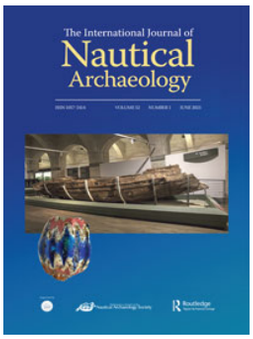

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An Overview of the Underwater Archaeological Evidence for the Maritime Transport of Sculptures in the Ancient Mediterranean

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ABSTRACT

This paper presents the results of new research on underwater archaeological evidence for the maritime transport of sculptures in the ancient Mediterranean. Through the creation of a Mediterranean-wide database and with a focus on information from surviving archaeological deposits, this study explores ancient Greek and Roman sculptures from under water as a dataset of transported artefacts that had a specific function within the maritime context of their discovery. This documentation, analysis and interpretation of underwater deposits with sculptures provide previously unexplored data regarding the geographical extent, date, reasons and circumstances of maritime movement of sculptural artefacts during Antiquity.

Una revisión de las evidencias arqueológicas subacuáticas sobre el transporte marítimo de esculturas en el Mediterráneo Antiguo

RESUMEN

Este artículo presenta los resultados investigaciones recientes en torno a las evidencias arqueológicas subacuática sobre el transporte marítimo de escultural en el Mediterráneo Antiguo. A través de la creación de una base de datos que abarca todo el Mediterráneo, con un énfasis en la información de depósitos arqueológicos, este estudio explora esculturas griegas y romanas de procedencia subacuática como conjunto de datos de artefactos transportados que tuvieron una función específica dentro del contexto marítimo en el que fueron hallados. Esta documentación, análisis e interpretación de los contextos subacuáticos con esculturas provee información previamente inexplorada sobre la extensión geográfica, periodo, razones y circunstancias del transporte marítimo de esculturas durante la Antigüedad.

古代地中海海上雕塑运输的水下考古学证据综述

摘要

本文介绍了有关古代地中海海上雕塑运输的水下考古证据的最新研究成果。该项研究通过创建覆盖整个地中海的数据库并侧重于现存考古沉积物的信息，探讨了纳入手工艺品运输数据集的水下古希腊和罗马雕塑，这些人工制品在其被发现的海洋环境中具有特定功能。这种对带有雕塑的水下沉积物的记录、分析和阐释，提供了有关古代雕塑制品海上运输的地理范围、日期、原因和环境这些以往未曾探索过的数据。

古代地中海海上雕塑運輸的水下考古學證據綜述

摘要

本文介紹了有關古代地中海海上雕塑運輸的水下考古學證據的最新研究成果。該項研究通過創建覆蓋整個地中海的數據庫並側重於現存考古沉積物的信息，探討了手工藝品運輸數據集的水下古希臘和羅馬雕塑，這些人工製品在其被發現的海洋環境中具有特定功能。這種對帶有雕塑的水下沉積物的記錄、分析和闡釋，提供了有關古代雕塑製品海上運輸的地理範圍、日期、原因和環境這些以往未曾探索過的數據。

نظرة عامة على الأدلة الأثرية التحتمائية للنقل البحري الخاص بالمنحوتات في البحر الأبيض المتوسط القديم

المُستخلص

تقدم هذه المقالة نتائج بحثاً حديثاً عن الأدلة الأثرية التحتمائية للنقل البحري الخاص بالمنحوتات في البحر الأبيض المتوسط القديم. تستكشف هذه الدراسة المنحوتات اليونانية والرومانية القديمة المُستخرجة من تحت الماء كمجموعة بيانات للقطع الأثرية المنقولة والتي كان لها وظيفة محددة ضمن السياق البحري لاكتشافها وذلك من خلال إنشاء قاعدة بيانات على مستوى البحر الأبيض المتوسط مع التركيز على المعلومات الخاصة بالرواسب الأثرية الباقية. ويوفر هذا التوثيق والتحليل والتفسير الخاص بالرواسب تحت الماء مع المنحوتات بيانات لم يتم استكشافها سابقًا وذلك فيما يتعلق بالنطاق الجغرافي والتاريخي إلي جانب الأسباب والظروف المتعلقة بالحركة البحرية للقطع الأثرية النحتية خلال العصور القديمة.

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关键词
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關鍵詞
雕塑; 水下沉積物; 地中海; 古典時代

الكلمات الدلالية
المنحوتات، رواسب تحت الماء، البحر الأبيض المتوسط، العصور القديمة

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Introduction

The Mediterranean seabed, similarly, to the land around it, has been a depository of material remains of human civilizations inhabiting this region for several thousand years. Submerged port and harbour structures, sunken settlements, wrecks of seagoing vessels with their cargoes and jettisoned objects are some examples of the Mediterranean underwater archaeological record preserved from Antiquity, a historical period during which the Mediterranean Sea was interconnected through extensive and complex maritime networks (Horden & Purcell, 2000).

One type of artefact from this period found under water is ancient Greek and Roman sculpture. Beginning in the 16th century, hundreds of ancient sculptural artefacts, of various types, sizes, dates and materials, have been retrieved from the Mediterranean seabed by early underwater explorers, archaeologists, or simply by fishermen, sponge divers and recreational scuba divers (Diolé, 1957; Bass, 1966; Mattusch, 1997; Arata, 2005; Tzalas, 2007).

The fascinating idea of discovering and recovering ancient sculptural works of art from under water has attracted over the years the attention of both academia and the public, while it has always stimulated local enthusiasm and pride (Rackl, 1978; Stenuit, 2002; Petriaggi, 2005; Queyrel, 2012; Bellingham, 2014). Despite the large number of Mediterranean underwater sculptural discoveries and their popularity, it is difficult for scholars to determine with certainty the exact area, era, reasons and circumstances of the maritime transportation and consequent underwater deposition of this material.

This paper presents the results of a recent project examining evidence for the maritime transport of sculptures in the ancient Mediterranean through the study of underwater archaeological deposits.[1] Through both Classical and maritime archaeological data, this article examines ancient sculptures from under water as a distinct group of underwater finds that had a specific function within their maritime setting. Similar to other studies focusing on transported artefacts from underwater deposits, such as amphorae, stone or other ceramics (Parker, 1992; Russell, 2013a; Leidwanger, 2017), the present article focuses on the underwater archaeological context of the sculptures, documenting the geographical and chronological extent of this maritime activity, as well as the reasons and circumstances under which sculptures of different types and materials were carried on board ancient seagoing vessels. Hence, the aim of this paper is to address the question of where, when and why sculptures were transported by sea in the ancient Mediterranean.

The analysis starts with a brief presentation of previous scholarly hypotheses and interpretations. Following that, the data and methodology of this research are explained before proceeding to the results regarding the geographical distribution, the chronological distribution, the types of transported sculptures and the reasons of maritime transport of sculpture identified for the ancient Mediterranean world. Through this research it is hoped to highlight that ancient sculptures from underwater sites constitute a unified and solid archaeological record and an outstanding dataset of artefacts with high potential for new scholarly conclusions.

Scholarly Interpretations of the Maritime Transport of Sculptures in the Ancient Mediterranean

The hundreds of ancient sculptures found under water indicates that, under specific circumstances, these objects had been carried on ships sailing around the Mediterranean. However, inaccessibility to the seabed to most of the academic community, at least until the middle of the 20th century when underwater archaeology developed, as well as the insufficient recording of underwater archaeological contexts where sculptures have been discovered, have restricted the amount of archaeological information available about these artefacts. Therefore, from early on, scholarly research has turned to different methods of studying and interpreting the maritime transport and underwater deposition of ancient sculptures in the Mediterranean.

Since the earliest discoveries, scholars have based their interpretations of the underwater deposition and maritime transport of ancient sculptures on relevant references in ancient literary sources. The best recorded textual evidence comes from Hellenistic and Roman historians, orators and other authors, and refers to maritime activities taking place during the 2nd century BC and the 1st century AD. This period coincides with the expansion of Rome in the eastern Mediterranean and the subsequent destruction of several Greek cities, including Corinth (146 BC) and Athens (86 BC). According to ancient literary references, the devastation of these cities involved the plunder of many works of art including sculptures, which were then transported to the Italian mainland and Sicily on ships that sometimes wrecked or lost parts of their cargoes at sea (Polybius, *Histories* 39.2.1-2; Dio Chrysostom, *The Corinthian Oration* 37.42; Velleius Paterculus, 1.13; Lucian, *Zeuxis* 3). In addition, a few ancient authors record the maritime transport of sculptures as part of an art collectors' market that developed in the same period, where wealthy citizens ordered sculptural pieces for the decoration of their private houses and villas, necessitating their transport by ship (Cicero, *Letters to Atticus* 1.8.2; *Against Verres,* act. 2.4.126). Influenced by these texts, scholars have mostly considered the underwater

deposition of ancient sculptures as a result of accidents that occurred during the maritime transport of these looting and art collection activities (Rackl, 1978, pp. 15–36; Wirth, 1994; Tzalas, 2007, pp. 342–363; Bouyia, 2012b; Koutsouflakis & Simosi, 2015).

Art-historical examinations of well-known sculptures from under water have brought to light stylistic features and sculptural details that generally match the period and areas of movement described in the ancient literary sources (Fuchs, 1963; Ridgway, 1967, pp. 329–334; Mattusch, 1997; Hemingway, 2004). Therefore, for years, any ancient sculpture found in the Mediterranean, with or without associated archaeological context, has been straightforwardly interpreted as having been transported due to looting or art collecting activities during the late Hellenistic or Roman Periods, without necessarily pursuing confirmation through further investigation of the find's context (Boardman, 1985, p. 53; Stewart, 1990, pp. 228–229; Spivey, 1996, pp. 134–136, 219-221; Neer, 2010, p. 86).

Concurrently with the research approaches presented above, there have been a few site-specific studies that have examined ancient sculptural material with consideration of their underwater archaeological context. The innovative studies and publications of the Mahdia shipwreck (identified as database entry #67: D.B.67) in Tunisia (Fuchs, 1963; Hellenkemper Salies et al., 1994) and the Porticello shipwreck (D.B.88) in Italy (Eiseman, 1979; Eiseman & Ridgway, 1987) are such attempts that present coherently all archaeological finds retrieved from the respective underwater archaeological deposits. The extensive documentation, study and publication of artefacts from these sites highlight the significance of contextualising archaeological evidence in order to better understand and interpret the sea-borne transport of sculptures as a distinct maritime phenomenon.

Despite the obvious benefits of studying ancient sculptures from underwater sites within their archaeological contexts, the separate development of the disciplines of Classical and maritime archaeology means that dividing lines still exist between scholars of each field (Bass, 1966, pp. 13–19, 70–80). Combined with the wide geographical distribution of the relevant archaeological evidence and the unique research traditions and socio-political circumstances indicative of these regions, a selective understanding of the maritime transport of sculptures in the ancient Mediterranean has developed. Therefore, there has not yet been a broad scholarly documentation, interpretation and understanding of where, when and why ancient Greek and Roman sculptures were transported on ancient seagoing vessels in Antiquity. This can only be achieved through the collective examination of the available sources and the holistic study of the existing underwater archaeological record, an approach that the present research has adopted.

Data and Methodology

In the present research the subject of maritime transport of sculptures in the ancient Mediterranean was revisited through the study of already available underwater archaeological evidence. As explained previously, the main focus of the research was the underwater archaeological context of the sculptures with the aim to document the geographical and chronological extent of this maritime activity, as well as the reasons and the circumstances under which sculptures of different types and materials were carried on board ancient seagoing vessels.

To accomplish that, a large Mediterranean-wide database was created, summarised in Table 1, recording any known underwater deposits containing ancient sculptures that have been lost under water, probably while in transit during Antiquity. The database was inspired by other archaeological studies that have recorded large number of sites and artefacts from the Mediterranean, for example A.J. Parker's, 1992 inventory in *Ancient Shipwrecks of the Mediterranean and the Roman Provinces* (Parker, 1992, p. ii) and the *Oxford Roman Economy Project* (Wilson, 2011, pp. 33–60; Oxford Roman Economy Project, 2019) including both Parker's, 1992 shipwreck database update by J. Strauss (Wilson, 2011, p. 34) and Ben Russell's research on the 'Economics of Roman Stone Trade' (Russell, 2011, 2013a, 2013b, 2015).

The database includes underwater deposits that had ancient freestanding sculptures of any size (small-scale figurines or statuettes, medium-scale sculptures, large-scale and over life-size statues and free-standing sculptural reliefs), material (stone, bronze, terracotta, wood, ivory, wood-and-ivory) or date. The underwater deposits recorded were ancient shipwrecks with sculptures; assemblages of sculptures from an unidentified archaeological context; and single sculptures that have been found out of context as isolated finds (Figure 1).

The geographical extent of underwater deposits with sculptures examined in this study extends throughout the Mediterranean and its neighbouring regions, such as west of the Strait of Gibraltar, and the Black Sea connected through the Dardanelles, the Sea of Marmara and Bosporus. The chronology of this material record extends from the early Archaic Period, commencing approximately in the 7th century BC, to the end of Late Antiquity, approximately in the 7th century AD.

Excluded from this research are ancient sculptures known to have been discovered in submerged settlements of the Mediterranean, like the sculptures from

Table 1. Finds of sculptures from underwater archaeological contexts in the Mediterranean. (Author.)

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
1	Agde assemblage	assemblage	France	unknown	2	bronze	Under life-size bronze sculptures, one of an Eros or Cupid and one of a young boy.	Kingsley, 2002; Arata, 2005.
2	Agde sculpture	sculpture	France	unknown	1	bronze	Bronze sculpture of a male nude figure with the portrait features of Alexander the Great; medium-scale and under life-size.	Parker, 1992; Tzalas, 2007; Queyrel, 2012.
3	Ai Stratis sculpture	sculpture	Greece	unknown	1	bronze	Bronze sculptural fragment from a large-scale equestrian statue.	Koutsouflakis, 2017.
4	Alexandria shipwreck	shipwreck/ sculpture (?)	Egypt	Roman	1	stone	Probably a stone sculpture of an unknown size. Only the head preserved.	*Archaeology Magazine*, 2017.
5	Antignano sculpture	sculpture	Italy	unknown	1	bronze	Under life-size bronze sculpture of a warrior; Imperial date.	Arata, 2005.
6	Antikythera shipwreck	shipwreck	Greece	1st century BC	*ca.* 62	bronze; stone	Marble and bronze sculptures of all dimensions, from small-scale, under life-size, to over life-size pieces.	Bass, 1966; Throckmorton, 1972; Rackl, 1978; Parker, 1992; Tzalas, 2007; Kaltsas et al., 2012; Foley, 2016.
7	Apollonia shipwreck	shipwreck	Libya	2nd century BC (?)	unknown	bronze	Unknown number of bronze sculptures of unknown size.	Parker, 1992.
8	Arap Adasi sculpture	sculpture	Türkiye	unknown	1	bronze	One large-scale bronze sculptural fragment of a veiled female figure.	Bass, 1966; Ridgway, 1967; Parker, 1992.
9	Artemission assemblage	assemblage	Greece	late 2nd-early 1st century BC	2	bronze	Large-scale, over life-size sculptures of a male god and a group of a horse and jockey.	Bass, 1966; Rackl, 1978; Wünsche, 1979; Boardman, 1985; Parker, 1992; Mattusch, 1997; Hemingway, 2004; Tzalas, 2007.
10	Ashqelon 1986 shipwreck	shipwreck	Israel	late 2nd-early 3rd century AD	1	stone	One life-size porphyry statue in Egyptian style without a head.	Parker, 1992; Russell, 2011; 2013a; 2013b.
11	Ashqelon 1998 shipwreck	shipwreck	Israel	1st-2nd century AD	3	bronze	Three small-scale bronze sculptures (figurines): one nude female, one bearded man, one zoomorphic.	*Oxford Roman Economy Project*, 2019; Galili & Ayalon, 2008.
12	Ashqelon sculpture	sculpture	Israel	unknown	1	stone	One life-size marble head.	Galili & Ayalon, 2008.
13	Ayia Galini shipwreck	shipwreck	Greece	3rd century AD (?)	*ca.* 13–14	bronze	Sculptural fragments from large-scale pieces, but also some medium- and small-scale, under life-size, sculptural artefacts.	Hood & Warren, 1966; Sanders, 1982; Parker, 1992; Arata, 2005; Brokalakis, 2016.
14	Benalmadena sculpture	sculpture	Spain	Roman	1	stone	One large-scale (life-size or over life-size) marble sculpture representing	Arata, 2005; Russell, 2011, 2013a, 2013b.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
							probably the deity Artemis/Diana.	
15	Brindisi sculpture	sculpture	Italy	unknown	1	bronze	The reports describe a 'small-scale' statue of a philosopher.	Walters, 1899; Arata, 2005.
16	Brindisi shipwreck	shipwreck	Italy	3rd–6th century AD (?)	*ca.* 150–200	bronze	Fragments of bronze sculptures (under life-size, life-size and over life-size) belonging probably to more than 100 sculptural works.	Mattusch, 1997; Ruppe & Barstad, 2002; Auriemma, 2004; Arata, 2005.
17	Cadiz assemblage	assemblage	Spain	unknown	2	bronze; stone	Head of a marble sculpture and a bronze figurine of a female figure.	Parker, 1992; Arata, 2005.
18	Cadiz sculpture	sculpture	Spain	unknown	1	bronze	Large-scale, over life-size bronze sculpture found in fragmentary condition.	Arata, 2005.
19	Caesarea shipwreck	shipwreck	Israel	4th century AD	unknown	bronze	The sculptures retrieved are bronze fragments from at least three large-scale statues; also small-scale pieces including a small-scale, under life-size, bronze sculpture of the moon goddess Luna.	*Archaeology Magazine*, 2016.
20	Camarina 1989 shipwreck	shipwreck	Italy	1st century AD	1	bronze	One bronze sculpture of a dolphin of unknown size.	Di Stefano, 1991; Parker, 1992.
21	Camarina 2000 shipwreck	shipwreck	Italy	1st–2nd century AD	1	bronze	One small-scale, under life-size, bronze male sculpture representing probably the god Mercury.	Di Stefano, 2004.
22	Cap Camarat shipwreck	shipwreck	France	1st century BC	unknown	terracotta	Small-scale, under life-size terracotta sculptures.	Liou & Pomey, 1985; Parker, 1992.
23	Cape San Vito sculpture	sculpture	Italy	unknown	1	bronze	Small-scale, under life-size, bronze sculpture representing a female figure, possibly Aphrodite.	*Archaeology and Arts*, 2017.
24	Capo Boeo sculpture	sculpture	Italy	unknown	1	stone	A marble sculpture of a young male.	Arata, 2005; Russell, 2013b.
25	Capo Linaro sculpture	sculpture	Italy	unknown	1	bronze	Bronze fragmentary sculpture of a male figure (Greek original or Roman copy).	Arata, 2005.
26	Capraia assemblage	assemblage	Italy	unknown	unknown	bronze; stone	Bronze and marble sculptures brought up in fishing nets.	Parker, 1992; Arata, 2005.
27	Cavallo shipwreck	shipwreck	France	1st century AD	1	bronze	Small-scale bronze sculpture;	Corsi-Sciallano & Liou, 1985; Arata, 2005.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
							representing a divine figure.	
28	Cide sculpture	sculpture	Türkiye	unknown	1	bronze	Sculpture preserved in a very good condition with only the arms missing; unknown the exact size, but it should be either medium- or large-scale (either life-size or slightly under life-size).	Ridgway, 2002.
29	Coltellazzo 1967 shipwreck	shipwreck	Italy	4th–2nd century BC	unknown	terracotta	A larger than life-size terracotta head (known as 'Lady of Nora'), two male and two female heads and pieces of other terracotta figures.	Parker, 1992; Arata, 2005.
30	Coltellazzo 1978 shipwreck	shipwreck	Italy	unknown	unknown	terracotta	Terracotta sculptures of the 3rd and 2nd centuries BC.	Parker, 1992; Arata, 2005.
31	Crete sculpture	sculpture	Greece	unknown	1	bronze	Bronze head of a female deity.	Arata, 2005.
32	Delos sculpture	sculpture	Greece	unknown	1	bronze	Bronze sculpture of unknown size, representing a lion; identified as a Hellenistic sculpture.	Touchais, 1984; Parker, 1992; Archibald et al., 2001.
33	Egnazia sculpture	sculpture	Italy	unknown	1	bronze	Bronze sculpture of unknown dimensions representing a female figure.	Arata, 2005.
34	El Sec shipwreck	shipwreck	Spain	4th century BC	2	bronze; stone	Small-scale, under life-size, marble female sculpture with a naked child resting on the right shoulder (type of Hera Eilithya); fragments of the forearm and right hand of another small-scale bronze sculptural figure.	Arata, 2005.
35	Elba sculpture	sculpture	Italy	2nd century AD (?)	1	ivory	Small-scale ivory sculpture depicting Bacchus and Pan.	Arata, 2005.
36	Eleusis sculpture	sculpture	Greece	unknown	1	bronze	Medium-scale, under life-size, bronze male sculpture.	Bass, 1966; Arata, 2005; Koutsouflakis, 2017.
37	Fano sculpture	sculpture	Italy	unknown	1	bronze	Under life-size bronze sculpture of a male youth.	Parker, 1992; Mattusch, 1997; Tzalas, 2007.
38	Favaritx shipwreck	shipwreck	Spain	5th–7th century AD	c. 6	bronze	At least six small-scale sculptural artefacts; all of the sculptures are preserved in fragmentary condition.	Fernandez-Miranda, 1977; Fernandez-Miranda & Belén, 1977; Fernandez-Miranda & Rodero-Riaza, 1985; Keay, 1984; Parker, 1992; McCormick, 2001.
39	Foça sculpture	sculpture	Türkiye	unknown	1	bronze	Bronze sculpture of unspecified size representing an athlete.	Arata, 2005; Tzalas, 2007.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
40	Fos-sur-Mer sculpture	sculpture	France	unknown	1	ivory	An ivory head of a female figure of unknown dimensions.	Diolé, 1957.
41	Gaza sculpture	sculpture	Gaza	unknown	1	bronze	Large-scale bronze sculpture of a male figure preserved in a good condition.	*CNN*, 2019; *The Independent*, 2014.
42	Gela shipwreck	shipwreck	Italy	6th–5th century BC	unknown	terracotta; wood	Clay figurines of a boar; wooden arm of a small statue.	Parker, 1992; *National Geographic*, 2008.
43	Golfo di Baratti sculpture	sculpture	Italy	unknown	1	stone	Marble female sculpture with the head and feet missing.	Arata, 2005; Russell, 2011; 2013a; 2013b.
44	Grado sculpture	sculpture	Italy	unknown	1	bronze	Bronze sculpture of unknown type or size.	Arata, 2005.
45	Grado shipwreck	shipwreck	Italy	2nd century AD	1	bronze	A small-scale, under life-size, sculpture, probably representing the god Neptune.	Parker, 1992; Arata, 2005; Beltrame et al., 2011.
46	Grau-du-Roi sculpture	sculpture	France	unknown	1	stone	Small-scale marble sculpture with no head; unknown type.	Arata, 2005.
47	Haifa sculpture	sculpture	Israel	2nd century AD (?)	1	unknown	Small-scale sculpture, probably representing the god Serapis.	Galili & Ayalon, 2008.
48	Hierapetra sculpture	sculpture	Greece	unknown	1	bronze	One bronze sculpture of a youth, possibly dated to the 2nd century BC.	Arata, 2005; Russell, 2013b.
49	Kalymnos 1994 sculpture	sculpture	Greece	unknown	1	bronze	Large-scale bronze sculpture of a veiled female figure.	Arata, 2005; Koutsouflakis, 2007; 2017; Koutsouflakis & Simosi, 2015.
50	Kalymnos 1997 assemblage	assemblage	Greece	unknown	2	bronze	A large-scale bronze statue head of a mature bearded man wearing a *kausia* (hat of the Macedonian court) and a left lower leg of a large-scale bronze statue.	Koutsouflakis, 2007; 2017; Koutsouflakis & Simosi, 2015.
51	Kalymnos 1997 sculpture	sculpture	Greece	unknown	1	bronze	A bronze sculptural fragment of a right leg and sandaled foot probably from a large-scale equestrian statue.	Koutsouflakis, 2007; 2017; Koutsouflakis & Simosi, 2015.
52	Kalymnos 1999 sculpture	sculpture	Greece	unknown	1	bronze	Bronze sculptural fragment of a left leg and sandaled foot, probably part of a large scale equestrian statue.	Koutsouflakis, 2007; 2017; Koutsouflakis & Simosi, 2015.
53	Kalymnos 2006 sculpture	sculpture	Greece	unknown (1st century BC?)	1	bronze	Large-scale torso of an equestrian bronze statue (life-size or over life-size).	Koutsouflakis, 2007; 2017; Koutsouflakis & Simosi, 2015.
54	Kalymnos 2009 sculpture	sculpture	Greece	unknown	1	bronze	Large-scale torso of an equestrian bronze statue (life-size or over life-size).	Koutsouflakis & Simosi, 2015; Koutsouflakis, 2017.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
55	Karatas sculpture	sculpture	Türkiye	unknown	1	bronze	Large-scale bronze sculpture representing a male figure, possibly a philosopher, dated in the 1st century BC.	Arata, 2005.
56	Kythera sculpture	sculpture	Greece	unknown	1	bronze	Head of a bronze sculpture.	Koutsouflakis, 2017.
57	Kythnos sculpture	sculpture	Greece	unknown	1	bronze	One large-scale, life-size, statue representing a male figure.	Dramgoole, 2006; Sakellariou et al., 2007.
58	Leipsoi / Leros sculpture	sculpture	Greece	unknown	1	bronze	Fragment of a bronze dolphin, probably part of a sculptural group.	Koutsouflakis, 2007; Koutsouflakis & Simosi, 2015.
59	Lemnos sculpture	sculpture	Greece	unknown	1	unknown	Equestrian sculpture, of unspecified size, representing Augustus.	Parker, 1992.
60	Livadostra sculpture	sculpture	Greece	unknown	1	bronze	Medium-scale, under life-size, bronze sculpture of a male figure, probably a deity; dated in the Classical Period.	Bass, 1966; Mattusch, 1997; Tzalas, 2007; Koutsouflakis, 2017.
61	Livorno assemblage	assemblage	Italy	unknown	4	bronze	Four bronze portrait busts representing Greek poets.	Bass, 1966; Parker, 1992; Dillon, 2006; Ling, 2007.
62	Livorno sculpture	sculpture	Italy	unknown	1	bronze	Bronze sculptural fragment of a torso from a sculpture of a male figure.	Arata, 2005.
63	Lixouri shipwreck	shipwreck	Greece	unknown	6	stone	Six marble sculptures with no head.	Parker, 1992.
64	Lluchmajor sculpture	sculpture	Spain	unknown	1	bronze	Small-scale, under life-size bronze sculpture representing probably Venus; possibly Roman Imperial date.	Arata, 2005.
65	Lošinj sculpture	sculpture	Croatia	1st century BC-2nd century AD	1	bronze	Over life-size bronze statue of a male figure in the form of an *Apoxyomenos*.	Stenuit, 2002; Arata, 2005; Tzalas, 2007; *Croatian Conservation Institute*, 2017.
66	Madrague de Giens shipwreck	shipwreck	France	1st century BC	1	stone	The arm of a medium-/small-scale marble sculpture; possibly a type of Bacchus.	Liou & Pomey, 1985; Parker, 1992; Arata, 2005.
67	Mahdia shipwreck	shipwreck	Tunisia	2nd–1st century BC	*ca*. 44	bronze; stone	At least 15 bronze and 29 marble sculptural pieces of different types and sizes.	Fuchs, 1963; Throckmorton, 1970; 1972; Rackl, 1978; Hellenkemper Salies et al., 1994; Mattusch, 1997.
68	Marathon sculpture	sculpture	Greece	unknown	1	bronze	One medium-scale, under life-size, bronze sculpture of a male figure.	Bass, 1966; Parker, 1992; Mattusch, 1997; Tzalas, 2007.
69	Marmaris shipwreck	shipwreck	Türkiye	7th century BC	1	terracotta	One Archaic terracotta sculpture of a female figure;	*Ancient Origins*, 2017.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
							probably under life-size.	
70	Marsala 1980s sculpture	sculpture	Italy	unknown	1	stone	Large-scale marble statue of a warrior; head and parts of the extremities are missing.	Sofroniew, pers. com., 2016
71	Marsala 2014 sculpture	sculpture	Italy	unknown	1	stone	Large-scale fragmentary marble torso of a female sculpture; recognised as an Aphrodite *pudica* type.	Sofroniew pers. com., 2016
72	Mateille shipwreck	shipwreck	France	5th century AD	1	bronze	Large-scale bronze sculpture representing a female figure.	Solier et al., 1981; Parker, 1992.
73	Mazara del Vallo 1998 sculpture	sculpture	Italy	unknown	1	bronze	Large-scale bronze statue of a dancing satyr.	Petriaggi, 2002, 2003, 2005.
74	Mazara del Vallo 1999 sculpture	sculpture	Italy	unknown	1	bronze	One fragmentary bronze sculpture of a life-size elephant's foot.	Petriaggi, 2005; Lapatin, 2018.
75	Megadim shipwreck	shipwreck	Israel	100/99 BC	unknown	bronze	Fragments of anthropomorphic and zoomorphic larger-than-life-size bronze sculptures; pieces include fingers, toes, locks of hair, drapery and other.	Misch-Brandl & Galili, 1985; Raban & Galili, 1985; Parker, 1992; Syon et al., 2013.
76	Monaco sculpture	sculpture	Monaco	unknown	1	bronze	Bronze figurine of a panther, of probably medium- or small-scale, with red copper inlaid spots; suggested dates of sculpture: Hellenistic or Roman (1st century BC/1st century AD).	Diolé, 1957; Bass, 1966; Reymond & Dugand, 1970; Parker, 1992.
77	Mykonos sculpture	sculpture	Greece	unknown	1	bronze	Small- or medium-scale bronze sculpture of Artemis.	Koutsouflakis, 2017.
78	Northern Aegean sculpture	sculpture	Greece	unknown	1	bronze	Large-scale sculpture, portrait in the Julio-Claudian style; the torso, arms and head preserved; probably from an equestrian statue.	Arata, 2005; Tzalas, 2007; Koutsouflakis, 2017.
79	Paros assemblage	assemblage	Greece	2nd century AD (?)	unknown	stone	Stone freestanding sculpture fragments.	Papathanassopoulos & Schilardi, 1981; Russell, 2011, 2013a, 2013b.
80	Pellestrina sculpture	sculpture	Italy	Roman	1	bronze	Bronze sculpture, probably of small or medium scale, representing Neptune.	Arata, 2005.
81	Pinedo sculpture	sculpture	Spain	unknown	1	bronze	Medium-scale, under life-size, bronze sculpture; possibly representing	Arata, 2005.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
							Apollo (or a Bacchus) in a seated position; the right leg is missing; date suggested: Roman Imperial copy of a Hellenistic original.	
82	Piombino sculpture	sculpture	Italy	unknown	1	bronze	Medium-scale bronze sculpture of a male figure; the representation recognised as Apollo.	Bass, 1966; Mattusch, 1996; Arata, 2005; Tzalas, 2007.
83	Piraeus shipwreck	shipwreck/ assemblage (?)	Greece	unknown	unknown	stone (?)	Sculptures of unspecified number, material or size; described as dated to the 2nd century AD; marble statue fragments and sculptural reliefs from the Archaeological Museum of Piraeus possibly belonging to this deposit.	Bass, 1966; Parker, 1992.
84	Planier shipwreck	shipwreck	France	AD 1–15	2	wood	Two small-scale wooden sculptures; figures recognised as a man wearing a *toga* and a boy with an amulet and a phallus.	Parker, 1992.
85	Pointe Lequine shipwreck	shipwreck	France	6th century BC (?)	unknown	bronze; terracotta	Several bronze and terracotta sculptures; within the bronze sculptures are reported a lion, a warrior and a figure of Selinus perhaps of small scale; within the terracotta sculptures are reported female figures, possibly deities wearing a *polos*, and a nose that belonged to a larger sculpture.	Arata, 2005.
86	Port Vendres shipwreck	shipwreck	France	2nd century AD	1	bronze	Small-scale bronze sculpture of a rhinoceros.	Liou & Pomey, 1985; Parker, 1992.
87	Porticcio shipwreck	shipwreck	Italy	3rd century AD	unknown	stone	Marble busts of Philip the Arab and Otacilia Severa; numerous fragments of full length statue of Philip the Arab; a nearly complete female statue; parts of statuettes of Mars and a young boy.	Cubells, 2005; Russell, 2013b.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
88	Porticello shipwreck	shipwreck	Italy	5th–4th century BC	*ca.* 20	bronze	Approximately 20 fragments of two or three large-scale bronze sculptures; dated in the Classical Period.	Eiseman, 1979a; 1979b; Eiseman & Ridgway, 1987; Gill, 1987; Lawall, 1998; Ridgway, 1993, 2004, 2010.
89	Pozzino shipwreck	shipwreck	Italy	2nd–1st century BC	1	ivory and/ or wood	Fragments of a small-scale or medium-scale wooden or ivory-and-wood sculpture; representing probably the god Asclepios.	Kapitän, 1990; Spawforth, 1990; Yellowlees-Bound & Bound, 1990; Gibbins, 1991; Parker, 1992.
90	Punta Scifo shipwreck	shipwreck	Italy	2nd–3rd century AD	1	stone	Medium-scale marble statuary group of Cupid and Psyche.	Parker, 1992; Bartoli, 2008; Russell, 2015.
91	Rhodes sculpture	sculpture	Greece	unknown	1	stone	Large-scale marble statue of a female figure; described as the type of Aphrodite '*aidoumene*'.	Bass, 1966; Arata, 2005.
92	Rhone Delta shipwreck	shipwreck	France	1st century BC	1	stone	Large-scale, over life-size, head of a portrait of Augustus in *luna* marble; dated to *ca.* 27–20 BC; possibly destined to be added to a colossal statue of Augustus.	Parker, 1992; Arata, 2005.
93	Riace assemblage	assemblage	Italy	1st century AD (?)	2	bronze	Two large-scale, over life-size, bronze sculptures representing nude male figures; dated both to the Classical Period.	Busignani, 1981; Foti & Nicosia, 1981; Parker, 1992; Arata, 2005; Tzalas, 2007.
94	Saintes Maries-de-la-Mer sculpture	sculpture	France	unknown	1	bronze	Medium-/small-scale bronze sculpture of a satyr.	Tchernia, 1969; Valaison & Valaison, 1970; Parker, 1992.
95	Salerno sculpture	sculpture	Italy	unknown	1	bronze	One over life-size head of a bronze sculpture; representing probably Apollo (type of Apollo of Cyrene); dated stylistically to the 1st century BC.	Arata, 2005; Pacifico, 2017.
96	Santa Maria di Leuca shipwreck	shipwreck	Italy	unknown	unknown	bronze	Corroded fragments of bronze sculptures; parts of anthropomorphic and zoomorphic figures as well as pieces drapery from large-scale, life-size, statues are reported.	Arata, 2005.
97	Shave Ziyyon shipwreck	shipwreck	Israel	5th–4th century BC	*ca.* 100	terracotta	Several hundreds of small-scale terracotta figurines.	Linder, 1973; Parker, 1992; Arata, 2005; Seco Alvarez & Noureddine, 2010; *Jewish Virtual Library,* 2017.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
98	Şile shipwreck	shipwreck	Türkiye	2nd century AD	2	stone	An over life-size statue of a cuirassed emperor and a bust of a woman.	Beykan, 1988; Smith, 1991; Parker, 1992; Arata, 2005; Russell, 2013a.
99	Spargi shipwreck	shipwreck	Italy	2nd–1st century BC	1	unknown	Small- or medium-scale sculpture of unknown material, size or form.	Parker, 1992; Beltrame, 2000; Arata, 2005.
100	Stagira sculpture	sculpture	Greece	unknown	1	stone	Large-scale marble sculpture of a male figure in the form of a *kouros*; dated to the Archaic Period.	Petsa, 1975; Arata, 2005.
101	Styra shipwreck	shipwreck	Greece	Late Hellenistic	unknown	bronze	Several fragments of life-size bronze sculptures; part of a nude calf, parts of folded drapery, and the selvage of a garment displaying a zone of inlaid reddish copper reported.	Koutsouflakis, 2017.
102	Syracuse assemblage	assemblage	Italy	unknown	5	stone	Grotesque-looking heads of male and female figures; large-scale, life-size and over life-size.	Sofroniew, pers. com., 2016.
103	Tarragona shipwreck	shipwreck	Spain	3rd–1st century BC	1	terracotta	One head of a small-scale female terracotta sculpture.	Parker, 1992.
104	Terracina sculpture	sculpture	Italy	Roman	1	bronze	Large-scale bronze sculpture of a horse; probably from an equestrian statue group; dated stylistically to the 2nd century AD.	Parker, 1992; Arata, 2005.
105	Torre Flavia shipwreck	shipwreck	Italy	unknown	3	bronze; stone	Two marble and one bronze sculpture of unspecified size or type.	Parker, 1992.
106	Tyre assemblage	assemblage	Lebanon	4th–3rd century BC	6	bronze	Six bronze sculptures of unknown size or type; possibly dated to the 4th/ 3rd centuries BC.	Marx, 1974; Parker, 1992; Arata, 2005.
107	Tyre shipwreck	shipwreck	Lebanon	5th century BC	7	terracotta	Seven small-scale terracotta sculptures; these resemble the figurines found at Shave-Ziyyon, Israel (D.B.97), showing a goddess with her right hand raised in a gesture of blessing, and her left hand either over her breast or holding a baby; on the base appears the 'sign of *tanit*'.	Marx, 1974; Parker, 1992.

(*Continued*)

Table 1. Continued.

Database Number (D.B)	Name	Type of underwater site/ discovery	Country	Date of underwater deposit	Number of sculptural pieces	Material of sculptures	Details of the sculptural artefact(s)	Selected Bibliography
108	Unknown 1930s sculpture (Minneapolis Institute of Art)	sculpture	unknown	unknown	1	stone	Large-scale, over life-size, sculpture representing a male figure in the sculptural type of *'Doryphoros'*.	Arata, 2005.
109	Unknown sculpture (National Archaeological Museum Athens)	sculpture	unknown	unknown	1	bronze	One medium-scale bronze sculpture of a male youth; known also as *'Saarbrucken Ephebe'*.	Tzalas, 2007; Koutsouflakis, 2017.
110	Yalikavak assemblage	assemblage	Türkiye	unknown	2	bronze	Large-scale bronze sculpture of a boy and one small-scale sculpture representing *Isis Fortuna*.	Bass, 1966; Ridgway, 1990; Parker, 1992; Arata, 2005; Koutsouflakis, 2017.

the fountains of the submerged city of Baia in southern Italy (Parco Archeologico Sommerso di Baia, 2019), as well as identified post-Antique archaeological deposits, like the Late-Antique statue of the 'Colossus of Barletta', which was lost in the Adriatic Sea during the Crusades, or ancient sculptures from some 'Grand Tour' shipwrecks (Johnson, 1925, p. 22; Arata, 2005, pp. 5–6, 148-149; Vickers, 2006; 2007).

This project researched ancient sculptures discovered only in the sea. Therefore, not included are underwater sculptural discoveries from other aquatic environments, such as rivers and lakes, of the ancient Mediterranean region and beyond: for example, the lead model sculptures of temples found in the 1st-century BC Comacchio shipwreck in Valle Ponti, Italy (Berti, 1990), and the bronze head of Emperor Hadrian, discovered as an isolated find in the Thames, London, UK (British Museum, 2020).

The information of the archaeological record collected in this database was mainly retrieved from academic publications both within Classical and maritime archaeology. However, since many of the known Mediterranean underwater sculptural discoveries have not been researched and/or published, news and popular media articles had to be used, as well as information from private communication with other scholars, information from personal visits in museums and archaeological services and data from the study of archaeological archives. The variability of these sources of information required the systematic recording, in a standardised and homogenous format, of as many Mediterranean underwater deposits with ancient sculptures as possible. This method, used also by Parker (1992, pp. 3–4), increased the chances of comprehending the overall extent of the available archaeological record, as well as the actual geographical and chronological span of this activity. However, as Parker (1992, p. 4) acknowledged, this large corpus of data that includes non-excavated and largely unpublished information raises some implications and constraints for the interpretation of the recorded material. Therefore, due to the varied levels of reliability of the sources, as well as the inconsistent circumstances of discovery of the recorded underwater deposits, the list of finds of sculptures from underwater archaeological contexts in the Mediterranean should not be considered definitive (Table 1). New underwater sculptural discoveries or previously unknown cases from museums and archaeological services of the Mediterranean and around the world might be added in the future. Moreover, re-assessments of already recorded underwater depositions of sculptures could provide adjusted information and improved data for specific entries of the database.

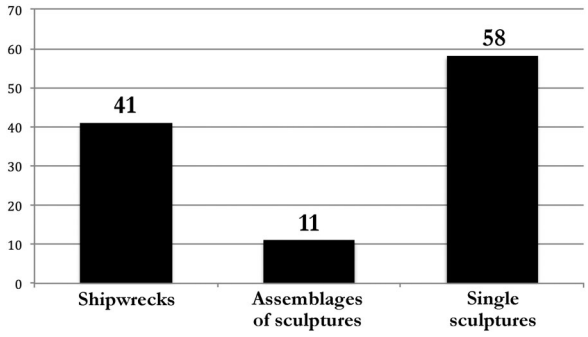

Figure 1. Classification of the recorded sites according to the type of the underwater deposit. (Author.)

After the creation of this database that includes 110 entries, and with the awareness of its limitations, a macro-scale research approach was employed. The information of each database entry was studied separately and then all data were classified, quantified and analysed comparatively. Through this process, it was possible to record the overall geographical and

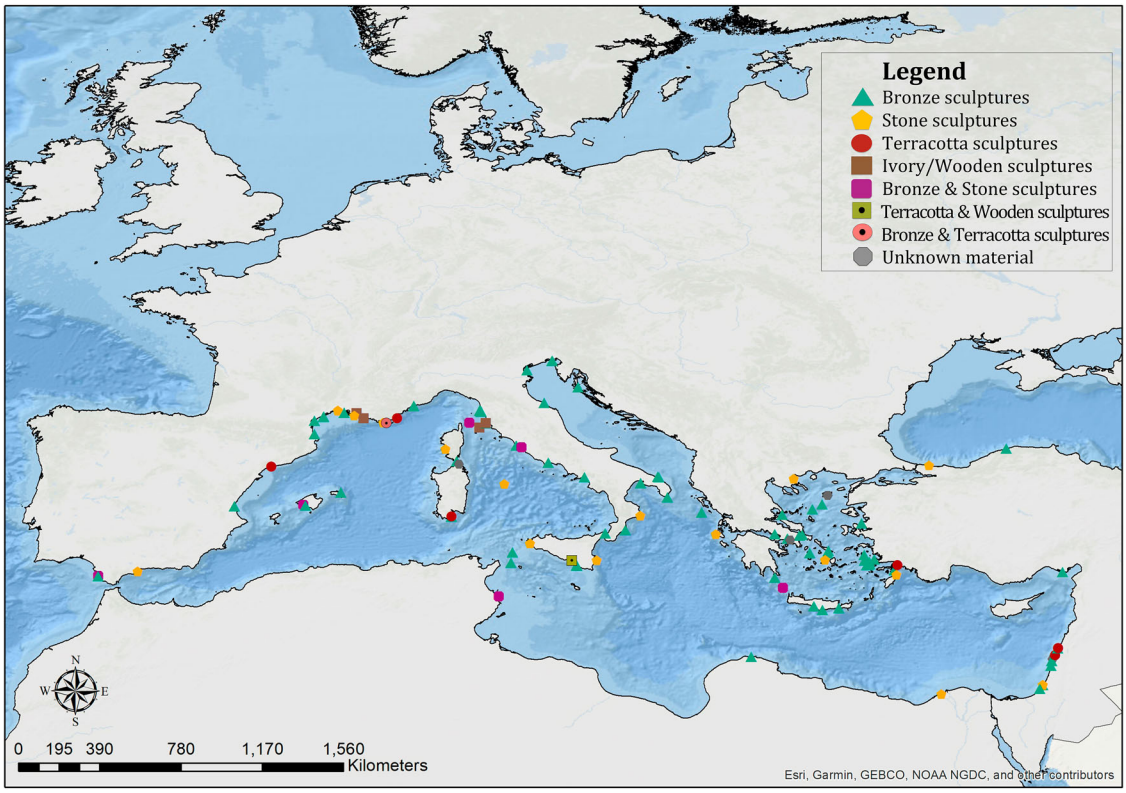

Figure 2. Geographical distribution of the sites and their classification according to the material of the sculptures that they include. (Author.)

chronological extent of the available archaeological evidence. Furthermore, this macro-scale investigation, using maps, graphs and comparative analysis of various archaeological sites enabled the identification of similarities and differences between the various database entries, which resulted in the detection of specific patterns of transport over space and time, presented below.

Geographical Distribution

Sculptures of different materials have been found all around the Mediterranean Sea, from the coast of the Iberian Peninsula to the Black Sea, Asia Minor and the Levantine coast (Figure 2).[2] This geographical distribution matches the distribution of generally ancient Mediterranean shipwrecks recorded previously by researchers, such as Parker (1992, p. 548) and Wilson (2011, pp. 33–60). This similarity in the distribution of data constitutes the first indication that the maritime transport of sculptures was not an isolated activity with a regional focus, as it was previously thought. On the contrary, it seems to have been geographically incorporated within wider Mediterranean maritime networks of transport and trade of products in several different periods of Antiquity.

The interest of previous scholars on underwater sculptural material from specific regions (Arata, 2005; Tzalas, 2007; Koutsouflakis, 2017), as well as the constant reproduction of older hypothetical theories regarding the transport of Greek sculptures from the eastern Mediterranean to Italy by the Romans (Boardman, 1985, p. 53; Stewart, 1990, pp. 228–229), had created the impression of a localised phenomenon and an one-way maritime transport from east to west, starting from Greece, Asia Minor or the Levantine coast heading toward southern Italy or specifically Rome. However, the data reveal that this activity was far more complex geographically than previously considered, and it must have involved multiple routes and directions around the Mediterranean world.

Another detail that is significant to note is that the higher or lower density of underwater evidence detected in specific areas of the Mediterranean does not necessarily indicate places where ancient cargo ships with sculptures were moving more or less intensely. Similar to Parker's (1992, pp. 6–7) shipwreck catalogue, and the updated shipwreck database by Strauss (2013) that was part of the Oxford Roman Economy Project (2019), the view of the geographical distribution of underwater deposits with sculptural finds in the Mediterranean is subject to a series of distorting factors, caused mainly by the availability of academic, archaeological and financial resources in various regions. These results are affected by the modern political systems in each country and the availability of provisions for the documentation and preservation of underwater cultural heritage. Therefore, the areas of the Mediterranean with no

underwater sculptural finds, as seen for example, along the coast of North Africa, does not necessarily indicate that the maritime transport of sculptures in Antiquity did not take place there. The case of the Mahdia shipwreck (D.B.67) in Tunisia, for instance, could be considered representative of the currently invisible archaeological reality in the area rather than an exceptional or unusual find.

In the same way, the higher density of underwater sculptural finds in some areas like Greece, Italy and southern France should not be interpreted solely as a result of more intense maritime transport of sculptures in these regions. Some historical circumstances, geomorphological features and weather conditions could have certainly influenced the wrecking of ships in some areas more than others. However, the accumulation of more evidence in specific regions must be considered as a result of modern-day factors, such as large-scale fishing development, recreational underwater activities and underwater archaeological research, all being conducted more in some Mediterranean countries than in others.

Despite these distorting factors, as long as the above issues are taken into consideration and the density of finds is considered to be indicative of a larger archaeological record not yet fully explored, the geographical evidence recorded in the database still has high validity, indicating that the maritime transport of sculptures was not exclusively restricted between geographical areas.

Chronological Distribution

In order to establish the chronological extent in which this maritime activity took place, it was necessary to establish the date of the sites at which sculptures were deposited, rather than the date at which they were produced. Unfortunately, though, due to the fragmentary archaeological record and the lack of direct scholarly research at most of these sites, the date is not easy to reconstruct.

For approximately 64 database entries, more than 58% of the data, it is impossible to assign a date for the deposit. This is due to the sculptures being isolated finds and their recovery from undated and non-archaeologically surveyed contexts. However, for the remaining 42%, archaeological information has made it possible to assign dates to the deposits. These dates span from the 7th/6th century BC to the 7th century AD (Figure 3), making it clear that the maritime transport and underwater deposition of sculptures covered a broad chronology.[3] In this distribution it becomes obvious that there is an increase of archaeological evidence from the 2nd century BC to the 2nd century AD, with spikes in the 1st century BC and the 2nd century AD. The 5th and 4th centuries BC, as well as the period between the 3rd and 5th centuries AD, show relatively high frequency, too. This chronological distribution is confirmed also in Figure 4, which represents visually the attributed dating of the underwater deposits with known, or at least partially researched, archaeological contexts.

This chronological range resembles also the general chronological distributions of ancient Mediterranean shipwrecks observed by Parker (1992, pp. 8–9; 2008, p. 187) and Wilson (2011, pp. 33–39), only with a slight drop in the 1st century AD. The similarity of these data to the chronological patterns of the wider ancient Mediterranean shipwreck evidence provides a second indication that the shipping of sculptures had been largely incorporated to the wider, already known, maritime trading networks of Antiquity.

Types of Sculptures Transported

The sculptures included in the database vary in material, size, date of construction and subject of representation. Analysis of these data can assist in understanding why sculptures were transported by ship in Antiquity.

Material

The underwater archaeological record preserves evidence for all materials known to have been used for sculptural production during Antiquity (Table 1, Figure 5). The majority of recorded archaeological deposits, 67, have solely bronze sculptures. Twenty

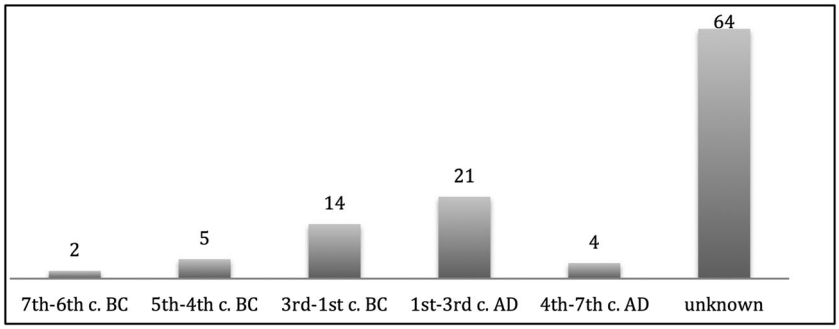

Figure 3. Dating of the recorded underwater deposits. (Author.)

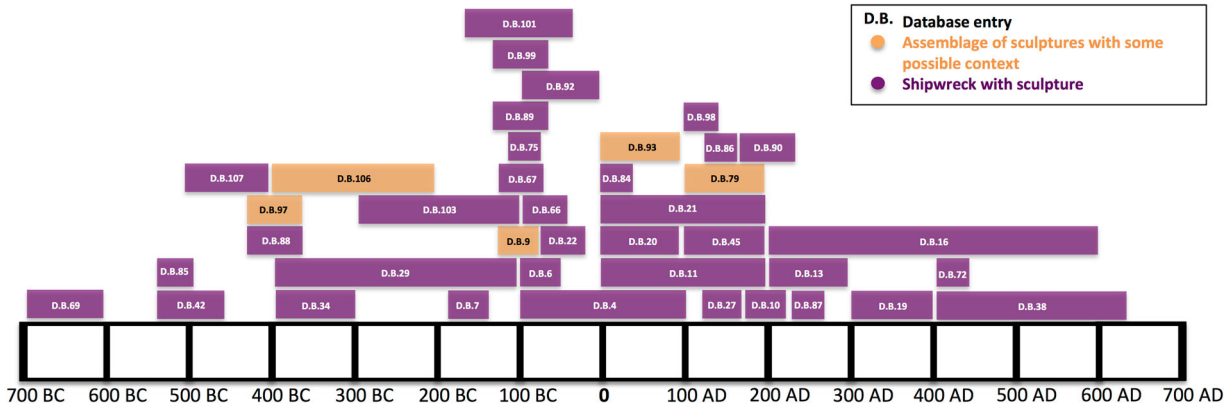

Figure 4. Dating of sites with identified underwater archaeological contexts as indicated in scholarship. (Author.)

possess only stone sculptures, seven with only terracotta, six have both bronze and stone sculptures, four have only wooden or ivory sculptures, one has both terracotta and wooden sculptures, and one has bronze and terracotta sculptures. Finally, there are four sites for which the available sources do not report the material of the sculptures.

The predominance of sites with solely bronze sculptures is very notable. However, similar to the geographical distribution and chronology of the documented underwater deposits, this number can illustrate simple coincidence. Since most of the recorded underwater deposits are simply sculptures retrieved as accidental finds, with no secure recorded contextual information, it is easy to understand that bronze as a material is far easier to be caught and lifted from the seabed by a fisherman, sponge diver or scuba diver. This is due to bronze being relatively light in comparison to stone, which is heavier (causing fishermen's nets to break) and more prone to degradation by marine organisms and salt water (Ricci et al., 2019). Additionally, the distinct colour and texture of bronze makes sculptures of this material easier to detect on the seabed, as well as better preserved in comparison to terracotta, wood or ivory, which become more easily coated, disintegrated or absorbed in the marine environment (Ricca et al., 2021). Hence, the larger number of deposits with bronze sculptures does not necessarily imply that more bronze sculptures were carried on ships sailing the ancient Mediterranean.

Size

Since it was not possible to examine in person every single sculpture from the sites listed in Table 1 due to access constraints, it has been hard to determine the exact size of many of the sculptures, except for only a few cases where exact dimensions were provided. Thus, it has only been possible to classify the finds into the broad categories of small-, medium- and large-scale sculptures.

From the 110 underwater archaeological deposits recorded, 26 have sculptures of unknown size, while 11 are reported with under life-size sculptures, referring probably to either small- or medium-scale

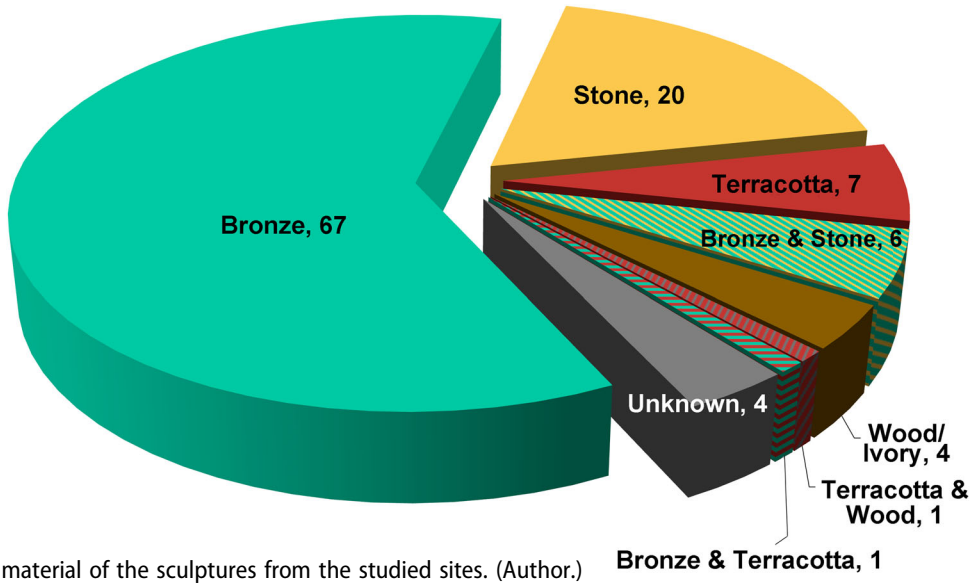

Figure 5. The material of the sculptures from the studied sites. (Author.)

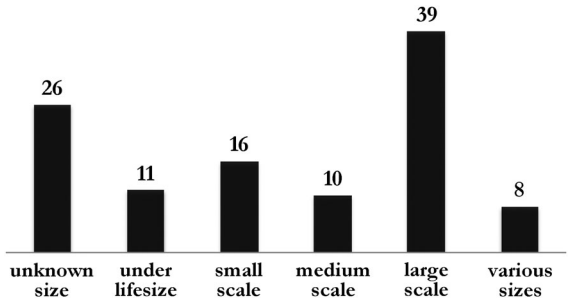

Figure 6. The size of the sculptures from underwater sites, if known/recorded. (Author.)

sculptures (Figure 6). Of the rest are 16 deposits with definite small-scale sculptures, ten with medium-scale and 39 with large-scale sculptures, but also eight with sculptures of multiple sizes reported.

Dating

The date of when the sculptures were produced is another detail not easily understood from the available sources unless individual sculptures have been studied art historically and dated stylistically. However, from the overall information provided, it is evident that these sculptures date from the Archaic to the Late Roman Periods. It is important to clarify, though, that typological dating cannot be used for the dating of underwater archaeological contexts in which the sculptures were found. That is because the date of sculptural production does not always coincide with the date of the object's transport and deposition under water.

For example, the Antikythera shipwreck (D.B.6) in Greece wrecked in the first half of the 1st century BC while carrying a large cargo of both bronze and marble sculptures, which were constructed in different periods between the 4th and 1st centuries BC (Tzalas, 2007, pp. 342–363; Vlachogianni, 2012, pp. 62–115). Moreover, the Megadim shipwreck (D.B.75), in Israel, which has been dated by its coins to approximately 100/99 BC, carried bronze sculptural fragments with a production date in the 4th and 3rd centuries BC (Syon et al., 2013, pp. 2–4).

The distinction between the date of the sculptures and the date of the transport and underwater deposition has been observed on several occasions and it signifies once more the importance of contexts in the study of sculptures from underwater sites. Additionally, the variation in the dating of the sculptures in comparison to their underwater deposition has been a significant clue for the detection of possible reasons and patterns of the maritime transport of sculptures.

Themes and Subjects Represented

The available sources for the database are not always very thorough in recognizing the represented subjects of the sculptures. Additionally, there are many cases in which the seriously defaced condition of the free-standing sculptures makes the represented theme impossible to identify. However, the overall database indicates what was previously thought: namely that in Antiquity, ships carried all known freestanding sculptural types produced in different periods and regions of the ancient Greek and Roman world (Boardman, 1985; Stewart, 1990; Smith, 1991). These types could be: freestanding anthropomorphic figures (mythical or mortal), such as the dancing satyr of the Mazara del Vallo 1998 sculpture (D.B.73) found in Italy, or the female figure of the Rhodes sculpture (D.B.91) found in Greece; zoomorphic figures (animals and mythical/imaginary creatures), such as the horses from the Antikythera shipwreck (D.B.6); sculptural groups, with combinations of the above, like the sculptural group of the Horse and Jockey from Artemission (D.B.9) in Greece; freestanding sculptural reliefs, such as those retrieved from the Piraeus shipwreck (D.B.83) in Greece.

Moreover, the wide variety in the levels of finish of the transported sculptural products has been very noticeable. There are examples of roughly cut sculptural pieces, such as the colossal statue of a cuirassed emperor retrieved from the Şile shipwreck (D.B.98) in Türkiye, finished sculptural works, such as the statues from the Riace assemblage (D.B.93) in Italy, as well as sculptures that were most probably carried by sea after having been damaged, such as the headless stone statues from the Lixouri shipwreck (D.B.63) in Greece.

A very interesting observation is the identification of copies or reproductions of earlier original sculptural works. The phenomenon of copying and reproducing versions of well-known sculptures made by renowned artists, mainly from the Classical and Hellenistic Periods, was introduced during the late 3rd and early 2nd centuries BC by the Hellenistic kings of the eastern Mediterranean, who wished to collect famous works of art (Stewart, 1990, p. 63; Smith, 1991, pp. 14–16; Ridgway, 1984; 2002). This activity was adopted and developed further during the Roman Period resulting in large numbers of similar sculptural subjects (Ridgway, 1984; Gazda, 2002; Anguissola, 2018).

Some examples of sculptural copies from the underwater archaeological record are: the statue of Herakles from the 1st-century BC Antikythera shipwreck (D.B.6; Vlachogianni, 2012, pp. 64–65; Return to Antikythera, 2022), which closely resembles the statue known as 'Farnese Hercules', currently in Napoli, Italy; the bronze Dionysiac herm from the Mahdia shipwreck (D.B.67; Hellenkemper Salies et al., 1994, tafel 14-15) that resembles closely the herm exhibited currently in the J. Paul Getty Museum (Jeffrey, 2017,

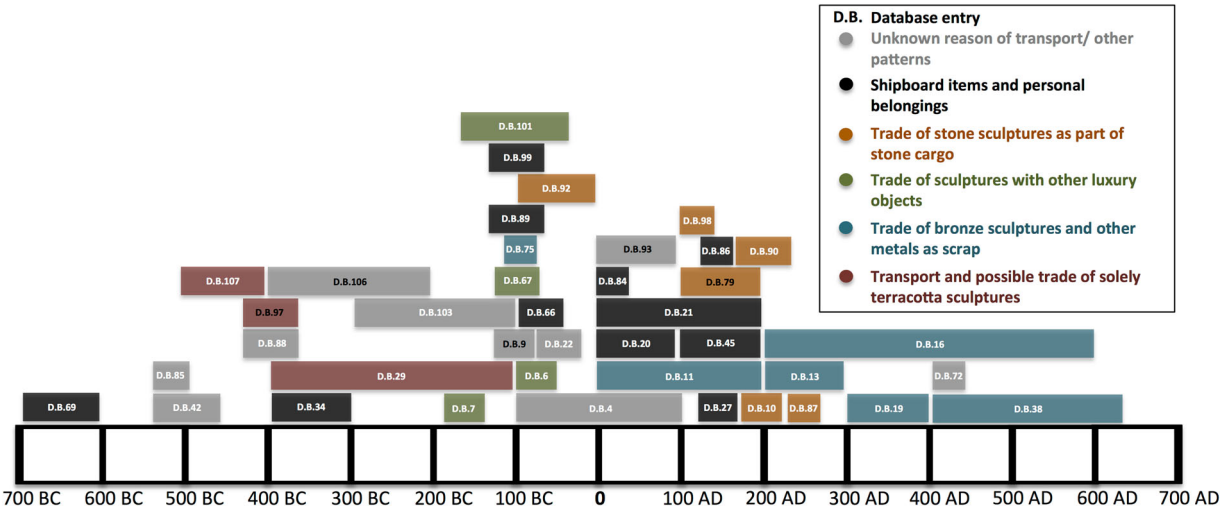

Figure 7. Dating of the database entries in relation to the suggested reasons and patterns for the transport of sculptures. (Author.)

fig. 41.1); the Unknown 1930s large-scale marble statue, currently at the Minneapolis Institute of Art (D.B.108), which depicts a male figure in the type of *Doryphoros*, considered to have been sculpted originally by Polykleitos during the 5th century BC (Mattusch, 1994, pp. 431–449).

Reasons and Patterns of Maritime Transport of Sculptures

The macro-scale research with the classification, quantification and careful recording of the data, described above, provided a good overview of the available evidence for the maritime transport of sculptures in the ancient Mediterranean. Additionally, this study made it possible to understand the function of sculptures at several of the sites and therefore detect reasons and patterns of maritime transport of sculptures during Antiquity (Figure 7). For this identification, only sites classified as 'shipwrecks', 41 in number, and some 'assemblages' with contextual archaeological information, 11 overall, have been used. The 58 sculptures found as single sculptures (Figure 1), namely as isolated finds without secure archaeological contexts, have not been included in this part of the study because they cannot provide any transport data.

Shipboard Items and Personal Belongings

A possible pattern is the transport of small- or medium-scale sculptures of different materials as shipboard items or personal belongings. This type of transport, which is not a trading activity, has been recognised in well-surveyed or excavated shipwrecks, providing a known archaeological context for the sculptures and the other discovered artefacts. Most sites that belong to this category are shipwrecks with identifiable, non-sculptural, cargo, that include a small number of under life-size sculptures in a single or multiple materials, dated as contemporary or slightly older than the date of the underwater deposit. The chronological range extends throughout the entire period surveyed in this study (Figure 7) and must have been part of the habit of ancient mariners carrying personal figurines, sometimes protective, during their journeys (Hanfmann, 1962; Brody, 2008; Galili & Baruch, 2015). This type of transport seems to have taken place beginning much earlier. The small figurine of a female deity retrieved from the Late Bronze-Age Uluburun shipwreck is one of the earliest preserved examples of this pattern of sculptural transport (Pulak, 1998, p. 207, fig. 20). Despite the lack of direct underwater archaeological evidence after the 2nd century AD, the transportation of under life-size sculptural artefacts as shipboard items or personal belongings that sailors individually carried with them must have continued in Late Antiquity, given the widespread use of small-scale statuary in the private sphere, known from terrestrial finds, during the Roman Period (Trego, 2004; Madigan, 2013, pp. 1–38; Stoner, 2015; Papantoniou et al., 2019).

For the identification of this pattern, it has been vital to know the number, size and type of the recovered sculptures, the main cargo of the ship, but also the location of discovery within the wider archaeological context of the shipwreck site. The Madrague de Giens shipwreck (D.B.66) in France and the Pozzino shipwreck (D.B.89) in Italy are some obvious examples of that sort. The 1st-century BC Madrague de Giens shipwreck site, with its commercial cargo of black glaze pottery and wine transported in thousands of amphorae, included a fragment of an under life-size sculpture, specifically the arm of a medium-/small-scale marble sculpture recognized as a type of Bacchus, probably serving as part of a shipboard shrine (Liou &

Pomey, 1985, p. 563; Parker, 1992, pp. 249–250). Similarly, the late 2nd- or early 1st-century BC Pozzino shipwreck with its cargo of amphorae and pottery included fragments of a small-scale wooden or ivory–and-wood sculpture representing probably the god Asclepios, which was found within a wooden chest with medical containers (Yellowlees-Bound & Bound, 1990, p. 255; Gibbins, 1991, p. 241). This sculptural piece has been interpreted as possibly belonging to a passenger, maybe a medical practitioner, travelling on board at the time of wrecking (Spawforth, 1990, p. 9; Gibbins, 1997, p. 2).

Additional examples that could belong to this category are the Camarina 1989 shipwreck (D.B.20) in Italy, the Cavallo shipwreck (D.B.27) in France, the El Sec shipwreck (D.B.34) in Spain, the Grado shipwreck (D.B.44) in Italy, the Planier shipwreck (D.B.84) in France and the Port Vendres shipwreck (D.B.86) in France.

Trade of Stone Sculptures as Part of Stone Cargoes

This maritime movement of stone sculptures for trading purposes has already been identified previously and is considered as part of the wider stone trade that took place during the Roman Period (e.g. Beykan, 1988; Claridge, 1988; Bartoli, 2008; Castagnino Berlinghieri & Paribeni, 2011; Russell, 2011, 2013a, 2013b, 2015).

There are six identified shipwrecks and one assemblage with stone cargoes that include stone sculptures. The Ashqelon 1986 shipwreck (D.B.10) in Israel, the Porticcio shipwreck (D.B.87) in Italy, the Punta Scifo shipwreck (D.B.90) in Italy, the Rhone Delta shipwreck (D.B.92) in France, the Şile shipwreck (D.B.98) in Türkiye, possibly the Piraeus shipwreck (D.B.83) and the Paros assemblage (D.B.79) in Greece could be included in this category. These deposits all preserve evidence for stone blocks, architectural parts, and freestanding stone sculptures, transported altogether. The dating of the stone artefacts, and of the stone sculptures in particular, are usually contemporary to the date of the wreck but they appear to be in different levels of finish (Anguissola, 2018, p. 118). The sites range in date from the 1st century BC to the 3rd century AD (Figure 7), a period which coincides with the large development of the Roman stone trade, as presented and analysed previously by Russell (2011, 2013a, 2013b, 2015).

Some particularly interesting deposits are the 2nd- or 3rd-century AD Punta Scifo shipwreck, found off Italy in the Ionian Sea (Bartoli, 2008, p. 47, 128–131, 261–262) and the early 2nd-century AD Şile shipwreck, found off the Black Sea coast of Türkiye (Beykan, 1988; Parker, 1992, p. 361; Russell, 2013a, fig. 8.4). Both shipwrecks seem to have been involved in the transport of stone artefacts quarried from the island of Proconnesus in the Sea of Marmara. These two sites suggest the existence of two different routes in the shipping and distribution of Proconnesian stone artefacts and sculptures during the 2nd and 3rd centuries AD. Moreover, the distinct levels of finish seen between the smoothly-finished Punta Scifo sculptural group and the roughly-cut Şile portrait sculptures suggest a variation in the carving requirements of the shipped sculptures or the use of different craftsmanship and techniques, possibly based on the shipping circumstances, the type of the order, the ship or the packaging used (Claridge, 1988, pp. 148–151; Anguissola, 2018, pp. 119–125).

Trade of Sculptures with Other Luxury Objects

A third type of sculptural transport are the wrecks of ship that were carrying large numbers of both bronze and stone sculptures of multiple sizes together with other luxury objects (Bouyia, 2012b, pp. 287–292). The Antikythera (D.B.6) and Mahdia (D.B.67) shipwrecks are the two most notable examples. These shipwrecks, dated to the late 2nd and early 1st century BC, transported both bronze and marble sculptures of different sizes, from small-scale to over life-size, but also a variety of other high-quality luxury, objects such as domestic furnishings, architectural parts, fineware pottery, glassware, large decorative vessels (Hellenkemper Salies et al., 1994; Kaltsas et al., 2012, pp. 14–15, 36; Anguissola, 2018, pp. 116–117).

Similar but less studied sites that could fall into this category are the Apollonia shipwreck (D.B.7) in Libya, the Styra shipwreck (D.B.101) in Greece and the Torre Flavia shipwreck (D.B.105) in Italy. The Apollonia shipwreck (D.B.7) dated approximately to the 2nd century BC was found in close proximity to the harbour of Apollonia, containing a collection of bronze furniture and sculptures (Parker, 1992, p. 57). The Styra shipwreck (D.B.101), excavated recently by the Greek Ephorate of Underwater Antiquities, included several fragments of life-size bronze statues found together with bronze furniture pieces and the main cargo of amphorae and tableware and has been dated in the Late Hellenistic Period (Koutsouflakis, 2017). The Torre Flavia shipwreck (D.B.105) was discovered including several architectural members as well as two marble sculptures and one bronze (Parker, 1992, p. 427).

Ships carrying such valuable cargo (Bouyia, 2012a, pp. 36–49) are considered to have been very large in size and they have been associated with the sculptural transport conducted for the needs of the art collection market of wealthy elites during the Late Hellenistic, Late Republican and Early Roman Imperial Periods (Bartman, 1994, pp. 71–88; Anguissola, 2018, p. 55, 121–122). This was the maritime activity alluded to

in the orders that Cicero describes in his letter to Atticus (Cicero, *Letters to Atticus* 1.8.2). This has also been the interpretation that most scholars have suggested as a general explanation of the underwater deposition of ancient sculptures in the Mediterranean. However, as this study illustrates, trade or simply shipping of sculptures with other luxury objects is not the only reason for the maritime transport of sculptures in the ancient Mediterranean. On the contrary, this type of transport is only archaeologically documented in the last two centuries BC (Figure 7).

Trade of Bronze Sculptures and Other Metals as Scrap

Another reason for the maritime transport of sculptures, identified in several shipwrecks, is seen in mixed cargoes of metal objects including a variety of bronze sculptural artefacts. The shipwrecks of Ashqelon 1998 (D.B.11) in Israel, Ayia Galini (D.B.13) in Crete, Greece, Brindisi (D.B.16) in Italy, Caesarea (D.B.19) in Israel, Favaritx (D.B.38) in Menorca, Spain, and Megadim (D.B.75) in Israel all transported bronze sculptural elements together with other metal artefacts, evidently with the intention to be recycled as scrap (Fernandez-Miranda & Rodero-Riaza, 1985, pp. 175–188; Misch-Brandl & Galili, 1985, pp. 12–13; Parker, 1992, p. 62, 176; Mattusch, 1997, pp. 13–14; Arata, 2005, pp. 143–144; Brokalakis, 2016). The sculptures discovered in these sites are almost always considerably older in date than the period contemporary with the shipwreck and usually preserved in a fragmentary condition, since they had fallen into disrepair prior to their maritime movement.

The chronology of this type of transport ranges from the Late Hellenistic Period to Late Antiquity (Figure 7). This maritime activity spreads from the Balearic Islands to the Levantine coast. The similarities in the material found in the above-mentioned sites, despite their chronological and geographical variation, indicate possibly the existence of a consistent Mediterranean-wide maritime pattern for the transport of bronze sculptures in disuse.

Generally, the transport of scrap metal objects by ship has been recorded in the archaeological record and literary sources (Mundel Mango, 2001, pp. 95–102). However, pieces of sculpture from underwater contexts have not been widely incorporated in the study of scrap metal transport. Only McCormick (2001, p. 51), was one of the first to identify the Favaritx shipwreck (D.B.38) as part of this wider Late Roman network for metal extraction, production and distribution.

The identification of this type of sculptural transport is very significant because the archaeological re-examination of many underwater deposits with fragmentary bronze sculptures, which are not yet thoroughly researched, could also belong to this category of scrap metal transported by ship, rather than other types. For example, the bronze statues of the Artemission assemblage (D.B.9) in Greece that were retrieved from the seabed in a very fragmentary condition (Bass, 1966, pp. 72–73; Hemingway, 2004) or the bronze sculptural fragment of an elephant seen in the Mazara del Vallo 1999 sculpture (D.B.74) in Sicily, Italy, analysed most recently by Lapatin (2018, pp. 166–167), were all found without secure contextual data and could have been transported as scrap, too. In the future, a systematic study of additional underwater deposits with all their contextual information will hopefully confirm this hypothesis.

Transport of Solely Terracotta Sculptures

There also exist underwater deposits with only terracotta sculptures of different sizes. The Coltellazo 1967 shipwreck (D.B.29) and the Coltellazzo 1978 shipwreck (D.B.30) in Italy, the Tyre shipwreck (D.B.107) in Lebanon and the Shave Ziyyon assemblage (D.B.97) in Israel have been the best-preserved examples (Marx, 1974, p. 332; Parker, 1992, p. 151, 401; Arata, 2005, pp. 179–180, 199; Seco Alvarez & Noureddine, 2010, p. 7). These sites, located mainly off the coast of Italy and along the Levantine coast, range chronologically from the 5th to the 2nd centuries BC (Figure 7).

Despite the uniformity of data that these sites present, due to the poor recording of their underwater archaeological contexts and the lack of extensive publication of the archaeological material, it has not been possible to document accurately the number, condition, size and form of the relevant terracotta sculptural artefacts. Thus, it has been unclear why the terracotta sculptures were transported by sea. The possibilities of trade or other religious purposes have been indicated. Unfortunately, though, due to lack of accurate evidence no further conclusions have been produced for the deposits with solely terracotta sculptures at this stage.

Unclear Transport Purposes

Some well-identified shipwrecks with preserved archaeological contexts do not clearly reveal a reason for their transport. For example, for the case of the Porticello shipwreck (D.B.88) in Italy, the regular size of the merchant ship, the distinct chronology in the late 5th or early 4th century BC, a period when there are no comparative sites, and its geographical location in the Straits of Messina, have not permitted the straightforward identification of a specific transport type solely through the macro-scale methodological approach of this research.

Conclusion

Through the documentation, quantification, classification and comparative analysis of available data from already known underwater deposits with sculptures around the Mediterranean it has been possible to first map successfully and present the geographical distribution of underwater evidence for the maritime transport of sculptures in Antiquity. From that process, it has become clear that sculptures of different materials have been found throughout the Mediterranean, from the coasts of the Iberian Peninsula to the Black Sea, Asia Minor and the Levant, making thus the maritime transport of sculptures a Mediterranean-wide activity and a not regionally focused phenomenon, as previously understood.

Secondly, it has been possible to understand the chronological range of the existing underwater archaeological record with ancient Greek and Roman sculptural artefacts. Thus, it has been proven that ancient sculptures of various known types, dates and representations had been transported on ships in all areas of the Mediterranean and throughout Antiquity, from the 7th or 6th century BC to the 7th century AD.

Moreover, through this macro-scale research, it has been possible to provide evidence for different types of maritime transport of sculptures in the ancient Mediterranean. Thus, it has been identified that sculptures were transported by sea as shipboard items and personal belongings, for trading purposes as part of stone cargoes, or as a cargo of luxury objects, as scrap metal with the intention to be recycled, as part of terracotta sculpture assemblages with a ritual or trading purpose but also for other unidentifiable purposes.

The present study brings together and collectively examines all available underwater archaeological evidence for the maritime transport of sculptures in the ancient Mediterranean. Thus, it has been possible to answer the question of where, when and why sculptures were transported in the ancient Mediterranean. Overall, the preserved underwater archaeological record shows clearly that the maritime transport of sculptures was more complex than anticipated by scholars in the past. This maritime activity was not rare or unique. The sculptures lost in the waters of the Mediterranean were not necessarily a special cargo transported alone, nor only during distinct periods and in specific regions of the Mediterranean. On the contrary, the present research provides solid data that suggest that the maritime transport of sculptures was very common and widespread, both chronologically and geographically. The sculptures seem to have been transported by sea for various reasons as mixed cargo, on a regular mercantile basis and within the generally established trading activities and maritime networks of each period. Thus, the maritime transport of sculptures should be considered as a common maritime transport activity, part of the already known commerce and connectivity of Antiquity. This study, with its new research perspective, refutes the traditional scholarly interpretation that considers the maritime transport of sculptures to have been conducted solely during the Late Hellenistic and Roman Periods, from solely east to west and as a result of looting or art collection activities.

By providing these new insights, this study highlights reasonable archaeological observations and improved understanding regarding the maritime transport of sculptures in the ancient Mediterranean. Additionally, the importance of underwater archaeological contexts, as well as the benefits of archaeological revision and re-examination of reports, data and older scholarship, even without direct access to the primary information due to loss or already disturbed archaeological deposits, is stressed.

However, given the limitation of the database creation and the macro-scale research, this study should be considered only as a first step in a field that still has endless possibilities for further study. It is hoped that the present re-evaluation of archaeological evidence will motivate scholars of both Classical and maritime archaeology to reconsider the approach towards Mediterranean underwater deposits with sculptures in order to improve the preservation and interpretation of this rich archaeological dataset.

Notes

1. The present paper stems from a doctoral dissertation with the title 'The Maritime Transport of Sculptures in the Ancient Mediterranean' (Velentza, 2020) completed at the University of Southampton.
2. The geographical position of archaeological deposit is not exact. Due to the lack of research and publication of most of the underwater sites, approximate coordinates have been used, based on information provided by Parker (1992), or established by the author according to the descriptions provided in other academic sources.
3. This does not mean that sculpture transport did not happen at other periods. See for example, the Late Bronze Age 'Uluburun shipwreck', off the coast of Türkiye (Pulak, 1998, p. 207) and post-Antique evidence for the maritime transport and underwater deposition of ancient sculptures of various types and dates during the medieval times and the period of the 'Grand Tour' (Johnson, 1925, p. 22; Arata, 2005, pp. 5–6, 148–149; Velentza, 2020).

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