

COMMONALITY AND DIVERSITY IN THE HELLENISTIC WORLD

PROCEEDINGS OF THE INTERNATIONAL
WORKSHOP HOSTED BY
THE CREA-PATRIMOINE (ULB)
MAY 15, 2023

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Edited by
Alexandros Laftsidis

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1st photo: Terracotta figurine from ancient Demetrias (Type 15; NAM 32663) © Hellenic Ministry of Culture (photo by Stelios Ieremias).

2nd photo: West Slope oinochoe from the Orgame necropolis © V. Lungu archive.

3rd photo: Obverse of a silver hemidrachm/triobol from Argos [Numisfitz GmbH, Auction 2 (04/06/2023), lot 209].
On the background detail of the world map by Claudius Ptolemy.

Back cover :

Votive relief of a procession of youths and men approaching Demeter. Paris, Louvre Ma 756 (Marie-Lan Nguyen, Wikimedia Commons).



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Στην μνήμη του καθηγητή
Ιωάννη Μ. Ακαμάτη,
ενός υπέροχου ανθρώπου
και μεγάλου δασκάλου

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The participants of the International Workshop “Commonality and Diversity in the Hellenistic World”. ULB, 15/05/2023

FOREWORD

I am extremely happy to introduce the publication of the Proceedings of the International Workshop “Commonality and Diversity in the Hellenistic World”, held on May 15th, 2023 at the Université libre de Bruxelles. This new volume shares the long-term concern at the CReA-Patrimoine with the study of people and objects’ mobility, social and economic aspects of craft productions and cultural exchanges. It is the first volume of the series entirely devoted to the Hellenistic era, and further compliments the previous publications in Greek Archaeology of the series « Études d’Archéologie » which concentrated on the Archaic and Classical periods.

“Commonality and Diversity in the Hellenistic World” reflects the editor’s deep interest in the scale and importance of cultural interactions during the Hellenistic period throughout the Mediterranean and beyond. The subject of the workshop grew out of several questions Dr Alexandros Laftsidis is facing in his own research, which focuses on the phenomenon of the so-called “Hellenistic koine”. Through the study of a large range of material evidence (sculpture, architecture, numismatic, glass, pottery, and terracottas), the volume examines the social organisation and processes laying behind the emergence of

both similar and diverging new patterns of culture observable over wide geographical areas of the Hellenistic world.

Alexandros joined us at the CReA-Patrimoine through two prestigious and highly competitive post-doctoral fellowships, a Marie-Curie COFUND-CIVIS3i followed by a post-doctoral research fellowship awarded by the Belgian National Research Fund (FNRS). Next to his research, he successfully organised this international workshop and co-organized with several other colleagues the 5th symposium of the International Association for Research on Pottery of the Hellenistic Period (IARPotHP), which brought together the leading scholars in the field.

I would like to use the opportunity of this preface to express my gratitude to Alexandros for sharing with us his research expertise and for organising both events at ULB. Many thanks are also due to Étienne Depasse, infographist at the CReA-Patrimoine, for preparing the volume for publication.

Athena TSINGARIDA
Director of the CReA-Patrimoine

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The International Workshop “Commonality and Diversity in the Hellenistic World” took place in May 2023 in the frame of the research project ““Glocalization” in the Hellenistic Period: Realizing Socio-Economic Complexities Through the Evidence of Pottery Production and Consumption”. This project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801505. The editor would also like to warmly thank Prof. Athena Tsingarida for her

insightful supervision and excellent cooperation. Gratitude is also owed to colleagues Mostafa Alskaf, Antoine Attout, and Chrysoula Kakarimpa for their precious assistance during the workshop. Don Evely must be thanked too for editing the English of the volume’s papers. Finally, many thanks are due to the late Nathalie Bloch, who produced the program and poster of the workshop, and to Etienne Depasse, who produced this volume in such an efficient and time-effective manner.

ABBREVIATIONS

The abbreviations to ancient authors and their works follow the system adopted in the *Oxford Classical Dictionary* (2nd edition). Further, apart from the established abbreviations followed by the *American Journal of Archaeology* on standard reference works, journals, and book series, the abbreviations below are also used throughout the volume:

%wt. = weight percentage

Drs. = Drawings

Fig(s). = Figure(s)

frg. = fragment

g = gram

H. = height

kms = kilometers

m = meter

mm = millimeter

n. = note

nn. = notes

no(s). = number(s)

Pl(s). = Plate(s)

W. = width

A' EllKer = *A' Συνάντηση για την Ελληνιστική Κεραμική*, Δεκέμβρης 1986, Ioannina, 1989.

B' EllKer = *B' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική: Χρονολογικά προβλήματα της ελληνιστικής κεραμικής*. Πρακτικά. Ρόδος 22-25 Μαρτίου 1989, Athens, 1990.

Γ' EllKer = *Γ' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική: Χρονολογημένα σύνολα – εργαστήρια*. 24-27 Σεπτεμβρίου 1991, Θεσσαλονίκη, Athens, 1994.

Δ' EllKer = L. ΚΥΡΑΙΟΥ (ed), *Δ' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική: Χρονολογικά προβλήματα*. Κλειστά σύνολα – εργαστήρια. Πρακτικά, Athens, 1997.

Ε' EllKer = E. ΚΥΡΑΙΟΥ (ed), *Ε' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική. Χρονολογικά προβλήματα*. Κλειστά σύνολα – εργαστήρια. Πρακτικά, Athens, 2000.

ΣΤ' EllKer = D. ΖΑΡΗΙΟΠΟΥΛΟΥ (ed), *ΣΤ' Επιστημονική Συνάντηση για την Ελληνιστική*

Κεραμική: Προβλήματα χρονολόγησης. Κλειστά σύνολα – εργαστήρια. Βόλος 17-23 Απριλίου 2000, Athens, 2004.

Z' EllKer = E. ΚΟΤΣΟΥ (ed), *Z' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική*. Αίγιο 4-9 Απριλίου 2005. Πρακτικά, Athens, 2011.

H' EllKer = E. ΚΟΤΣΟΥ (ed), *H' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική*. Ιωάννινα 5-9 Μαΐου 2009, Athens, 2014.

Θ' EllKer = E. ΚΟΤΣΟΥ (ed), *Θ' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική*. Θεσσαλονίκη 5-9 Δεκεμβρίου 2012. Πρακτικά, Athens, 2018.

I' EllKer = E. ΚΟΤΣΟΥ (ed), *I' Επιστημονική Συνάντηση για την Ελληνιστική Κεραμική*. Θεσσαλονίκη, 10-14 Μαρτίου 2020. Πρακτικά, Athens, 2023.

AEMTh = *Το Αρχαιολογικό Έργο στη Μακεδονία και στη Θράκη*

AEThSE = *Αρχαιολογικό Έργο Θεσσαλίας και Στερεάς Ελλάδας*

AnP = *Altertümer von Pergamon*

CH = *Coin Hoards*

CID V = D. MULLIEZ, *Corpus des Inscriptions de Delphes*. Fasc. 5, *Les actes d'affranchissements*, Paris, 2019.

Coins in the Peloponnese = E. ΑΠΟΣΤΟΛΟΥ and CH. DOYEN (eds), *Coins in the Peloponnese: Mints, Iconography, Circulation, History. From Antiquity to Modern Times, Proceedings of the Sixth Scientific Meeting in the Memory of Tony Hackens*, Argos, May 26-29, 2011, vol. I: *Ancient Times*, Athens, 2017 [*Bulletin de Correspondance Hellénique Supplément* 57 / *Obolos* 10].

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HGATLAS = G. METALLINOU (ed), *Historical and Geographical Atlas of the Greek-Albanian Border*, Athens, 2008.

IARPotHP 2 = A. PEIGNARD-GIROS (ed), *Daily Life in a Cosmopolitan World: Pottery and Culture During the Hellenistic World. Proceedings of the 2nd Conference of IARPotHP, Lyon, November 2015, 5th-8th, Vienna, 2019.*

IARPotHP 3 = I. KAMENJARIN and M. UGARKOVIĆ (eds), *Exploring Neighborhood. The Role of Ceramics in Understanding Place in the Hellenistic World. Proceedings of the 3rd Conference of IARPotHP, Kaštela, June 2017, 1st-4th, Vienna, 2020.*

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IG II² = J. KIRCHNER, *Inscriptiones Graecae. Vol. II et III. Inscriptiones Atticae Euclidis anno posteriores. Editio altera*, Berlin, 1913-1940.

IG IV = M. FRAENKEL (ed), *Inscriptiones Graecae, Aeginae, Pityonesi, Cecryphaliae, Argolidis*, Berlin, 1902.

IG IV² 1 = F. HILLER VON GAERTRINGEN (ed), *Inscriptiones Graecae IV, Inscriptiones Argolidis, Fasc. 1: Inscriptiones Epidauri*, Berlin, 1929.

IG V 2 = F. HILLER VON GAERTRINGEN (ed.), *Inscriptiones Graecae V.2, Inscriptiones Arcadiae*, Berlin, 1913.

IGCH = M. THOMPSON, O. MØRKHOLM and C. M. KRAAY (eds), *An Inventory of Greek Coin Hoards*, New York, 1973.

Koroplastiki & mikrotechnia = A. GIANNIKOURI (ed), *Κοροπλαστική και μικροτεχνία στον αιγαιακό χώρο από τους γεωμετρικούς χρόνους έως και τη ρωμαϊκή περίοδο. Διεθνές συνέδριο στη μνήμη της Ηούς Ζερβουδάκη*, Athens, 2014.

Les alexandres après Alexandre = S. KREMYDI and M. C. MARCELLESI (eds), *Les alexandres après Alexandre: histoire d'une monnaie commune*, Athens, 2019 [Μελετήματα 81].

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Pergamon and the Hellenistic Kingdoms = C. A. PICON and S. HEMINGWAY (eds), *Pergamon and the Hellenistic Kingdoms of the Ancient World*, New York, 2016.

SGDI II = H. COLLITZ, *Sammlung der griechischen Dialekt-Inschriften. Fasc. 2, Epirus, Akarnanien, Aetolien, Aenianen, Phthiotis, Lokris, Phokis, Dodona, Achaia und seine Colonien, Delphi, Göttingen*, 1899.

Syll³ = W. DITTENBERGER, *Sylloge Inscriptionum Graecarum*, Leipzig, 1924³.

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BUILDERS AS AGENTS OF AN ARCHITECTURAL KOINE: THE CASE OF THE ATTALID STOAS IN ATHENS¹

Jean Vanden Broeck-Parant

ABSTRACT

This paper explores the concept of architectural “koine” as a process of knowledge transfer with the Attalid stoas in Athens as a case study. The origin of the skilled labourers working on the Stoa of Eumenes (on the south slope of the Acropolis) and the Stoa of Attalos (on the east side of the Agora) is discussed, using archaeological and epigraphical evidence, while the related question of marble provenance prompts a discussion on the reasons behind the choice of various kinds of materials. This serves as a basis to explore the understudied question of on-site technical transfer between craftsmen with different practices in ancient monumental construction. Supporting evidence comes from labour cost estimations drawn from figures of the modern reconstruction of the Stoa of Attalos in 1953-1956. A case is made for architectural energetics (labour cost estimations) as a way of better understanding the concrete mechanisms behind the diffusion of formal and technical features.

1. Introduction

The Attalids of Pergamon sponsored the construction of two (perhaps three or even four; see below) stoas in Athens in the course of the 2nd century B.C. They were built in a short interval of time around the middle of the century, the first one by Eumenes II on the south slope of the Acropolis, the second by his brother and successor, Attalos II, on the east side of the Agora (Fig. 1). These two buildings show a number of distinctively Pergamene traits as well as more ‘Atticising’ features (such

as the proportions of the Doric order),² but they are also the expression of general trends in Hellenistic monumental architecture, a shared set of forms and techniques that could be (loosely) referred to as an “architectural koine”.

Such an expression has been little used in the context of ancient Greek architecture in general, and perhaps only slightly more often when dealing with Hellenistic architecture in particular, even though the original concept of “koine”, originally used in a historico-linguistic context, is typically associated with the Hellenistic period, starting roughly (and somewhat arbitrarily) at the end of the 4th century B.C.³ When used in the context of Hellenistic architecture, the term “koine” is rarely given a definition and is rather used as a convenient way to address the development of shared practices in given geographical areas, whether strictly or loosely defined. More specifically, two main strands of thought are

1 I am grateful to Alexandros Laftsidis for organising such a stimulating workshop on the Hellenistic “koine”, for accepting my paper in this volume, and for his useful comments. I am also grateful to Natalia Vogeikoff-Brogan and Eleftheria Daleziou for allowing me to look at the Homer A. Thompson Papers at the Gennadius Library of the American School in December 2021 and for agreeing to the publication of the relevant information found in these documents. This research was done in the framework of a postdoctoral grant of “Chargé de recherches” from the F.R.S-FNRS (2021-2023).

2 See WINTER 1993, 261.

3 COLVIN 2011, 31-32.

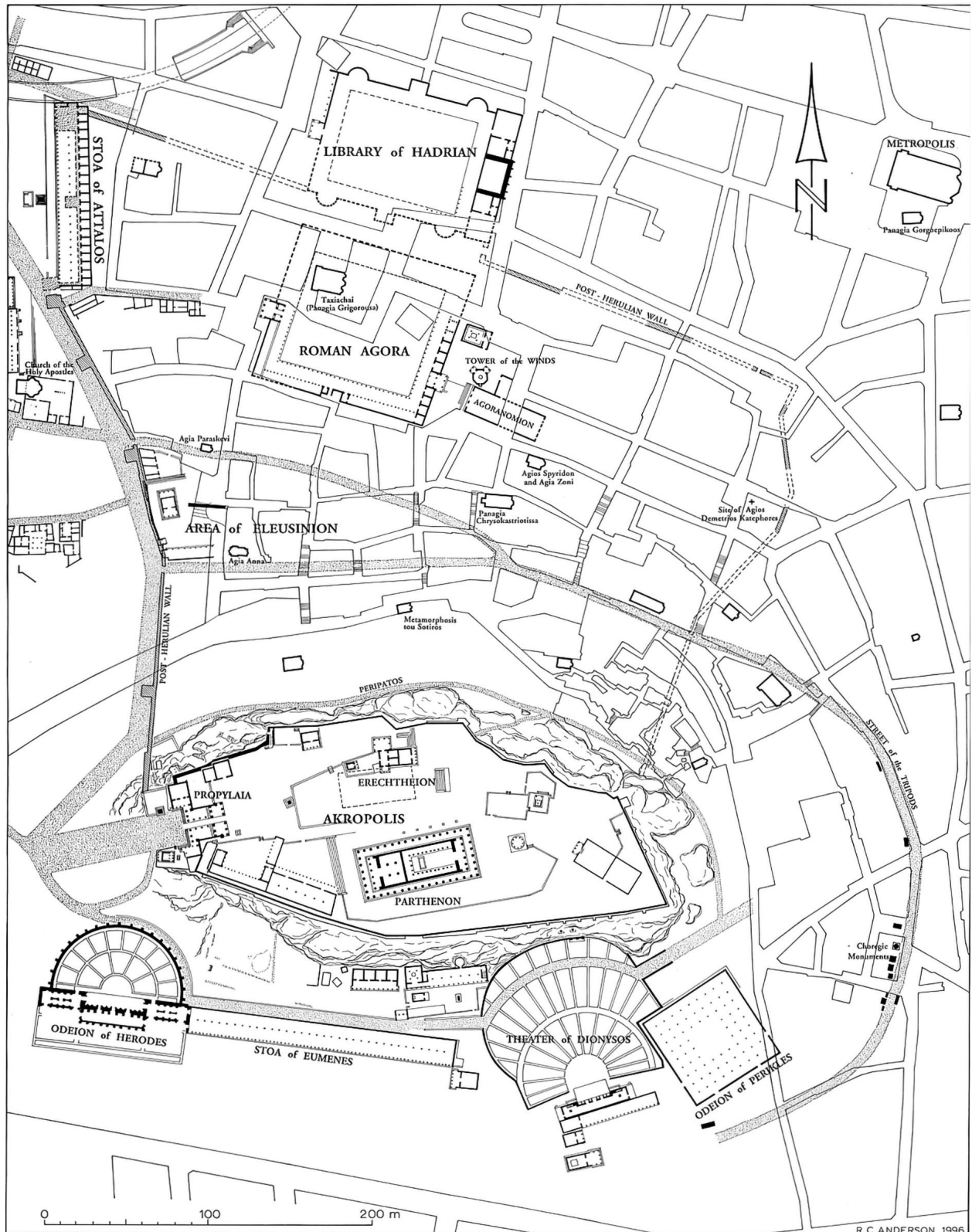


Fig. 1. Plan of the Acropolis and adjacent area to the north, with the locations of the stoas of Eumenes II and Attalos II (The American School of Classical Studies at Athens, Agora Excavations).

represented. On the one hand, the concept of “koinē” is applied to architectural practices shared in distinct regions of the Hellenistic world, such as the Eastern Aegean under the Ptolemies,⁴ the North coast of the Black Sea,⁵ the Illyria-Epirus region,⁶ Magna Graecia (a “Western Ionic koinē”)⁷ or Cyprus.⁸ In a similar way, Hélène Fragaki speaks of a Late Classical-Early Hellenistic architectural “koinē” that developed with the large building programmes of Asia Minor and had a lasting influence on Ptolemaic architecture before it started fading in the course of the 3rd century B.C.⁹ On the other hand, the term has been used to describe a process of universalisation of the material culture in the Mediterranean as a whole,¹⁰ not only in ceramics, as is most common, but also in sculpture or architecture.¹¹ Frederick E. Winter probably came closest to a definition of the Hellenistic architectural “koinē” in this sense, describing it, with an analogy to linguistics, as “a common idiom (...), which was nevertheless expressed in a number of differing local dialects.”¹² The latter aspect is particularly relevant to the present case and should be seen, in my opinion, not as an opposing force to that of “koinē” but rather, as an integral part of it, and even as a condition of its very existence. As such, the concept of “koinē” can be a powerful heuristic tool,¹³ especially if seen as a dynamic, ever-evolving process that is the corollary of local and regional architectural expressions. In much the same way, the concepts of “local” and “global” in the Hellenistic world have been theorised as a matter of constant negotiation rather than opposition, a cyclical, two-way process encapsulated in the terms “glocal” and “glocalisation”.¹⁴

This paper looks closely at this process through aspects of the socio-economic organisation of construction sites, taking the Attalid stoas of Athens as a case study. More specifically, the origin of the builders is discussed, as evidenced by the provenance of the materials, as well as by the forms and



Fig. 2. Current state of the remains of the Stoa of Eumenes II, showing the arched retaining wall and part of the rear wall.

techniques used for the construction of the stoas of Eumenes II and Attalos II, respectively. Using a variety of evidence, including the archives of the modern reconstruction of the Stoa of Attalos by the American School of Classical Studies at Athens (ASCSA) in the 1950s, the stoas are addressed through the lens of “architectural energetics” to estimate the amount of time and the number of craftsmen necessary for their completion. Combining these two approaches allows one to address, in a very concrete way, the processes by which Pergamenian features were assimilated in an Attic environment and, more generally, the knowledge transfer that underlies the spread of architectural features outside their original setting.

2. The Attalid stoas of Athens: a brief description and discussion

The Stoa of Eumenes on the southern slope of the Acropolis was (probably) the first large building gifted by the Attalids to the Athenians during the reign of Eumenes II between c. 180 and 159 B.C. A long (161.80 m excluding the stairs), two-storeyed building, it was located west of the Theatre of Dionysus and likely provided a shelter for its visitors, as is recounted by Vitruvius.¹⁵ In A.D. 161, the Odeon of Herodes Atticus was completed and connected to the western end of the stoa. Today, what remains of it *in situ* consists mostly of the large retaining wall with arched buttresses that was located behind the building itself. Parts of the rear wall of the stoa

4 CALIÒ 2010.

5 KRYZHICKIJ 2007.

6 CEKA 1993.

7 WINTER 2006, 186; see also HEURGON 1969, 248-250.

8 MICHAELIDES and PAPANTONIOU 2018; REKOWSKA 2020.

9 FRAGAKI 2015, 288, 300.

10 VERSLUYS 2015.

11 LAFTSIDIS 2019.

12 WINTER 1993, 281.

13 See LAFTSIDIS, this volume.

14 BECK 2024, 14.

15 Vit., *De Arch.* 5.9.1.

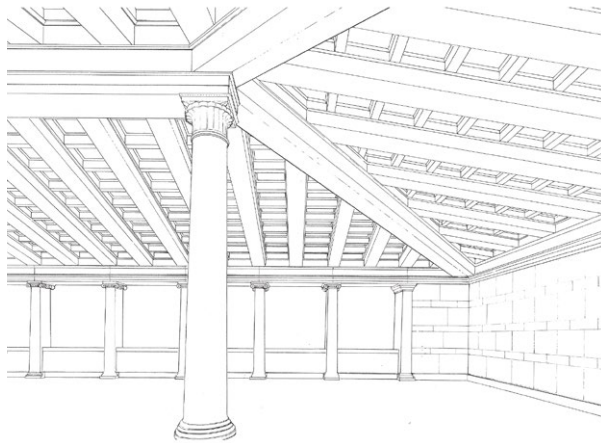


Fig. 3. Perspective restored view inside the second storey of the Stoa of Eumenes II, showing the new reconstruction of the corner of the façade by M. Korres (after KORRES 2022, Fig. 3B).

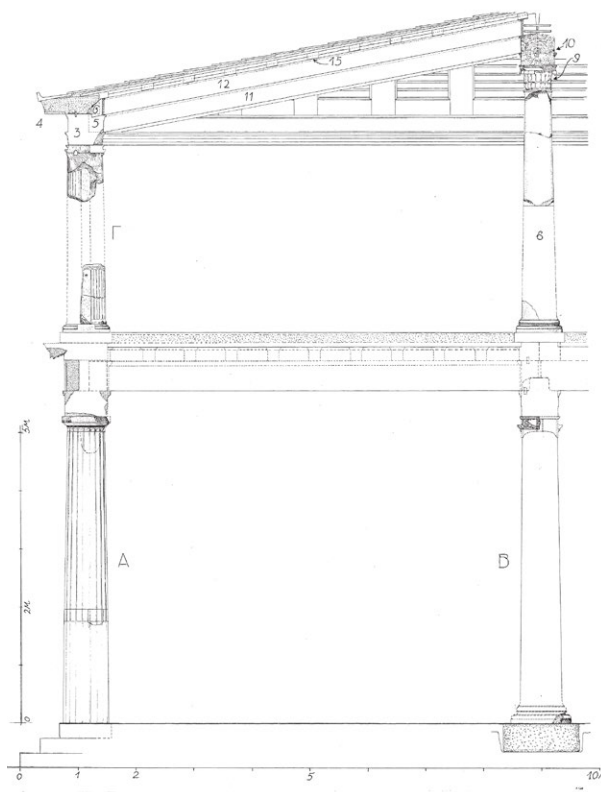


Fig. 4. Transversal section of the Stoa of Eumenes II (after KORRES 2022, Fig. 2).

are also preserved along the retaining wall (Fig. 2), while the foundation of the façade is still in place almost over the entire length of the building, in some parts up to the euthynteria. In the internal

space, the foundations of 18 columns are preserved.¹⁶ Originally, it was a two-storeyed stoa with staircases on both ends to access the upper floor. When the Odeon of Herodes Atticus was built, the western staircase was removed in the process. The façade, in a Pergamian fashion, was Doric on the ground floor, with 65 columns, and Ionic on the second, with as many double half-columns. Each bay of the upper floor had a parapet. According to the traditional reconstruction, both sets of columns were framed, at each end, by anta pillars. However, in the latest architectural study of the building, Manolis Korres suggests a new reconstruction of the corners of the façade on the upper floor with, at each end, a wall section instead of a bay in the colonnade (Fig. 3). The implication of this new reconstruction would be a reduction of the number of bays to 64 and of columns to 63, with a pilaster against each wall's end of the same thickness as the double half-columns.¹⁷ As for the interior, it was two-aisled, with a single colonnade of 31 columns running parallel to the façade on each floor – probably Ionic in the lower floor, and with palm capitals in the upper floor (Fig. 4).

Various questions exist surrounding this building, starting with its date and its very identification as the “porticus eumeniae” mentioned by Vitruvius. The arches have been interpreted as an indication of a Roman date, some believing that it was contemporary with the Odeon,¹⁸ some that it was even later, on the basis of an erroneous reading of the stratigraphy with the nearby Monument of Nikias, which was destroyed in the 3rd century A.D.¹⁹ It is now acknowledged that arches were used rather consistently in Attalid architecture, including, for instance, in the terrace of Attalos I in Delphi. Another major bone of contention was the supposed ambiguity of Vitruvius's description of the location of the Stoa of Eumenes.²⁰ In fact, the phrase “post scaenam porticus sunt constituendae” is to be understood as a general statement; to deduce that the “porticus eumeniae” itself was behind the proscenium of the theatre of Dionysus is an overinterpretation. The question of the identification of the building was solved once and for all when Korres observed that

16 KORRES 2022, 64-65.

17 KORRES 2022, 75-77.

18 KÖHLER 1878.

19 VIALE 1921-1922.

20 See MERCURI 2004, 61-63 for a detailed discussion of the various interpretations.

STOA OF ATTALOS

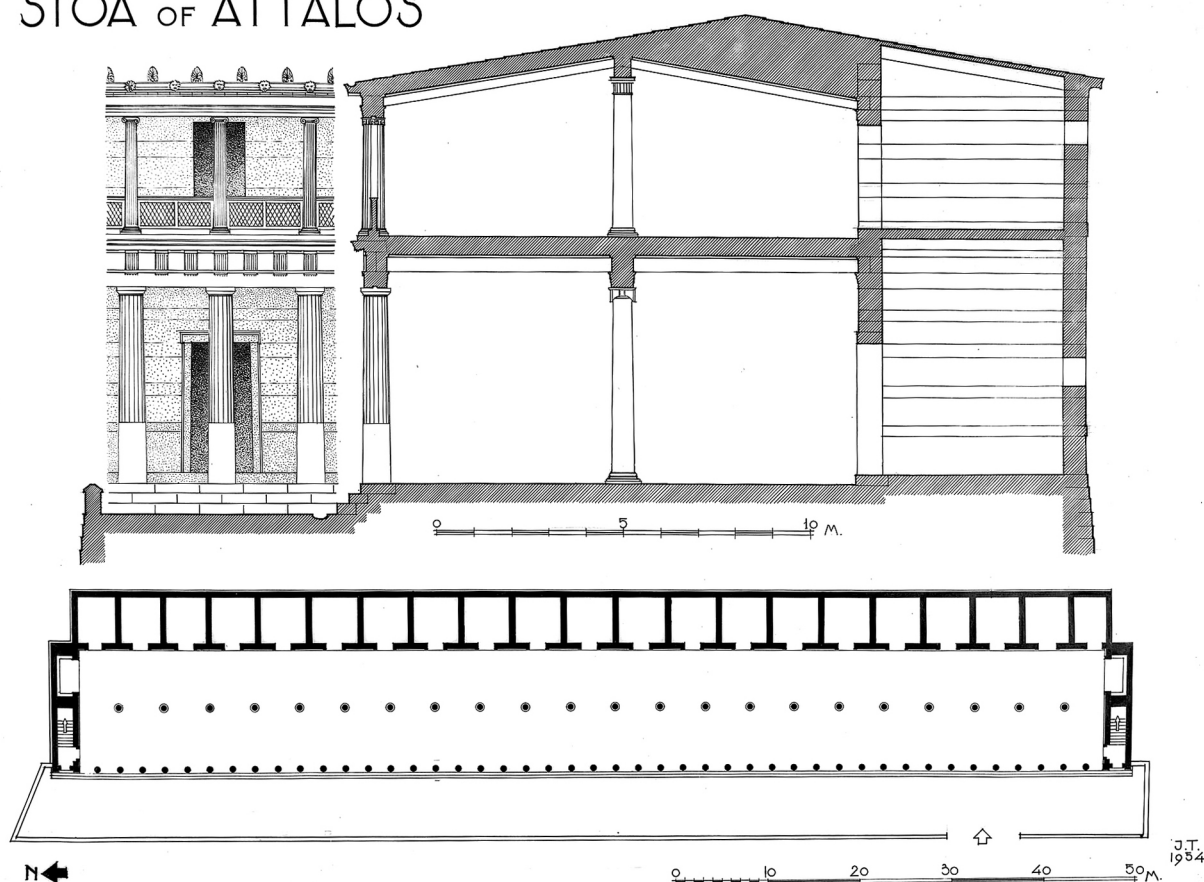


Fig. 5. Plan, elevation, and section of the Stoa of Attalos II (ASCSA, Agora Excavations. Drawing by John Travlos, 1954).

a significant part of the marble had probably been extracted close to Pergamon and that the mason's marks found on some blocks were undoubtedly Pergamian.²¹ It is not known when exactly during the reign of Eumenes II the stoa was built, but according to Korres, it must be dated roughly around 180-160 B.C.²² Henner von Hesberg dated it somewhat more precisely, on stylistic grounds, around 170-160 B.C.,²³ while Marcus Kohl favours a period of diplomatic relaxation, i.e. after 175, a year marked by the accession to the throne of Antiochos IV with the support of the Attalids.²⁴

The Stoa of Attalos did not face such identification problems (or at least, not for nearly as long), for the dedicatory inscription of the building was found at an early date, probably in 1862.²⁵ The inscription

is clear about the identity of the donor as Attalos II, since it mentions his patronymic (Attalos) and his matronymic (Apollonis).²⁶ The remains of the building were explored by the Greek Archaeological Society in 1859-1862 and 1898-1902, and were then excavated from 1931 under the auspices of the American School at Athens. It was rebuilt in its entirety, using both ancient and modern techniques and materials, between 1953 and 1956, to serve as the Agora Museum and repository of the Agora excavations' archives.²⁷ The Stoa of Attalos is very similar to that of his brother Eumenes II in many aspects, but it also shows a number of differences (Fig. 5). It is two-storeyed and two-aisled, with staircases at each end, although they are more voluminous than that of the Stoa of Eumenes, and it presents an identical distribution of orders, both on the façade and in the interior, and similar proportions in elevation. However, the whole building is con-

21 KORRES 1983.

22 KORRES 2015, 132; c. 170 B.C. in KORRES 2022, 63.

23 VON HESBERG 1980, 26-28.

24 KOHL 1995, 203-204.

25 KAYE 2016, 538.

26 IG II² 3171.

27 MAUZY 2006, 42.

siderably shorter (116 m including the stairs at each end) and the portico itself is significantly narrower (13.30 m vs 17.85 m for the Stoa of Eumenes). This difference in width is compensated by the presence of rows of individual rooms on both floors at the rear of the building, each one opening onto a portico. This means that the Stoa of Attalos as a whole had a width of 19.40 m. Another main difference is the provenance of the materials used in the two buildings. This will be discussed in more detail in the following section, as it pertains to the issue of the origins of the craftsmen. The stoa is securely dated to the reign of Attalos II (159-138 B.C.) thanks to the above-mentioned inscription. The material from the foundation trenches and in the substructure fill is consistent with this dating and supports a date in the first part of Attalos's reign.²⁸

At least one other stoa in the Pergamenian style was built in Athens, but we know relatively little about it. Like the two other stoas, it was a two-storeyed building, with Ionic double-half columns on the upper floor. Bases, shafts and capitals of such columns, as well as console geisa of the Pergamenian type, have been found close to the Tower of the Winds and in the Library of Hadrian.²⁹ According to Korres, the greyish-white marble of which they are made could be from Thasos.³⁰ John Travlos had associated these elements with another series of blocks belonging to a Doric colonnade, which had been reused in the cella of the Parthenon and in the East Stoa of the Asklepieion in Late Antiquity.³¹ This series would have formed the lower colonnade of the same stoa. It seems, however, that the two series must have belonged to two distinct stoas. Indeed, the geison of the Doric series rather points to a single-storeyed building.³² Furthermore, the blocks of this series were made of Pentelic marble, which would imply an unprecedented two-storeyed, Pergamenian stoa with a different marble for each floor.³³ While the Doric single-storeyed stoa cannot be said with certainty to be of Pergamenian style, this is though very much the case of the Ionic series, even if it shows a number of discrepancies in the details with the stoas of Eumenes and Attalos. Because of the find spots

of its elements, this third Pergamenian stoa could have been located somewhere south of the Tower of the Winds, with an east-west orientation. Its date remains difficult to establish. On the basis of stylistic elements (including some of the Doric parts), von Hesberg concluded that nothing stands in the way of dating it to the second quarter of the 2nd century,³⁴ before the Stoa of Attalos, but this rests in part on the assumption, following Travlos, that the stoa can be identified as the "Stoa of Rhomaios", which is mentioned in an inscription dating to 150 B.C.³⁵ However, as von Hesberg himself admitted, this identification is uncertain. Hildegard Schaaf wanted the stoa to predate the Stoa of Eumenes (although she did not explicitly say why),³⁶ but the time frame then becomes quite narrow, if one accepts that the archetypal model for the Pergamenian stoas of Athens was the North Stoa of the sanctuary of Athena in Pergamon.³⁷ J. J. Coulton, on the contrary, thought it was a later, "derivative work" by a different architect, but it must be noted that he did accept Travlos's association with the Doric series.³⁸ Most recently, Eric Laufer argued against a late, post-Attalid date; in his opinion, it is difficult to imagine that the popularity alone of the Pergamenian forms in Athens would have prompted such a close imitation by another Hellenistic king or by the city of Athens itself.³⁹ The latter option, however, does not seem so unreasonable. In my opinion, one does not need to assume a strong "pro-Attalid" sentiment behind the project. The Pergamenian type of stoa could have been considered by then (the later 2nd century or later) a part of the architectural 'panoply' of forms from which to draw inspiration for new projects. In other words, it was perhaps no longer considered so much Attalid as just a part of the architectural "koine" in a general sense. Such matters are thus at the core of the themes covered in the present paper but, unfortunately, due to our relatively poor knowledge of this building, no firm conclusions can be drawn at this stage on this specific point.

28 HABICHT 1990, 574; KOHL 2001, 253.

29 LAUFER 2021, 213-215.

30 KORRES 2015, 139, n. 39.

31 TRAVLOS 1971, 281.

32 KORRES 1994, 144.

33 LAUFER 2021, 213-214.

34 VON HESBERG 1980, 28-29.

35 IG II² 958.

36 SCHAAF 1992, 92-93.

37 LAUFER 2021, 214.

38 COULTON 1976, 69.

39 LAUFER 2021, 215.

3. Provenances of the materials and origins of the skilled labourers

In order to better understand the processes by which forms and techniques were adopted in a new environment, an important aspect we need to address is the origins of the builders employed on the construction site. When no explicit information is available, as is the case for the Attalid stoas of Athens, various types of evidence can be used in combination to draw plausible hypotheses.

The provenance of the materials used in the construction is relevant to the question of the origins of the builders, as it has been emphasised that in ancient Greece craftsmen tended to be specialised in a specific type of material⁴⁰ and to travel along with their building materials to the construction site, even though it has also been acknowledged that foreign craftsmen could work on local materials as well.⁴¹ In this regard the stoas of Eumenes II and Attalos II are remarkably different: while the latter resorted exclusively to Attic stone, the former made use of stone from a variety of provenances.

Let us first have a look at the Stoa of Eumenes II. The core of the foundations, as well as most of the retaining wall, are made of local conglomerate. Limestone from the quarries of Piraeus was used for the external part of the foundations and for the base, buttresses and arches of the retaining wall. Marble from Hymettos was used for the toichobate and orthostates of the walls of the stoa. According to Korres, the courses on top of the orthostates are made of stone from Aigina,⁴² and it is worth noting already at this stage that the island had been an Attalid possession since 209/8 B.C.⁴³

For a long time it was believed that all of the marble used in the Stoa of Eumenes was from Attica, until Korres observed that the parts that were hitherto thought to be made of Pentelic marble actually looked very similar to the marble used in the stoas of the sanctuary of Athena Polias in Pergamon itself. The parts that are made of this marble in the Stoa of Eumenes are all of the columns (including the dou-

ble half-columns), the Doric and leaf capitals, all of the Ionic bases, the architrave, frieze and geison of the ground floor, and the geison of the upper floor; it is probable that the steps, the Ionic capitals and the architrave of the upper floor were also made of that material.⁴⁴ Since then, isotope analyses have further refined the provenance of this marble; they have ruled out the Attic quarries, as well as the Kozak quarry north of Pergamon, but instead pointed, with very little doubt, to the island of Proconnesos,⁴⁵ which was exploited extensively by the Attalid rulers for its marble during the Hellenistic period.⁴⁶ Based on the available architectural fragments and the reconstructions of the stoa, the amount of Proconnesian marble used in the Stoa of Eumenes was about 555 cubic meters (about 1,500 tons), not counting the waste material in the quarries and the excess marble removed once the blocks arrived on the construction site (about 10%).⁴⁷

The provenance of the stone alone suggests that Pergamenian craftsmen⁴⁸ were involved in the construction but there is another, even more definitive argument, which is that the mason's marks found on a series of architectural elements made of Proconnesian marble are distinctively Pergamenian. Such marks were found in Pergamon itself (see below). Furthermore, the surface masonry work is identical to that of the Propylon of Athena Polias in Pergamon.⁴⁹ Korres argued that the blocks were sent entirely premade, that is already with their assembly marks, to the construction site where they were assembled by local workmen.⁵⁰ The implication is that, except for the architect, no Pergamenian builder worked on the construction site itself. Korres supports this view with *three main arguments*, which have all been contested by Ulf Weber as follows:

1. *There are no mason's marks on the blocks made of Attic marble, whether in the Stoa of*

40 FEYEL 2006, 382-384.

41 HELLMANN 2000. See for example WESCOAT 2018, 118, 151.

42 KORRES 1983, 204; 2022, 65.

43 ALLEN 1971, 1-2.

44 KORRES 1983, 204.

45 CRAMER 2004, 237-238.

46 LAUFER 2021, 174.

47 BESSAC 1996, 311.

48 By "Pergamenian craftsmen", we understand craftsmen who were dependent on Pergamenian rule and had been trained in Pergamenian ways of building, regardless of their geographical origin as individuals, which could have been quite varied. This expression is used here in this sense and for convenience.

49 KORRES 1983, 204-205.

50 KORRES 1983, 205.

Eumenes or in that of Attalos. However, this means nothing except that the elements that were not made of Proconnesian marble were more likely cut and assembled by Attic masons. It certainly does not exclude the presence of Pergamenian masons on the site.

2. *The abaci show differences in the height of their scamilli, a measure needed to compensate for the unevenness of the stylobate blocks.* This was taken by Korres as an indication of a lack of coordination on the construction site. This may well be true, especially if Attic stonemasons took care of the substructure, while Pergamenian stonemasons built the upper parts. However, it does not imply that the latter were not present on the construction site.
3. Finally, *no marble chips from Proconnesian marble were found on the south side of the Acropolis that would indicate on-site stonemasonry.* According to Korres, this suggests that the architectural elements made of Proconnesian marble were not worked *in situ* and, therefore, that they arrived entirely premade. This is an argument *ex silentio* that does not take into account the possibility that the south side of the Acropolis simply might not have been explored sufficiently. Moreover, such a scenario would imply that the blocks were shipped with the ornaments and fluting already finished, which would have represented a very high risk of damage during transport. The fluting in particular would have implied a pre-assembly of the column drums in the quarry. This goes against what we know about stone supply, i.e. that architectural elements were usually delivered with bossage that would be eventually cut off on-site.⁵¹

Recently, Korres has replied that in the scenario he envisioned, the column drums would not have been shipped already fluted. In his view, “excessive thickness” is only strictly necessary in the case of non-monolithic architectural elements and, in any event, the possible presence of protective “margins” near the joints does not challenge the general idea

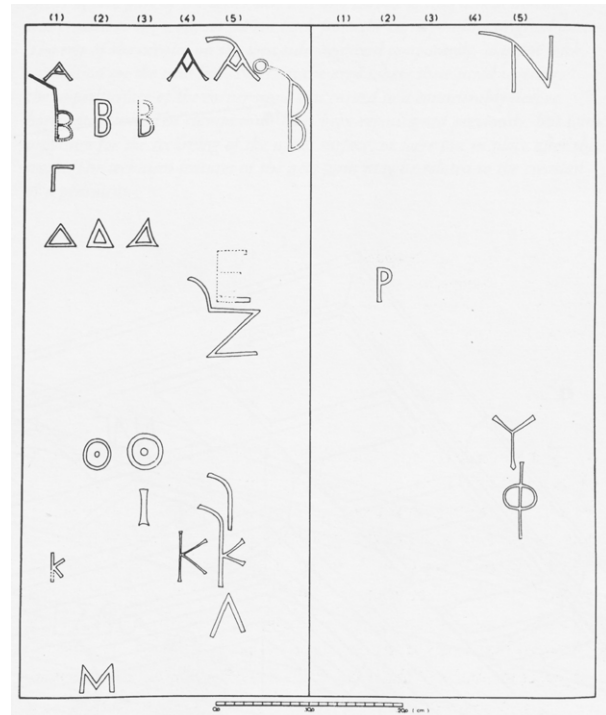


Fig. 6. Mason's marks-letters found until 1982 on dispersed marbles of the Stoa of Eumenes II. 1, 2 and 3: letters on column drums; 4: letters on bases of internal columns of the upper storey; 5: letters on the underside of geison blocks of the roof (after KORRES 2015, Fig. B6.13).

that the blocks were “prefabricated”.⁵² The whole matter, in fact, depends on what one understands by “prefabricated”. Surely the blocks must have been roughed out at least, as was normally the case, in order to minimise their weight during transport. However, evidence from later periods suggests that Proconnesos blocks were normally transported either with a protective “quarry-coat” or in an unfinished state.⁵³ In principle, local – Athenian – stonemasons would have been able to cut off the excessive thickness or to carve the final details. However, it

52 KORRES 2022, 66, n. 14.

53 The Kızılburun shipwreck, generally dated in the first three quarters of the 1st century B.C., contained unfluted column drums, as well as a Doric capital with a “quarry-coat”. The blocks were made of Proconnesian marble and were destined for the Temple of Apollo in Claros (CARLSON and AYLWARD 2010). Corinthian capitals made of Proconnesian marble were found in Ostia, Side, and Perinthos in a state just before the workshop stage (ASGARI 1988, 120). On Proconnesos itself, 43 Corinthian capitals have been documented at various stages of workmanship, including three in an almost finished condition, though these may have been models (ASGARI 1988; RUSSELL 2013, 243).

51 WEBER 2013, 48-49.

seems unlikely that after the blocks were carefully prepared by Pergamenian stonemasons, the finishing work would have been left to the Athenian craftsmen.⁵⁴ There are two main elements supporting this claim: first, the shape and organisation of the assembly marks and, second, the general policy of the Attalid kings.

The shape of the letters, some with characteristic diacritics at their upper ends (Fig. 6), is similar to that of the letters used at the Ionic temple of the Theatre Terrace⁵⁵ or at the temple of Dionysos in Pergamon.⁵⁶ Letters are found on the underside of geison blocks of the upper storey of the stoa,⁵⁷ as well as on the columns, but it is difficult, given how fragmented the column shafts are, to determine whether there was a single, coherent system in use. In the case of columns made of multiple drums, more often than not each drum bears two letters, one referring to the number of the column in a series, the other to the drum itself.⁵⁸ Interestingly, the numbering of the columns does not seem to have exceeded the alphabet, i.e. 24 letters, whereas there were no less than 65 columns on the ground floor façade (or perhaps 63; see above). This supports the idea that the column drums were marked on the construction site, where any possible confusion was easily avoidable, and not in the quarries or in Pergamenian workshops.⁵⁹

Another argument for the presence of Pergamenian workmen on the construction site of the Stoa of Eumenes in Athens is that it seems to have been a common feature of Attalid policy to also send people for the completion of works that they sponsored, as is attested by a number of inscriptions. Eumenes II himself is known to have sent staff to Delphi for the “construction” or, rather, the “repair” of the theatre – possibly after an accident which happened during the construction,⁶⁰ as well as for works on “other

offerings”, which cannot be identified with certainty.⁶¹ The term used for this workforce in one of the two inscriptions is “σώματα”,⁶² a word commonly used at the same period in Delphi to refer to (former) slaves in the large corpus of manumission inscriptions.⁶³ However, in theory *σώμα* can refer to any type of individual, regardless of their social status. In the other inscription one finds the even vaguer “τοὺς οἰκοδομήσοντας” (“those who build”).⁶⁴ In any event, some skilled workforce – and probably at least an architect – must have been part of the Pergamenian crew, since the theatre of Delphi shows evidence of Pergamenian construction techniques in its second phase.⁶⁵ A manumission inscription from Delphi dated to 197 B.C. mentions a certain Dameas, who was in charge of the supervision of “royal works”, perhaps at the Stoa of Attalos I.⁶⁶ A few decades later, the city of Delphi honoured three painters who had been sent by Attalos II to restore, or perhaps copy paintings in Delphi,⁶⁷ and it has been suggested, quite convincingly, that the paintings were those of the same Stoa of Attalos I.⁶⁸

It has been suggested that whenever Attalid kings paid the costs of statue bases, the latter show typical Pergamenian features,⁶⁹ which in turn supports the idea that Pergamenian builders were hired. The best example of this is the letter by Eumenes II to the Ionians, in which he accepts the honours bestowed on him and declares that he shall “make” the gilded statue himself in order to save the Ionian League the expense, and that it should be placed in Miletos.⁷⁰ This inscribed letter was found in Miletos itself, on blocks belonging to a round base, which originally supported a bronze statue, and which presents formal and technical features characteristic of Pergamenian construction.⁷¹ Of course, a partic-

54 With reference to the 2nd and 3rd centuries A.D., Nuşin ASGARİ (1988, 120) suggested that Proconnesian blocks could be finished by local craftsmen, as long as the latter had been taught by craftsmen trained in Proconnesian workshops.

55 KORRES 1983, 204.

56 WEBER 2013, 48, n. 16. This similarity also supports the dating of the stoa to the 2nd century B.C.

57 WEBER 2013, 47; KORRES 2022, 66, 73.

58 KORRES 2022, 67.

59 WEBER 2013, 47-48.

60 On the vocabulary issue, see JACQUEMIN, MULLIEZ and ROUGEMONT 2013, 299.

61 *FD* III 3, 237, 239.

62 *FD* III 3, 239, l. 12.

63 See *CID* V.

64 *FD* III 3, 237, l. 10.

65 BOMMELAER 2008, 266-270.

66 *SGDI* II 2001; JACQUEMIN and LAROCHE 1992, 253-254.

67 *Syll.*³ 682.

68 ROUX 1952, 184-185.

69 KOTSIDU 2000, 592, 597.

70 *OGIS* 763.

71 Among these features are the circular plan, the masonry, the joining techniques, the mason's marks, the Attic profile of the base moulding, and the profile of the crown moulding (KÄSTNER 1991; KOTSIDU 2000, 487; LAUFER 2021, 269).

ular design or set of techniques alone is not proof of the implication of Pergamenian stonemasons. The “typical” pseudo-isodomic masonry used for pillars, for instance, does not even necessarily point to Pergamon at all; in Delos, a pillar previously thought to be Pergamenian dates, in fact, to c. A.D. 125.⁷² Still, with enough context, this kind of design can support the idea that craftsmen from Pergamon or, at least from Asia Minor, were involved.⁷³ In the case of the terrace of Attalos I in Delphi, not only was the architect Pergamenian (or at least someone well versed in Pergamenian practices), but there is also little doubt that Pergamenian builders were employed along with local ones, who could handle better the local material such as limestone and conglomerate from the Parnassus.⁷⁴ When a second pillar was erected on the terrace, likely at the time of Eumenes II, more Pergamenian stonemasons were probably sent to Delphi, as attested by its Pergamenian construction techniques.⁷⁵

As in the case of the terrace of Attalos in Delphi, Pergamenian builders must have worked alongside local builders during the construction of the Stoa of Eumenes II in Athens. That Attic stonemasons worked on the parts made of Hymettian marble, Piraeus limestone and Attic conglomerate cannot be proven by any positive evidence, but is supported by the absence of any mason’s mark on the blocks made of local material.⁷⁶ Nor was any mason’s mark found on the blocks made of Aeginetan poros, however, and we have seen that the island was by then a possession of the Attalids. Furthermore, if local stonemasons made the retaining wall with its arches, it must have been under the supervision of a Pergamenian architect, for such arches were a trademark of Pergamenian construction and were otherwise rather uncommon at the time, especially in a retaining wall.⁷⁷ Whatever the distribution of roles, teams from various regions cannot have worked independently from each other. Rather, there must have been a necessary collaboration between local and Pergamenian stonemasons and between the stonemasons and a Pergamenian architect, perhaps with supervisors from both regions.

At the very least, some kind of cooperation must have been necessary for assembling the parts that were made of Aeginetan sandstone or Hymettian marble, on the one hand, and Proconnesian marble, on the other. In his recent reconstruction of the Stoa of Eumenes (Fig. 3), Korres notes that the Proconnesian pilasters at each end of the façade on the upper floor must have been connected to masonry made not of soft limestone from Piraeus or sandstone from Aigina, but of marble. It is impossible to say at this stage whether it was Proconnesian or Hymettian marble⁷⁸ but, if it was the latter, coordination must have been necessary between the local and Pergamenian stonemasons for the setting and joining of the blocks.

An illustration of such collaboration needed for the assemblage of blocks worked by different teams of masons is the case of the orthostates of the Thymele in Epidauros, built in the course of the 4th century B.C. The interior orthostates of the circular wall, made of “black” stone from Argos and the exterior ones, made of Pentelic, were set up “back to back” and assembled by means of clamps on their upper joint. The lines pertaining to these blocks in the so-called “building accounts” of the Thymele⁷⁹ are a particularly vivid and enlightening example of the practical collaboration needed to assemble blocks supplied by craftsmen from different regions. First, Chremon of Argos is paid for “working the black stones for the assemblage”,⁸⁰ that is, presumably, for cutting half-mortises along the joint, among other things. Next, Euthynomos of Athens and Sannion of Paros were to set up the Pentelic orthostates. The complexity of the operation seems to be reflected in the somewhat convoluted writing: “for Euthynomos and Sannion for the working and assemblage of the Pentelic stones, whereby they have already taken over the black stones worked for the assemblage, in order to assemble them”.⁸¹ Interestingly, the Argive and Pentelic blocks were assembled by means of Π-shaped clamps, which were still very uncommon in Athens (where T-shaped clamps were

72 HASENOHR and SAGNIER 2009.

73 LAUFER 2021, 118-119.

74 ROUX 1987, 131.

75 JACQUEMIN and LAROCHE 1992, 254, n. 71.

76 WEBER 2013, 49.

77 MERCURI 2004, 64, n. 19.

78 KORRES 2022, 77.

79 IG IV², 1, 103 = PRIGNITZ 2014, n° 2.

80 PRIGNITZ 2014, n° 2, l. 187-188: “Χρέμωνι τῶν μελάνων λίθων ἐργασίας εἰς σύνθεσιν”.

81 PRIGNITZ 2014, n° 2, l. 190-192: “Εὐθύνωμι καὶ Σαννίωνι ἐργασίας καὶ συνθέσιος τῶν λίθων τῶν Πεντελικῶν, τοὺς δὲ μέλανας λίθους λαβόντες ἐργασμένους εἰς σύνθεσιν συνθεῖναι”.

preferred) at the time but were already known by Argive stonemasons.⁸² While Chremon, on the one hand, and Euthynomos and Sannion, on the other hand, were paid under separate contracts, which is why they appear in distinct entries in the inscription, the phrasing, combined with the archaeological evidence, suggests that an active collaboration was necessary to assemble the blocks. What is more, and this is also of interest for our present case, this case illustrates, in a very pragmatic fashion, how innovative techniques (here the II-shaped clamps) could be transmitted.

The Dedication of Philip III and Alexander IV in Samothrace (Eastern Hill; late 4th century) can serve as another example. The *krepis*, the back and the sides were made of Thasian marble, while the façade was in Pentelic.⁸³ Accordingly, two distinct teams of stonemasons, Attic and Thasian, could be identified, each working on a distinct set of material. The shifting, setting and securing techniques are vastly different and consistent with either local or Attic practices.⁸⁴ At least a couple of elements illustrate the practical issues of combining the two materials, which required a certain amount of collaboration between the two teams. First, the antae consist of upright Pentelic slabs that were not interlocked with but rather set up against the Thasian marble walls (except perhaps at the level of the anta capital). However, at least some anta blocks seem to have been clamped to the wall blocks.⁸⁵ Second, the raking sima of the façade was (surprisingly) made of Thasian marble rather than Pentelic. This means that Thasian masons probably dowelled the raking sima to the raking geison, which was made of Pentelic.⁸⁶ Bonna D. Wescoat surmises that a problem with the supply of Pentelic must have occurred, prompting this solution.⁸⁷ Here again, and even if the interconnection of the various materials was apparently far from perfect from a structural standpoint, some collaboration must have taken place that is still visible in the architectural remains.

Turning now to the Stoa of Attalos, the appointment of a Pergamenian architect for its construction, or

at the very least someone trained in the Pergamenian ways, is in little doubt. This is supported by a number of distinctively Pergamenian features of the building, both in general and in detail, namely the double-storey format, the Ionic double half-columns on the façade of the upper floor, the palm capitals in the interior of the same floor, and the so-called “Pergamenian” console geison.⁸⁸ Some have suggested that the same architect supervised the construction of both the Stoa of Eumenes II and that of Attalos II.⁸⁹ Although the similarities between the two buildings,⁹⁰ as well as their chronological proximity, do not prove this hypothesis, they could speak in its favour. However, from a strictly technical point of view, it is much more difficult to assert the involvement of Pergamenian stonemasons in the construction of the Stoa of Attalos II.⁹¹ To begin with, the fact that only local materials were used suggests that local stonemasons were hired. Furthermore, no assembly marks have been found⁹² that could establish the involvement of Pergamenian builders, as is the case with the Proconnesian parts of the Stoa of Eumenes II. Although it is possible that the builders used painted marks,⁹³ this means at the very least that a different procedure was used. Kohl noted similarities with the Stoa of Eumenes and other Pergamenian buildings regarding the masonry of the foundations and of the elevation⁹⁴ but this might be attributable primarily to the architect. Regarding the geisa of the Doric entablature, while the profile of the geison of the Stoa of Attalos is similar overall to that of the Stoa of Eumenes, the slope of its mutule is much more horizontal in comparison.⁹⁵ Furthermore, it presents a hawksbeak with cyma reversa running on top of the geison’s face, where one finds instead (from top to bottom) a simple cyma reversa, a set back and a fillet at the Stoa of Eumenes.⁹⁶ Such a hawksbeak is otherwise unattested in Attalid

82 VANDEN BROECK-PARANT forthcoming.

83 WESCOAT 2018, 84.

84 WESCOAT 2018, 151.

85 WESCOAT 2018, 118–119.

86 WESCOAT 2018, 115, 151.

87 WESCOAT 2018, 173.

88 LAUFER 2021, 61.

89 COULTON 1976, 69.

90 One must add to the above-listed elements, a specific type of base for the Ionic double half-columns, found in the Stoa of Eumenes and in that of Attalos, as well as among the architectural elements belonging to the third Athenian stoa of Pergamenian style discussed above (LAUFER 2021, 219–220).

91 SCHAAF 1992, 99.

92 KORRES 1983, 205.

93 WEBER 2013, 49.

94 KOHL 1995, 268; 2001, 252.

95 KORRES 2022, 69.

96 KORRES 2022, 69, fig. 1.

architecture, and Kohl interpreted it as an Athenian feature, which is indeed found in several buildings of the Agora.⁹⁷

Finally, some features hitherto believed to be typically Pergamenian might in fact fall under more general trends of Hellenistic architecture. Thus, claims about the similarities of “clamps, dowels and craftsmanship”⁹⁸ between the roof geisa of the two stoas might be correct to some extent, but one would have to demonstrate similarities that are not anyway shared in the wider Greek world at that period. Π-shaped clamps, for instance, are all too normal in the Hellenistic period⁹⁹ and not specific to Attalid architecture. A much more detailed analysis of the clamping techniques used at that period would be necessary to substantiate such a claim. For the same reasons, the attribution of the Metroon to the Attalids has been called into question.¹⁰⁰ Similarly, the broader fillet between the Doric flutes of both stoas is not a Pergamenian trait due (originally) to the difficulty to work andesite,¹⁰¹ but rather a general trend in Hellenistic architecture.¹⁰²

To sum up, subject to further analyses of the construction techniques, the evidence does not specifically point toward the involvement of Pergamenian stonemasons in the construction of the Stoa of Attalos, contrary to what can be observed at the Stoa of Eumenes. The absence of mason’s marks and the exclusive use of local material (and, to a lesser extent, details of the geison’s profile) rather suggest that local workmen were hired. Kohl appraises the question as follows: “[l]e portique d’Eumène est en effet un édifice importé, non seulement du point de vue du matériau de construction, mais aussi en ce qui concerne le décor. Les éléments micrasiatiques sont prépondérants. Le portique d’Attale, avec les marbres du Pentélique et de l’Hymette, avec la pierre du Pirée et les citations de formes locales, est de tendance plus atticiste”.¹⁰³ In terms of employment, however, the situation does not need to have been as clear-cut; as already suggested, it is possible that the same Pergamenian architect supervised the works

at both stoas, and similarly it is not impossible that some of the Pergamenian workmen, who worked on the construction of the Stoa of Eumenes, were then hired again for the Stoa of Attalos, where they worked side by side with Attic stonemasons.

Such collaborative interaction was probably reflected too at a higher, decisional level. Agency has often been implicitly denied to the Athenians when discussing Attalid dedications in their own town. It should be stressed, however, that the fact that the Attalid kings were the main financial contributors (if not the only ones) of these projects does not necessarily imply that they made unilateral decisions in terms of town planning, architectural design, and construction. In fact, it is more likely that projects such as the Pergamenian stoas of Athens were the results of negotiations between the Athenians and the Attalid kings, and it is not inconceivable that the Athenians, having good relations with the Attalids and knowing their eagerness to show their generosity towards the city, opportunistically took the first step by asking for their support.¹⁰⁴ This is suggested, for the Stoa of Attalos, by its successive changes of plan during construction,¹⁰⁵ as well as by the fact that it seems to have been part of a larger town planning project on the Agora, which also included the South Stoa II, the Middle Stoa, the East Building, and the Metroon.¹⁰⁶ Arguably, the stoa on the south slope of the Acropolis gave Eumenes II an opportunity to model the urban layout of Athens on that of Pergamon, thus reinforcing the links between the two cities.¹⁰⁷ However, the chronological sequence between the Stoa of Eumenes and the Theatre Terrace programme in Pergamon is not secure.¹⁰⁸ In any event, an initiative on the part of the Athenians cannot be ruled out,¹⁰⁹ especially if, as suggested by Luca Mercuri, the area had already been cleared of its private houses by the late 4th or early 3rd centuries in favour of a public open space. Such a scenario is supported by the archaeological finds in the area south of the Acropolis and eliminates the need to imagine that the clearance happened specifically for Eumenes’

97 KOHL 2001, 248.

98 DINSMOOR 1910, 482, n.2, quoted by KORRES 2022, 72.

99 MARTIN 1965, 273.

100 KOHL 2001, 255, n. 80. See also LAUFER 2021, 269.

101 See THOMPSON and WYCHERLEY 1972.

102 KOHL 2001, 247, n. 44.

103 KOHL 2001, 261.

104 LAUFER 2021, 75-77.

105 TRAVLOS 1971, 505.

106 DICKENSON 2016, 185.

107 LAUFER 2021, 127-128.

108 SCHMIDT-DOUNAS 2000, 64-65, 228-229.

109 LAUFER 2021, 128.

stoa, which would have been highly unpopular and thus contrary to the king's intentions.¹¹⁰

In conclusion, it is important to stress that the processes by which Pergamenian forms were adopted (and adapted) in foreign contexts were by no means unilateral, i.e. with proactive Attalid kings and Pergamenian architects and builders, on the one hand, and passive Athenians on the other.

4. The logistics and economics of construction

The employment of Pergamenian workmen for the Stoa of Eumenes, and perhaps for the Stoa of Attalos, had economic implications which are inextricably linked to the use of Proconnesian rather than local marble. It has been suggested that the extraction and shipping of this marble were intended by Eumenes II as a prestigious display of power.¹¹¹ While it certainly had a positive impact on his image as a powerful and generous king, I believe that it was a set of constraints, rather than a deliberate policy, that dictated this strategy.

Little is known about the regime under which the Attalids exploited the marble from Proconnesos, but it must have been advantageous, judging by their excellent relationship, throughout the 3rd and the 2nd centuries, with the city of Cyzicus, who owned the island since the 4th century B.C.¹¹² The exploitation of the Pentelic quarries might have come, in theory, at a cost, but it is doubtful that the Athenians would have asked for such a fee, when the king was being so generous to them. Therefore cost was probably not the issue, all the more so as Eumenes II certainly would have had the means to resort to Pentelic marble. Attalos II certainly did, as he used it for his own Athenian stoa.

The resort to Proconnesian marble had probably more to do, in fact, with logistics rather than just costs. During the 3rd century B.C., the Pentelic quarries were mostly dormant and they only witnessed a spectacular revival in the course of the 2nd century B.C. with the resumption of the works on the Olym-

pieion under the aegis of Antiochos IV.¹¹³ It is not known exactly when the works resumed in Athens, although it is generally assumed that they started shortly after Antiochos IV accessed the throne in 175 B.C.,¹¹⁴ since the temple appears to have been almost finished at the time of his death in 164 B.C.¹¹⁵ Whatever the duration of the works at the Olympieion, it is quite possible that they overlapped, in whole or in part, with the construction of the Stoa of Eumenes (see above). With Antiochos's programme, the Pentelic quarries, which had been somewhat neglected until then, must have been suddenly working at full capacity, with little to no room for another massive extraction at the same time. The same could be said of the local labourers in general, who would have been busy with the construction of the temple. For Eumenes II, the easiest solution was to turn to another white marble source, which happened to be already in exploitation with all the necessary infrastructure and a privileged access for the Attalids, and to a Pergamenian workforce. Such a scenario does not contradict, but rather exemplifies the atmosphere of friendly competition between the Attalids and Antiochos for the most generous patron of Athens during the decade of the Seleucid king's reign.¹¹⁶

Another possibility, of course, is that the Stoa of Eumenes was not built at the same time as the construction works at the Olympieion. It could have been built before, i.e. c. 180-175 B.C., in which case Eumenes II might have found the Pentelic quarries to be inoperative or working at a reduced scale, with no sufficient infrastructure and workforce to sustain a large project like that of the stoa. Rather than investing in the resumption of activities in Attica, which might have meant combing the territory for skilled quarrymen and stonemasons, he would have turned to his own, fully functioning white marble quarries and workforce. The Proconnesos quarries, which had been exploited since the 6th century B.C. at least¹¹⁷ and had been used for the structure of the Mausoleum of Halikarnassos in the 4th century B.C.,¹¹⁸ were certainly in full swing at the time of the construction of the Stoa of Eumenes in Athens.

110 MERCURI 2004, 64-68.

111 LAUFER 2021, 67, 268.

112 LAUFER 2021, 90, n. 806. On the absorption of Proconnesos by Cyzicus, see Paus. 8.46.4.

113 BERNARD and PIKE 2015, 454.

114 MITTAG 2006, 116-117.

115 TÖLLE-KASTENBEIN 1994, 145-148.

116 HABICHT 1990, 569.

117 Vitruvius, *De Arch.* 10.2.15.

118 Vitruvius, *De Arch.* 2.8.10; Pliny, *HN* 32.15.1.

Proconnesian marble was used throughout the Hellenistic period and is found in several monuments of Pergamon itself during the 3rd century, as well as during the 2nd century B.C., notably in the Great Altar and in the stoas and propylon of the Sanctuary of Athena, both likely built during the reign of Eumenes II himself.¹¹⁹

In a third scenario, the stoa was instead built after 164 B.C. and during the interruption of the construction of the Olympieion. The Pentelic quarries could have then been pre-empted for other projects in Athens (such as the Metroon, the Tower of the Winds or the Little Attalid monument on the Acropolis) and abroad (the Propylaia of the Athenians on Delos, three marble temples in Rome),¹²⁰ but whatever the case these undertakings could hardly have matched the scale of the temple of Zeus, leaving perhaps enough room, in theory, for a project like the Stoa of Eumenes.

One must then consider the suggestion by Korres that Eumenes's decision to resort to Proconnesian marble was motivated by purely economic reasons, i.e. with the aim of keeping as much capital as possible within the Pergamenian realm and stimulating the local economy, in a manner perhaps reminiscent of what Pericles had promoted in his own time for Athens, according to Plutarch.¹²¹ This economic argument is supported by the fact that another significant part of the materials was likely quarried in Aigina, which was an Attalid possession at the time (see above) and, if anything, it speaks in favour of the employment of Pergamenian craftsmen in Athens. The dispatch of construction workers could easily be framed as part of the gift (which indeed it was), similar to the repair of the theatre of Delphi discussed above. Viewed from this angle, the use of

local resources and the likely employment of local craftsmen for the construction of the Stoa of Attalos could be seen not as an argument against the economic factor,¹²² but rather as the result of a firmer negotiation on the part of the Athenians with Attalos II, for which a series of potential indications have already been noted. The two arguments – logistical and economic – are thus not necessarily mutually exclusive: at the time of the construction of the Stoa of Attalos, the Athenians would have had more leverage in the negotiation if the Pentelic quarries were again available for exploitation. Furthermore, the employment of Pergamenian (rather than local) craftsmen must have been less easily justifiable than before since Athenian stonemasons and craftsmen were now better acquainted with Pergamenian architecture, drawing on the experience of the construction of the Stoa of Eumenes. The conditions in which this experience took place can be better assessed by looking at the labour force involved in these projects at the scale of the builders themselves.

5. Quantifying labour at the Stoa of Eumenes

Labour cost estimations can provide a more accurate picture of the socio-economic impact of the construction of the Attalid stoas in Athens. The estimation of the number of Pergamenian craftsmen involved in the construction of the Stoa of Eumenes, in particular, allows a fresh view on the economic arguments for their employment, as well as on the concrete implications of the accommodation of a large crew of Pergamenian stonemasons in Athens, both in terms of organisation and knowledge transfer.

Labour cost estimations, also sometimes referred to as “architectural energetics”, have been used in the context of Mediterranean antiquity for more than 25 years¹²³ and have been, since then, both praised as a convenient tool with a variety of applications, and criticised as encouraging an illusion of accuracy and objectivity. In their most basic form, they consist in measuring the size and volume of materials used in a given construction and, based on that information, to estimate the cost of labour (expressed in

119 HEILMEYER 2007, 137.

120 BERNARD and PIKE 2015, 454, n. 5.

121 Plut., *Life of Pericles* 12.1-7; see KORRES 1983, 205-206. SCHAAF (1992, 90) discarded Korres's suggestion on the grounds that Pergamenian stonemasons were probably not in demand of employment under the reign of Eumenes II, which saw the largest development of Pergamon, and that the king had proved to be extremely generous in other occasions. I think that both arguments miss the point. First, it was not about keeping the craftsmen busy, but rather about supporting the Pergamenian economy. Second, Eumenes II would have been far from appearing ungenerous in this case, since he was providing both the materials and the craftsmen.

122 LAUFER 2021, 268.

123 A seminal work is that of DELAINE 1997. Lately, see BARKER ET AL. 2023.

person-days or person-hours) needed for each (or a specific) task of the *chaîne opératoire* pertaining to each material. This cost is assessed by referring to and expanding on known labour figures in similar contexts, taking into account a variety of factors (type of material, tools, skills, terrain, etc.) that are relevant to the question at hand. Labour cost estimations do not answer anything in themselves and always need to be interpreted. Nor are they required to be as accurate as possible; rather, they should provide broad, but realistic figures for the specific question that needs to be answered.¹²⁴

The question, in this case, is the following: can we estimate the number of men sent from Pergamon to the construction site in Athens? Unfortunately, we have very few figures from ancient sources that we could use as comparison. In a famous passage, Diodorus mentions that no less than 60,000 men were hired for the construction of the city walls of Epipolai in Sicily, which only took 20 days.¹²⁵ However, most of these men were unskilled labourers recruited among “peasants from the countryside”, who were placed under the responsibility of master builders (one per stade) and masons (one per *plethron*). Since the wall was 30 stades in length according to Diodorus, about 30 master builders and 180 masons must have been hired, i.e. 210 skilled builders. While the construction of a defensive wall can hardly be compared to the erection of more refined buildings such as temples or stoas, what interests us here is the number of active skilled workers in a given region at a given time. One can assume that in the case of Epipolai, not all 210 men were actually free and available at the time of their requisition, and that the emergency of the situation must have justified that they put their current work on hold. For non-emergency works such as the Stoa of Eumenes in Athens, it is less likely that skilled masons would have been required to interrupt their work. That being said, since most monumental works were then sponsored by the king himself, he could have decided to concentrate his workforce in Athens for a limited time, if he deemed it necessary.

The Erechtheion accounts record more than 110 men for the last stages of the construction only,¹²⁶ so the total number of workers must have been much higher. Alison Burford estimated that about 175 men must have been employed on the construction of the temple of Asklepios in Epidauros in the 4th century B.C., including quarrying and excluding transport.¹²⁷ For comparative purposes she mentions modern restoration works, such as the reconstruction of the Stoa of Attalos by the ASCSA between 1953 and 1956. The latter is indeed pertinent because the stoa was rebuilt at the same scale as the original building and using the same marble (Hymettos and Pentelic). Burford noted that 85 men were “employed continuously” for three years, a figure that she gathered from people directly involved in the project, i.e. Homer Thompson, Lucy Tallcott and Theodoros Mastores and his sons.¹²⁸ In a booklet about “Ancient Athenian Building Methods”, however, John Camp says that “the modern reconstruction of the Stoa of Attalos needed 198 men”.¹²⁹ These two figures are not necessarily contradictory if we assume that the former included only skilled workers and the latter, all workers regardless of their skill level. Craig A. Mauzy speaks of 150 workmen, “including 50 master masons, 20 carpenters, and 5 steelworkers”.¹³⁰ In any event, the core of the restored building is made of concrete,¹³¹ which makes such a global comparison difficult.

Fortunately, the specific number of marble workers was also documented. In a letter to Charles Morgan on December 16, 1954, the architect W. Stuart Thompson said that “60 marble cutters and setters” were at work at the time but that they were “unable to increase this force”.¹³² This concern was echoed a few years later in a letter by Homer A. Thompson in response to Alison Burford, who was enquiring about the labour force: “I do think you are right in emphasising the vital part played by skilled labour. We became painfully conscious of this on our work on the Stoa. Even to build up a force of 75 marble

124 For criticisms and answers to those criticisms, see BRYSSBAERT and PAKKANEN 2021; see also BARKER and RUSSELL 2012.

125 Diod. Sic. 14.18.3-8.

126 CAMP and DINSMOOR 1984, 3; FEYEL (2006, 31-57) counts 123 of them in his catalogue of craftsmen.

127 BURFORD 1969, 246-251.

128 BURFORD 1969, 246.

129 CAMP and DINSMOOR 1984, 3.

130 MAUZY 2006, 42.

131 MAUZY 2006, 56-59.

132 American School of Classical Studies at Athens, Archives, Homer A. Thompson Papers, Box 110, folder 4.

workers we had to comb the whole country including the islands”.¹³³ This serves to remind us that such difficulties in hiring skilled labourers must have existed in antiquity as well, probably on a regular basis. The hiring of foreign contractors in 4th-century Epidauros and Delphi, as well as in Hellenistic Delos, should (also) be seen in this light. While the post-WWII context likely made it even more difficult to find a skilled labour force to work on the restored stoa, it should be emphasised that the building was completed within a reasonable timeframe, and despite numerous delays, with only 60 to 75 marble workers.

These figures do not allow us to make more than educated guesses regarding the number of Pergamenian workmen involved in the construction of the Stoa of Eumenes in Athens. This is all the more complicated in that we do not know how many (or, indeed, if) Athenian marble workers were hired to work alongside their Pergamenian colleagues. Nonetheless, even an educated guess can be useful to get a sense of the organisation of the working site. Considering that the Stoa of Eumenes is almost a third longer than the Stoa of Attalos while presenting a similar arrangement of the façade and inner colonnades of similar dimensions, a working hypothesis of about 100 skilled stonemasons seems reasonable.

Some labour figures have been recorded for the carving of architectural elements during the restoration of the Stoa of Attalos in the 1950s. This includes Doric and Ionic capitals (either single or double), which, as far as we can tell, were carved with traditional tooling. It took 45 person-days for the carving of an Ionic capital, while only 18 person-days were required for a Doric capital. These figures, already published by Mauzy,¹³⁴ can be found in the Homer A. Thompson Papers in an unsigned, one-page document, and with no additional information except that it is dated to July 9, 1956.¹³⁵ The figures were thus collected towards the very end of the reconstruction, i.e. with the experience of works recently done, which lends them more credit. This document does not specify how many hours is considered a

normal working day, but letters from 1955 allude to the fact that some stonemasons sometimes worked two (or two and a half) extra hours per day, on top of the “normal” eight hours.¹³⁶ Therefore, it must have varied, and an average of nine hours of work per day is probably not too far off. Giovanni Pegoretti, a 19th-century author of a manual frequently used in labour costs studies for its labour-rate estimation tables, gives the rate of 460.80 person-hours for the carving of an Ionic capital in white marble of medium hardness, which is remarkably consistent with the 45 person-days recorded at the Stoa of Attalos.¹³⁷

Given the strong similarity of the Ionic and Doric capitals of both stoas, the rates recorded for the carving of these elements during the reconstruction of the Stoa of Attalos can be readily applied to labour rates estimations of the Stoa of Eumenes. The calculations are summarised in **Table 1** below.¹³⁸

With a total of about 5,500 person-days, and assuming as a working hypothesis 100 stonemasons, the Doric and Ionic capitals alone account for 55 days of work, almost two months. This does not account for all the other elements made of Proconnesian marble, but gives a good indication of a minimum amount of time that the Pergamenian stonemasons would have stayed in Athens.

Another proxy through which we can look at the duration of the stay of the Pergamenian stonemasons is the fluting of the columns, which was a tedious and costly task. For Doric marble columns, a somewhat contentious figure of about five person-days per square metre can be suggested on the basis of labour figures from the reconstruction of the Stoa

133 Homer A. Thompson to Alison Burford, January 26, 1966 (ASCSA, Homer Thompson Papers, Series IA, Box 7, folder 3).

134 MAUZY 2006, 51.

135 ASCSA Archives, Homer A. Thompson Papers, Box 111, folder 3.

136 W. Stuart Thompson to Charles Morgan, August 26, 1955; Manuel A. Tavarez to Homer A. Thompson, September 6, 1955 (ASCSA Archives, Homer A. Thompson Papers, Box 111, folder 1). However, it is worth noting that the extra hours system does not seem to have worked well because the workers would “pace themselves”. The contract system seems to have been more efficient, especially when the contractors got paid extra, if delivered early (Manuel A. Tavarez to W. Stuart Thompson, October 7, 1955; ASCSA Archives, Homer A. Thompson Papers, Box 111, folder 1).

137 BARKER and RUSSELL 2012, 93; see PEGORETTI 1843, 269.

138 These do not take into account the possible reduction of the number of columns in the façade (see above).

	Person-days per element	Number of elements	TOTAL of person-days
Ionic capital (interior, ground floor)	45	31	1,395
Ionic capital for double-half columns (exterior, first floor)	45	65	2,925
Doric capital (exterior, ground floor)	18	65	1,170
TOTAL			5,490

of Attalos.¹³⁹ It can be verified, however, on the basis of prices and wages. The agreed price for the fluting of one Doric column was \$300¹⁴⁰ and a daily wage of about \$7.5 per day can be assumed at the time of the fluting in September-October 1955.¹⁴¹ Given that

only the upper two-thirds of each column of the stoa were fluted (7.65 m²), a figure of about 5 person-days per m² can be deduced. With adequate scaffolding, up to four people could easily work on the fluting of the same column, as shown on a picture taken during the restoration of the Stoa of Attalos (Fig. 7). In early September 1955, 32 men were engaged on fluting the columns,¹⁴² meaning that eight columns could be worked on simultaneously. Assuming the same rate and, for the sake of the estimation, an equal number and distribution of workers, it would have taken about 85 days to complete the fluting of the Doric columns of the Stoa of Eumenes, or about three months.

Again in this case, it should not be assumed that all of the workmen were Pergamenian. If not, it would have only stimulated even more the interactions between Athenian and Pergamenian stonecutters and opportunities for knowledge and skill transfer. While the degree of collaboration between local and foreign skilled workmen is difficult to assess, what interests us here is the (estimated) minimum amount of time that the latter would have had to spend in Athens, exposing Athenian stonecutters to new forms and techniques. Some of the Perga-

139 BURFORD (1969, 246) says that the fluting of one Doric column represented 78 person-days, with four men working at the same time. It is clear from her other calculations that she did not mean that it took four workmen 78 days to complete the task but rather that it would have taken them about 19 days and a half. Indeed, she estimated that it took about 1.2 person-days per m² to flute the poros Doric columns of the temple of Asklepios in Epidauros (1969, 250), an estimation based in part on the fact that it takes “five times as long to work Pentelic marble as it does to work poros limestone” (1969, 247; this information was likely found in STANIER 1953, 71). This is roughly (but not exactly) consistent with the value one gets when dividing 78 person-days by 16.65 m², which was the “area fluted” according to Burford. However this value is puzzling because it does not actually correspond to the total surface of a Doric column of the stoa, which is about 11.48 m², with only two-thirds of that area fluted, or 7.65 m² (as noted by BARKER and RUSSELL 2012, 91, n. 35). As for THOMPSON (1956, 68), he notes that “[t]he first column required c. 76 person-days of labour for the fluting alone” but that “with experience the time and cost per unit have been somewhat reduced”. If one wanted to reach roughly the same value per m² as Burford, the labour cost would have needed to be “reduced” from 76 to about 45 person-days, which is a substantial but not inconceivable improvement. Note, however, that it would still be almost twice as much as the 26.5 person-days figure that can be estimated based on the rates given by Pegoretti for a white marble of medium hardness (BARKER and RUSSELL 2012, 92).

140 Manuel A. Tavarez to W. Stuart Thompson, October 7, 1955 (ASCSA Archives, Homer A. Thompson Papers, Box 111, folder 1).

141 In 1951, the wages ranged from \$2.50 a day for labourers to \$10 for top technicians and supervisors (John L. Caskey to Charles Morgan, August 5, 1951; ASCSA Archives, Homer A. Thompson Papers, Box 109, folder

5). In the same period, “quarrymen and technicians who cut and set the marble [were] paid the equivalent of \$5 or \$6 per day” (Homer A. Thompson to Practor, August 28, 1951; ASCSA Archives, Homer A. Thompson Papers, Box 109, folder 5). In the following years, however, a general increase of labour and material costs was noted, with a 20% increase for the period between July 1, 1953 and July 1, 1954 alone (ASCSA Archives, Homer A. Thompson Papers, Box 110, folder 3).

142 Manuel A. Tavarez to Homer A. Thompson, September 6, 1955 (ASCSA Archives, Homer A. Thompson Papers, Box 111, folder 1).



Fig. 7. Fluting the first Doric column during the restoration of the Stoa of Attalos (ASCSA, Agora Excavations).

menian workers might have then transitioned to the Stoa of Attalos, which, as we have seen, was built quite shortly (perhaps very shortly) after the Stoa of Eumenes. In any event, and even if only Athenian workmen were employed on the Stoa of Attalos, it is possible, if not likely, that some of them at least had been employed on the Stoa of Eumenes where they spent some time collaborating with Pergamenian colleagues. On-site knowledge transfer is a blind spot in the archaeology of construction,¹⁴³ but the idea that various teams of craftsmen with different habits and traditions shared and learned new skills by active collaboration does not seem inconceivable, including the present case. Thus, by the time the Stoa of Attalos started to be built, typical Pergamenian shapes and techniques must have been integrated into the repertoire of Athenian craftsmen.

6. Conclusion: the concrete mechanisms of the architectural “koine”

In this paper, I have tried to show the potential of addressing the “koine” processes (as defined in the introduction) in ancient architecture not just through the analysis of shapes and design, but also from a socio-economic perspective, looking specifically at labour and resources. With such a material approach, one can hope to reveal the concrete mechanisms underlying the processes by which skills, techniques, shapes, and designs were transferred and adopted.

The Attalid stoas of Athens seem like an ideal case study, especially because the combination of techniques and materials from various provenances in the same building (the Stoa of Eumenes) allows one to address the question of the collaboration between individuals, while the reconstruction of the building on the basis of the archaeological remains allows an estimation of the scale of this collaboration. Unfortunately, the preservation of the remains does not permit one to go much further than what is presented here, although it should be possible to suggest further estimations for other specific architectural elements of the stoa.

Nevertheless, this approach would be worth being more systematically applied to the study of the transmission of shapes and techniques among ancient builders, especially in cases where we are sufficiently informed about the nature and provenance of the materials, the techniques used in various parts of a building, and the background of the workmen employed in the construction. By providing a concrete basis for discussion, it makes it possible to identify the dynamic processes that we call (architectural) Hellenistic “koine”.

¹⁴³ With some exceptions, see for example DESSALES 2011.

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