is needed.

The eastern Phoenician territories held a reputation for trade and artisanry, exemplified in the concept of local artisans and workshops used to produce luxury goods, most notably their carved ivories (Feldman, 2014, 1-2). These goods circulated within their immediate neighbours, the Assyrian Empire and Egyptian dynastic territories, and took on stylistic elements from these neighbours. The resulting goods adopted a diverse range of cultural styles, leading to a typological classification that referenced the geographical origin of their stylistic elements (Winter, 1976, 189-192). Another link to the ostrich egg arises here. Winter's classification of carved ivories produces several distinct typologies amongst carved ivory that Pisano has connected to several decorated ostrich eggs, which are also incised or carved in what Pisano has viewed as an expansion of ivory crafting, considering the precise expertise needed to incise ostrich eggshell (Pisano, 2006, 237). Considering the role of Phoenician workshops in creating

Assyrian-style ivories and the potential link to ostrich eggshell carving, understanding the Phoenicians as movers of the final product is a connection to make. However, more evidence is required to furnish this idea.

It should be noted that there are two key trading spheres – the eastern circulation of Levant-Egypt-Mesopotamia, versus the central-western Mediterranean sphere. A brief definition of the two spheres, functionally east and west Mediterranean, split into the two Mediterranean sub-basins along the straits of Sicily (Manning, 2018, 85), is important for context here. The Phoenicians are noted for their role in moving goods within both spheres (Hodos, 2020b, 112). The peak of Phoenician expansion west coincides with the shifting application of Assyrian power in the Levant, which allowed for freedom of Phoenician trade – however, scholarship has suggested that the two are not inherently tied (Aubet, 2008, 184, Pappa, 2013). For much of this paper, the focus will be on the coastal Mediterranean away from the Levant, as this is where we see the distribution of eggshell throughout the period of study.

Material recovered from shipwrecks provides some of our strongest evidence for the range of Phoenician goods and their nature as distributors. Some shipwrecks in the Mediterranean dated to the early 1st Millennium BCE provide physical evidence of the wealth of trading routes in this period (Hodos, 2020b, 117). These shipwrecks support evidence of Phoenicians as movers of goods, particularly in the Western Mediterranean. One shipwreck near the Iberian Peninsula, termed Mazarrón 1, was found with material cargo from the Western Mediterranean, coupled with Phoenician bowls and amphorae, as well as ropes made from grasses indigenous to Iberia, suggesting a hybrid enterprise (Negueruela et al, 1995, 189, Tejedor, 2018, 320, Hodos, 2020b, 118). Hybrid here refers to the mixture of two (or more) cultural groups working together with separate, identifiable techniques that leads to an output with evidence of input from multiple cultures. Other examples of this are found commonly in the Iberian Peninsula (Delgado & Ferrer, 2007, 22, Vives-Ferrándiz, 2008, 242, Celestino, 2016, 21).

This paper will not provide a postcolonial assessment of the Phoenician settlement in Iberia, as it will provide limited relevance within the scope of this study. However, understanding the existence of Phoenician settlements in the West as having potential roles beyond that of trade is important, as it strengthens the case for Phoenicians taking

a role in managing the movement of goods and delegating work within their trading diaspora.

Geographical Considerations

Most of our finds occur in the Western Mediterranean, with over ninety percent of the catalogue's findspots being found in Italy, Spain, or North Africa (See Chapter 4). As with the rise in popularity and appearance in these decorated eggs, we must equally consider the changing status of parts of the *chaîne d'opératoire* that contribute to these stylistic differences. Moreover, it would be remiss to assume that an element of stylistic influence and preference plays no part – to this end, the concepts of localisation and globalisation, in respect to ancient economic and cultural changes, must be considered.

The changes in distribution and stylistic evolution of decorated ostrich eggs over the 1st Millennium raise questions. Primarily, the distribution sees over 50% of the finds outside of North Africa. As such, over 50% of the distribution is beyond the natural range of ostrich populations in this period (Brown, 1982, 32). Therefore, we must consider how the eggs are reaching their areas of deposition. The most likely answer, in a period of increasing trading connection and overseas commercial operation, is sea trade. This brings us to a key question of the study. Who was moving them, and were these eggs being decorated before or after their movement? Phoenicians have been raised as a potential trader and are recorded as having crafting workshops in the Levant that produced luxury goods, most notably carved ivories such as those at Nimrud, which, as discussed, is a similar productive enterprise to engraved or incised ostrich eggs (Pisano, 2006, 237, Aruz & de Lapérouse, 2014, 141, Feldman, 2014, 2).

Many North African and Spanish coastal sites were sites under Phoenician influence, with Carthage acting as their most influential colony (Castro, 2008, 76, Hodos, 2009, 231, Hoyos, 2010, 3-4). Carthage would grow in power and relevance, becoming a primary trade hub for the southern Mediterranean, its trading sphere covering Iberia and the Tyrrhenian Sea, inclusive of the Italian islands, Malta, and the Etruscan coast, supported by evidence of Phoenician material throughout these territories (Castro, 2008, 74, Aubet, 2016, 147, Quinn, 2018, 106). Carthage has oft-been thought of as Phoenicia's descendent in the West, inheriting their cultural legacy as Phoenician city-states in the east fell. However, at the time of the most prevalent ostrich egg finds, Phoenicia had not yet been subsumed entirely into the imperial hegemon of the Near

East, still maintaining their own cultures even as they colonised westward (Hoyos, 2010, 5). The trade network between the Western Phoenician colonies is apparent through more than just eggshell finds. Polybius anecdotally refers to the trade agreements of Carthage and Rome as far back as the late 6th Century, suggesting an awareness of Carthage's trading influence over the Western Mediterranean (Polybius, 3.22). Markoe further posits that an agreement between the Carthaginians and the Etruscans had been struck, affording Carthaginians a contemporary trading monopoly over southern Iberia (Markoe, 2000, 54-56).

Bronze Age Antecedents

The 1st Millennium as a period sees a much wider range of decorated ostrich eggs than the Bronze Age antecedents, both stylistically and geographically, allowing for a broader cultural commentary to be drawn from the items. Nevertheless, contextualising the study within the origins of decorative ostrich eggshell of the Bronze Age informs the shift in distribution and underlines the changes our study aims to show.

Originating in the Near Eastern Bronze Age, decorated ostrich eggs are found first in the 3rd Millennium BCE. Primarily they are found in funerary contexts, with the luxury eggs of Ur providing an early example of eggs imagery as a funerary luxury (Hansen, 1998, 70, & Figure 1 & 2). The rich decoration across these two items show both the use of ostrich eggs as a luxury good and the importance of their symbolic image through the recreation of the form in gold and gemstone. The use of precious metals and gemstones in their decoration is a testament to the owner's wealth, contributing to the owner's premier status through the display of wealth. If the owner had the prerequisite wealth to fund this item as a decoration, their disposable income is significant. As it is included in the Royal Tombs of Ur, this item, despite originally being a vessel, was designated as a funerary item after death (Hansen, 1998, 70, & Figure 1 & 2)). This inclusion of items of perceived wealth in a funerary context is a frequent hallmark of funerary rites throughout the Near East, Mediterranean, and Europe. From the buried chariot graves throughout Eurasia to the buried riches of the Egyptian pharaohs, funerary wealth is not unusual (Ikram, 2015, 162, Muller, 2015, 116). However, the inclusion of a specifically decorated ostrich eggshell is not found commonly prior to this date after the advent of civilisation.



Figure 1 - An ostrich egg jar from the Royal Tombs of Ur c. 27th Century BCE. Reproduced from the collection of the British Museum. © The Trustees of the British Museum.



Figure 2- A gold vessel in the form of an ostrich egg. Taken from the Royal Tombs of Ur, c. 27th Century BCE. Reproduced from the collection of the University of Pennsylvania Museum of Archaeology and Anthropology. © University of Pennsylvania Museum of Archaeology and Anthropology.

The embellishment of these finds suggests that these items belonged to individuals of a significantly rich strata of society. The recreation of egg vessels in scarce material such as gold and gemstone make it plain that the egg vessels (such as Figure 1) had significant social meaning if they would be replicated in other expensive media (such as Figure 2). The 1st Millennium sees a broader distribution, with a greater range of findspots and higher concentration of finds per site. This shift over time suggests several possibilities in the *chaine d'operatoire* of the decorated ostrich eggs: greater availability of the eggs, wider awareness of motifs, greater mobility of craftworkers, or a cultural shift that raised their popularity. This background and the shift toward greater available information has informed the decision to focus purely on the 1st Millennium BCE for study.

Feast or Famine – Questions of Material Availability

The lack of recorded information regarding the *chaine d'operatoire* of these eggs – due in part to the destruction and poor archaeological recording of the sites they originate from – does not allow for a neat assessment of where ostrich eggs were gathered from. However, their presence has been impacted by changing approaches in archaeological

academia that have seen finds from the Western Mediterranean miscategorised and poorly recorded (Celestino, 2016, 9). Furthermore, some elements regarding availability of material can be reconstructed from the archaeological record and what we know of component elements. For example, we know that ostriches are powerful and dangerous animals, whose native presence in the Arabian Peninsula was only made extinct in the last two centuries due to the use of firearms – an advantage that hunters in the 1st Millennium did not have (Brown, 1982, 32, Potts, 2000, 183). Furthermore, we know that ostrich eggs featured in the royal inscriptions of Assyrian kings, as a part of their great hunts – an event we know to be staged (Grayson, 1991, 291-292). This then raises the question of whether these eggs would be gathered from populations that were captured and faked for royal events, allowing for greater quantities to be harvested. However, research from Hodos et al. has proven this theory to be untenable, as eggs that the team examined showed signs of the stress of natural, or wild births, as well as citing oxygen isotope analysis that does not connect the laying birds with any constant supply of drinking water, therefore nullifying any possibility of a captive sample of ostriches (Hodos et al., 2020, 390).

With the possibility of captive birds ruled out in the Eastern Mediterranean, the question of material availability in this area is simplified. The same conclusion cannot be drawn for the Western Mediterranean; eggs from these contexts have not been subject to the same analysis at present. With regard to eggs from the Eastern Mediterranean, however, we know that they were gathered from wild specimens, making the first step of the *chaine d'operatoire* clearer. This provides the necessary context to the nature of these eggs. The material is being gathered from wild animals that were considered worthy for kings to hunt, instilling these objects with an inherent sense of value attached to the danger of their gathering. The restricted geographical access to this material further reinforces its status as a luxury throughout the Mediterranean. As time progresses, we begin to see wider adoption of the eggs, predominantly in funerary contexts.

Chapter 2 – Decoration, Hybridisation and Communities of Style

Defining Terms

This study will treat a broad range of concepts and make use of terms that are specialist in nature. A number of these originate from art-historical perspectives but are used as chronological indicators. This becomes problematic, particularly in cross-cultural analysis since a style is not necessarily proxy for an absolute date. Therefore, how this study uses such term will be defined early to avoid confusion.

The chronological period of this study is the 1st Millennium BCE – this refers to the period between 1,000 BCE and 1 BCE. The more specific chronological range of the catalogue of finds begins at the start of the 8th Century. It ends with the closing of the 3rd Century, providing a more precise timescale of 800 – 200 BC. However, these dates remain imprecise as dating on the decorated ostrich eggs is rarely done to anything more precise than an approximate century, as they are dated by associated finds that often have a production span (e.g., pottery). Therefore, the author has incorporated decorated ostrich egg finds into the catalogue with their recorded estimated date of interment. The term Iron Age will not be used as a chronological reference for a part of this period. There is significant “period” variability between the cultural groups and areas that are under discussion. As such, it is not conducive to the study to speak in terms of relative period. As such, this study will make use of absolute dates as often as possible.

The catalogue deals with a range of styles. These styles are complex and varied phenomena and collectivising them could be viewed as over-simplifying the situation. The stylistic categories have been chosen for similarity in crucial elements of stylistic execution, while motifs may be shared between individual finds within *and* across categories. The categories and their definitions are as follows:

<u>Style</u>	<u>Description</u>
Incised	Predominant legible decoration on the ostrich egg is formed of incisions into the shell. Paint may or may not still be present and may have been a key part of the decoration prior to decay.
Monochrome	Painted in a singular colour without incision.
Polychrome	Painted in multiple colours without incision.
Plain	Modified form but otherwise lacking painted or incised decoration.

The Problems of the terms “Orientalising” and “Geometric”

This study will use the art-historical terms “orientalising” and “geometric”. These terms originate from a Hellenocentric perspective by centring development in reference to the Greek world (Arafat & Morgan, 2012, López-Ruiz, 2021, 45). Consequently, they are complicated in their usage when describing artistic finds that fall outside of the Hellenic sphere of influence, let alone the geographical Hellenic world. Discussion of orientalising and geometric styles throughout this study, as noted earlier, refers to the form of artistic expression, rather than the chronological period. The terms are used to highlight iconographical elements on the eggs themselves rather than to group them into any specific geographical or chronological moment. The discussion will use these terms as a stylistic reference going forward to ground the discussion in existing terminology used for iconographic assessment.

The orientalising style draws upon a mix of styles used in Near Eastern and Egyptian artistic and architectural works, and crafted goods such as ivory and metal work (Vickers, 2012, López-Ruiz, 2021, 3-4). However, to term these styles as “orientalising” approaches it from a Hellenocentric view, as it centres the lens on when these discoveries were brought to Greece. This perspective is an increasingly limiting one to

study the Mediterranean, as it lacks the necessary nuance to understand the range of contributions made to the network of the Mediterranean from all sides. However, despite the controversy of the term, it will remain in use in this study. This usage is due to its use in distinguishing motifs from geometric symbols, and rather refer to the suite of floral and animal motifs in styles derived from a range of Near Eastern cultures. In a similar vein, geometric will also be used to describe patterns of a geometric fashion.

Cultural Spheres and their Impact on Artistic Expression

The Western Mediterranean is in the sphere of Carthage and the Western Phoenician trading diaspora. At the same time, the Central and Eastern Mediterranean has a broader range of influences - the Greek settlements throughout the Aegean, modern Greece, and even into Magna Graecia in southern Italy provide a broad network of sites for the dispersion of Greek cultural influences. Considering that a large swathe of our catalogue is contemporaneous to the orientalisising and geometric period, areas in these spheres see more Greek-inspired expressions of these styles.

Cultural Hybridisation in Art

Styles have typically been conflated with chronological periods due to hybridisation. New styles forming from motifs across cultures represents key turning points in art – just as the Geometric period gave way to the Orientalising period in Greece as they adopted Near Eastern motifs (Arafat & Morgan, 2012). Cultural hybridisation and how its outcomes manifest through art is a key focus of this study. Hybridisation refers to “the creation of new transcultural forms within the contact zone produced by colonial-ism” (Ashcroft et al, 1998, 118). As many of the findspots that are a part of this study are on boundaries of diverse cultures or formed by colonisation, it is essential to consider how these items may exist as a facet of hybridised cultural expression in some locales.

Assessing the styles of decorated ostrich eggshells requires understanding similar contemporary and precedent styles. A practical starting point is in the decorated ivories of the Near East. It is important to note that ivory was a material of luxury status throughout the ancient Mediterranean and Near East and was prevalent in Phoenician contexts from east to west (Aruz, 2014, 120-121). Ivories and ostrich eggshell are often found in similar regions and circulation. Ivories are typically better known due their

easier recognition, whereas ostrich eggshell pieces are harder to identify. Ivories provide a useful comparison from an artisanal perspective, per Pisano's observations on ivory and egg incision (Pisano, 2006, 237). Furthermore, the ivories exhibit the hybridising nature of iconographies and forms that reflect differing meanings across their range of distribution – exemplified in Feldman's term, "communities of style" (Feldman, 2014, 2).

Decorated ostrich eggshell vessels do not entirely adhere to stylistic groupings found among contemporary finds. Instead, decorative elements are found on the shells that correspond with a range of existing material finds. Comparing elements of incised eggshell decoration to that of decorated ivories from the early 1st Millennium will provide a useful touchpoint for understanding the imitable nature of decoration and a frame for understanding how culture influences decoration (Aruz & de Lapérouse, 2014, 141, Feldman, 2014, 6). It is worth noting that ivories are assigned to stylistic groups that are not discrete; instead, they reflect the communities from which the styles originate; Phoenicia, Assyria, and Egypt are the communities whose styles feature most prominently (Feldman, 2014, 1). These cultural entities have a strong stylistic influence on their neighbours and contemporaries in the early 1st Millennium BCE. The legacy of this style is apparent in the decoration of the ostrich eggshell vessels. However, these groups are more fluid than previously assumed and do not form discrete categories; they are better regarded as "communities" around styles and practices (Feldman, 2014, 35). Feldman's approach to stylistic groups and their understanding as a fluid category that is influenced by the geographic and social relations tied to the craftsman, upsetting the traditional "city-workshop" model prevalent in the Levant is essential to the methodology of this paper (Feldman, 2014, 2).

A good case study of ivories to examine are the contemporary Nimrud Ivories. These ivories were found at the Assyrian palace at Nimrud and feature a range of artistic stylings and iconographies associated with a range of cultures from the Ancient Near East; notably, Assyrian, Egyptian, North Syrian, and Phoenician (Winter, 2010, 189, Aruz & de Lapérouse, 2014, 141). These styles have been distinguished from one another by the iconography. Assyrian-style ivories share elements with Neo-Assyrian sculptures, such as both bipedal and quadrupedal winged guardians, bearded kings, and chariots or cavalry (Aruz & de Lapérouse, 2014, 141). They additionally make use of incised

technique to “embellish garments” of those in significant positions (Aruz & de Lapérouse, 2014, 141). In contrast, Egyptian styles incorporate a broader array of animal parts; human-headed sphinxes, falcon-headed cats, winged creatures with their wings folded, the Atef crown of Osiris, and protective uraei (Aruz & de Lapérouse, 2014, 145). These elements have strong cultural ties that provide evidence of their origin; sacred protectors of kingship and elements of royal courts are a recurrent theme but localised to the culture of the consumer. The Phoenician style, by contrast, is a mixture of themed elements. Use of Egyptian imagery, such as the Atef crown, or falcon-headed guardians and sphinxes in relief work is compounded with Phoenician elements such as beaded necklaces, ewers, and silver bowls (Aruz & de Lapérouse, 145-148). This is compounded with the use of specific physical technique, such as the use of *cloisonné* (Figure 3), greater mastery of depth and inlaid work (Winter, 1976, 3, Aruz & de Láperouse, 2014, 148).



Figure 3 - Cloisonné furniture plaque with two griffins in a floral landscape, Phoenician style. Reproduced from the collections of the Metropolitan Museum of Art. Accessed 04/11/2021 at <https://www.metmuseum.org/art/collection/search/325344>. © The Trustees of the Metropolitan Museum of Art.

Beyond Aruz and Winter, Poulsen suggested that the North Syrian style lacked “Egyptian elements” that are otherwise present in and influential on the Phoenician style, while Barnett went further in characterising Syrian ivory as influenced by Hurrian and Hittite elements left over from other cultures that had inhabited the region (Poulsen, 1912, 39, Barnett, 1957). In short, the categorisation by 20th Century scholarship is one predicated on a zero-sum assignment of iconographic features to historical cultures, wherein the ivories as *objets d’art* are categorised based on whether they have more features with one culture’s influence than a neighbouring one. While understandable in its attitude to provenance, this approach assumes a one-to-one equivalence of style group to cultural origin. Feldman’s paradigm of communities of style offers an overview that allows for variability in the definition of “style”, that is no longer tied inextricably to a fixed culture. Feldman argues that communities are a more

appropriate way of looking at the creation of artwork, rather than seeing them originate in static entities such as culturally bounded city-state workshops (Feldman, 2014, 2). The idea that the artistic communities – such as those involved in artisanal workshops – can reflect a diversity of community and repurposing of cultural memory across contexts allows for the production of art that represents a range of iconographies without defining it by a singular style's prevalence. It is in this idea of stylistic communities that we can begin to better understand decorated ostrich eggs, as we move away from ideas of finds being confined to a singular cultural origin; instead, they reflect more dynamic use.

The nature of other transportable luxury goods that are contemporaneous to decorated ostrich eggs is important to help furnish our understanding of the role the eggs played in the growing international economy of the period. Pisano draws a connection between the incision of mobile ivories and the incision of decorated ostrich eggs (Pisano, 2006, 237). Pisano argues that the precision needed to carve ostrich eggs makes the decorative incisions found on eggs across the Mediterranean a continuation of Phoenician craft tradition in the same vein as the carving of ivory (Pisano, 2006, 237). By creating a continuation in incision through mobile luxuries, we see the inherent luxury association of the use of incision as a form of decoration. However, this is geographically relative; the carved ivory is depicted as an Eastern Mediterranean practice, while Pisano is writing of Western Mediterranean incised eggs (Pisano, 2006, 237). As such, there is a disconnect between the two spheres preventing an assumption of continued elite status in this practice on this assumption alone. However, the existence of the mobile ivories as a luxury, found with similar execution of decoration incorporating both paint and incision and a range of iconographies that are also featured and adapted in ostrich eggshell decoration provides a significant argument for similarity in the practice (Aruz & de Lapérouse, 2014, 150). Ivories such as those from Nimrud portray craft like that of decorated ostrich eggs. Their stylistic groups must in turn be understood as fluid, per Feldman (2014), based on geographical proximity to a range of diverse cultural influences. Grouping the catalogue of finds into strict groups according to style is, thus far, an impossible process. There are not enough stylistic groups to cover the entire catalogue, nor are the previous categorisations by style an applicable system – per Feldman, the nature of these styles reflects community practices but not origin (Feldman, 2014, 35).

An alternative has been typological categorisations for these eggs. While helpful in assessing the structure of a find, they restrict classification to structure as a vessel or fragment, and are geographically specific, with Pedr az’s observations drawing on finds from the Western Mediterranean (Figure 4, Pedr az, 1975, 73). For example, Savio provides a comprehensive catalogue of the evolution of decoration in Iberia and the Balearics, which he groups by their findspots; the serial listing evokes a sense of development, but lacks a typological classification (Savio, 2004). This classification arrangement does not say that there are no stylistic groups, nor to disparage preceding works. However, as the present study evaluates the geographic and diachronic distribution of these decorated eggs, we must consider style beyond its immediate context. This consideration requires examining the eggs alongside a range of other finds, of similar artefacts and stylistic expression in other mediums (Napolitano, 2007, 15-16). Moreover, just as it is challenging to delineate style groups for Levantine ivories, the decorated eggshells do not adhere to defined groups. This challenge arises through stylistic practices bleeding between workshops throughout the Near East in a way that defeated the concept of any “distinct borders” (Feldman, 2014, 31)— as such, understanding their context and *chaine d’opatoire* is our best hope for categorising these finds.

Diferentes formas de las cáscaras de huevos de avestruz

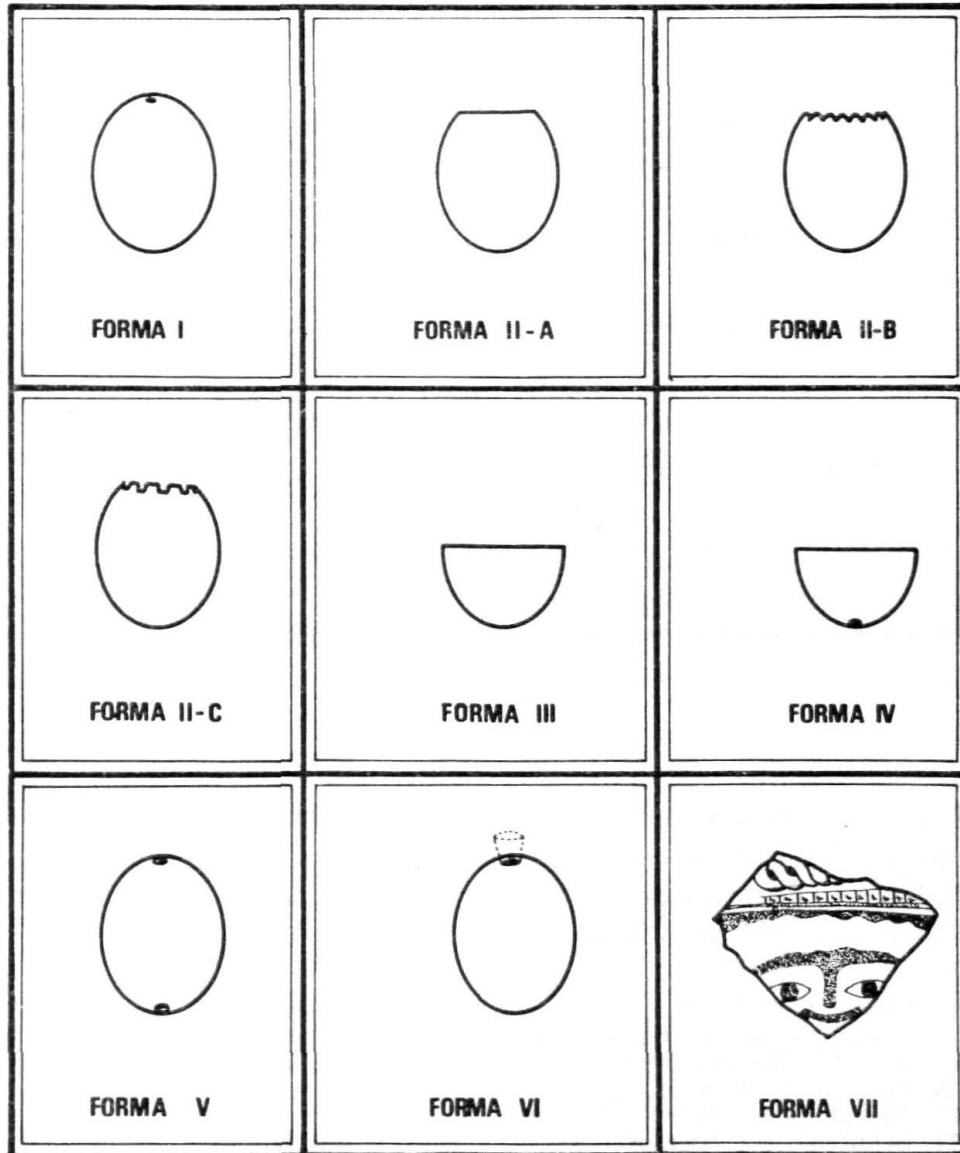


Figure 4 - A table of forms for ostrich egg-based artefacts from Iberia (Pedráz, 1975, 73).

Exports and Imports – Incisions and Colour

As discussed, many styles of decorative execution and iconographies found in this catalogue fit into the frame of “orientalising, with reference to the influence of the Eastern Mediterranean and Ancient Near East over art found in a Mediterranean context (Vickers, 2016). The inclusion of palmette friezes, lions and lion-griffins, and flame-motifs suggests an array of eastern Mediterranean or Ancient Near Eastern influence (Rathje, 1986, 397-398). However, any identification of these items as “Orientalised” places an awkward emphasis on determining this egg as “Mediterranean” or “Eastern,” creating a false dichotomy between not only the geography of the Mediterranean and southwestern Asia, but also into artistic hemispheres of the Mediterranean.

Most of the finds locations make it clear that the eggs were to be imported at some point during their object biographies. Since the eggs would be transported in most instances, it is possible that they were decorated prior. As such, it becomes a question of whether eggs were incised/painted/fitted with metalwork prior to their exportation away from sites of ostrich egg availability – e.g., Arabia and North Africa (Hodos, 2020a, 3). Therefore, discussion should acknowledge the range of iconographies present on the pieces while focusing on the style of the decoration on the ostrich egg. This refocuses assessment of the production of these goods through the lens of their crafters. Understanding whether the crafters were decorating with styles for an export market or producing in imitation of existing styles as a means of adaptation will inform our understanding of wider trends of use. At present, however, there is a fundamental lack of evidence to say where an egg was worked. As such, the best means of assessing whether eggs were decorated locally lies in their decoration.

Execution of decoration

The forms of decoration found on decorated ostrich eggs fit into four execution styles. This section is not referring to the range of motifs used and the influences therein; instead, this section focuses on the different methods of applying decoration. Typically, decorated eggs will feature either monochromatic or polychromatic painted decoration, incisions (with or without paint as visible to the naked eye), or plain but otherwise modified beyond a blown egg. This modification may take the form of a vessel,

compounded with other material or polished. These form the basis of the four decoration subsections in this catalogue. The Monochrome style is the most significant subsection, representing 94% of the known examples. This percentage precisely equals the proportion of finds from explicitly Punic contexts. Numerically, this is significant as both the Punic and Monochrome categories overlap substantially. By contrast, the other styles represent a much smaller proportion of the catalogue.

Monochrome

The monochrome decoration style refers to an execution of decoration on ostrich eggshell that is characterised by a single colour – typically red-orange ochre (Figure 5). There is little to no significant incision or other decoration on the egg's body under this style.



Figure 5 - A monochromatically decorated ostrich egg. Reproduced from the collection of the Puig des Molins Museum of Archaeology. © The Trustees of the Puig des Molins Museum of Archaeology.

Incised

The incised decoration style is a form of decoration made by incising (or “carving”) decoration into the shell of the egg itself (Figure 6). These finds often have painted decoration to complement the incision or to create a form of shading. The painting,

whether mono- or polychromatic, if present, is secondary in this catalogue to the incision to identify the decorative style.

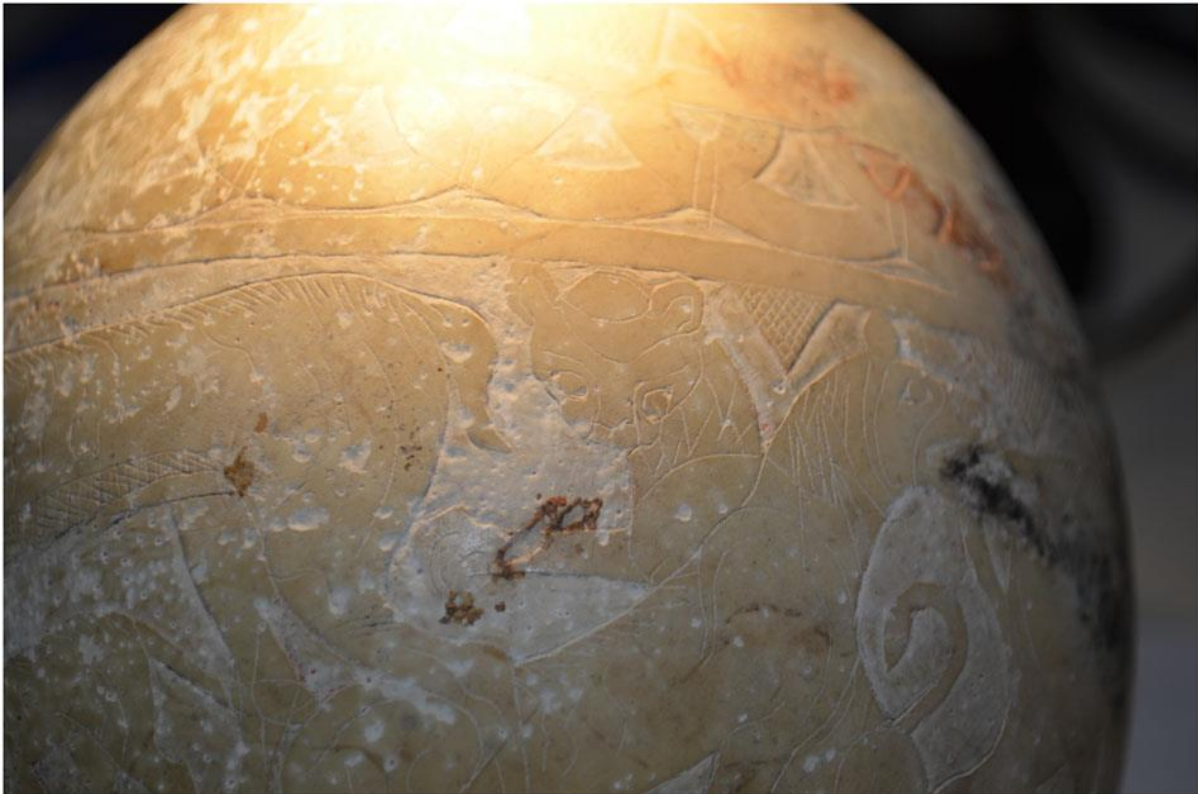


Figure 6 - Incised decoration on an ostrich egg, from Vulci, Italy (Hodos, 2020a, 2). © Dr. Tamar Hodos, University of Bristol.

Plain

Plain ostrich eggs are slightly oxymoronic in a catalogue of “decorated” eggs. However, in this instance, it refers to the absence of decoration on an otherwise modified ostrich eggshell or vessel (Figure 7). Plain finds are sparse within the catalogue, with most ostrich eggshell finds modified in structure. For the purpose of the catalogue, plain finds are taken from eggshell sherds that can be reconstructed partially or fully into an eggshell that has been modified in structure. The comorbidity of decoration and modification is significant, suggesting that a modified ostrich egg would typically be decorated. It is yet unclear whether decoration comes after the modification of the egg, although a supposition could be made that it comes after from a perspective of necessity and ease. However, evidence for this can only be found in Bronze Age wrecks, with the Uluburun wreck providing evidence of blown ostrich eggs *sans* modification (Brysbaert, 2013, 236). Per Hodos et al., it remains unclear whether the eggs would be blown prior

to transport, despite a decade of study since Brysbaert's appraisal of Uluburun (Hodos et al., 2020, 382).



Figure 7 - A plain ostrich egg bowl reformed from fragments. After Sconzo, 2000, Fig. 2a.

Polychrome

Polychrome decoration refers to ostrich eggs decorated with multiple painted colours without incision (Figure 8). As noted above, some incised eggs also featured polychromatic colouring, but this style refers to the use of multiple colours of paints without incision. The style also uses colours not found in monochromatic styles. Such colours include black formed from carbonised vegetal growth, yellow from earth elements (akin to red ochre), and stretch to whites and blues (Napolitano, 2007, 13).



Figure 8– An example of an egg with polychromatic paintwork. This example is incised with polychromatic paintwork but is the best recorded visualisation of use of polychromatic paint on an egg. © The Trustees of the British Museum.

Iconography

Iconography refers to the visual characteristics of the images applied to decorated ostrich eggs rather than the execution of those images, e.g., the use of a palmette frieze band around the upper and lower thirds of an egg, sphinx and lotus imagery, or images of armed individuals, rather than the use of polychromatic paints or incised decoration. Common iconography classifications will be described below, with examples provided to clarify the differences between groups and allow for their diachronic and geographical comparison.

Orientalised

Orientalised motifs refer to elements of artistic expression derived from the Near Eastern Mediterranean. These elements include the use of *protomes*, three-dimensional figures attached to another object and the usage of parading figures, typically either a royal procession or of a range of animals, both wild and mythical (Markoe, 1996, 48, Vickers, 2012, Arruz & Laperouse, 2014, 141, Barringer, 2014, Gunter, 2019, 238). Such examples draw parallels to ivory carvings, vase painting, and architecture from the period, as they often share motifs, such as mythical or significant creatures such as gryphons or lions, as well as faunal elements such as palmettes and flame motifs (Rathje, 1986, 398, Figure 9).



Figure 9 - A decorated ostrich egg featuring "orientalised" stylistic motifs. Key parts of this motif, such as the stylised mythical creature and frieze banding can be made out despite the wear on the artefact. Image Credit: Dr. Tamar Hodos, University of Bristol. © The Trustees of the British Museum.

Geometric

Geometric motifs refers to a style that incorporates geometric shapes such as horizontal bands, meanders, and use of space – typically between handles in the case of pottery or on the centre of the vessel – to decorate it (Coldstream, 2003, 5, Arafat & Morgan, 2012).

Other Motifs and Consideration

Geometric and orientalised motifs form much of our decoration, with limited variance. Plainly decorated eggs feature no motifs, while the Punic eggs of Iberia feature a separate form of decoration. This style incorporates soft lines around the body of the egg to form stylised floral and faunal imagery, along with solid bands of paint around the apex and base, with small dotting below the apex band (Figure 10). This form of decoration tends to have less complex decoration than geometric or orientalised styles, and features smoother linework.



Figure 10 - A decorated ostrich egg featuring Punic-style decoration. Reproduced from the collection of the Museo Arqueològic D'Eivissa I' Formentera. © the trustees of the Museo Arqueològic D'Eivissa I' Formentera

Chapter 3 – Catalogue Data

Introduction

For this catalogue, the predominant focus has been on cataloguing known decorated ostrich egg finds from a range of work. As such, this work draws from both published material and unpublished works and observations. This catalogue has done its best to be as broadly inclusive of known finds as possible. For example, several Etruscan finds are included despite poor recording of their provenance in many cases due to record of their being whole finds, particularly in necropolis contexts (Bock, 2002, 16).

To understand the distribution of decorated ostrich eggs best, visualisation of the phenomenon will be done in two steps. One diachronic map will show each site according to the first recorded instance of decorated ostrich eggs in the region, providing us a *terminus post quem* for the adoption of this cultural trait in the region. A second map will demonstrate the period when the highest concentration of the eggs is found at each site, allowing us to visualise the peak of distribution throughout the Mediterranean. The visualisation of the period when decorated ostrich eggs were introduced to sites narrows down the possible agents for introducing the good. In turn, dating the peak of distribution per site will help us understand how demand may have changed after the introduction – whether trending up or down. Finally, a map demonstrating the last known dates of finds will be used to bookend the period of adoption and use, giving us a complete visual diachronic range of the adoption of decorated ostrich eggs in the Mediterranean.

Methodology, as listed above, with added proviso noting the catalogue has been compiled from a range of primary and secondary sources, with numerous major secondary catalogues and a host of primary/unpublished reports.

Sources

Decorated ostrich eggs are not a medium with universal exposure in the archaeological record of publication. Some finds are well-known, such as the so-called Isis Tomb eggs from Vulci being exhibited in the British Museum; other finds, such as those from Ibiza, Crete, and Cyprus, also feature in museums more local to their findspots. These cases have raised the profile of decorated ostrich eggs, but without broader contexts of their extent and variability in style, function, and context over time and across geography. For

example, the Vulci eggs on display in the British Museum are incised and painted, representing a small portion of the catalogue. Despite this, images of these eggs are the most commonly recurring examples found when investigating decorated ostrich egg finds, whether in academic papers or search engine findings. The perception of a “typical” decorated ostrich egg is skewed by the well-known and well-represented rather than the commonly occurring.

The compilation of this catalogue has drawn on a range of relevant sources. These include academic articles, museum catalogues, diachronic explorations of ostrich eggs as a luxury, archaeological site reports, and unpublished notes and communications from scholars that assert the existence of decorated ostrich eggs or fragments existing at a given site. Due to the varied nature of sources, there is no even distribution of information across different sites and types of finds. For example, details from published texts tend to synthesise multiple site reports, providing more information than individual site reports; these, in turn, provide more data than unpublished notes. The quality and quantity of information influences the structure of the catalogue. There will be sites and find-types that are better reported that can be better represented, continuing to skew representation in their favour.

This ties into a broader issue with sources. Some finds come from well-excavated sites, well-recorded, well-publicised, or some mixture of the above. Others come from footnotes in sites excavated 100+ years ago, with a limited record of their technique or context. This variance creates problems for the catalogue, stripping many finds of context that could shed light on the journeys of individual finds. A wealth of unknown information is, as such, absent from this catalogue. This dearth is due to sources concerning decorated ostrich eggs lacking critical information. Nevertheless, the study intends to use as many sources as possible, irrespective of their contents and format.

Well-publicised sources and sites also influence the catalogue. As noted above, the British Museum’s display of eggs from Vulci creates a strong influence over public perceptions of decorated ostrich eggs from an outside perspective, despite not being representative of the broader stylistic format. As a well-preserved find with some documentation regarding its origin, albeit scant on some details, it is no surprise that the Vulci Eggs are treated as the epitome of the medium (Rathje, 1987, 397). It emphasises just how vital a well-preserved find is in influencing the interest of

academic and non-academic communities and their perceptions and how this guides available research and information. The catalogue has very few samples with as much documented research as the Vulci eggs. However, it can provide numerical evidence that these finds are not typical – just very well (disproportionately) represented and preserved to a high enough level to continually engage research around them.

Therefore, this catalogue intends to represent the full breadth of decorated ostrich egg vessels. However, this will not be possible to do equally or proportionally, as the sources for the catalogue face a range of challenges. This study has provided examples of all decorative styles and physical modifications to the eggs to provide as complete a stylistic range as possible to definitively catalogue the decorated ostrich eggshell medium from the 1st Millennium BCE, within the scope of the study and available sources. This study's cataloguing choices have been done to ensure as coherent and connected a catalogue as possible.

Range of Study

The geographical range for this catalogue spans the Mediterranean, from the Levantine coast to the straits of Gibraltar, incorporating major coastlines and countries abutting the Mediterranean Sea. This reflects the breadth of finds from the catalogue, which in turn shows the interconnected nature of the Mediterranean inhabitation throughout the period of study. The chronology is inclusive of the 1st Millennium BCE, from the year 1,000 to 1 BCE. The actual absolute dating of our study begins c. 800 BCE, with our first finds dated to the early 7th Century, while the end of our catalogue runs down to the 2nd Century, c. 200-101 BCE.

This study covers many decorated ostrich eggshells finds and their findspots. This range encompasses changes diachronically, geographically, and stylistically. Exploring the complete catalogue in depth would be an unnecessary task that would go beyond the chronological and geographical scope of the study. Instead, the focus will be placed on representative samples in a case-study format to represent typical stylistic examples within geographic and diachronic categories. Additionally, stylistically significant finds will be examined; finds anomalous from their peers in time or geography or are otherwise exemplary of a given style, such as the decorated ostrich eggs from Vulci, Italy. Rathje's cataloguing of these items demonstrates broadly similar decorative features, with some exceptions; four of the eggs are incised with shallow relief, while

another is painted, featuring a “very different” stylistic technique (Rathje, 1986, 399).
Rathje’s study will be discussed in full for consideration (Rathje, 1986, 399).

Chapter 4 – Distributional Analysis

Diachronic Analysis

This thesis will display the results of the ostrich egg database visually. Doing this will require several graphics that account for geographic and chronological distribution, as well as a hybrid visualization for diachronic distribution. In addition, graphical representations of comparative quantities of individual qualitative categories demonstrating the range in concentrations of style and area will be employed.

The first step in our analysis is to examine the range of findspots throughout the Mediterranean. Figure 11 is a diachronic distribution map created by the author. The figure incorporates key Mediterranean trade routes that highlights territories under the control of key powers throughout the period. These boundaries are mutable over the course of the entire period – however, the ones used have been picked to highlight the regions at the peak of ostrich eggshell production and consumption. This provides a basic overview of the data in geographic and chronological space. The data represents the earliest century of deposition likely for ostrich eggshell finds at the site, according to the available reports and information.

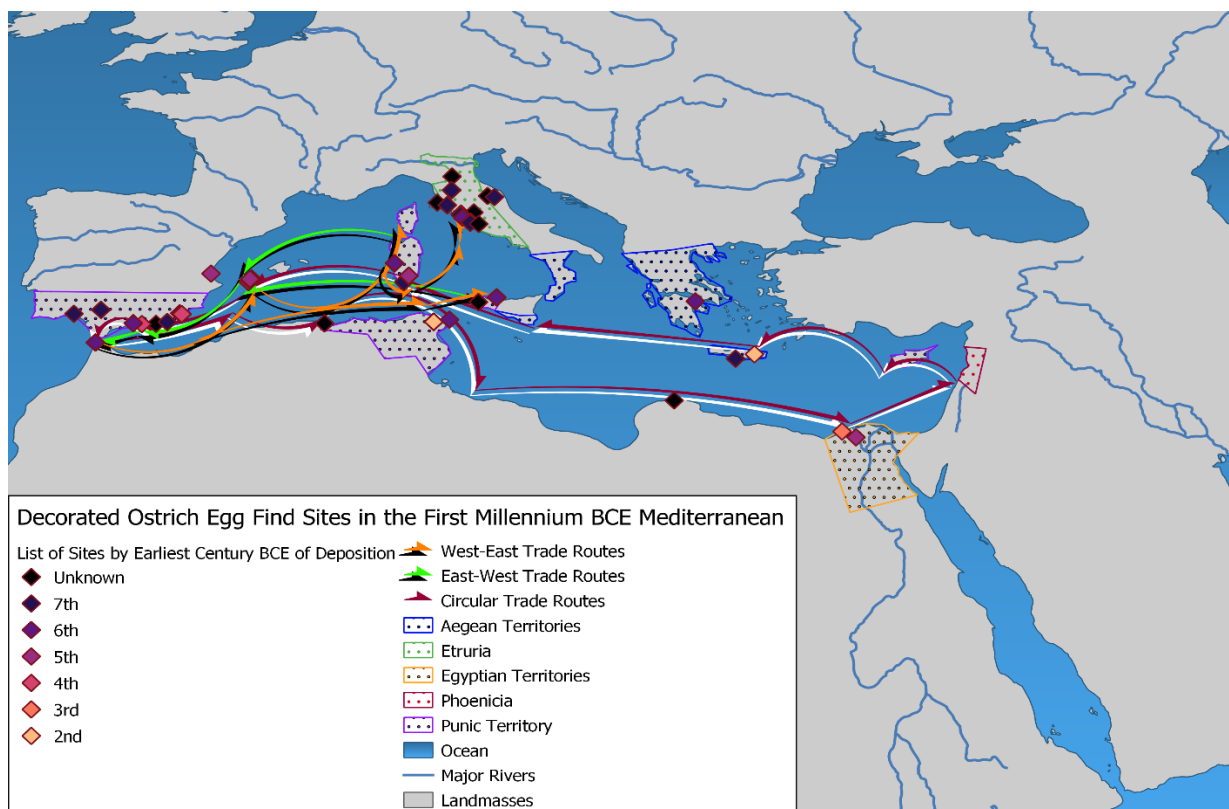


Figure 11– A map charting the concentration of decorated ostrich eggs in sites across the Mediterranean.

The quantitative data map shown by Figure 11 provides an interesting overall map of diachronic shifts. For the purposes of this mapping data, the century for the site is allocated by when the earliest decorated ostrich eggshell finds (plural, to avoid anomalies) occur. This data suggests that there is a shared date of earliest deposition occurring in central regions of Carthage and Etruria in the 7th Century, before circulating throughout their hinterland territories and the wider Mediterranean in the 6th and 5th Centuries. This provides an interesting consideration regarding urban centres as distribution hubs while latent adoption beyond key centres takes time to increase. What this image fails to convey is the quantities of finds per findspot or per period – or when each site saw its peak of ostrich eggshell artefacts.

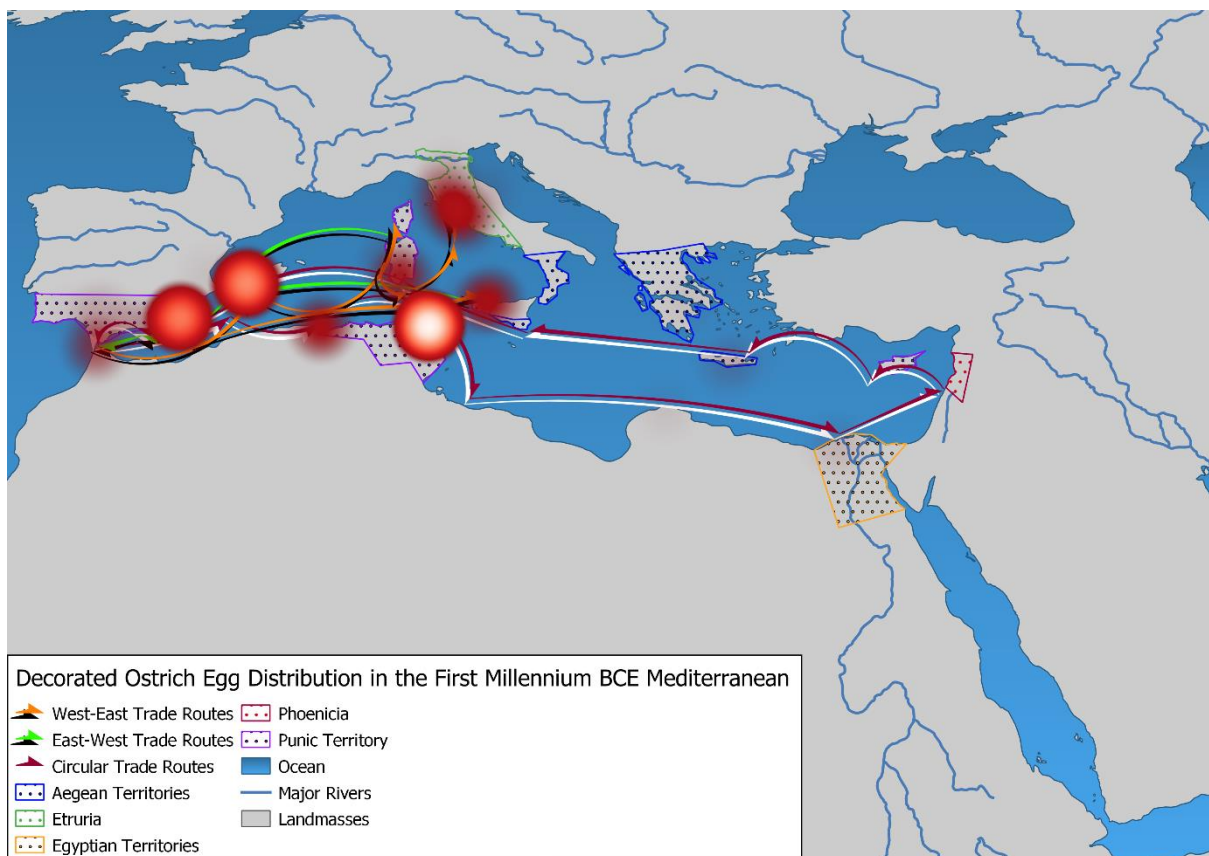


Figure 12 – A concentration map that highlights the range of concentration across sites. The greater the visible spectrum of colours in the concentration circles, the higher the absolute quantities in the region.

The map created in Figure 12 highlights the levels of concentration in ostrich eggshell finds. The visualisation of data in this way balances the visual provided by the map of findspot distribution, as, while sites are spread throughout the Mediterranean, the sites in Greece and Egypt provide an exceedingly small portion of the dataset, while most finds are in North Africa and Iberia. The visualisation highlights how significant

Carthage's quantitative contribution to the catalogue is is. The site of Carthage is a single site with a huge quantity of finds, with a higher concentration of finds per site than any other site. Elsewhere, the majority of finds are distributed in small numbers, typically below 20 per site, but over a larger number of sites in a region. As such, Carthage forms a significant deviation from the norm in the distribution of ostrich eggshell finds. Understanding where we see the greatest concentrations of finds is useful for understanding which regions were the most involved in the display and use of decorated ostrich eggs. However, this data does not provide a chronological information, merely providing the sum in an area. We have seen previously chronological data used to display the earliest date of deposition for each site, informing us as to the spread of decorated ostrich eggs as a phenomenon. However, to better understand how this trend evolved diachronically, we need to chart when each site saw its peak of ostrich egg finds.

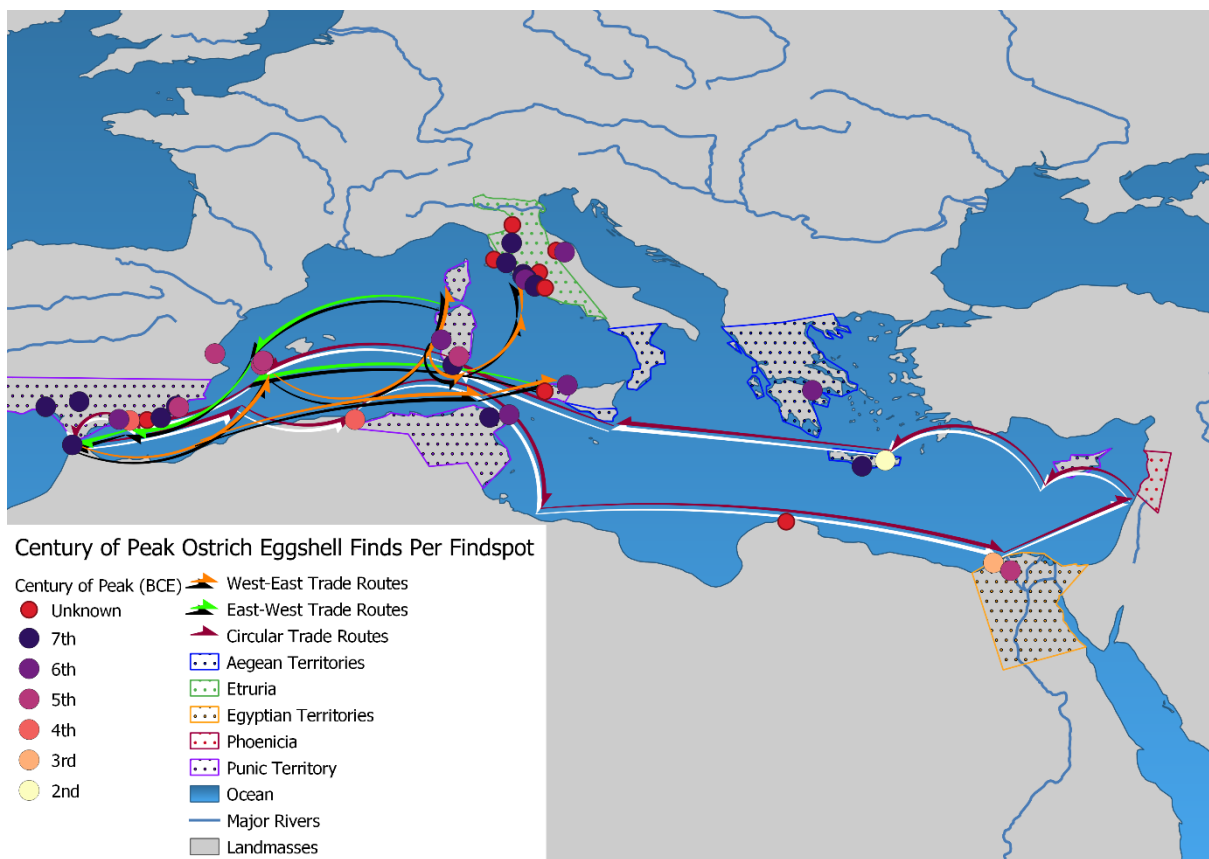


Figure 13 - A map of the Mediterranean mapping the century in which quantities of decorated ostrich eggshell goods reach their quantitative peak per site. Data is author's own.

The above figure (Figure 13) visualises the range of quantitative peaks across the Mediterranean, while the below pie-chart provides a break-down of site peaks

diachronically (Figure 14). This data is useful in evaluating the differences between when sites first adopt ostrich eggshell finds and when they are most found. In some instances, such as at Cap Spartel or Vulci, this is the same century, while other sites like Villaricos peak in subsequent centuries, suggesting prolonged and increased engagement with decorated ostrich eggshell use and display. This data is useful for the study as it provides a more in-depth diachronic understanding of the use of decorated ostrich eggshell.

Comparing date of introduction to a region to date of peak quantity offers the opportunity to examine why regions may have chosen to engage with the ostrich eggshell over time or whether they were simply a passing fad. Figure 14 provides a clear idea of when first deposition is occurring throughout our study. In almost a quarter of our sites, the question of “when” is unclear, as they are often find decontextualised or when in context lack dateable evidence such as ceramics or are from a layer of excavation that does not have a clear chronology. Use of “unknown” categorisation has been avoided where possible, as sites where most finds are from this category are represented by the next most represented century. Unknown datapoints, therefore represent sites that have no known chronology for the ostrich eggshell finds from them, which are typically sites with less than 10 finds total.

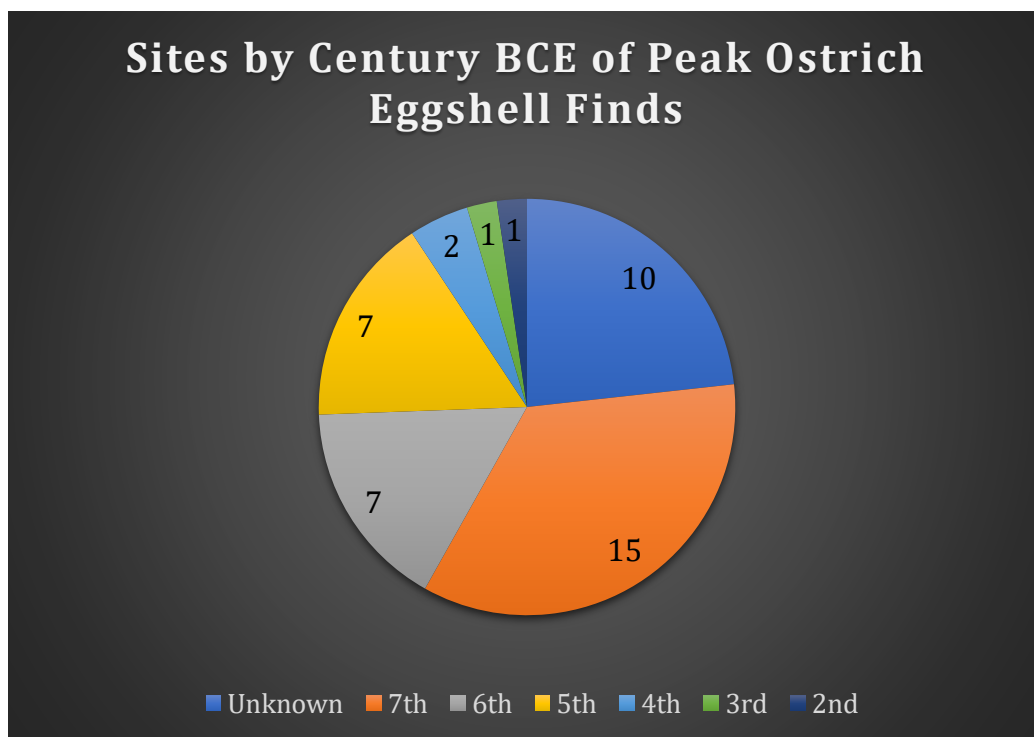


Figure 14 - A pie-chart representing the number of sites that reach the quantitative peak of finds in each century.

Beyond this anomaly, we see that the 7th Century – the century wherein we see the most first instances of ostrich eggshell finds within our catalogue – is also the most common century for peaks, before dropping off over subsequent centuries. This data alone is interesting, as it suggests that the tendency is for ostrich eggshell display and use to peak in its introduction. However, to fully evaluate this information, we need to look at the full breadth of diachronic distribution information, and how the quantities of ostrich eggshell goods are represented across the chronology of the study.

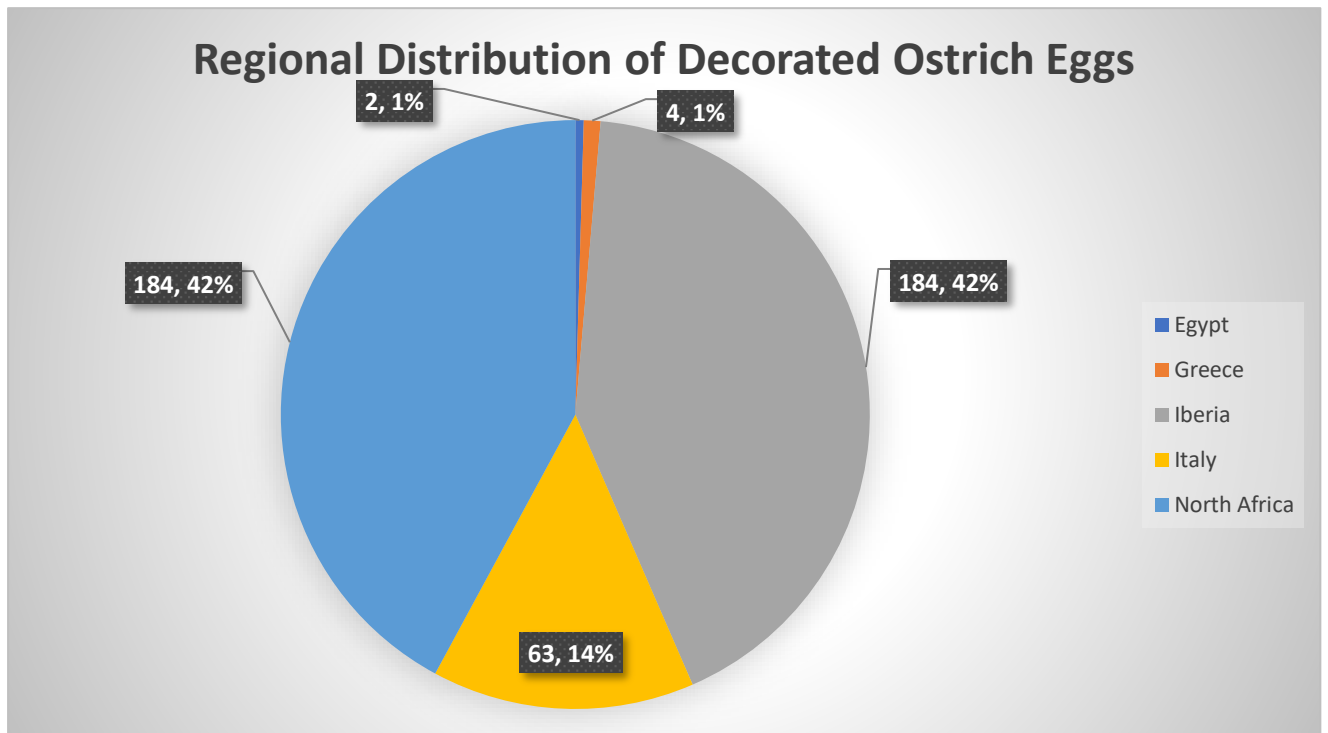


Figure 15 - A pie chart representing both the percentage and absolute quantity of overall finds per region.

Diachronic Distribution of Decorated Ostrich Egg Styles

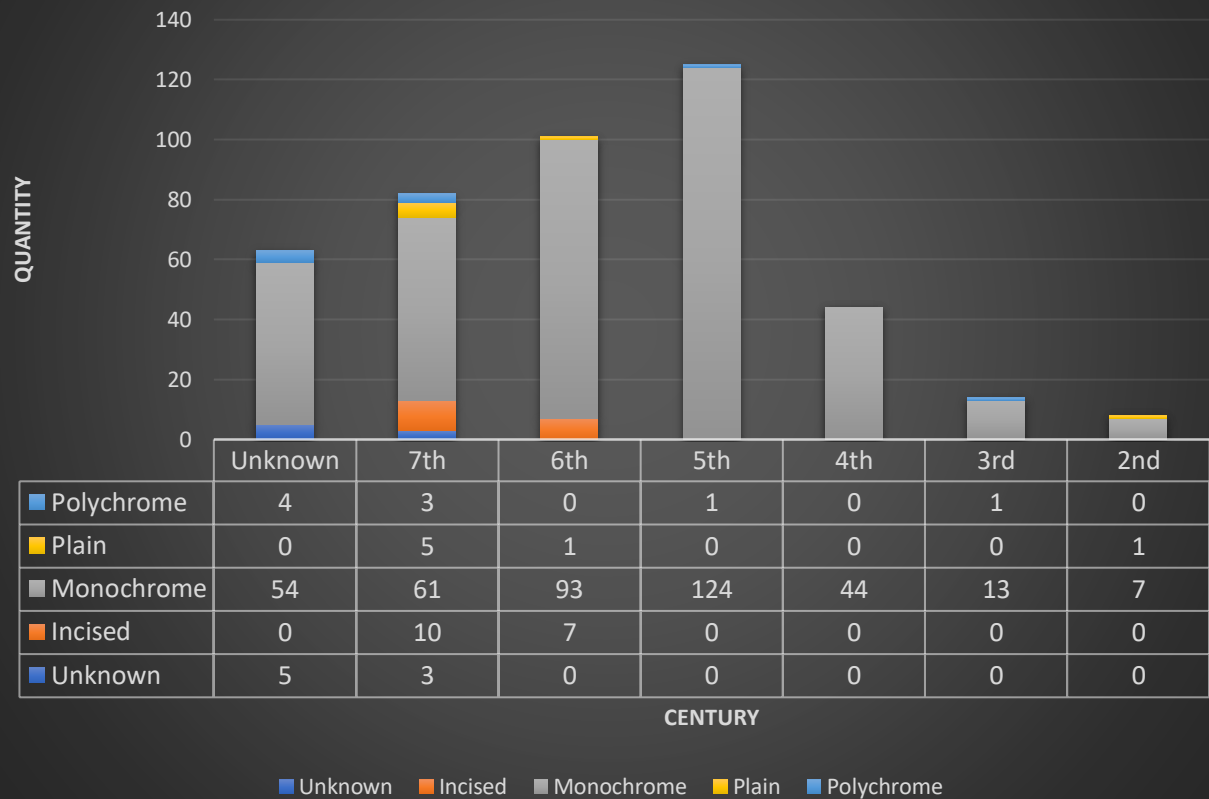


Figure 16 – A bar chart representing the diachronic distribution of decorated ostrich eggs, categorised by century and by style.

The first graph (Figure 15) shows the absolute quantity and the percentage of the overall catalogue per region. This provides us with an informative breakdown of how the number of finds are distributed across the Mediterranean, decoupled from individual sites. This informs our understanding of which regions see the majority of the finds and make the biggest quantitative contribution to the catalogue. The second graph (Figure 16) shows the chronological fluctuation in styles, with a numerical breakdown presented below the graph for ease of information. This data makes it clear that unknown chronologies do contribute a significant portion to the catalogue, but the known data does create a very clear chronological progression of use of decorated ostrich eggs. This comprehensive diachronic breakdown of our dataset that allows for greater understanding of the information first provided in the mapping figures at the top of the chapter. Immediately, these give us an interpretation that is quite different to some of our mapping figures. While the peak century for first deposition is the 7th

Century, most of the finds appear to occur in the 5th Century. Many sites, such as Vulci, Cap Spartel, and Cerveteri have the same century of first deposition as that of their peak deposition, i.e., first ostrich eggshell finds occurring in the 7th Century and reaching a quantitative peak in the same period. However, the peak of total finds for the catalogue occurs in the 5th Century, meaning that sites that deviate from the trend of 1st Century of deposition coinciding with peak quantities are sites that go on to contribute significant quantities of ostrich eggshell finds and thus significantly influence the overall makeup of the catalogue. Key examples of this trend are some of the most quantitatively significant sites; Villaricos, and Puig des Molins. Carthage forms an outlier as a site, with the 7th and 6th Centuries offering an equal number of finds, suggesting significant continuation from after the first data of introduction for ostrich eggshell finds.

Figures 15 & 16 contribute to this understanding significantly. The contribution of North African and Iberian sites – the regions where Carthage, Villaricos, and Puig des Molins all are – account for over 90% of the catalogue. This data is significant as a companion to the map-based visualisations, as they are more effective at communicating the range and geographical density of finds, rather than the absolute quantities of distribution, and the disparities across time and space therein. The number of sites in Etruria versus the number of finds, for example, are a worthwhile consideration. With just over ten sites across its region, Etruria is the third largest contributor by number of sites, and while it is also the third largest in sheer quantity, these contributions are not correlative to the number of contributing sites; inversely, North Africa is over-represented by the single site of Carthage, which contributes over 100 finds as a singular site. To understand the nature of ostrich egg distribution, it is essential that we have a visual representation of this range of comparative diachronic data. This provides a visually digestible representation of how ostrich eggs intersect with social and trading spheres across a globalising Mediterranean.

Ostrich Eggshell Vessels – A Globalising Good

Transporting the eggshells from their point of origin to their deposition sites throughout the Mediterranean, even onto islands, is a multi-step process. The findspots that we have examined are far beyond the natural span of ostrich inhabitation and are sites that would only be accessible from by sea trade or through an incredibly time-consuming overland journey (Brown et al., 1982, 32). Given the shipwreck evidence for

eggshell and their accoutrements, movement by sea is far more likely than an arduous land journey (Conwell, 1987, 33, Hodos, 2002b, 119). The customisation seen in the case studies exemplifies how ostrich eggshell is worked to fulfil local needs throughout the Mediterranean. As the objects see increased quantity of distribution, there is a possibility of increased interactions across trading networks.

These decorated ostrich eggshells remain primarily grave goods; early examples of decorated ostrich eggs or vessels resembling the eggs are typically found in a grave or funerary contexts (Hansen, 1998, 70, Vermeule, 1974,46). This context is maintained over the 1st Millennium BCE in Etruscan, Iberian, and Carthaginian contexts (Rathje, 1986, 398, Savio, 2004, Pieraccini, 2013, 279). One could argue therefore, that the continuation of this process is a form of globalisation. The eggshells are used primarily in similar ways by different cultural groups that are nevertheless in commercial contact with one another. They are found usually in funerary context, in which it is widely regarded that they share symbolic roles of rebirth and perhaps acting as a ward (Bikai, 1989, 204, Pieraccini, 2013, 279). As such, the eggs fulfil a similar role across geographical and diachronic spaces, reinforcing shared social values across distinct cultural groups, creating one facet of a globalised Mediterranean culture (Hodos, 2020b, 102).

To fully understand the range of the eggshells and their role in spreading shared social values, their distribution must be examined beyond these case studies. This snapshot is essential in identifying their work facilitating localised cultures in the Mediterranean and the artistic evolution of decorated eggshell practices. However, a fuller exploration of the distribution is necessary to account for the broad geographic and diachronic distribution of the eggshells, their cultural impact in the Mediterranean Iron Age, and the social values they contributed at a time of increasing globalisation. Figure 17 combines our concentration and earliest date of deposition mapping to give a comprehensive – albeit busy – image of how ostrich eggs spread diachronically and which areas saw the greatest numbers of finds.

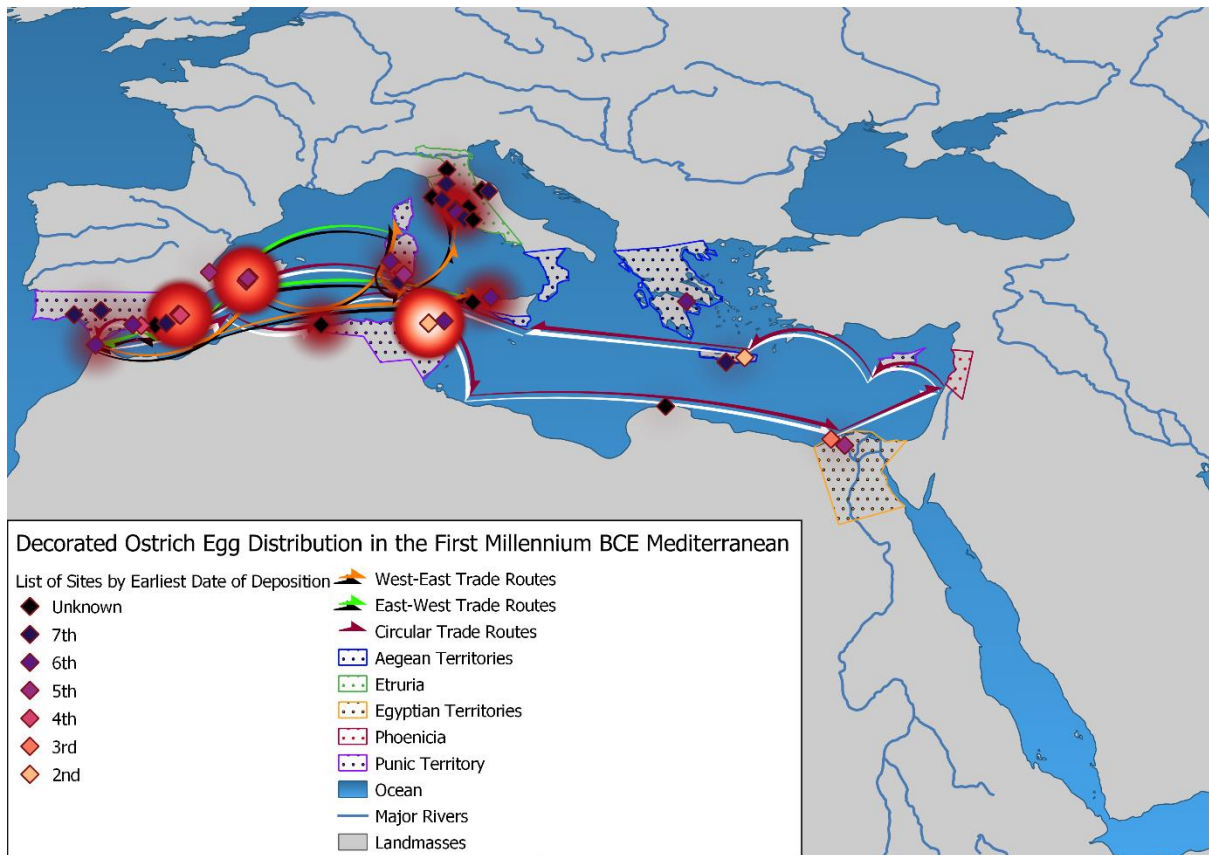


Figure 17 - A distribution map displaying earliest known dates of deposition and concentration of finds per site as well as key trading routes in the Mediterranean.

Geographic Distribution

Most of the finds from the 1st Millennium are in the Western Mediterranean, centred on North Africa and the Eastern Iberian coast (Figure 17). We know that these are areas of significant Phoenician influence in the early 1st Millennium, giving way to Carthaginian hegemon as Phoenicia weakens in the east (Aubet, 1993, 3). The sheer amount of decorated ostrich egg finds in Western Mediterranean contexts connected to the Phoenicians make it apparent that there is a cultural change that sees the consumption of such items shift so far across longitudinal bounds. Etruscan eggs have a similar yet different use to Phoenician-Punic ostrich eggs. There is overlap and contrast between the two. For example, the ostrich egg is argued to have symbolism in both Phoenician and Etruscan funerary ritual, with a connection to afterlife and rebirth occurring in both cultures (Pieraccini, 2013, 289, Ruiz et al, 2021, 6). The Etruscan view of these items also means that they would be suitable funerary objects for elites, thus introducing them to the funerary context that we find them in. Furthermore, the eggs had to be brought to Etruria in the first place, whether as a finished product or as the raw

material. There is a shared understanding of the symbolism of the eggs between the cultures with its connection to funerary ritual and elite funerary display, as well as a connected distribution network. By contrast, however, the iconography and method of craft is largely different. In Etruria, it reflects contemporary and local craft from Etruria – a localised form of decoration that makes the eggs in this region specific to this region. This sets them apart from local consumption in Iberia and is what underpins the globalising nature of ostrich eggs in this period; they share practices at the higher, global level insofar as their shared funerary ritual use, while featuring differences at a local level through artistic expression.

East vs West – Colonisation, Trade, and Luxury Distribution

This paper is not suited to discussing the importance of colonisation and trade in the Mediterranean to various contemporary powers, nor categorising any given settlement as a colony, trading post, agricultural settlement, or otherwise. Instead, this paper operates based on the understanding that overseas settlement and trade occurred between states throughout the Mediterranean. This paper will not assess the relevance of colonial elements to the existence of Phoenician settlements, only that they were extant factors and had a role to play in the distribution of the decorated ostrich eggs. To say anything else is beyond the scope of this paper. The terms “colonies” and “settlements” will be used hereafter to describe urban centres that have seen significant urbanisation within the last 2500 years, and with a cultural origin elsewhere, for a streamlined assessment of ostrich egg distribution.

The existence of decorated ostrich eggs in the Western Mediterranean, particularly west of Etruria, lies within the Carthaginian territory or the territory of Phoenician and Carthaginian colonies. Aside from the expansive collection of finds from Carthage, we have swathes of finds in Puig de Molins, Villaricos, and the Laurita necropolis in Cerro de San Cristóbal (Astruc, 1957, Savio, 2004, see Appendix 1 for further detail). Given the nature of these sites, as Phoenician/Carthaginian colonies, there is likely to be a strong trading connection between them, evidenced by the presence of decorated ostrich eggs. As per earlier discussion, we know ostriches are not natural inhabitants of Iberia. This trade, then, is responsible for the presence of the decorated ostrich eggs, showing the growth and reinforcement of local trading networks and creation of market networks in the Western Mediterranean (Hodos, 2020b, 121). These sites have connections to both

Phoenicia and Carthage from a cultural perspective. Most of the ostrich egg finds can be dated to when both areas were beginning to exert cultural influence. By analysing the decoration of the eggs and determining the origin of its style, we can, in turn, infer where the Phoenician-Punic influence in this part of the world originated.

Simplistic Refinement – Stylistic Contrasts Over Time

The decoration of the ostrich eggs simplifies throughout its chronology. In its Bronze Age roots, we see bejewelled recreations of eggs formed of precious metals and faience (Hansen, 1998, 70). By the time we reach the highest concentration of the phenomena in the middle 1st Millennium BCE in the Western Mediterranean, the finds are most often painted, often featuring repeated patterns, metopes, and depictions of more realistic elements than the mythical processions of the orientalisising style, instead focusing on fauna and flora (Astruc, 38-44, 1957, Savio, 2004). As the range and concentration of distribution increase, the eggs are present over a wider area. This more comprehensive presence, in turn, sees the decoration become less complex. This in turn suggests the production would be less expensive, and in turn, likely more accessible to those beyond the elite echelons of society. As empires make way for city-states, gemstone mosaics and golden additions make way for incision and ochre paints. These mobile luxuries are no longer reserved for the elite but became accessible to other, less-elite strata of society (López-Ruiz, 2021, 2).

Understanding the 1st Millennium Mediterranean Economy – The Relevance of Trade

The Mediterranean of the 1st Millennium BCE is a period of new frontiers from an economic perspective and cannot be described with words used for modern economic analytics (Manning, 2018, 5-6). As Manning points out, the world of the 1st Millennium BCE was one of dynamic, interacting powers rather than static entities. We must understand that the economies and trade we see are interconnected, which contributes to our understanding of the distribution in our study (Manning, 2018, 5-6, 7). The importance of this interconnected nature cannot be understated; it is the mesh of connections between states, poleis, city-states, colonies, and settlements that created the fertile ground for cultural transmission in the Mediterranean 1st Millennium and allowed it to transform (Manning, 2018, 6, Hodos, 2020b, 95). As mentioned, it is

essential to understand that there were no static boundaries or powers in this period. There is no singular controlled Mediterranean economy, as much as there is no singular Phoenician, Etruscan, or Greek economy within it; it is a period of moving, interconnected parts, geographically, commercially, and most importantly, culturally (Manning, 2018, 10). The interdependent nature of these parts means that economic choices have knock-on effects on other economic structures and cultural ones, too – something that this chapter hopes to explore using the catalogue of decorated ostrich eggs.

We have seen that trade is inextricably tied to our catalogue's distribution of findspots and locations. As Manning notes, the economic history of the ancient world is a complicated and hotly debated topic, with no agreed-upon definition on the definitive model for ancient economics (Manning, 2018, 17). Present scholarship refutes Finley's Eurocentric model in *The Ancient Economy*, as his focus is too narrow. Finley's model of the ancient economy that focused on the later Greek and Imperial Roman structures ignored the economic factors that contributed to early 1st Millennium Mediterranean colonisation through Phoenician and Greek expansions (Manning, 2018, 44-45). Such terminology is here used carefully, without the association of inequality and subjugation inferred from *colonialism* (Hodos, 2020b, 68). The influence of the Near East and the products of its trading relationship with the wider Mediterranean cannot be understated in the creation of an interconnected Mediterranean – as López-Ruiz notes, the Phoenicians are the beating heart of the age of exploration and colonisation in the 1st Millennium Mediterranean (López-Ruiz, 2021, 1-2). Establishing a better understanding of trade networks and who operated them, in turn, provides greater insight into the origins and movers of the decorated ostrich eggs.

The turn of the 1st Millennium saw a shift in Mediterranean economies. The collapse of the large palatially-centred states redistributed power and agency to non-state aligned actors, creating more commercial autonomy that would differentiate itself according to need, demand, and availability (Sherratt & Sherratt, 1993, 374). The settlement of these differentiated sites of production and commerce created smaller localised economies that contributed to a more extensive pan-Mediterranean exchange of goods (Sherratt & Sherratt, 375). This trade led to commercially oriented settlements by some groups,

such as the Phoenicians, in the western Mediterranean (Sherratt & Sherratt, 375, Manning, 2018, 45).

This shift from state-controlled economies with centrally managed and recorded resources to a much more varied economy that still saw state intervention but allowed increased movement and action governed by independent agents provides an essential theoretical foundation for the study of decorated ostrich eggs (Sherratt and Sherratt, 1993, 361, Broodbank, 2015, 694, López-Ruiz, 2021, 2). We can begin to understand the social and economic principles that encouraged the distribution of the decorated ostrich eggs in our study through this foundation. Suppose we understand that much of the settlement in the Western Mediterranean originated from commercial expansion. In that case, it makes sense that these sites would be the first to distribute the eggs throughout the Western and Central Mediterranean. From this, we can theorise the reason behind the disparity across styles and regions, which also has a grounding in trading networks; access to different stylistic influences and crafting materials across geographical boundaries informs the regional desire for goods and how these goods are crafted, modified, and displayed. To explore styles across regions, we will now look at case studies from the catalogue in closer detail.

Decorated Ostrich Eggs - Case Studies

Significant finds from the catalogue will be presented as case studies to provide insight into the material catalogue itself and provide a background to trading and political relations of the time. The case studies will provide examples from between the 8th and 3rd Centuries. The case studies selected represent the greatest concentration of decorated ostrich egg finds and the richest artistic diversity at the height of the medium's popularity as far as present data shows.

The Central Mediterranean– Eggshell finds at Vulci

A central Mediterranean site with well-documented examples is that of the site of Vulci. A collection of five eggs from a tomb, known colloquially as the Isis Tomb, represent an interesting collection of style and iconography (Rathje, 1986, 397). These five ostrich eggs present examples of painted and incised decoration and reflect the diverse range of Pan-Mediterranean influence in ostrich eggshell decoration at the time. Questions of origin are central to the nature of decorated ostrich eggs, and the new categorisation of

them, combined with a more comprehensive cataloguing of finds, intends to highlight how these eggs contribute to the overall story of ostrich eggs in the Mediterranean.

The decoration on these eggs is a mixture of painting and incision, with all eggs featuring either intact painting or evidence of previous painting, and all but one featuring decoration by incision (Rathje, 1986, 397, Hodos, 2020a, 2, Hodos et al., 2020, 382). Decorative elements on the incised and painted eggs are repeated; undecorated bands and bands of tongues feature throughout, alongside friezes of lotus buds and flowers, all repeated in a fashion to create a border frame before the central decoration (Rathje, 1986, 397, Figure 18). This decoration forms the uniform pattern along the upper and lower thirds of the incised eggs, between which the central decoration, a carved frieze, is found. These friezes frequently feature living creatures, covering a range of animals and some humans; the armed soldiers in Figure 18 are one such example, while other eggs feature friezes of fantastical creatures, like gryphons, alongside lions, bulls, and horses (Rathje, 1986, 397-8, Fig 18). The subject of the friezes is as essential in assessing their origin as the stylistic elements used.



Figure 18 - A decorated ostrich egg from Vulci. This example features painted and incised decoration. The decoration depicts armed individuals through use of negative space. Reproduced from the collection of the British Museum, museum number 1850,0227.9. © The Trustees of the British Museum.

The material for their creation – that is to say, the ostrich eggshell – is evidently imported. Decoration on the eggs does nothing to inform us of the origin of these eggs, as the 7th Century – the period these finds have been dated to – was a period in which mobile artisans were known to be active (Hodos, 2020a, 2). The iconography and style of the decoration is less explicit. The motifs found in the large majority reflect a Near Eastern or “orientalising” influence; however, Etruscan artisans had incorporated these motifs into their own work by this stage, suggesting a possibility of *in loco* decoration and reflecting the way in which iconographies cannot be assigned to a single geographic location (Haynes, 2000, 158). This kind of assessment is more complicated with the eggs from Vulci due to the disputed origin of the pigments on the eggs (Rathje, 1986, 398).

Ostrich eggs, when decorated, typically emulate the style of their chronological and geographical origin. The Vulci eggs decoration incorporates orientalising stylistic

elements, such as palmettes, gryphons, and flame motifs, consistent with Syrian stylings (Rathje, 1986, 398). The incisions themselves reflect the style of carved ivories present in the Near East in the early-mid 1st Millennium (Winter, 1976, 1, Aruz & Lapérouse, 2014, 141). The incised decoration on the eggs from Vulci provides no origin for these eggs. While incised ivory styles are named for geographic areas, it is no longer presumed that these styles were solely present in these areas (Feldman, 2014, 3). Replication of the style is possible beyond the traditional geographical borders of incised styles and motifs found in such mediums as ivory and ceramic, thus allowing for the possibility that the eggs from Vulci were created *in loco*, in an imitation of eastern styles.



Figure 19 - A decorated ostrich egg from Vulci. The incised decoration displays a gathering of creatures, including griffins and bulls. Reproduced from the collection of the British Museum, museum number 1850,0227.5. © The Trustees of the British Museum.

The friezes that decorate the centre of these eggs are diverse in their subject matter. The first depicts a row of fantastic animals, such as gryphons, winged animals, and lions (Figure 19, 1850,0227.5). This is typical of the orientalising style and suggests the decorator of the egg was aware of said style. The fourth represents groups of men and horses moving left-to-right, with all the men carrying spears and shields, with palmette decoration in the background (Figure 19, 1850,0227.9.). The main friezes, per Rathje, are split into categories of “animals, real and fantastic,” and “chariots, riders, men and horses” (Rathje, 1986, 398). This imagery creates a clear idea of the images that the artists intended to convey and reflects the interregional artistic influence present in the artistic decoration. The bulls, lions, sphinxes, and gryphons of the Syrian and North Syrian styles appear alongside the chariots and sketched styles of the armed soldiers, reflecting a proto-Corinthian influence (Akurgal, 1968, 68, Cristofani, 1971, Rathje, 1986, 398-399).

Brysbaert and Phillips suggest that, rather than being emptied and then decorated *in loco*, ostrich eggs would typically be emptied prior to transport (Phillips, 2000, 333, Brysbaert, 2013, 236). The supporting evidence for this theory comes from the Uluburun shipwreck, which is a wreck from the 14th Century; as such, it is not possible to extrapolate this information into a known approach in the 8th-6th Centuries. We cannot guarantee that the eggs in Vulci followed the same process as those in the Uluburun wreck; however, it does establish a precedent for the transport of eggs for use after emptying. The manner of engraving in the pendant semi-circles in the upper decoration of 1850,0227.5 and 1850,0227.9 suggests use of compasses in their creation (Rathje, 1986, 397). With this provision, *in loco* decoration depends on the availability of compasses or similar tools within Etruria between the 8th and 6th Centuries. Compasses are found in the Protogeometric period in Greece, which spans the late 11th to 9th Centuries BCE, with earlier existence in the Levant, all predating the dating of these eggs. This existence suggests that these compasses would at the very least be present in the Aegean in successive centuries, at a time and in a place that the theoretical artisan responsible for these eggs may have travelled in due to the familiarity with the Corinthian style that Rathje highlights (Rathje, 1986, 398, Papadopoulos et al., 1998, 512).

The output of Etruscan craftsmanship in this period reflects a range of Greek and orientalisising influence, with incision present on their most successful ceramic; *bucchero* ware (Haynes, 2000, 56). As such, the presence of compasses for *in loco* incision and decoration is very plausible. However, the incisions reflect ivory styles like those from the Near East and the Levant found in the early 1st Millennium BCE (Aruz & de Lapérouse, 2014, 141). This makes it possible to theorise the eggs as being decorated either *in loco* or abroad prior to transportation. From the information present, either hypothesis is possible. The eggs may have been distributed with a signature incised style and then further decorated (as with painting) upon arrival, supporting Napolitano's hypothesis that eggs were painted *in loco* (Napolitano, 2007, 14). However, Rathje disagrees with the external decorator hypothesis. Citing the artists' familiarity with Eastern Mediterranean and Proto-Corinthian styles, she suggests that the carving took place after importing the eggs into an Etruscan city that had ties to Corinth – even Vulci itself (Rathje, 1986, 399). Combined with the familiarity Etruscans had with a range of styles, iconographies, and decorative techniques from across the Mediterranean basin and incorporated into their own work, *in loco* decoration is a very plausible theory.

To further assess this, the last egg from Vulci must be examined (Fig. 20). The find is cut obliquely, with one third missing from the top of the egg, corresponding to forms found in the Punic world. The decoration sees (top to bottom); banded friezes of red and blue-green, a figured frieze, then a blue-green band and a red band. The bands frame the figured frieze, which contains "fantastic creatures", variously identified as griffins, camels, or, Rathje argues, sphinxes (Rathje, 1986, 399). The imagery is characterised as different from previous finds, lacking the incised decoration found on the other eggs, and likening its style to orientalisised elements by way of the sphinx, and also to the Punic world to the west (Rathje, 1986, 399). In reflection of the Punic style, 27.6 has been cut obliquely, leaving a third of the egg missing as noted earlier (Pedráz, 1975, 78, form II). In addition, as a series of triangular cuts 1-2 cm deep to create a raised border of the eggshell itself: this form further echoes Punic eggshells (Rathje, 1986, 399). It is coloured red internally, with a slight blue-green border. The red paint is repeated on the outside, forming bands below the triangular cuts and again at the base, with blue-green bands framing the painted frieze, forming a repeatedly painted red and blue-green pattern (Rathje, 1986, 399). The frieze itself shows four "fantastic" creatures walking to

the left, with raised wings, tails, and cocked heads. Rathje interprets them as sphinxes rather than gryphons or camels. Regardless of which presumed animals are present, any of these creatures suggest an orientalising style in the decoration. Combined with the Punic form of this eggshell and the unusual form of the paintings compared to other painted examples found in 27.5-9, it appears likely that this object was created in a Western Phoenician context and then imported (Rathje, 1986, 400).



Figure 20 - A decorated ostrich egg featuring "orientalised" stylistic motifs. Key parts of this motif, such as the stylised mythical creature and frieze banding can be made out despite the wear on the artefact. Image Credit: Dr. Tamar Hodos, University of Bristol, museum number 1850,0227.6. © The Trustees of the British Museum.

Rathje suggests that the four incised eggs are part of a group separate from the painted egg from the same site. While there is an apparent split in style, this study is not suitably scoped to settle this debate. Instead, the observation of difference should be noted in reference to the collection and set aside.

As we understand the evidence, sea-based trade of ostrich eggshell is an essential part of the *chaîne d'opératoire*. Post-Bronze Age shipwreck evidence for movement of eggs comes from the Iberian coast, which may have contributed to the collection at Vulci. The Bajo de la Campana wreck included evidence of decorated ostrich eggshell vessel stands (Hodos, 2020b, 118-119). The cargo also included elephant ivory, indicating that these goods were not circulated from Iberia but from a trading hub in the Western Mediterranean (Hodos, 2020b, 118-119). Then, decorated ostrich eggs were transported from both sides of the Mediterranean, from the Levantine and Egyptian east and the Punic west. These two areas of distribution are in a prime position to take advantage of the native ostrich populations in Africa and Arabia at the time. This positioning affords them access to the raw materials needed to form the essential good for export (Phillips, 2000, 333). From there, the eggs can be distributed throughout the Mediterranean. Then, what needs to be explored is how decorated ostrich eggs were distributed throughout the Mediterranean to reach their final deposition sites. We must look at another concentrated case study; the Balearic Islands.

Island Treasures – Decorated Ostrich Eggs in the Mediterranean Islands

The Balearic Island of Ibiza will be a case study to explore island deposition, sea trade, and the stylistic differences in decorated ostrich eggs in the Western Mediterranean Iron Age. The site of Puig des Molins, sitting in the central-southern bay of the island, features a Phoenician-era necropolis. The area has been cited as having Phoenician inhabitation since the mid-7th Century, and features a range of material evidence for their influence, including decorated ostrich egg fragments and vessels (Diod. 5.16, Ramon, 1996, 53, Savio, 2004, Hoyos, 2010, 41). Ibiza does not have and has indeed never had a verifiable indigenous ostrich population. Therefore, ostrich eggs present in these finds are an import. Furthermore, Ibiza is an island; we can further surmise that they were brought via sea trade routes. The Bajo de la Campana wreck provides evidence of a Phoenician trade vessel operating in the Iberian Peninsula. The Bajo de la Campana wreck was found on the eastern coast of mainland Spain, approximately 30

kilometers northeast of Cartagena (Polzer, 2014, 230). Assessment of the pottery on the ship suggests that the goods were produced by Phoenician settlements in Andalusia, operating in trade networks that intersect between Tartessos and the wider Mediterranean (Polzer, 2014, 236). More importantly, evidence from Phoenician settlements in Ibiza, such as Sa Caleta, has shown that their pottery was imported from this region of Andalusia and they in turn traded their surplus with Carthage, creating a network of local trade that ties Ibiza into a wider distribution network (Polzer, 2014, 240-241).

The catalogue's coverage of Puig des Molins, Iberia, and the Western Mediterranean in general (8th – 6th Century) paints a vastly different picture of the ostrich egg decoration style compared to the finds in Etruria. As discussed above, the finds at Vulci were all incised, with one exception; the egg in the morphological and decorated style of the Punic eggs (Rathje, 1986, 399). The Punic style in this context refers to the style we see most commonly in decorated ostrich eggs from Iberia – the Monochrome style of decoration, with a variety of motifs and forms of carving (Savio, 2004, 50-90, Fig. 21). The idiosyncrasies in the style of the Punic eggs are apparent. One visually striking change from the Etruscan eggs is that their morphology is different. A large section is removed rather than a small apex hole, creating a much wider “mouth” of the vessel. The size of removal compared to Etruscan finds suggests an alternative purpose for the vessel, such as a cup.



Figure 21 - A decorated ostrich egg reconstructed from fragments of a whole vessel at Puig des Molins. Reproduced from the collection of the Cartagena Museum of Archaeology, Murcia. © The Trustees of the Cartagena Museum of Archaeology.

The Monochrome style eggs incorporate a broad range of motifs and design elements but rarely stray from simple red ochre designs, occur exclusively in funerary contexts, and are thought to represent a connection between life and death (Pieraccini, 2014, 279, Ruiz et al., 2021). The connection to death is not unique to Monochrome styles; indeed, most eggs occur in a funerary context. As Pieraccini notes, eggs, including ostrich eggs, often feature in myths of death and rebirth (Pieraccini, 2014, 268).

In addition to the change in the vessel's construction, the decoration is markedly different. Primarily, there is a lack of stylistic incision. The decorative method and iconography are different; framing bands are instead applied in a solely painted fashion. The images portrayed are different too. There is a dearth of full human images, instead typically showing faces or eyes akin to finds from Carthage, and a range of stylised flora, such as lotuses, with small geometric designs. Additionally, fauna is included and shifts from the mythological winged animals, sphinxes, or grander animals such as lions, to more local representations of the living world, like birds, deer, and flora (Fig 22 and 23).



Figure 22 - A decorated ostrich eggshell fragment from Puig d'es Molins with decoration imitating a human face. Per Savio, 2004.

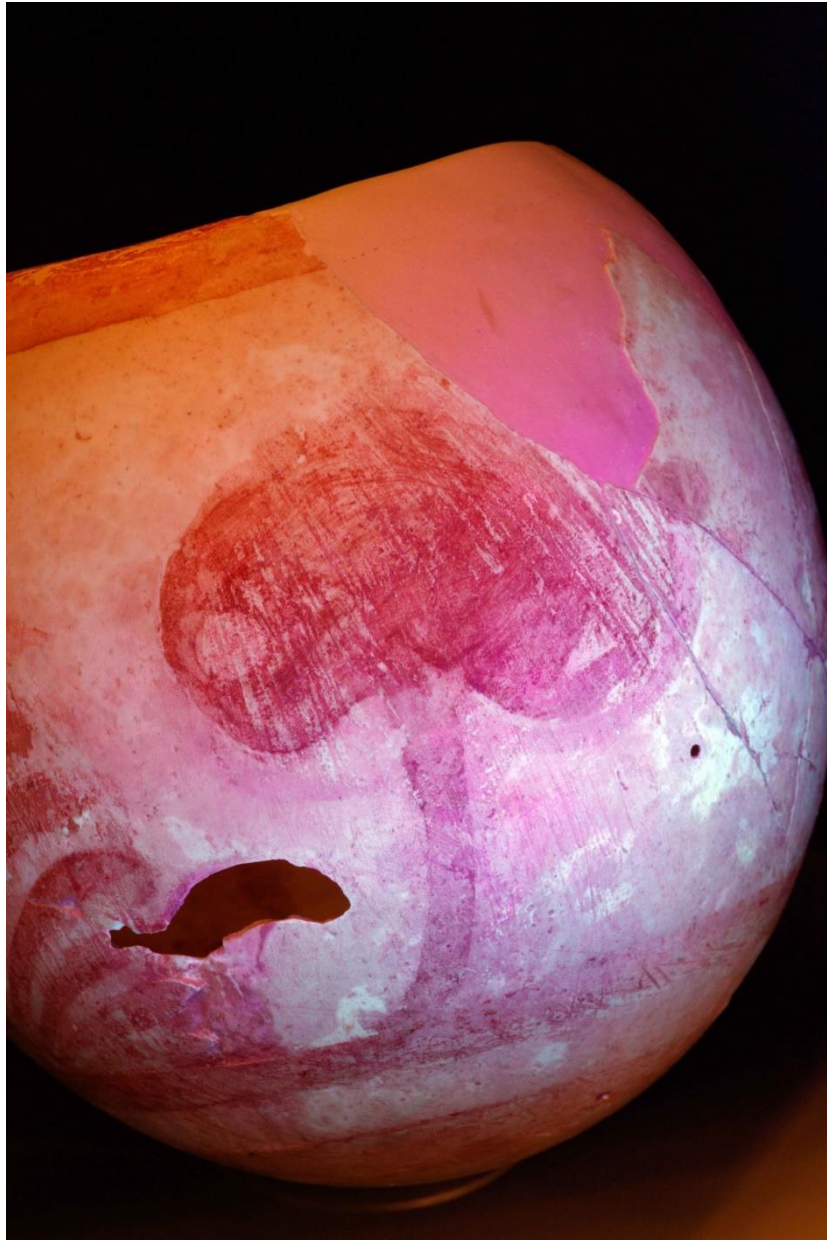


Figure 23 - An ostrich eggshell with painted decoration of flora. Per Ruiz et al, 2021, Fig.6.

This shift in the design represents a distinct form of decoration. It must be questioned whether the change in decoration compared to other eggs reflects an incorporation of local styles. To do so, examination of other contemporary mediums will be considered. Figure 24 represents a collection of predominantly 5th Century art from Ibiza and reflects the use of zoomorphic imagery and rosettes in art beyond the medium of ostrich eggs, suggesting that the iconography on the decorated ostrich eggs is somewhat typical of the region for the time. The eggs in Iberia, especially in sites in Ibiza, are still found predominantly at necropoleis. Therefore, this use of decorated ostrich eggs in this context and the specific decoration reflects the adoption of an external cultural practice

– i.e. the use of ostrich eggs as funerary goods - by the population of the Ibiza settlements, and features a localised form of decoration. This decoration is consistent with other contemporary art from the area and likely represents indigenous artistic styles (Figure 24). By adding this to the medium of the decorated ostrich egg, it creates a globalised good – reflecting a shared practice at a higher level with a localised style to distinguish it. Furthermore, it reflects the agency that the indigenous populations had in influencing social dynamics at the time. This could suggest that these instances of decorated ostrich eggs form an example of cultural hybridity, thus playing an important part in displaying the nuances of the social exchange and intercultural relations in the 1st Millennium Mediterranean (Hodos, 2020b, 22, López-Ruiz, 2021, 24).

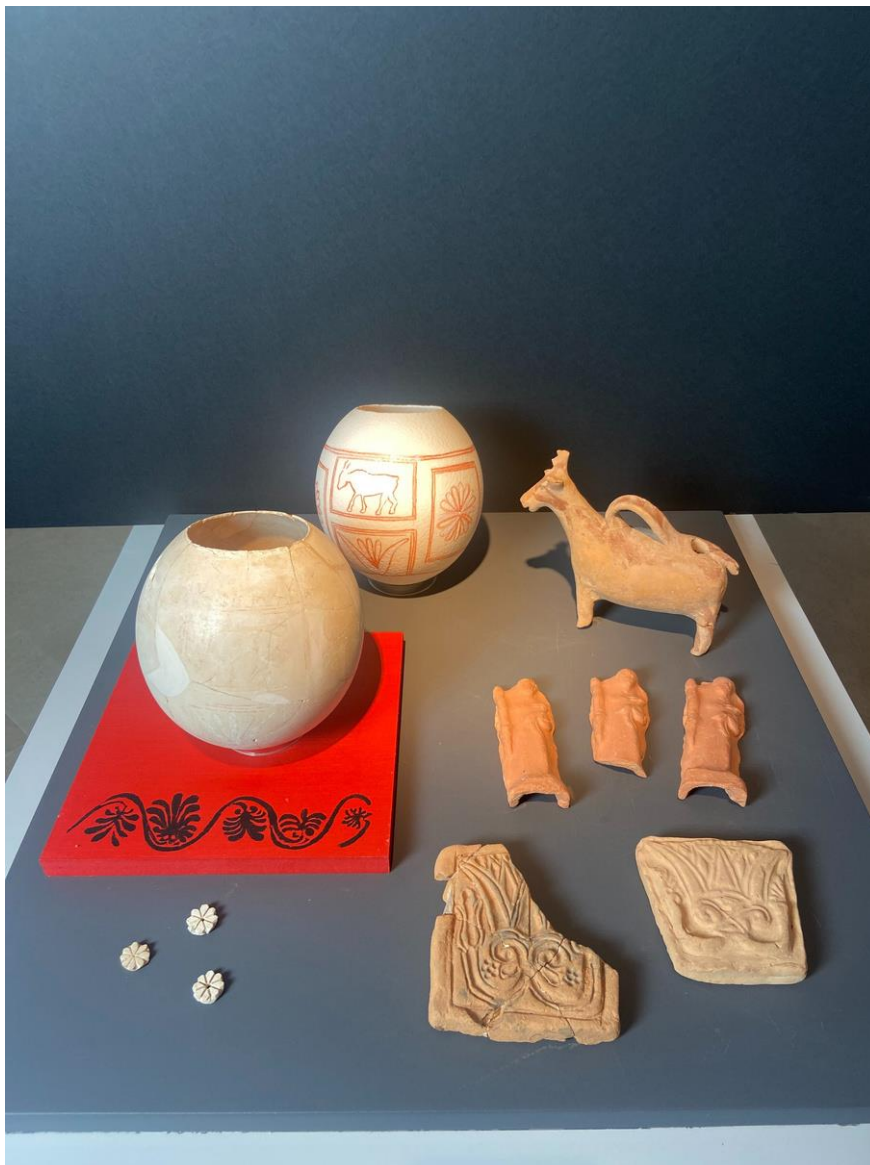


Figure 24 - A collection of 5th - 4th Century art from Ibiza necropoleis. Image Credit: Museu Arqueològic d'Eivissa i Formentera, 2021. © The trustees of Museu Arqueològic d'Eivissa i Formentera.

Beyond Ibiza, we see other island case studies that contribute to understanding the catalogue. Mozia in Sicily is an additional example of globalised economic interactions through the lens of decorated ostrich eggs. The existence of decorated ostrich egg finds – largely with paint, typically in a single colour, and at times laid over incision – at the site further supports the concept of localised fashions driving demand in overseas trade as an island settlement. Figure 25 is a drawn reconstruction of a 6th Century bowl from the Sicilian site of Mozia formed of eggshell (Sconzo, 2000, 605-606). This find features a triangular decoration around the rim of the bowl, which provides a decorative mirror of the physical crimping applied to some Iberian ostrich eggshell cups. Other motifs include a ring of curved triangles around the base and other teardrop or grain shapes around the body of the bowl. This imagery is distinct from the structure of Iberian decoration, which is typically much more figurative with more delineation via banding, and from Etruria, which features a greater range of non-abstract imagery. Still a scarce good in the 6th Century, Mozia exhibits only 4 finds, all from wealthy necropoleis, suggesting an attachment to the elite funerary tradition seen elsewhere in the Mediterranean (Sconzo, 200, 603).

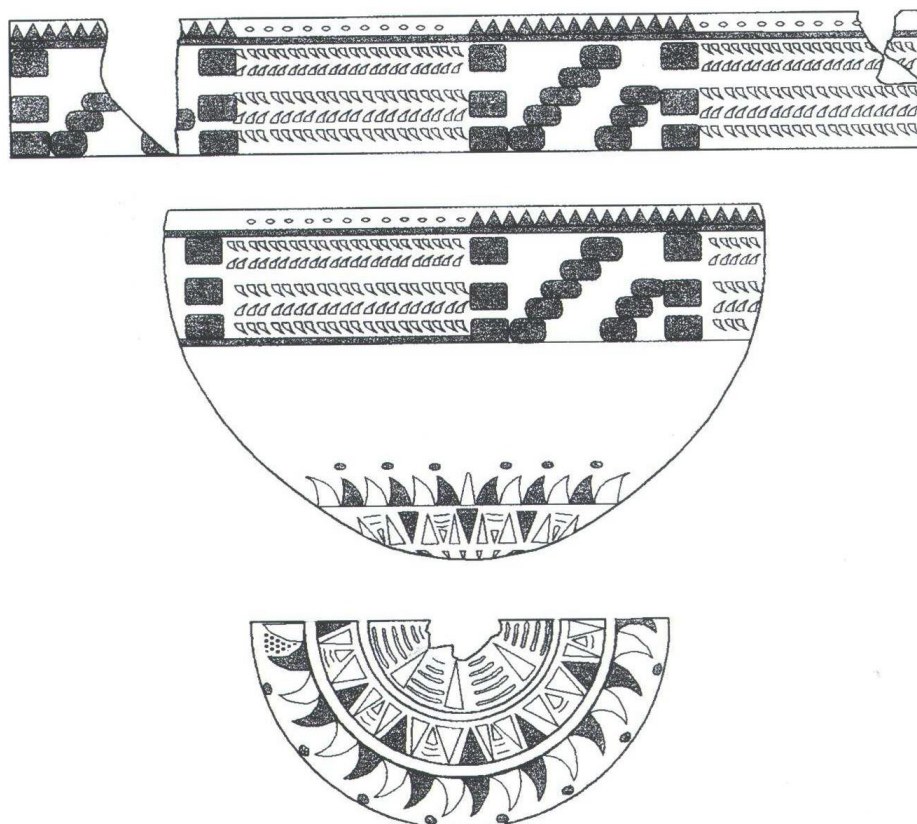


Figure 25 - A drawn reconstruction of an ostrich eggshell bowl, with emphasis on the style of decoration. Per Sconzo, 2000, N.I 2479.

The Importance of Maritime Routes

Explorations of the Mediterranean past have often adopted a Hellenocentric stance or otherwise excluded contributions from the Levantine and North African coasts of the Mediterranean (López-Ruiz, 2021, 8). The economic contributions of these regions, particularly in the 1st Millennium BCE, are significant and have been historically diminished. By way of Carthaginian trade and exports, North Africa left a significant imprint on the economy – exports of Punic wares are apparent throughout Etruria and Iberia, as is the reverse, suggesting a circular trade between the Central Mediterranean and North Africa (Aubert, 2016, 150). Geographically and diachronically, assessing the distribution of decorated ostrich eggs requires a more holistic view of the 1st Millennium BCE. This assessment must go beyond ideas of periodisation or cultural groups (Morris, 2010, 263, López-Ruiz, 2021, 5). The Mediterranean of the 1st Millennium BCE is neither a coherent, cohesive entity of unified practice nor a metaphorical ship led by a guiding figurehead. It is a reactive, dynamic system governed by a mixture of geographical forces, *a la* Braudel's Annales school definitions of the *Longue durée*, and social forces reacting to catastrophic system change (Broodbank, 2015, 694, Manning, 2018, 82). Examining the interconnected nature of trade through the lens of a specific good – such as decorated ostrich eggs – explores social change and demand without the burden of any culture-centric influences. Instead, interpretation of the goods themselves and analysis of their diachronic distribution along established trade routes will inform the study and eschew traditional periodisation.

López-Ruiz identifies the 2nd quarter of the 1st Millennium BCE as one permeated by a pan-Mediterranean “class” of “urban, literate, and sophisticated elites”, tied together in cultural and economic elements, with a clear Near Eastern aesthetic – this is the so-called “Orientalizing” influence (López-Ruiz, 2021, 1). In this period, a “global” Mediterranean enters academic parlance. We see colonial expansion facilitate the technological and artistic transmissions that set the stage for the Mediterranean that is related to itself throughout (López-Ruiz, 2021, 1, 2). Hodos' definition of globalisation certainly applies here – common goods with localised styles and meanings that espouse a sense of self-identification among competing cultures, such as decorated ostrich eggs, are emblematic of a globalised good (Hodos, 2020b, 108).

Ostrich eggs are an essential consideration within the scope of trade as they are a sign of a pan-Mediterranean adoption of the so-called “orientalising style”. Most decorations found on the eggs show symbolic and decorative motifs or engraving styles that find their origins in Phoenician exports, as a part of what López-Ruiz terms “orientalising kits” (López-Ruiz, 2021, 3). This phrase refers to the nature of the Phoenician cultural capital in influencing artistic styles throughout the Mediterranean, along the path of their trading and settling networks. Identifying the Phoenicians as “the first movers to join the eastern and western parts of the Mediterranean” emphasises their importance in connecting the distant west of the Mediterranean with the styles of the east (Manning, 2018, 35). Furthermore, it presents us with a theoretical key “mover” for decorated ostrich eggs – or at least, the elements of style we see present on them. Figure 26 illustrates the array of trading networks present in the 1st Millennium BCE Mediterranean in combination with the distribution of decorated ostrich egg findspots in the catalogue to understand this movement. With these in tandem, we can see that decorated ostrich eggs are present in sites connected by trade routes. This conclusion is logical; ostriches are not native to many findspot regions and must have been transported by some means. However, the concentration of finds in sites under Phoenician control or at the end of sea-trade routes controlled by Phoenicians makes plain how integral the Phoenician element is to this distribution.

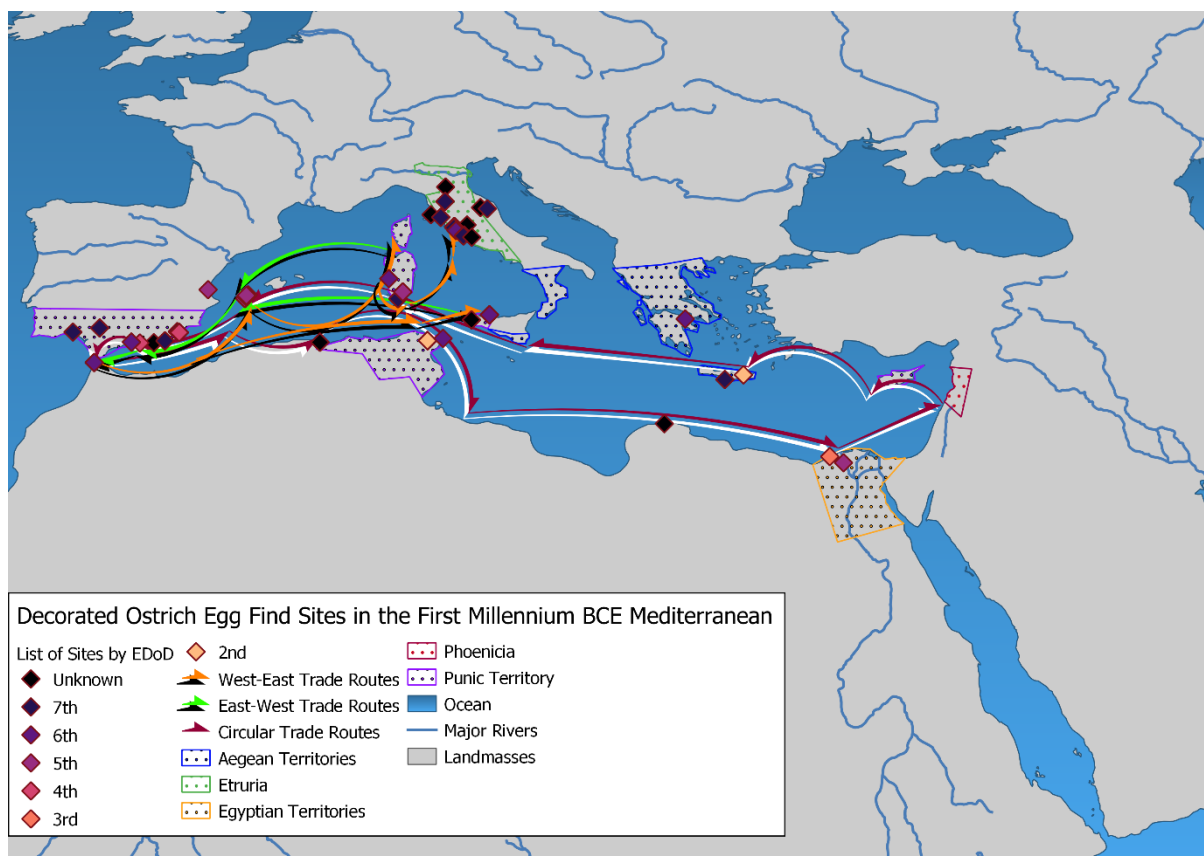


Figure 26- A distribution map displaying findspots, categorised by chronology, overlaid with trade routes from the 1st Millennium BCE. Trade routes after Aubet (2001, 159-164, Fig. 28-30), Hodos (2006, 5), and Manning (2018, 45, Map 1).

Immediately, it is easy to see the connection between the two; where trade routes go, ostrich eggs are not far behind. The diachronic distribution is marked by the changing colours, which clarifies the evolution of geographic spread over time. The Central Mediterranean has a much higher number of finds in the 7th and 6th Centuries than any other period. This data suggests greater uptake of decorated ostrich eggs when the eggs are likely to have been transported along trading routes between sites in the Western Mediterranean, notably from Carthage and other Phoenician-Punic settlements in Iberia. As earlier discussed, the settlements in the Western Mediterranean were established with economic motives in mind, creating localised productive enterprises in these settlements that formed specialist parts of their respective industries (Sherratt & Sherratt, 1993, 375, Broodbank, 2015, 694, Manning, 2018, 45). As such, the role of specialist economic settlements in the crafting and distributing of these finds must be considered. The earliest finds in the 1st Millennium are either Monochrome or Incised; it is not until the 6th Century that we begin to see an uptick in other finds, and these are subsequently sparse. This figure illustrates the quantitative shift in styles throughout

the diachronic duration of the catalogue. The 6th Century sees the numerical peak of the study, with a very steep collapse in the number of finds after this period. From this data alone, we cannot infer what caused this collapse. Understanding the subsets of style through the lens of trade further informs our study. We must begin our investigation of the traded distribution of eggs with the largest stylistic group – the Monochrome eggs.

The Monochrome style is confined to the Iberian Peninsula and North African Phoenician-Punic territories, with single-digit exceptions. This evidence suggests that the Monochrome style: a) in the Western Mediterranean lies in areas of Phoenician-Punic control, and b) is the first style of the 1st Millennium BCE Mediterranean. This style's creation and large-scale internal distribution suggest that these items are of significant cultural relevance in these communities in the Western Mediterranean and represent a form of expression that reflects local cultural practices and artistic forms. This style use stands in contrast to the imported styles present on the Incised eggs. Those feature incisions that match elements of Syrian, Phoenician, and Egyptian-type crafts and more generally reflect Near Eastern motifs, despite evidence suggesting that some eggs in the region may have been decorated *in loco* in Etruria (see discussion above; Rathje, 1973, 399, Winter, 1976, Napolitano, 2008, 14). The limited distribution of the incised style versus the more widely adopted and quantitatively present Monochrome style suggests that the latter is a “homegrown” style, furthered by the ubiquity of the Monochrome style across the chronology. The Monochrome style forms a baseline for decorated ostrich eggs in the 1st Millennium BCE Mediterranean. Therefore, understanding the significance of elements of their decoration is key to understanding which elements were adopted, localised, or removed over time and distance through their traded distribution.

Considering that decorated eggs are comparatively rare in Etruria, as we have less than ten findspots for the region, and that their contexts are always among the most elite graves of the site, we can consider that these finds indicate exceptional luxury consumption of individuals or small groups such as wealthy families. By contrast, the findspots in the Western Mediterranean tend to have more finds per site in their funerary contexts. This distribution suggests that eggs in this region represent a less exotic luxury when occurring in high numbers; instead, they represent a much more commonplace funerary item.

Trading Places – How Trade Informs Our Understanding

Trade is a central column in understanding our catalogue of finds and how they were distributed throughout the Mediterranean. As charted earlier in this chapter, networks of exchange have a significant role in this system. The scale of consumption beyond the Western Mediterranean suggests that ostrich eggs were introduced via commercial trade networks or small-scale settlement/transplant, with evidence existing for both possibilities. Ostrich inhabitation data and shipwreck evidence make it clear that eggs were transported by sea, at least to the European parts of the Mediterranean (Conwell, 1987, Fig. 14, Hodos, 2020b, 119). As for potential settlers importing the eggs, bilingual inscriptions at a sanctuary at Pyrgi suggest that Etruria was home to some Phoenician-speaking people, whether temporarily as a means of touching down before continuing journeys (even trade routes) or more broadly as a lived-in base (Aubert, 2016, 51). However, the latter evidence is much more tenuous and cannot be accepted as an example of Western Mediterranean people, let alone Phoenicians, more specifically, living in the region. The existence of the Vulci eggs and the suggestion that they were decorated *in loco*, however, lends credence to the possibility of settlers from beyond Etruria living, at least impermanently, in the region (Rathje, 1986, 399, Napolitano, 2007, 14). Given the motifs and methods in question with these eggs, the eggs either came decorated from the Levant, where decorated by Levantine crafters working Etruria, or Etruscan crafters learned Levantine techniques. These are all theoretically possible, but there is no way of discerning which outcome is the case with the current evidence. The conclusion remains, however, that Levantine crafters – likely the Phoenicians, considering their residence in parts of Sardinia and Sicily and active contributions to regional trade networks – remain central to the distribution of ostrich eggs in Etruria.

Analysing the Evidence

The evidence presented thus far has been wide-ranging. A mixture of find case studies, diachronic mapping, and granular data in graph form have provided a comprehensive break down of the physical and chronological range of decorated ostrich eggs. The absolute majority of findspots occur in Etruria, North Africa, and Iberia, while Iberia and Etruria have ~40% of the respective quantity of total finds each. As such, we see that decorated ostrich eggs are confined to the Central and Western Mediterranean and

orbit areas of Phoenician influence. Furthermore, we see that most sites are along major Phoenician trade routes and follow a chronological path that suggests movement between sites along the same trading routes. Following from this evidence, the reasonable conclusion seems to be that decorated ostrich eggs were distributed by Phoenician traders, or at least those operating along their pathways.

The quantity of style groups changes over time. Each style peaks at contrasting times. The peak of overall finds is in the 5th Century, which coincides with the peak of Monochrome finds. After the 5th Century, quantities of finds begin to fall off across styles, suggesting that after the 5th Century there is a change in the reception of ostrich eggshell as a good or an impact to the *chaine d'operatoire* that complicates access to them. Alternatively, there could be a decline in demand for the product due to their increasing availability; as they reach their most available status and are used by larger groups of the population, the elite taste moves on, and those emulating them then move onto the new trend.

The mapping data that has been generated provides a hitherto-unseen insight into the fluctuation in decorated ostrich egg use over time, and strongly suggests that there is a correlation between Western Mediterranean trade routes and their distribution, which grow steadily until the 5th Century peak, before falling sharply into the 4th Century onward. It is in this century we see Carthage's hegemon over the central Mediterranean Sea begin to be challenged, where previously Carthage had been growing as the leading power through use of political treaty, as embodied in their 6th Century treaty with Rome (Plb. 3.22). Wars in Sicily allowed Rome to seize greater control of the Italian peninsula in a move that would lead them into conflict with Carthage in the ensuing centuries, potentially explaining a decrease toward the 4th and 3rd Centuries (Plut. Pyrrh. 23.6). This change of political status cannot be assumed to be the only cause of this change of consumption; however, increasing political tensions cannot be ruled out as a cause of disruption to trade and resources. As monochrome is the most consistently occurring style, it drives the overall fluctuation in use; simply put, when Monochrome finds peak, the entire distribution catalogue peaks. Monochrome decorated ostrich eggs are as such the largest contributor to the catalogue from a quantitative perspective and with respect to archaeological impact.

To fully understand how diachronic distribution changes, looking at finds associated with these eggs and how these finds change provides a necessary fullness of context. Ostrich eggs are found predominantly in funerary contexts. Finds in Etruria are contained within tombs and mausolea, while Carthaginian finds are found predominantly in necropoleis with motifs imitating Punic funerary masks (Rathje, 1986, 397, Savio, 2004). Alongside them, we see elite finds such as, golden plates, a bronze basin shaped like a vehicle, and a bronze female bust – again, all in funerary contexts (Dennis, 1883, 457-458, Rathje, 1986, 397, Haynes, 2000, 154-158). The inclusion of elaborate objects in high value metals in funerary contexts alongside ostrich eggs suggest that they together reflect an elite status. The fact that the ostrich eggs have been transformed into drinking or pouring vessels suggest that they are also a part of a funerary ritual themselves; they may have also contributed to a wider symbolic meaning of rebirth that some scholars have tied to funerary practices (Pieraccini, 2014, 271-274).

In sum, the contextual association with luxury goods, use of stylistic techniques such as incision, for which Phoenician crafters were famous, and movement along Phoenician trade networks suggests that Phoenicians were indeed the main distributors of the eggs. Combining this evidence with the distribution pattern data and the variance in occurrence over time strongly suggests that the movement of decorated ostrich eggs remained a primarily Phoenician enterprise.

Chapter 5 - Conclusions

Appraising the Egg – Findings and Conclusions

This paper has presented a collection of data that has not been comprehensively – or even widely – attempted before. The cataloguing of diachronic distribution data for accessible, known ostrich eggshell finds creates a range of new datapoints for analysis. What this data has shown us is that the predominant style of finds is single painted finds, that are at times painted over an incised relief. This type of paint is typically red, and found most commonly around the 5th Century, in North Africa and Iberia. The second quarter of the 1st Millennium has a greater quantity of finds than the third quarter, wherein our finds begin to drop off significantly. There is a correlation between the rise of egg finds over time, suggesting that they become more accessible. This is supported by a reduction in elaborate decoration and less exclusive finds contexts, suggesting that the later stages of the catalogue sees ostrich eggs as a less exclusive and elaborate luxury.

From a data point of view, most of the variety in stylistic execution is found in Etruria, despite having only 4% of the total finds. Etruscan consumption of decorated ostrich eggs treats them as an unusual luxury. Three-quarters of the style types are present in Etruria and only in the 6th Century. In the Punic west, the finds are more common and more homogenous in the execution of style, suggesting that they are less of a luxury import and more of an internal product with demand within Punic territories. The chronological distribution of the distinctive styles identifies the 6th Century as the peak of innovation, or at least stylistic variance, for decorated ostrich eggs. After the 5th Century, there is a steady drop-off in finds. The data shows that the 5th Century holds the highest number of finds, while the 7th Century has the strongest relative variety in stylistic numbers.

Carthage holds the largest number of known finds, with over 154, but is followed closely by a number of sites across Ibiza. It is logical, therefore, that North Africa and Iberia as regions hold a roughly equal percentage of the total catalogue, sitting at c. 42% each. Our data suggests, when overlaid with known trade routes of the period and the dates of probable earliest deposition, that ostrich eggshell first occurred in regions with significant Phoenician cultural influence, i.e., Iberian and North African sites with

trading ties to Phoenicia or Carthage, or Phoenician colonies, like Carthage itself. Across the catalogue, the contexts are almost universally funerary, suggesting the ostrich eggs have a funerary context, as hypothesised by other scholars and connected into rituals of rebirth (Pieraccini, 2014, 279).

Within this study, it is evident that the eggs *chaîne d'opératoire* is a complex one. The variance of decoration makes it impossible to make a universal statement on how eggs were decorated. However, there is evidence for *in loco* decoration extrapolated by both an understanding of available material and technology and examples of contemporary creations (Papadopoulos et al., 1998, 512, Haynes, 2000, 56, Napolitano, 2007, 14). Distribution is governed primarily by sea travel, with the ostrich eggs occurring on the African and European shores of the Mediterranean, beyond the natural habitat of the ostrich. This distribution necessitates importing the goods, suggesting a healthy demand for these eggs – something supported by the quantity with which they are found, especially in the Western Mediterranean.

Gift exchange once played a role in distributing decorated ostrich eggs in the Bronze Age (Vermeule, 1974, 48). However, as Manning notes, there is a significant shift in economic structure and exchange following the so-called Bronze Age Collapse, as there has been an understanding of the economies of the 1st Millennium in the past century (Manning, 2018, 6, 23). The model that was used to understand the ancient world and economies shifted from the elite output and exchanging their gifts. Instead, a paradigm of assessment that evaluated the influence of social values and the power of individual agency beyond political structure or a unitary definition has provided a much richer ground for assessing past exchanges (Davies, 1998, 241, Morley, 2004, 50, Manning, 2018, 22). We understand from the distribution patterns observed in figures thus far that the quantity and range of these eggs are unlikely to have come from sequential gift exchanges. Instead, the variety in their consumption patterns and the range of decoration and motif combined with the physical distribution range suggest distribution via trading networks, furthered by shipwreck evidence of ostrich egg accessories on a critical trade route between the Western Mediterranean and Etruria (Negueruela et al., 1995, 189, Tejedor, 2018, 320).

Eggs being distributed through trading networks is not a revolutionary conclusion. What is essential is to understand that these networks reflect a much more diverse

interaction than the exchange of goods. Indeed, even the exchange of goods reflects something much more complicated than an economic trade – and these eggs are the perfect exemplar of this. A trading network exports the cultural input of each participant of the network throughout its expanse. The level of this export varies depending on the nature and level of its input. For example, a trading network between 7th Century Greek *poleis* and Carthage will have more Greek and Carthaginian products due to their role as the destination cities. However, it will also include items that have made their way to these cities via separate exchanges. As such, trading networks form a microcosm of different ancient cultures, incorporating items from various communities, which in and of themselves reflect a range of cultural memory, leading to the results in this study. The sea trade that moved these items across the Mediterranean, the ubiquity of their presence in funerary contexts, and the different decorations across geographical and cultural spaces reflect a union of globalising trends and localised responses. The increasing mobility in the 1st Millennium allowed for greater freedom of travel, and the decentralisation away from palatial economies encouraged independent agents to act as movers for trade (Brooke, 2014, 299, Broodbank, 2015, 594). The decoration of the eggs themselves represent the pan-Mediterranean communities of style, that, over time, adopted elements from one another to use iconographies and elements from across the sea as styles of their own. This mixture creates a good that simultaneously transcends and unifies broad cultural frontiers. These goods find a shared origin – the typical modification emphasises this much into storage and subsequent display as a grave good.

A key finding lies in the variety of distribution. The disproportionate difference in quantity across the Mediterranean, combined with the almost uniquely Monochromatic style in the West, suggests distribution in the West is driven by a different motivator to Etruria or findspots in the Italian islands. Finds in Italy and North Africa both peak in the 7th Century, while Iberia does not peak until the 5th Century. Demand appears to take root later and pervade in Iberian contexts, while Italy/Etruria ceases to have any finds beyond the 5th Century, and Carthage maintains a steady but declining pace from the 7th Century onward. Since the 5th Century does not see a spike of adoption in terms of number of sites, it can be assumed that the later flourishing of decorated ostrich egg distribution in 5th Century Iberia – and as such, the largest quantitative record for a century in the catalogue – reflects a shift in demand towards ostrich eggshell use.

Furthermore, this coincides with monochrome style eggs reaching their highest count, as Iberia records almost exclusively decorated ostrich eggs of that style. This data therefore shows that the disproportionate representation of the Western Mediterranean and of monochrome-style eggs in the archaeological record is tied to the uptick of usage of these eggs in Iberia in the 5th Century. What caused this shift in demand is unclear. However, as we have seen from other data, the finds are predominantly funerary in nature, and are typically moved by Phoenician traders. As such, we can hypothesise that a change in cultural funerary practices and greater interaction with Phoenician traders (that may have influenced the aforementioned change in practice) may be key to this change.

In summary, the decorated ostrich egg came with the Phoenicians in the 1st Millennium BCE Mediterranean. Moreover, the Phoenicians left their mark on these eggs – as did every culture to lay a hand on them, with changing decoration reflecting the diverse tastes and incorporated iconographies from across the Mediterranean, creating a genuinely globalised luxury.

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Appendix 1 – Catalogue

Location	Century of Earliest Deposition	Styles	Region	Count of Finds
Egypt, Naucratis	5th	Polychrome	Egypt	1
Egypt, Gadra and Gebel Tarif.	3rd	Polychrome	Egypt	1
Crete, Kommos	7th	Unknown	Greece	2
Corinth, Temple of Apollo	6th	Plain	Greece	1
Agios Nikolaos, Crete	2nd	Plain	Greece	1
Ibiza, Spain	Unknown	Monochrome	Iberia	10
Es Cuiram	Unknown	Monochrome	Iberia	3
Cerro de Monte Cristo	Unknown	Monochrome	Iberia	1
Huelva	7th	Monochrome	Iberia	1
Cerro de San Cristobal	7th	Monochrome	Iberia	3
Almizaraque	7th	Monochrome	Iberia	1

Los Alcores de Carmona	7th	Monochrome	Iberia	3
Puig d'es Molins	6th	Monochrome	Iberia	77
Véléz-Malaga	6th	Monochrome	Iberia	3
Villaricos	6th	Incised, Monochrome	Iberia	78
Can Pere Catalá des Port	5th	Monochrome	Iberia	1
La Albufera	5th	Monochrome	Iberia	1
Almunecar	4th	Monochrome	Iberia	1
Moza, Sicily	6th	Polychrome	Italy	4
Bomarzo	Unknown	Unknown	Italy	1
Area sacra di Santo Omobono, Rome	Unknown	Unknown	Italy	1
Fabriano	Unknown	Unknown	Italy	1
Marzabotto	Unknown	Unknown	Italy	1
Populonia	Unknown	Unknown	Italy	1
Bitia, Sardegna	7th	Monochrome	Italy	4
Vulci	7th	Incised, Monochrome	Italy	5
Montalto di Castro	7th	Monochrome	Italy	1
Tarquinia	7th	Monochrome	Italy	2
Gravisca	7th	Monochrome	Italy	1

Cerveteri	7th	Plain	Italy	5
Ladispoli	7th	Unknown	Italy	1
Pitino	7th	Monochrome	Italy	1
Calzaiolo	7th	Incised	Italy	5
Vetulino	7th	Incised, Polychrome	Italy	4
Palermo, Sicily	6th	Monochrome	Italy	14
Cagliari, Sardegna	6th	Monochrome	Italy	8
Tharros, Sardegna	6th	Incised, Monochrome	Italy	4
Cyrene, Libya	Unknown	Monochrome	North Africa	1
Carthage, Tunisia	7th	Monochrome	North Africa	154
Gouraya, Algeria	7th	Monochrome	North Africa	16
Cap Spartel, Morocco	7th	Monochrome	North Africa	10
Kerkouane, Tunisia	6th	Monochrome	North Africa	1
Djidijelli, Algeria	5th	Monochrome	North Africa	2