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On Doubling the Square and Other Phenomena

ABSTRACT: *Gnomonice*, the construction of clocks, is the topic of Book 9 of Vitruvius's ten books on architecture. This essay examines his inclusion of gnomonics as a "part" of architecture in terms of the triumphalist context that shaped the composition of *De architectura*, which Vitruvius wrote for Augustus Caesar in the early 20's BCE, arguing that its author's consistent appeal to Greek paradigms such as the origin of the Corinthian capital and Plato's method for doubling the square is meant to enhance the imperial project by dignifying its culture of conquest with credentials appropriated from the Hellenic world Rome had annexed to its own a century earlier.

KEYWORDS: Vitruvius, gnomonics, Caryatids, Corinthian order, Corinth, Plato, Pythagoras, Aristotle

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Book 9 of *De architectura,* the ten books on architecture Vitruvius presented to Augustus Caesar around 25 BCE is about *gnomonice*, the construction of clocks. *Gnomonice*, he writes, is the second of the three parts of architecture (Vitr. I, 3, 1). The other two are building (*aedificatio:* Books 1-7) and machinery (*machinatio:* Book 10), which includes the machinery of war. Book 8 is on water, included in *De architectura*, though not a "part" of architecture as Vitruvius defines it.

A preface addressed to the Emperor, his dedicatee, introduces each of the ten books. The preface to Book 9 is an encomium on the importance of learning, for which Vitruvius has been an advocate from the outset, beginning with the opening chapter of Book 1 and its directive that a properly-educated architect acquire familiarity with no fewer than nine different disciplines, ranging from geometry and music to history, philosophy and astronomy—*caeli rationes*, in Latin, the "order of the heavens" (Vitr. I, 1, 3)[1] In his ninth preface, this general advocacy narrows to focus on empirical knowledge whose benefits are specific and, above all useful: knowledge, Vitruvius declares, that underwrites good government as the very bedrock of civil society (Vitr. IX, pref. 2.). In an account whose subtext is a clearly a bid to be considered one of them, Vitruvius asserts that the learned men who are the source of such knowledge deserve the very highest honours. Sages whose writings render them immortal are worthier by far of palms and crowns than Olympic athletes whose fame is as transient as their short-lived bodily strength. So great is their importance to civilisation, he claims, that they even merit the accolade of a triumph, the martial ritual that consecrated Rome's victorious generals in a spectacular parade of warriors, weapons, prisoners and plunder, culminating in the triumphator's ascent to the Temple of Jupiter on the Capitol. Augustus's extravagant triple triumph of 29 BCE, referred to in the preface to Book 1, is part of the background here.[2] Another allusion, to the deification of Augustus's adoptive father Julius Caesar, also referenced in the first preface, surfaces in Vitruvius's insistence that, like Caesar, his intellectual triumphators have earned nothing less than

[1] His emphasis on the importance of learning underpins the view that Vitruvius made architecture liberal art. See F. Brown, "Vitruvius and the Liberal Art of Architecture," *The Bucknell Review*, XI, 4, 1963, pp. 99–107.

[2] Vitr. I, pref, 1: "When your divine mind and power Imperator Caesar were seizing command of the world [...] and citizens were glorying in your triumph and victory (*triumpho victoriaque tua cives gloriarentur*) . . ." On the triple triumph, *inter alia* F. Hickson "Augustus 'Triumphator': Manipulation of the Triumphal Theme in the Political Program of Augustus," *Latomus*, L, 1, 1991, pp. 124–138.

the ultimate reward of "a seat among the gods."[3] Such references may tend to elude modern readers, but to Vitruvius's Roman contemporaries, his addressee in particular, they would have been obvious. So too, in the triumphal period following the brutal civil war which culminated in Augustus Caesar's emergence as sole ruler of the Roman world, would their rhetorical intent.

In this context, who in fact *were* in fact the men Vitruvius credits with the gift of civilisation and good government? Learned men who, like Pythagoras, Democritus, Plato and Aristotle are the source of useful knowledge he claims as the foundation of "the civilised ways, laws and impartial justice without which no city can be safe or whole?" (Vitr. IX, .pref. 2)[4] Or Roman conquerors who justified territorial ambition in precisely those terms? Vitruvius could not have helped sharing their belief in the civilising mission of conquest—as a citizen of Rome, of course, but more specifically and with firm professional commitment as a designer of siege machinery attached to Julius Caesar during the latter's conquest of Gaul in the 50's BCE.

And if learned men were indeed to be honoured with triumphs as Vitruvius suggests, what prisoners, weapons, trophies and looted treasure could possibly figure in such a celebration? There were rules for triumphs and one, a defining constituent that allowed for no exceptions, was the triumphant general's entry into the city at the head of his undefeated troops.[5] Another required that a triumph-worthy conquest count at least 5,000 enemies killed. How, by that token, would you evaluate an intellectual's victory, identify his enemies, count their corpses? What kind of warriors could conceivably be mustered to march with the victorious intellectual as he entered Rome in triumph? These questions are rhetorical, of course, meant only to heighten how absurd proposing the award of a triumph for intellectual achievement becomes if taken literally. But Vitruvius does not mean to be taken literally. Nor, in my view, is his intention simply metaphorical, with "triumph" a figure of speech

[3] Vitr. IX, pref. 3: *inter deorum sedes dedicandos iudicari*. Vitruvius refers to the deified Caesar's "seat among the gods" in identical terms at I, pref. 2.

[4] All translations of Vitruvius are my own. The Latin text used is that published in in *Vitruve: de l'architecture*, livres I-X, various eds,. Presses universitaires de France, Paris, 1969-2009.

[5] On the rules for triumphs, see chapter 6 in M. Beard, *The Roman Triumph*, Harvard University Press, Cambridge, MA / London, 2009, pp. 187–218.

intended to frame, in pointedly Roman terms, the exceptional degree of recognition he thinks is owed to men of learning.

Rome's was a warrior culture, a culture of conquest consecrated in the ritual of the Roman triumph. Vitruvius was a sustaining member of that culture whose terms were bound to dictate his view of how education was to be valued just as inescapably as economic terms now dictate the value placed on education by our own culture's sustaining members. Where the current mantra is that learning is important because—or if—it leads to earning, for Vitruvius learning was important because it underwrote Rome's God-given right to rule the world.

His adherence to imperial norms and his fealty to the Emperor for whom he wrote are evident from the outset. "When your divine mind and power, Imperator Caesar, were seizing command of the word and all your enemies had been crushed by your invincible *virtus*" he writes at the beginning of his first preface, firmly anchoring his treatise in the triumphal period of the early 20's BCE already alluded to (Vitr. I, pref. 1). The military frame of reference, if rarely as clamorously foregrounded as this, remains constant.

At the start of Book I, in his chapter on the education of the architect, Vitruvius famously begins with the declaration that, *architecti scientia,* the knowledge of the architect, is brought into being by *fabrica* and *ratiocinatio*—hands-on practice and the discourse "furnished with many disciplines and various kinds of learning" that explains or "rationalises" the architect's work, accounting for its *raison d'être* (Vitr. I, 1.1).[6] Both are essential. Architects who rely on hands-on practice without the aid of learning, he writes "will never achieve authority equal to their labors, and those who rely only on discourse and learning will appear to have chased a shadow and not the thing itself." But architects who have mastered both, he concludes with a flourish "like men fully armed, will attain their goal speedily and with authority." (Vitr. I, 1, 2)

Vitruvius had served Julius Caesar as a military engineer during Caesar's conquest of Gaul, as already mentioned, but also very possibly during the civil wars and other campaigns that followed, which is to say

[6] For a recent, close reading of this opening, P. Lefas, "Declarative and Tacit Knowledge in Vitruvius: *Disciplina*, *fabrica* and *ratiocinatio* in *De architectura* I, 1," *Khōrein: Journal for Architecture and* Philosophy, I, 1, 2023, pp. 50–62. On the education of the architect, recently (among others) pp. 21–26 in T. Fögen, "*L'architecte engagé:* Education, Morality and Politics in Vitruvius' *De architectura*," *Graecolatina et Orientalie* XXXIX-XL, 2018, pp. 17–46.

for 15 formative years from about 59 BCE, when Vitruvius would have been in his early 20s, up to Caesar's assassination in 44.[7] Whatever the details, there is no contesting that Vitruvius treasured the memory of his attachment to the great general who, thanks principally to his own self-advertising commentaries, was especially known for the speed and authority with which he attained his goals—most famously, the speed of his conquest of Pontus in 47 BCE, summed up in the VENI VIDI VICI inscribed on a *titulus* paraded along with other trophies in the triumph awarded for that conquest, third of the four he celebrated in April 46 BCE.[8] Vitruvius may have been there – as a spectator or even perhaps as a participant. Weapons, including the scorpions and ballistae that were Vitruvius's area of expertise, were a standard feature of the triumphal décor, and Caesar's onetime military engineer may even have contributed as a consultant.

Writing is the first of nine disciplines which, as I noted earlier, are to arm Vitruvius's well-educated architect. "An architect is to know writing (*litteras*) so that he can produce a stronger memory in commentaries," he writes (Vitr. I, 1, 4). *Commentarii* could be any of a variety of written documents, including Vitruvius's own *De architectura* and the sources he worked from, also referred to as commentaries.[9] Julius Caesar too wrote what were (and are) known as commentaries, self-aggrandizing third-person accounts of his military successes in his case, much admired for their purity of style.[10] As a general Caesar worked through messengers; as a writer, from military dispatches, assembling in these commentaries the *litterae* (as they were called) sent to him by legates in the field with those he in turn sent to the Senate at Rome where bulletins of success in battle were greeted as *litterae laureatae*, laureate letters—messengers of victory. The award of a triumph could depend on such reports.[11]

Drawing and geometry are second and third. The fourth is listed history. "Architects," he instructs, "must be able to recall numerous *historiae* because they provide answers to questions that arise concerning the

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[7] B. Baldwin, "The Date, Identity and Career of Vitruvius," *Latomus*, 49, 1990, pp. 425–434. A rough estimate of Vitruvius's dates, which are not known with any accuracy, is 80-20 BCE.

[8] Attachment to Caesar: Vitr. I, pref. 2; *Veni vidi vici*: Suetonius, *Divus Julius*, 37.

[9] I. K. McEwen, *Vitruvius: Writing the Body of Architecture*, MIT Press, Cambridge, MA / London, 2003, pp. 18–31. Vitr. I, 4; I, 1, 12.; VII, pref. 1 and *passim*.

[10] *Bellum Gallicum* on his conquest of Gaul, and *Bellum Civile* on the civil war against Pompey.

[11] I. K. McEwen, *Vitruvius*, p. 23 with references.

reasons for using the many ornaments designers include in their works." Like *histoire* in French, or *storia* in Italian, the Latin *historia* can be a narrative account of past events or a fictional "story."[12] This ambiguity is particularly relevance in the present context.

The ability to recall a great many *historiae* makes Vitruvius himself exemplary in this respect. The large number of historical anecdotes he includes in *De architectura* (28 in all) may be explained, in part, by fear of losing his reader's interest, as he writes to the Emperor in the preface to Book 5, where he recognizes that without narrative enhancement architecture can be a rather unengaging topic (Vitr. V, pref. 1).[13] Many of these stories are unique to Vitruvius, raising the possibility that some, in part or in whole, were his own invention. The first of the 28—one of the two meant to illustrate the prescription that architects must know *historiae* to justify their use of certain ornaments – is a case in point. It is a story of conquest and triumph: the capture and destruction of a city, the slaughter of its male citizens, the enslavement and public humiliation of its women.

As Vitruvius tells it, Carya, the Peloponnesian city in question, was sacked by the Greeks for colluding with the Persian invaders—in the early fifth century BCE, we assume, when Xerxes overran much of Greece. Permanent admonitory chastisement of the Caryans' treachery is why caryatids, statues of widowed Caryan women wearing their finest clothes, are put in the place of columns to support entablatures. "So that they might be led in triumph not just once, but enslaved forever as a lesson." (Vitr. I, 1, 5)

But the Persian advance was arrested at Salamis in 480 BCE, and Xerxes' armies never reached the Peloponnese. Although the genesis of the fifth-century monuments of the Athenian Acropolis can indeed be traced to the Athenian victory at Salamis, the Erechtheion caryatids which used, traditionally, to be taken as the ones referred to in Vitruvius' story were in fact called *korai* by the classical Greeks—"maidens"—not "caryatids."[14]

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[12] C. Lewis and C. Short, *A Latin Dictionary*, Oxford University Press, Oxford, 1962, sv. *historia*.

[13] For a detailed commentary on each of Vitruvius's 28 historical anecdotes, see A. Becchi, "Vitruvius' *Historiae* and the Love of Learning," in I. D. Rowland and S. W. Bell (eds.), *Brill's Companion to the Reception of Vitruvius*, Brill, Leiden, 2024, pp. 627–684. See also B. Koloczek, "Tell me a Curious (His)story. Historical Content in Vitruvius' *De architectura*," *Symbolae Philologorum Graecae et Latinae*, XXII, 1, 2022, pp. 57–78.

[14] The Persians burned down all the buildings on the Athenian Acropolis just before the battle of Salamis. The monuments of the Periclean Acropolis eventually replaced them. On

The term itself originates with Vitruvius as indeed does much of the entire story.[15] But getting the facts right was not Vitruvius's aim. His point was rhetorical, meant to show how closely allied *architecti scientia*, the knowledge of the architect was to Rome's warrior culture, its interests and core values. His second story, also drawn from the Persian wars, reinforces the argument.

At the battle of Platea, the Greeks, led by the Spartans, won their final, decisive victory over the Persian invaders, which Vitruvius says was celebrated "in glorious triumph with spoils and plunder." Triumphs were exclusive to Rome, as already noted—the Greeks did not celebrate them, which makes this a significant misstatement in a story that otherwise adheres more closely to known facts than the previous one, where there is also a misplaced mention of a triumph. A similar one, mentioned earlier, appears in the Greek context of the preface to book 9, where Vitruvius argues for the award of triumphs to men of learning. One way to understand this misattribution is as a form of appropriation which deflects these narratives from their place in the Greek golden age to draw them into the Roman orbit, where indeed the entire Greek world had been orbiting for a hundred years and more by the time Vitruvius wrote.[16]

Continuing his story, Vitruvius goes on to tell how, once back in Sparta, the Spartans used their booty to build what he calls a "Persian portico" as a trophy of their success in battle (Vitr., I, 1, 6). As punishment for the Persians' insolence, the Spartans placed statues of Persian captives wearing their barbarian attire as supports for the roof of this portico which, he writes, was meant to strike terror in the hearts of Sparta's enemies, and stand before its citizens as an *exemplum virtutis*—a paradigm

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the Athenian victory over the Persians at Salamis as the chief and perennial informant of its architecture, J. Hurwit, *The Athenian Acropolis: History, Mythology and Archaeology*, Cambridge, Cambridge University Press, 1999.

[15] The whole caryatid controversy, with citations and bibliography, is reviewed in *Vitruve: de l'architecture livre 1*, P. Fleury (ed. and trans.), Presses universitaires de France, Paris, 1990, pp. 74–80. See also J. Rykwert, *The Dancing Column*, MIT Press, Cambridge, MA / London, 1996, pp. 129–138; D. King, "Figures Supports: Vitruvius' Caryatids and Atlantes," *Queaderni ticinesi di numismatica et antichità classiche*, 26, 1998, pp. 275–305; A.. Lesk, "'*Caryatides probantur inter pauca operum*': Pliny, Vitruvius, and the Semiotics of the Erechtheion Maidens at Rome," *Arethusa*, XL, 1, 2007, pp. 25–42; B. Koloczek, "Tell me a Curious (His)story. Historical Content in Vitruvius' *De architectura*," pp. 63-64.

[16] Claims that the Roman triumph originated in the bacchic *thriambos* of the Greeks date from Vitruvius's day, and are largely spurious (Varro, *De lingua latina*, VI, 68; Diodorus Siculus IV, 5, 21; Arrian, *Anabasis*, VI, 28). See M. Beard, *The Roman Triumph*, pp. 305–320 for a detailed discussion.

of *virtus*, the manly courage to which Romans attributed their success as conquerors.[17] That is why one often finds statues of Persians placed as supports for architraves, he goes on, concluding his case for the importance of knowing *historiae* with the assertion that "there are other stories *of the same kind* (my italics) that architects ought to know." (Vitr. I, 1, 6) Stories of victory and enemies vanquished, you are led to conclude. Stories, in other words, which bracket the culture of conquest with an art that, as Vitruvius would have it, provides triumph with enduring *proof* and justifies in unequivocally Roman terms the value of the entire architectural enterprise.

These two aetiological *historiae* are obviously intended to be taken as paradigmatic, appearing as they do at the beginning of Vitruvius's opening chapter on the fundamentals of architectural education. This is not to say, however, that their intent is to limit the architecture of victory to crass displays of dominance that pillory barbarian captives or put the enslaved wives of slaughtered enemies to permanent public shame. Their intent, I would claim, is to introduce the triumphal role of architecture in general by presenting Persian porticos and caryatid porches as its most unambiguous, basic and least subtle expression.

There were Roman ornaments with similar rhetorical intent that was of far greater sophistication and subtlety that this. Vitruvius "explains" the use of what became the most ubiquitous of such motifs in the elegantly-allegorized aetiology of the Corinthian capital he presents in the opening chapter of Book 4, the second of his two books on temples. His origin story concerning this, the most ornate of the three so-called Greek architectural orders is well known. Like the two *historiae* just discussed, its author situates it in the Greek golden age of the 5th century BCE, and like so many of his stories, it is unique to Vitruvius whose invention it could very well be, despite his claiming it a matter of record. He is also the earliest known writer to give the name "Corinthian" to the foliate acanthus capital that was to become a universally recognizable declaration of Roman world rule. The story goes as follows.

> This, so it is recorded, is how the capital was first invented. A virgin citizen of Corinth was just ripe for marriage when she was overcome

[17] M. McDonnell, *Roman Manliness:* Virtus *and the Roman Republic,* Cambridge University Press, Cambridge / New York, 2006, pp. 142–149; I. K. McEwen, "Virtù-vious: Roman Architecture, Renaissance Virtue," *Cahiers des études anciennes*, 48, 2011, pp. 255–283 (261–262).

> by disease and died. After she was buried, her nurse filled a basket with things ("pocula:" literally, small cups or vessels) that had delighted the virgin when she was alive, brought it to the tomb, and placed it on top. Then, so that the things in the basket would last longer in the open air, she covered it with a tile. As it happened, the basket was placed on the root of an acanthus plant. After a time, in the spring, because of the weight pressing down on the middle of it, the root put forth leaves and small stalks which grew up around the sides of the basket. Because of the weight of the tile, the ends of the stalks were forced by necessity to curl back into volutes at the corners.
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> Then Callimachus, called "Catatexitechnos" by the Athenians because of the refinement and skill of his marble-carving, passed by the tomb, and noticed the basket and how tender the leaves growing up around it were. Delighted by the freshness of this new form, he used it as a model to make columns for the Corinthians, established their symmetries, and assigned the rules for completing works of the Corinthian order. (Vitr., IV, 1, 9-10)

Scholarly attempts to account for Vitruvius's story have been foiled at almost every turn by the difficulty of reconciling its details with the historical and archaeological evidence.[18] The *genus* Vitruvius calls Corinthian could not have originated at Corinth, where acanthus does not and did not ever grow, and the 5th century BCE Athenian sculptor Callimachus is unlikely to have had anything to do with the invention of a capital whose form, as Vitruvius prescribes it, dates from the 2nd century BCE, not the 5th, when its earliest prototypes (from Athens, not Corinth) looked very little like the one, current in Vitruvius's own day, here described.[19] Nor indeed has any corroboration of the acanthus plant's funerary symbolism scholars have seen reflected in the story been found in the Corinthia.

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[18] For a review, *Vitruve: de l'archiecture livre IV*, P. Gros (ed. and trans.), Presses universitaires de France, Paris, 1992, pp. 75–90. Also J. Rykwert, *The Dancing Column*, pp. 317–349; M. Wilson Jones, *Principles of Roman Architecture*, Yale Univeristy Press, New Haven / London, 2000, pp. 136–138; *id*., *Origins of Classical Architecture: Temples Orders and Gifts to the Gods in Ancient Greece*, Yale University Press, New Haven / London, 2014, pp. 150–155; I. K. McEwen, *Vitruvius: Writing the Body of Architecture*, pp. 212–224.

[19] The proportions of the Corinthian capital Vitruvius attributes to Callimachus are detailed at IV, 1, 11–12. As Pierre Gros notes in his commentary on the passage (*Vitruve: de l'archiecture livre IV*, p. 89), "il nous semble que le schéma décrit dans ces paragraphes normatifs date pour l'essentiel de la seconde moitié du IIe siècle."

So why Corinth? In the face of so many disparities, can Vitruvius's location of the order's origin in the Greek city of Corinth contribute anything at all to our understanding the significance of this ostensibly tender-hearted tale? The answer is yes if you accept the premise that Vitruvius was a sustaining member of Rome's warrior culture, and recall that Roman conquest of the Greek world (together with the appropriation of *its* culture) can be dated with some precision to 146 BCE and the sack of Corinth by the Roman general Lucius Mummius Achaicus, who razed the city, killed its entire male population and sold its women and children into slavery. Boatloads of plunder—works of art mainly—were shipped back to Rome where the senate awarded Mummius a triumph, celebrated the following year. A century later, profit continued to be gained from the city's destruction through the sale to eager Roman buyers of grave goods known as *nekrocorinthia*, chiefly pottery and bronze ware, looted from Corinthian tombs (Strabo VIII, 6, 23). The conquest was a milestone in the annals of Roman expansion and reverently commemorated as such. Over a hundred years later, Vitruvius's younger contemporary Virgil would celebrate Mummius and his triumph in the parade of heroes that appear in Book 6 of the *Aeneid*: "There Mummius, triumphant over Corinth and famed for his slaughter of the Greeks will drive his chariot to the lofty Capitol." (Verg. *Aen*. VI, 836–837)[20]

Mummius's spoils paid for the temple he built to Hercules Victor as his victory monument in the Forum Boarium where it still stands.[21] It was a round, Greek temple (a tholos) built of Pentelic marble brought from Greece and had a peristyle of 20 Corinthian columns. All of these features, including use of the (possibly) as yet unnamed Corinthian order, were firsts in the city of Rome. It is also possible that its inaugural appearance on a temple celebrating the sack of Corinth was what gave the acanthus capital its name along with its enduring identity as a trophy of Roman conquest in general. How does Vitruvius's *historia* "explain" this?

To begin with, it is important to recall, as I mentioned earlier, that for Romans conquest had a civilising mission. The claim, if specious

[20] Cited M. Loar, "Hercules, Mummius and the Roman Triumph in *Aeneid 8*," *Classical Philology*, CXII, 1, 2017, p. 52.

[21] A. Ziolkowski, "Mummius' Temple of Hercules Victor and the Round Temple on the Tiber," *Phoenix*, 42, 1988, pp. 309–333; M. Loar, "Hercules, Mummius and the Roman Triumph in *Aeneid 8*." Filippo Coarelli thinks the temple was built by an oil merchant called M. Octavius Herrenus: F. Coarelli, *Il Foro Boario*, Edizione Quasar, Rome, 1988, pp. 92–105, but this is unlikely as Loar demonstrates in his recent article.

by any post-colonial measure, is understood readily enough on its own terms when it came to the inhabitants of places like Gaul, Caria, Lusitania, Aquitania and so on whose rudimentary building methods Vitruvius reviews in the chapter on primitive huts that opens Book 2 of *De architectura*—methods which proper guidance and the "certain calculations of symmetries" would eventually lead these barbarians not only to the construction of correctly-built Roman-style houses with foundations, tiled roofs and walls made of brick or stone but also, in due course, to lives of civilisation and refinement.[22]

But how might such claims justify Roman conquest of the Greeks who were definitely *not* barbarians having, as all agreed, invented civilisation, and long led cultivated lives of far greater sophistication than their Roman contemporaries. Rather *too* cultivated, Romans would opine with disapproval. Take Corinth.

Corinth, a seaport on the isthmus that separates Attica from the Peloponnese, had been one of the largest, wealthiest and most notoriously extravagant of Greek cities (Strabo, VIII, 6, 20).[23] Its patroness was Aphrodite Ourania *poliouchos*, heavenly "defender of the city," to whom young Corinthian women were dedicated as sacred prostitutes.[24] In the fifth century BCE, Aristophanes tellingly used the verb *korinthiazomai*, "to corinthiate," as an alternative for "fornicate" (Aristophanes, *Frogs*, 354). Over a thousand prostitutes had been attached to Aphrodite's temple on Acrocorinth, a great attraction to visiting ship captains, apparently, and a major source of the city's wealth (Strabo, VI, 6, 20).

Wallowing in the cognate vices of lust and luxury Romans professed to abhor, Greek Corinth epitomized what the Romans had in mind when they claimed that the Greeks had invented civilisation, but lost it; an exemplar of the kind of decadence for which Roman conquest was to be a moral corrective.[25] Corinth had definitely had it coming.

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[22] Vitruvius 2.1.6-7. I. K. McEwen, *All the King's Horses: Vitruvius in an Age of Princes*, MIT Press, Cambridge, MA / London, 2023, pp. 32–33.

[23] See also J. Salmon, *Wealthy Corinth: A History of the City to 318 B.C.*, Oxford University Press, Oxford, 1984, pp. 398–401.

[24] C. K. Williams, "Corinth and the Cult of Aphrodite," in M. Del Chiaro (ed.), *Corinthiaca: Studies in Honor of David A. Amyx*, University of Missouri Press, Columbia, 1986, pp. 12–24.

[25] Roman obsession with morals: C. Edwards, *The Politics of Immorality in Ancient Rome*, Cambridge University Press, Cambridge,1993, pp. 5–6 on luxury and lust as cognate vices. Conquest as a moral corrective: G. Woolf, "Becoming Roman, Staying Greek: Culture, Identity and the Civilizing Process," in *Proceedings of the Cambridge Philological Society* 40, 1994, pp. 116–143; *id.*, *Becoming Roman: The Origins of Provincial Civilization in*

For over a hundred years after Mummius's legions reduced the city to ashes, the site of Corinth lay waste, a public land of Rome under Roman administrative tutelage.[26] In 44 BCE, shortly before his assassination, Julius Caesar refounded it as a Roman colony, renaming it *Colonia Laus Julia Corinthiensis* (the Corinthian glory of Julius) (Appian, *Punica*, 136; Dio Cassius, XLIII, 50, 33).[27] Duly "squared" with a grid layout in keeping with time-honoured Roman practice, the new city, rebuilt under Augustus with a typical Roman monumental centre, became a model of *romanitas* in the Greek East.[28]

Vitruvius's early attachment to Caesar makes his knowledge of and interest in the rebirth of Aphrodite's city as Caesar's "Corinthian glory" a given. Allowing this, and against the background of Rome's relations with Corinth, the aetiology of the *genus* he names Corinthian fairly begs for an allegorical reading.

There was, moreover, a famous Corinthian prostitute called Lais whose grave according to Pausanias was still an attraction in the second century CE (Pausanias, II, 2, 4). Antipater of Sidon immortalized her in an epitaph in about100 BCE, not long after the city was sacked: "I contain her who in Love's company luxuriated in gold and purple, / more delicate than tender Cypris / Lais, citizen of sea-girt Corinth . . ." (*The Greek Anthology* VII, 218)[29] Antipater, who may have been living at Rome when he wrote the epitaph, is mentioned by Cicero in his *De oratore*, a work Vitruvius lists as one of his sources (Cicero, *De oratore* III, 194; Vitruvius IX, pref. 17).

"Had she not made her bed the public slave of gain, Greece would have battled for her as for Helen," writes the poet at the end of his epitaph

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Gaul, Cambridge University Press, Cambridge, 1998, p. 71. See also N. Petrochilos, *Roman Attitudes to the Greeks* National and Capodistrian University of Athens, Athens, 1974.

[26] Cicero *De lege agraria* 1.5. *Cf*. T. P. Wiseman, "Corinth and Rome I: 228 B.C.- A.D. 267," in H. Temporini (ed.), *Aufstieg und Niedergang der römischen Welt* II, 7.1, 1979, p. 493.

[27] *Cf*. T. P. Wiseman, "Corinth and Rome I: 228 B.C.- A.D. 267," pp. 497–498.

[28] Centuriation of the site: D. Romano, "Post 146 B.C. Land Use in Corinth and Planning of the Roman Colony of 44 B.C." in T. Gregory (ed)., *The Corinthia in the Roman Period. Journal of Roman Archaeology*, suppl. 8, 1993, pp. 9–30. Rebuilding of Corinth: D. Musti and M. Torelli, *Pausania. Guida della Grecia II. La Corinzia e l'Argolide* Mondatori, Milan, 1986, pp. 217–220; C. Williams, "The Refounding of Corinth: Some Roman Religious Attitudes," in S. Macready and F. Thompson (eds.), *Roman Architecture in the Greek World*, Society of Antiquaries Occasional Papers, New Series, 1987, pp. 26–37.

[29] *Cf*. D. Engels, *Roman Corinth: An Alternative Model for the Classical City*, University of Chicago Press, Chicago, 1990, p. 98.

in a bitter twist that has the young woman and her profession emerge as figures for the destruction of Corinth and the corruption alleged to have provoked it. Lais, the beautiful dead courtesan, is a resonant metaphor for the ruined city, her appeal as an anchor for Vitruvius's allegory reinforced by its marked similarities, both textual and thematic, with Antipater's epitaph. Like the dead prostitute, Vitruvius's dead virgin is a "citizen of Corinth," celebrated like Lais for her delicacy and tenderness.

This makes the Corinthian virgin is Corinth itself, and the disease (*morbus*, in Latin—also "vice") that overcomes her figures the city's decadence the reason for her death, which is Corinth's destruction. Being "just ripe for marriage" put her at the peak of the sexual attraction that made her a choice victim of the rape that routinely featured in the *direptio* of a city when Roman soldiers tore it to pieces in the course of a sack."[30] A Corinthian girl would, by definition, have been asking for it. Rome was the dead city's nurse for a hundred years until her rebirth as Caesar's "Corinthian glory" which flourishes in the acanthus plant that testifies to the regenerative power of natural forces whose divinely appointed agents Rome and the Caesars claimed themselves to be (*inter alia*, Vitr. VI, 1, 11). Even the *pocula*, cups or vessels, source of the virgin's former delight, which the nurse piles into the basket she puts on the girl's tomb resonate singularly with the pottery and bronze *nekrocorinthia* dug out of Corinthian graves for sale at Rome, for Corinth's "delight" in its lifetime had indeed been the pottery and bronze for which it had been famous.

Once named and located, the Corinthian order was no longer just about the rebirth of Corinth, of course, but about Roman renewal of the entire world. In the years after Vitruvius wrote, the foliate capital into which he encapsules the Greek city's rebirth would proliferate in a phenomenon scholars have called "corinthianisation" which included the appearance of acanthus not only in the capital of the columnar order whose use eventually became exclusive throughout the empire but also, ubiquitously, in friezes where it scrolled over stone surfaces with the ferocious tenacity of an invasive species.[31] If Rome was a self-appointed force of nature, corinthianisation became its manifest.

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[30] A. Ziolkowski, "*Urbs direpta,* or how the Romans Sacked Cities," in J. Rich and G. Shipley (eds.), *War and Society in the Roman World*, Routledge, London / New York,1993, pp. 69–91. Rape, writes Ziokowski, was "a gratification at least as eagerly sought as material gains" (p. 87).

[31] Corinthianisation: P. Gros, *Aurea Templa: Rechcerches sur l'architecture religieuse à Rome à l'époque d'Auguste*, École française de Rome, Rome, 1976, pp. 197–242; J. Onians,

And if throughout *De architectura* Vitruvius is at all points concerned to demonstrate the necessary connection of his topic to nature, as indeed he is, his aim in repeatedly calling attention to that connection is not to be taken as an end in itself.[32] His purpose, on the contrary, is to show that being founded in nature mirrors Rome's own naturally-founded right to rule making architecture a necessary accomplice in the fulfilment of that uniquely Roman destiny. "But, Rome, 'tis thine alone, with awful sway, / To rule mankind, and make the world obey . . ." Virgil intoned in what are probably the best-known lines of the *Aeneid*. *Tu regere imperio populous, Romane, memento* (Verg. *Aen*. VI, 847–853).[33] Written between 29 and 19 BCE, the *Aeneid* belongs to the same triumphal period as *De architectura*.

Framed by the terms of that context, Vitruvius's fable about the origin of the Corinthian capital is one of the most penetrating expressions of Roman triumphalism in the entire treatise, infinitely more nuanced it goes without saying than the comparably rather crass *historiae* concerning caryatids and Persian prisoners discussed earlier. Its interest both as an epitome of Rome's conquest of Greece and, through its message of endless renewal, a prophesy like Virgil's of an *imperium sine fine* cannot be underestimated (Verg. *Aen*. I, 278). Vitruvius's genius is to make "empire without end" a story about the power of architecture.

But remarkable as its resonance with the events of Roman history (modern sense) is, more remarkable still is the skill with which its author has transfigured the brutality of these events into a story whose affecting appeal has, as the record attests, seduced modern readers ever since recovery of *De architectura* in the early Italian Renaissance. Although no comparable record exists for its reception by Vitruvius's contemporaries, it is safe to assume that its allure for Roman readers would inevitably have included appreciative awareness of its triumphal intent, further enhanced by the cultural heft acquired by its presentation as a *Greek* origin story

Bearers of Meaning: The Classical Orders, Princeton University Press, Princeton, 1988, pp. 41–58; G. Sauron, "Le message ésthétique des rinceaux de l'Ara Pacis Augustae," *Revue archéologique*, fasc. 1, 1988, pp. 3–40; U.-W. Gans, *Korinthisierende Kapitelle der römischen Kaiserzeit*, Böhlau Verlag, Weimar / Vienna, 1992; D. Castriota, *The Ara Pacis Augustae and the Imagery of Abundance in Later Greek and Early Roman Imperial* Art, Princeton University Press, Princeton, 1995; M. Wilson Jones, *Principles of Roman Architecture*, pp. 138-140; *id*., *Origins of Classical Architecture*, pp. 150– 155; I. K. McEwen, *Vitruvius*, pp. 212–213, 296–298.

[32] *Ibid*., pp. 47–49.

[33] The English is from John Dryden's verse translation of 1697.

through an appropriative attribution that made it (like Greece itself) part of the epic of Roman conquest. Recent Vitruvius scholarship continues to take the story of these Greek origins as being in fact Greek—the dead virgin, the nurse, the acanthus, Callimachus and the powerful symbolism of death and renewal carried forward in the Corinthian capital he is supposed to have invented. The rather starker Roman story that underpins it, unpalliated by the consummate sophistry with which Vitruvius has soothed generations of readers beginning with those of his own time, lacks the solace of the other but also its illusions and its self-deceit. Appreciation of the Roman source and purpose of his *historia* reveals a narrative both closer to history as we understand it and far more in keeping with current cultural expectations and the general disillusionment of our time, a disillusionment which even scholarly pursuits as arcane as the study of Vitruvius are bound to come to terms with.

Vitruvius's endorsement of triumphalism is unequivocal from outset where, in his dedication to the Emperor, he clearly states that his recognition of how buildings perform as "guarantees" (*auctoritates*) of imperial expansion is his reason for writing the work. Addressing Augustus, whom he credits with personally having "increased" Rome (made Rome greater) through conquest, he writes,

> When I realized that [...] just as, through you, the city was increased with provinces, so public buildings were to provide eminent guarantees for the majesty of empire, I decided not to hesitate and took the first opportunity to set out for you my writings on these matters. (Vitr. I, pref. 2)

Too little attention has been paid to the importance of Vitruvius's profession as a military engineer in assessing this overall purpose. Book 10 on machinery which includes the machinery of war is the longest of the 10 books by far—as long as Books 3 and 4 combined. In keeping with other evidence of the martial bias already noted, it is significant that in his discussion of music, sixth of the nine disciplines he says an architect should know, the very first example he invokes to demonstrate the importance of understanding harmony is the proper "tuning"—by ear, it would appear—of the cables and springs of catapults and scorpions in order to ensure that, when launched, their projectiles fly straight (Vitr. I, 1, 8).

In his recent essay on Vitruvius's *historiae*, Antonio Becchi has noted that, of his 28 stories, ten – over a third – appear in Book 10. Five of these

are about the successes and failures of war machines.[34] Stories of failed war machines take up the entire final chapter of Book 10, and so conclude the treatise (X, 16). An odd way to end the work, you might think, with accounts of the deficiencies of an over-scaled siege-tower at the siege of Rhodes and the inadequate performance of a battering ram at the siege of Marseilles. But mechanical failure is not the point of these stories, of course. For when the machines failed, Vitruvius writes, architects stepped in to save the day with clever strategies that brought these cities victory, testifying to the superiority of the architects' knowledge over the fallible *rationes* of mechanical devices (Vitr. X, 16, 12). *Architecti scientia*, the knowledge of the architect – bringer of victory. The notion has had considerable appeal for architects over the years. Fifteen hundred years after Vitruvius, Leon Battista Alberti would expand on his Roman predecessor's claim, writing in the preface to his *On the Art of Building* that "the skill and ability of the architect have been responsible for more victories than have the command and foresight of any general."[35]

To return, then, to the preface to Book 9 with which I began this essay and Vitruvius's suggestion concerning the triumph-worthiness of men whose knowledge he says is the foundation of "the civilised ways, laws and impartial justice without which no city can be safe or whole." (Vitr. IX, pref. 2) He follows this proposal with a review of discoveries which, being particularly useful to human life, have earned their originators the reward of such honours. Plato tops the list.

From among Plato's many *utilissimae rationes* Vitruvius singles out as exemplary and (presumably) most useful of all his alleged discovery of the method for doubling the square. It appears in the *Meno* where, as Plato presents it, it is not really a method at all, nor especially useful either. Nor even, it would appear, was it Plato's discovery, but that of an unknown geometer of an earlier date.[36] The dialogue begins with a discussion of figures (*schêmata*) in general—the idea of the figure, in other words. Of this idea, the square, a bounded figure, is no longer a *schema* but a *chôrion*, specifically a *tetragônon chôrion*. Its doubling is not a set of instructions to be followed but geometrical knowledge gradually revealed to the slave Socrates questions in order to demonstrate to Meno,

[34] A. Becchi, "Vitruvius' *Historiae* and the Love of Learning," p. 673.

[35] L. B. Alberti, *On the Art of Building in Ten Books*, MIT Press, Cambridge, MA / London, MIT Press, 1988, p. 4 (prologue).

[36] *Vitruve. De l'architecture. Livre IX*, J. Soubiran (ed. and trans.), Presses universitaires de France, Paris, 1969, p. XXIX; nn. 17–18, pp. 45–46.

his eponymous interlocutor, the well-known Platonic theory concerning knowledge as a person's recollection—anamnesis—of what his soul knew before its embodiment at birth (Plato *Meno* 82b-85b).[37] As usual, the first step in the process is to lead the slave to admit that he knows nothing. Onto that tabula rasa of total ignorance, and with the help of a figure (*chôrion*) two feet to a side, drawn (one imagines) in the dust, there eventually emerges the phenomenon of a doubled square, whose generation is remembered knowledge that Socrates' insistent questioning has brought to light in the slave boy's mind.

Vitruvius begins his account by supposing a square piece of land (an *ager* or a *locus*) 10 feet to a side whose area you want to double from 100 to 200 square feet. This *quadratus locus*, as he calls it, sounds very much like Plato's *tetragônon chôrion*, except of course that it is nothing like, beginning with its size. Imagining a real piece of land and supposing a desire to double its area Vitruvius, with intentions clearly very different from Plato's, sets out a geometrical method burnished with Platonic credentials for what—allowing his unwavering imperial purpose—sounds suspiciously like a formula for territorial expansion. It is a particularly telling instance of precisely the kind of appropriative attribution already discussed, even down to the reference to his own now lost figure which he intimates derives from Plato's.

"Squaring" of course and the multiplication of squares was endemic to Rome's appropriation of its conquered territories. And if the manner in which squares were multiplied through centuriation did not exactly match the method Vitruvius here attributes to Plato, the convergence of the "Platonic" method he describes with the traditional practice of Roman land-surveyors is both unmistakeable and rhetorically persuasive.

The second discovery Vitruvius presents as evidence for learning as the bedrock of civil society is one on which each and every act of "squaring" depended: the set square, or *norma* in Latin. Thus for instance, in Vitruvius's description of the famous figure later tagged as Vitruvian Man, the "squared layout" found in the body of a well-shaped male whose height equals his arm span is the same, he writes, as that of "areas that have been squared with as set square."[38]

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[37] Jean Soubiran writes (*Vitruve: De l'architecure livre IX,* 1969, nn. 17–18, pp. 45–46), that Vitruvius probably worked not from Plato directly but from a secondary source, now lost, possibly by the Roman polymath Varro.

[38] Vitruvius 3.1.3: . . . *item quadrata designatio in eo invenietur; nam si a pedibus imis ad summum caput mensum erit eaque mensura relata fuerit ad manus pansas, invenietur*

As Vitruvius tells it, the triumph-worthy hero to be credited with discovery of the *norma* is Pythagoras, whose eponymous "Pythagorean" theorem permitted the accurate construction of 3-4-5 set squares in a simple procedure that bypassed the haphazard methods of artisans and made any set square so assembled failproof: as effective an agent of order (and as powerful) as the Roman army.[39] The discoveries of men like Plato and Pythagoras are not only of everlasting usefulness to mankind, Vitruvius concludes after listing a number of other sages whose work he admires; they also operate *ad mores corrigendos*, reforming standards of behaviour to set people straight (Vitr. IX, pref. 15).

"This book is on the principles of gnomonics," he writes in the last paragraph of the ninth preface, announcing the topic of *De architectura*, Book 9. "In it, I will explain how they were discovered from the sun's rays in the universe, by means of the shadows of gnomons, and how it is that these grow longer or shorter." (Vitr. IX, pref. 18)

Gnomonics, or the construction of clocks is second in Vitruvius's tripartite division of architecture, the other two parts being building and mechanics, as discussed earlier. It is a somewhat arbitrary taxonomy, particularly when it comes to his inclusion of *gnomonice*. Vitruvius is the first known author to make it a part of architecture, and his account is unique in surviving literature.[40] Later Roman writers seem not to have thought gnomonics belonged to architecture either.[41]

Why does Vitruvius include it? The gnomon, a sundial pointer, is essentially the same tool as the architect's *norma*. Both pointer and setsquare are referred to by the Greek word *gnomon* (generically, any upright), from which the Latin *norma* derives.[42] Both, interchangeably, are agents of the "squaring" that establishes the 90-degree relation between

eadem latitudo uti altitudo, quemadmodum areae, quae ad normam sunt quadratae. On the famous passage concerning Vitruvian Man, I. K. McEwen, *Vitruvius*, pp. 156–183, among many, many others.

[39] Vitruvius 9.pref.6-7. Pythagoras left no writings. For a commentary on possible sources, and other matters relating to the passage see Soubiran's commentary in *Vitruve: De l'architecture livre IX*, 1969, pp. 48–52.

[40] *Vitruve: De l'architecture livre IX*, p. lxx.

[41] At the end of the first century CE, when Pliny the Elder writes of the great sun clock Augustus Caesar had built in the Campus Martius at Rome, he refers to Facundus Novius, the man who devised it as a *mathematicus* not an *architectus*. Pliny *Natural History* 36.72. On the Horologium Augusti, begun in 13 B.C., I. K. McEwen, *Vitruvius*, pp. 240-250; P. Heslin, "Augustus, Domitian and the So-called Horologium Augusti," *Journal of Roman Studies*, 97, 2007, pp. 1–20.

[42] H. Liddell, R. Scott and H. Jones, *A Greek-English Lexicon*, Oxford University Press, Oxford, 1968, sv. *gnomon*; C. T. Lewis and C. Short, *A Latin Dictionary*, sv. *norma*.

verticals and horizontals without which there can be neither sundials nor cities nor buildings, nor indeed the exclusively human upright posture that makes a man in his prime architecture's fundamental human referent.[43] The "squaring," whereby Rome took possession of her conquered territories, entailed the correct deployment of a *groma*—another cognate of *gnomon*—which was the chief tool of the Roman land-surveyor who was called a *gromaticus*.[44]

But the gnomon was only half of a sun clock, of course. The other, equally important half was the analemma.

> The analemma is the pattern obtained from the course of the sun and discovered by observing the shadow of the gnomon as it lengthens to the solstice. It is by means of architectonic principles (*rationes architectonicas*) and the tracings of the compass that the analemma discloses how the universe operates. (Vitr. IX, 1, 1)

What Vitruvius is describing here is the two-dimensional projection of spherical solar order onto a flat surface in order to create the analemma or "face" of a sundial with the analemma, as he presents it, thus becoming a reflection of universal order. In the next paragraph, he goes on to assert that celestial order is in turn "architected" (*architectata est*) by the power of nature – a power likewise governed by "architectonic principles" which therefore direct even the "architecting" activity of nature itself (Vitr. IX, 1, 2).[45]

To take these passages as affirmation of the cosmic dimension of architecture, as many readers of Vitruvius have done since the publication of Rudolf Wittkower's *Architectural Principles in the Age of Humanism* over 75 years ago, is to forget who Vitruvius was (a sustaining member of Rome's imperial culture) and who he was writing for.[46]

Vitruvius wrote his treatise for Augustus Caesar, the first Roman emperor, whose very name "Augustus," a name never before given to any human, made him an epitome of divine order. As I have argued elsewhere,

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[43] Gnomons and sundials: Vitruvius 9 *passim;* gnomons and the laying out of cities: Vitruvius 1.6. Upright posture: Vitr II, 1, 2; human body as architecture's ultimate referent: Vitr. III, 1.

[44] Varro in Frontinus *De limitibus*, in C Thulin (ed.), *Corpus agrimensorum romanorium*, Teubner, Stuttgart, 1971, p. 10.

[45] I. K. McEwen, *All the King's* Horses, pp. 188–192.

[46] R. Wittkower, *Architectural Principles in the Age of Humanism*, Academy Editions, London, 1988.

the work's ultimate purpose was to show how architecture was the privileged means of giving the "divine" imperial power that now commanded the world real measurable extent through the building, gnomonics and machines that together made Roman world dominion palpable and incontestable.[47]

Thus, to name as "architectonic" the principles that guide the projection of heavenly order onto the earthly realm in the construction of a sun clocks is indeed potently metonymical, but not altogether as generally assumed. Heavenly order is, simultaneously and interchangeably, the order of Augustus and Rome whose earthly deployment through the application of "architectonic principles" endows such principles with crucial political clout. And this, as a result, assigns an equally crucial political role to the person with knowledge of them and of how to apply them – *architecti scientia*, the knowledge of the architect.

Knowledge is key, as indeed is the term "architectonic," whose appearance here is its first ever recorded in Latin. A transliteration of the Greek *architektonikos*, it appears most frequently in Aristotle, who uses it in contexts only marginally related to architecture. As Aristotle famously put it in the *Metaphysics*, the master craftsman he calls an *architekton* is more estimable than the artisans over whom he exercises authority, because the *architekton* knows the reasons for doing things (Arist. *Metaph.* 981a30-b5). His use of the adjective *architectonikos* takes this line of reasoning well beyond the activities of the *architekton*.

Architectonic arts he explains in his *Nicomachean Ethics*, are arts to which other arts are subordinate (Arist. *EN* 1094a4). Bridle-making, for instance, is subordinate to horsemanship, and horsemanship, along with every other military pursuit, is subordinate to strategy. Strategy, the art of the *strategos* or military commander, is an architectonic art because, like the *architekton*, the *strategos* knows the reasons why things are done.

But for Aristotle, the supremely "architectonic art"—the art to which all the other arts refer – is not architecture, although Vitruvius seems to imply that it is when he declares at the beginning of his first book that judiciously exercised, the "knowledge of the architect [...] demonstrates everything the other arts achieve." (Vitr. I, 1, 1)[48] There was in any case no word for architecture in Aristotle's day, and the art of the *architekton*, whose thoughts directed the activities of artisans—this as yet nameless

[47] I. K. McEwen, *Vitruvius*.
[48] *Cf.* I. K. McEwen, *Vitruvius*, p. 319 n. 88.

art, though doubtlessly architectonic, was not, for Aristotle, the *principal* architectonic art.

This, famously, is how Aristotle begins his *Nicomachean Ethics.* "Every art and every inquiry, and likewise every practical pursuit or undertaking seems to aim at some good: hence it has been well said that the good is that at which all things aim." (Arist. *EN* 1094a.1. H. Rackham, trans) The *supreme* good, he continues, the good toward which all arts and inquiries must ultimately be directed, is not individual, but collective: the common good, in other words. The common good is the end sought by the most truly *architectonic* of arts—the goal pursued by the master-craft to which every other art and discipline is subordinate. And this, the most authoritative, pre-eminently architectonic of disciplines, declares Aristotle, is *hê politikê*, "the political" in English—the knowledge or science of politics (Arist. *EN* 1094a.25-29). In the Greek context of Aristotle's day, knowledge of political matters, *hê politikê*, had of course to do specifically with the rule of cities—the governance of the *polis*, from which needless to say *politikê* derives.

It would not be wrong to assume that something like an Aristotelian understanding of "the political" underlies the view, voiced at the beginning of Vitruvius's ninth preface, that knowledge is the foundation of "the civilised ways, laws and impartial justice without which no city (*civitas*) can be safe or whole," particularly with Aristotle named along with three other Greek sages as the source of such knowledge. Worth noting too is that Vitruvius calls the city to be so governed a *civitas*, the word Latins used when translating the Greek "*polis*." (Vitr. I, pref. 2) Familiarity with Aristotle's ethics would also account for the sudden appearance of the Aristotelian term "architectonic" a few paragraphs later at the beginning of Book 9 proper. But architectonic principles, in Vitruvius, have nothing to do with the government of cities as Aristotle understood them, for the *polis* that was the purview of *hê politikê* had, in the wake of Roman conquest, long since ceased to exist. In Vitruvius, the architectonic principles that govern the transfer from heaven to earth of cosmic order had an infinitely wider application.

Romanae spatium est Urbis et orbis idem wrote the poet Ovid, famously reiterating an alliterative commonplace that had been current since the late Republic: "the world and the city of Rome occupy the same space."[49] The

[49] Ovid *Fasti* 2.684. E. Bréguet, "*Urbi et orbi*: un cliché et un theme," in J. Bibaux (ed.), *Hommages à M. Renard* I, Latomus, Brussels, 1969, pp. 140–152) cites all the occurrences

"city" whose good government is grounded, according to Vitruvius, in knowledge transmitted by the writings of Greek sages, is not the Aristotelian *polis* but this, the Roman world city. Endowing its cosmically sanctioned imperial command with Aristotelian credentials is another, particularly egregious example of appropriative attributions to Greek culture evident throughout *De architectura*.[50]

But to address Augustus Caesar with a plea vaunting the excellence of the imperial project would of course have been superfluous. Of this the Emperor needed no convincing, nor indeed was it Vitruvius's aim to do so. His ultimate purpose in headlining the naturally founded imperial order ruled by Augustus's "divine mind" is to vindicate the necessary role of architecture as its naturally founded and unrivalled instrument. Making gnomonics one of its constituent parts allows Vitruvius to reveal that this, the art that "demonstrates everything the other arts achieve," is an architectonic art in the most exalted political sense, bound by the set square and the compass to the order of the heavens in fulfilment of Rome's cosmic destiny.

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beginning with Cicero's Catalinarian orations of 63 BCE (pp. 142–145). See also C. Nicolet, *Space, Geography and Politics in the Early Empire*, University of Michigan Press, Ann Arbor, 1991, pp. 111–114; C. Edwards and G. Woolf, "Rome as World City," in C. Edwards and G. Woolf (eds.), *Rome the Cosmopolis*, Cambridge University Press, Cambridge, 2003, pp. 1–20.

[50] Similar intentions appear to have informed Vitruvius's extensive use of Greek terms, many with perfectly adequate Latin equivalents, according to a recent article by Pierre Gros who concludes, "C'est finalement une certaine identité grecque [...] qui se trouve ainsi construite et déconstruite, au gré des besoins suscités par la légitimation de schémas latins plus ou moins habilement décrits, comme des montages proportionnels ou géométriques, dont le théoricien espère qu'ils accèdent par ce biais à la dignité de leurs précédents helléniques." Pierre Gros, "De l'appropriation à l'exclusion : statut et axiologie des mots grecs dans le *De architectura*," Vitruvius, *Rivista del Centro Studi Vitruviani*, 3, 2024, p. 24.

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