



THE LITERARY EVIDENCE

MANY OF OUR views on the origin and early development of the Doric and Ionic “orders” are derived from literary sources. Particularly important is the book, *De Architectura*, of the Roman architect Marcus Vitruvius Pollio. Although written in the time of Augustus, toward the end of the first century B.C., Vitruvius’s work reflected as well the intellectual climate of the late Hellenistic period¹ and drew overwhelmingly from Greek sources. As the only surviving treatise on ancient architecture, it provides valuable information on the definition, origin, and early history of the orders. After its “rediscovery” in the fifteenth century, *De Architectura* held considerable prestige among Renaissance theorists. Their interpretations of ancient architecture were supplemented by evidence from other ancient authors as well as contemporary views. More modern theories have continued to draw on these same sources. In addition, archaeological exploration within and outside the Greek world has resulted in new theories. Yet the basic principles elucidated by Vitruvius are still generally accepted.

In order to set the background for our investigation of the emergence of the architectural orders, it is necessary to examine first the theoretical context in which our understanding arises. Vitruvius’s treatise remains fundamental in this context. Whether subsequent investigators followed him or not, they certainly had to take his statements into account. It is appropriate therefore to begin with Vitruvius. We will examine his points on the early orders in some detail, with the dual aim of assessing the extent of their validity and of demonstrating their impact on later, including modern, interpretations.

THE “ORDERS”

For our investigation, the most fundamental issue raised by Vitruvius is his definition of distinct architectural systems, or what we have come to understand as “orders.” These are treated in a rather disjointed manner, Ionic in Book III and Doric (along with Corinthian) in Book IV. According to Vitruvius, the orders are identified by their column forms (IV, 1, 3), but he describes their distinctive

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entablatures as well. Thus, the Doric entablature possesses triglyphs and metopes, the former placed above column centers, and a geison with mutules that correspond in location to the triglyphs. In Ionic, the column rests on a base of either Attic or Ionic type and is crowned by a capital with a volute member. Above appear a three-fascia architrave, a frieze, a line of dentils, and the corona, each with its own kymation. For both orders, strict rules are to be followed in placement, execution, and proportion.

Such rules have led to the belief that the two systems of architecture were rigidly defined. The English word “order,” from the Latin “ordo,” therefore seems appropriate. Yet the word used by Vitruvius was “genus,” which suggests a more flexible relationship of parts to the whole. Each system was not so much prescribed as it was defined by its family. Only in the early sixteenth century was the term “ordo” first applied.² The reason for this shift seems to be the Renaissance, and particularly papal, interest in more absolute or “eternal” truths that reflected the divine.

As I. D. Rowland suggests, Vitruvius’s emphasis on a fundamental harmony of proportions may not be far from this concept. Yet Vitruvius’s aim, at least in regard to the architectural styles, was very different from that of Renaissance architects. His goal was to present in a “complete and orderly form” the “established rules” and “usage” of these styles (IV, *praef.*, 1),³ thus to elucidate what one might consider the ideal form, but from existing temples and the treatises written on them. Renaissance architects worked in the opposite direction, from theory to practice. Their goal was to define a system that reflected the ideal, as a manifestation of the divine, in architecture. Their “ideal” was thus much more immutable than Vitruvius’s.

Vitruvius also makes it clear that usage, rather than prescription, stood behind the separation of components in the Doric and Ionic orders (I, 2,5–6). He notes that the adoption of dentils in a Doric entablature or triglyphs in Ionic would spoil the effect of the building, since the “usage in each class” had been fixed “long ago.” On the other hand, Corinthian, which was “produced out of the other two orders,” could employ Doric mutules and guttae or the sculptured frieze, dentils, and corona of the Ionic entablature (IV, 1, 2–3). At least initially, then, some flexibility must have existed in the orders. Although Vitruvius clearly viewed Doric and Ionic as distinct types, for him that distinction arose during the process of evolution.

Each order originated in its own area of the Greek world and at an early time (IV, 1, 3–12). Corinthian, which was the invention of Callimachus, clearly followed, and since tradition places him in the second half of the fifth century B.C., this date serves as a *terminus ante quem* for the other styles. Yet Vitruvius’s chronology is not entirely consistent. He attributes the initial use of the Doric style to Doros, “the son of Hellen and the nymph Phthia,” for a temple in the sanctuary of Hera at Argos. Hellen is the eponymous ancestor of the Greeks and his offspring, Doros, Xouthos (through his stepson Ion), and Aiolos, were the

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leaders of three Greek tribes.⁴ The term “Doric” was applied to the architectural style of this first temple since it was constructed in the territory of the Dorians, so named for Doros. At a later time, with the migration of the Ionians to the coast of Asia Minor, the style was transplanted there. Afterwards it was replaced by Ionic for the construction of the Temple of Artemis at Ephesos.

These statements conform generally with the early diffusion of the two orders: Doric in mainland Greece, specifically the Peloponnesos, and Ionic in Asia Minor and the Aegean Islands. The ethnic association implied by Vitruvius is not, however, fully verified, since Dorian settlements in both east and west Greece may use the Ionic style, while Ionian Athens typically uses Doric. It is also not clear at what point the Greeks began to define themselves as “Dorian” or “Ionian”.⁵ These terms appear occasionally in the early literature in reference to the ethnic groups or their characteristics, but as yet with vague, and sometimes contradictory, connotations. Two passages dealing with dress exemplify this point: Anakreon’s equation of female nudity with Dorian dress and Herodotos’s statement (V, 88) that all Greek women initially wore Dorian dress but later many adopted the Ionian – originally Carian – costume. It would appear that neither author possessed a firm understanding of what was “Dorian” in this regard, a point reinforced by E.B. Harrison’s conclusion that Herodotos was actually referring to seventh century Daedalic dress in both Dorian and Ionian territory.⁶ The events surrounding the Persian Wars of the early fifth century seem to have made the Greeks more aware of the dichotomy between east and west, and accordingly between the Greeks of Asia Minor and those of the mainland. Still, the latter division was often construed in geographical rather than ethnic terms, with “Ionian” used to signify all Asiatic Greeks. Indeed, Herodotos (I, 142–46) is at pains to offer a succinct classification of these Ionians, who speak different dialects and are of mixed Greek and even Carian origins. His tendency to focus instead on the city as the basic unit of Greek society may further indicate that the broader concept is as yet poorly developed.

It is only with Thucydides’s account of the Peloponnesian War in the later fifth century that the terms “Dorian” and “Ionian” become crystallized and set in opposition.⁷ Whether Thucydides himself accepted arguments based on ethnic identification and kinship is debated, but his use of them in (reconstructed) speeches certainly indicates his awareness of this line of reasoning. Our sources thus betray an increasing demarcation over time of these ethnic groups, which applied also to their customs and artistic products.⁸ Even so, the process does not seem to have reached fruition until the later fifth century, long after the evolution of the architectural orders.

Vitruvius’s sequence of events is also open to question. He seems to have considered Doric as the original, archetypal, form of Greek architecture. To be sure, other authors credit the city of Corinth, which is located in “Doric” territory, with innovations in temple architecture: Pindar (*Olympian Odes*, xiii, 21–22) implies that the pediment was invented there and Pliny (*HN* 35, 151–52) assigns

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to this city a leading role in the development of architectural terracottas. Since the Doric order lacked rules of proportion at this point, perhaps Vitruvius is alluding only to the transmission of general architectural components, such as those cited by other authors.

Accepting a more literal interpretation of this passage would require one to posit the existence of a Doric temple in Asia Minor that preceded the earliest Ionic construction. Such a temple, which according to Vitruvius was dedicated to Panionion Apollo, has been identified by P. Gros in an as yet undiscovered predecessor to the Hellenistic Doric Temple of Apollo at Klaros.⁹ Ironically, Gros's argument provides equal support for interpreting Vitruvius's statement in regard to the later building. An architectural connection with Delphi would apply in any period, but perhaps even more so in Hellenistic times, as the oracular function of the Klaros temple gained in importance. The Doric order was also undergoing criticism at this time, particularly by Asia Minor architects, as Vitruvius himself states only slightly later (IV, 3, 1). The fundamental role ascribed by Vitruvius to Doric architecture in Asia Minor may therefore arise as much from a Hellenistic justification of the style of this temple as from an awareness of a presumed predecessor.

CHRONOLOGY

Vitruvius's comments further imply that the two major architectural orders originated very early, apparently in the period currently labeled the Dark Ages. This is the time of presumed migrations, when the designation of three separate tribes for the Greeks would be most appropriate. Doros, the eponymous leader of the Dorians and the founder of the Temple of Hera at Argos, may have lent his name to the tribe upon their arrival in Greece. Tradition places the Dorian invasion at the time of (and perhaps contributing to) the fall of Mycenaean civilization, between 1200 and 1100 B.C. This movement, in turn, spawned the Ionian migration, which is dated around 1000 B.C.

According to this reconstruction of events, the Doric style of architecture must have originated sometime between 1200 and 1000 B.C., since it was already in existence at the time of the Ionian migration. Ionic would appear somewhat later. On the other hand, it is difficult to place the temples mentioned by Vitruvius in the same period. We know that the sanctuary of Hera at Argos was sacred from an early date, but probably not before the Geometric period (ca. 900–700 B.C.). The terrace supporting its earliest temple was initially identified by modern scholars as Mycenaean because of its "Cyclopean" masonry. It is now thought to have been constructed in the eighth or even seventh century, perhaps as an imitation of Mycenaean construction aimed at imbuing the site with the sanctity of the past.¹⁰ The first Heraion cannot, therefore, date before the eighth century and, as will be discussed later, is more

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likely to belong in the second half of the seventh century.¹¹ By the time of Vitruvius, such a difference in the age of the sanctuary would be negligible. Yet this inconsistency raises questions about the weight that should be given to his implied chronology.

A similar situation exists in regard to the first Ionic temple, that of Artemis at Ephesos. The site may have been sacred already in Mycenaean times, thus even before the Ionian migration. On the other hand, the first temple so far attested dates to the second half of the eighth century B.C.,¹² considerably after the arrival of the Ionians. In this case, Vitruvius allowed for an indefinite lapse of time, which may account for the difference. Moreover, if the proposed reconstruction of the building is correct, it would be the earliest known peripteral temple in Ionia and thus worthy of some acclaim. Yet this is not the structure to which Vitruvius referred. During the sixth century, it was replaced by a much larger, marble temple, which in turn served as the model for the famous dipteros still standing in his own day. Pliny (*HN* 36. 179) confirms that this older Temple of Artemis was the first to combine a moulded base and capital with the shaft. Additionally, the column described in IV, 1, 7 reflects the elaboration and proportion (1:8) consistent with the sixth century building.¹³

These discrepancies suggest that Vitruvius was not altogether familiar with early developments in Greek architecture. Another piece of evidence to support this view is the fact that he omits any reference to the third early “order,” which modern scholars call Aeolic.¹⁴ He does admit (IV, 1, 12) that “there are other kinds of capitals,” but the fact that those capitals are “set upon these same columns” indicates that Aeolic is not among them, since it was placed on a smooth shaft. The most likely reason for this omission is that he was simply unaware of Aeolic architecture. Although a vital style in northern Asia Minor throughout the sixth century B.C., it did not survive into later times. Its distance, both chronologically and geographically, likely meant that Vitruvius had no first-hand acquaintance with the order. His silence on the topic may also indicate that it was not discussed by his sources.

Moreover, it was not the aim of Vitruvius to present a history of architecture. Rather, as he states in the preface to Book I, his goal is to explain the rules of architecture that will enable the emperor to judge the quality of buildings already constructed as well as those to be built. A great deal of emphasis is placed on those rules, particularly as they regard proportions (III, 1, 3–9; 3–5; IV, 3–4). Although the building components and the rules governing them were established through practice and over time, the respective dates at which they were introduced have little bearing on his treatise. Therefore, he also neglects to inform the reader that “Ionic” and “Attic” bases developed at vastly different times, but instead treats them as equals. This disregard for chronology has been recognized in other authors of the period as well, who choose to focus on objects that are recognizable and valuable to their discussion, rather than on those occurring synchronistically.¹⁵ The modern concept of architectural history, with

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its emphasis on chronological development and inclusion of related events – in this case the emergence of a third order – was far from Vitruvius’s mind.¹⁶

Instead, his motives in discussing the history of Greek architecture were quite limited. By his own account, his knowledge and writings were aimed at winning the approval of the emperor (II, *prae*f., 4). Vitruvius himself was the recipient of some of the imperial commissions and presumably sought to ensure their continuation. He argues for education, rather than popularity, as the criterion for bestowing commissions on artists (III, *prae*f., 3) and explains the broad training of the architect (I, 1, 1–17). In this way he attempts to elevate architecture to the realm of the liberal arts and the education of the architect to that of other learned men.¹⁷ It is thus in his interest to demonstrate his own awareness of the past and his historical understanding of the profession.¹⁸ Yet at the same time, Vitruvius makes it clear that the breadth of information required precludes the depth of understanding that might be found in one trained in a single field, and admits that he “has had only a dip into those studies” (I, 1, 17). Such confessions should serve as a direct warning to the reader about the limitations of the author and his text.

THE ENTABLATURE: A WOODEN BACKGROUND

This point becomes particularly important in regard to another historical issue raised by Vitruvius – his claim of a wooden origin for architectural forms. In IV, 2, 1–5, he discusses the “ornaments” of the orders, that is, the components above the columns, all of which represent “imitations” of “carpenter’s work” in stone and marble. Thus, the Doric triglyph represents boards or plaques fastened to the ends of beams and the metope originated in the closure of the space between. In subsequent developments, mutules and the horizontal cornice were derived from the projection of the principal rafters. Ionic dentils, on the other hand, imitate the projection of common rafters. Since neither type of rafter continued into the pediment, its cornices were smooth. Later scholars have expanded on this theory. Some interpret the banded architrave as a translation into stone of horizontal wooden beams placed one above the other to achieve the proper height.¹⁹ Others link columns and capitals with structural components in wood.²⁰

As an architect, Vitruvius must have been well aware of the use of wood in roofing. It is therefore perhaps natural that he might accept wooden origins for what he himself defines as decorative members (“ornaments”). Whatever meaning originally existed had clearly been lost by his time, and these members were reproduced in stone simply as imitations of original inventions (IV, 2, 2). There even seems to have been some disagreement as to what was imitated, at least in the case of triglyphs, which some identified with windows (IV, 2, 4). Nor has it been any easier for modern scholars to correlate many of these ele-

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ments with structural components or with forms that might naturally occur in wood. Instead, one can argue that Vitruvius’s explanation for the “ornaments” of the orders is based more on historical theory than on knowledge of early practice.

Yet why would he, as an architect, perpetuate such theories? One concern of theoreticians is in justifying the existence of individual forms. To accept a purely decorative purpose would be to admit that there is no fundamental need, and thus no real justification, for that form. This is inconceivable in a system based on logic. Vitruvius’s reconstruction, although apparently erroneous, provides a logical explanation, since both orders derive their essential forms from a single construction: ceiling beams and primary rafters become the frieze and mutules of the Doric order, while secondary rafters become the dentils of Ionic.²¹ Moreover, in such a system, an explanation is assumed to exist in the remote past and to derive from some earlier need.²² Wooden roofing members serve that role for Vitruvius, that is, they “legitimize” the entablature, even though by his time they have become purely ornamental.

VITRUVIUS’S HISTORICAL DEVELOPMENT

The early use of wood also fits with Vitruvius’s evolutionary view of architectural development. Both materials and technology are assumed to progress over time toward a state of perfection. In Book II, 1, 1–3, 6–7, he briefly traces the development from primitive shelters to increasingly more sophisticated huts and finally to houses. This development coincides with the evolution of humans from a wild beastlike origin and results from their increasing mastery of techniques and materials. Within this system, wooden forms would be the natural predecessors of the canonical architectural components in stone.

The link between the progress of human culture and the development of its arts has been traced back as far as the Classical period in Greece.²³ This theory must have been well accepted by Roman times, since it appears also in the works of authors writing about another medium, sculpture. Here, again, wood is seen as the predecessor of stone. Pliny (*HN* 12, 5) states that trees were once used for divine images, while Plutarch (from Eusebius) and Pausanias (2, 19, 3) refer to the earliest statues as being of wood.²⁴ To all these authors, an early date could entail only limited human technology, and thus materials that were easy to handle.

As A. A. Donohue argues, however, the evidence from sculpture does not support a relationship between the use of wood and either a necessarily early date or a primitive level of technology.²⁵ Instead, wood and stone could be used interchangeably in various cultures, even from earliest times, while wooden figures may be as stylistically advanced as their stone counterparts. If the origins of sculpture can provide any guide to those of architecture, they

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certainly raise doubts about wooden predecessors. Just as significantly, the widespread assumption that material dictates form is not borne out. If we can thus dispel an association between “flat” statues and a wooden background or sharp shapes and a derivation from metal, might we also doubt a connection between the geometric components of an entablature and their presumed origins in wood?

Related to this evolutionary view of materials is that of a historical development of forms. That development is conceived in terms of “invention and innovation,” which leads to perfection. Vitruvius applies this approach to the creation of the architectural orders. Their components seem to appear fully formed at the moment of creation, but proportions and arrangements were left to the contributions of later architects. A comparable view is found in various passages in Pliny (*HN* 34,54; 35,15–16; 35, 151–53; 36, 15), when he speaks of innovations by artists in individual media. Yet it certainly had antecedents in Greek thought, which was typically concerned with inventions. This interest is attested perhaps as early as the fourth century B.C. with a treatise on the subject by Skamon of Mytilene entitled *Peri Eurematon* (*On Inventions*).²⁶

For Vitruvius the goal of these developments in architecture was perfection (II, 1, 8). This perfection seems to have existed in a system of principles, derived from the truth of Nature (IV, 2, 6). This rather scientific basis for architecture justifies its inclusion among the liberal arts,²⁷ a requirement that had existed for such disciplines already in the Hellenistic period.²⁸ Yet the underlying concept, of an “ideal,” appears much earlier among the Greeks, as in the forms elucidated in Plato’s *Republic*. It is attested in art by the High Classical period and was apparently first set down in writing in a treatise by Polykleitos (*The Canon*), which probably dates to the third quarter of the fifth century B.C. For Polykleitos, perfection was based on mathematical proportions, a concept likely derived from theories on the fundamental role of numbers espoused by the late sixth-century philosopher Pythagoras and his followers.²⁹ Vitruvius implies that perfection can exist both in the components of a building, through their fitness as he has just described, and in its proportions. In relating the proportions of a “perfect building” to that of a human body as designed by nature, and in acknowledging the derivation from the body of the “perfect number” ten (III, 1, 4–5), he may be reflecting the theories of both Polykleitos and Pythagoras.³⁰ Certainly the Augustan period was a time of revitalization of interest in the High Classical past and it is not a stretch to suggest that Vitruvius, in trying to curry favor with Octavian, would have based some of his theoretical principles on those of Classical period authors.

Vitruvius’s evolutionary view thus seems to be consistent with the thinking of earlier and contemporary writers. It is also inherently logical, which may account for its relatively unquestioned acceptance in modern times. Yet it remains a theoretical construct, which was passed down in the sources and accepted without verification.

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SOURCES

The exact sources available to Vitruvius are uncertain. Particularly in the preface to Book VII, he names a number of authors and their subjects. It would appear from Vitruvius's list, however, that the majority of their works concerned individual buildings and thus were probably on the order of specifications. This seems to be especially true of the early treatises. From preserved evidence, such treatises place more emphasis on technical aspects of construction than on issues of design or theory, which become important in the Late Classical and Hellenistic periods.³¹ Only to Silenus, Arcesius, and Philo³² are attributed general texts, on Doric, Corinthian, and temple proportions, respectively, and to those listed as less celebrated men, treatises on symmetry. No mention is made specifically of his sources for the origins of the architectural orders and since none of the texts cited is extant,³³ it is impossible to speculate on them.

Some indication of the variety of Vitruvius's sources has been gained through an examination of the structure of the two main books in question, III and IV. Gros points to a much greater coherence and precision in Book III, which discusses the Ionic order, as evidence that Vitruvius relied heavily for this portion on the treatises of Greek architects in Asia Minor.³⁴ Indeed, Vitruvius mentions among his list of authors both Pytheos and Hermogenes, whom we believe to have been active in Asia Minor during the second half of the fourth century and in the late third or second century B.C., respectively.³⁵ Yet even in Book III, there are inconsistencies and these probably reflect the diversity of sources used. They have especially been noted in regard to the Ionic capital, which according to R. Carpenter may depend on treatises by Pytheos and unknown late Hellenistic sources for its proportions, the writings of Hermogenes for its plan, and surviving tradition in Asia Minor for its design.³⁶ Even if, as F. W. Schlikker argues,³⁷ much of Vitruvius's information had already been compiled by a single major source, it nevertheless remains an eclectic tradition.

Book IV is much more disjointed. Gros attributes this to the need for Vitruvius to develop for the Doric and Corinthian orders a treatment comparable to that of Ionic, as well as to provide additional information on all three, without the benefit of such thorough and well-organized treatises. Indeed, in some cases, as the derivation of the Corinthian capital from acanthus leaves growing around a basket above a maiden's grave, he seems to have resorted to anecdotal accounts.³⁸ Clearly the quality of information conveyed was very much dependent on the sources used, some of which were more valuable than others.

Although the names of Vitruvius's sources go back as early as the mid-sixth century B.C. with Theodoros on the Temple of Hera at Samos and Chersiphron and Metagenes on the Temple of Artemis at Ephesos, the earliest authors with whom information on the orders can be reliably linked are relatively late. Where the sources for particular details can be identified, they are likewise late. The architect Pytheos, active in the second half of the fourth century B.C., is among

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the earliest. Additionally, the Ionic entablature prescribed by Vitruvius, which includes both a frieze and a dentil course, does not, on present evidence, appear until the early fifth century, and is not common before the end of the fourth century B.C.³⁹ If, as generally acknowledged, Vitruvius's own sources are rooted in the Late Classical and Hellenistic periods, any information they conveyed regarding the origins of the architectural orders must have been already several centuries removed. Indeed, it was not unusual for scholars of the period to rely on secondhand sources, especially since original texts were often inaccessible. Even when the originals were consulted, technical terminology must have posed problems in interpretation.⁴⁰ Thus, the advantages over modern scholars that Vitruvius gained through proximity in time may not be as great as we assume.

There is no doubt that Vitruvius offers valuable information on the architectural orders as well as the motivations that gave rise to them. Yet inconsistencies clearly exist in his statements, especially in the precise circumstances, early date, and wooden antecedents of the orders. These suggest that he may not have fully understood his sources or that they were inadequate. Like him, many of these authors were writing long after the fact. Moreover, their approach to architectural history differed significantly from our own. We cannot therefore accept Vitruvius as the final authority on these issues, but rather should see him as a compiler and transmitter of the prevailing views regarding them in the late first century B.C.

LATER INTERPRETATIONS: RENAISSANCE

Despite the problems thus enumerated in Vitruvius's account of the origin of the architectural orders, his impact on the study of ancient architecture has been enormous. One reason is the authority that his work held in later times. The treatise was certainly known to architects and transcribed in monasteries through the Middle Ages, but it received particular attention in the Renaissance, following its "rediscovery" in the fifteenth century.⁴¹ As the only architectural treatise from antiquity to survive, it enjoyed a near monopoly on information within its purview. Additionally, Vitruvius's theoretical approach to his subject matter was very much in line with that of other writers of his day, who therefore provided reinforcement and elaboration of his statements. More important, this approach was also generally consistent with that of Renaissance artists and theorists, who looked to Vitruvius for confirmation of their own evolving views, sometimes to the point of dogmatism.⁴²

Even in later times, with the introduction of more critical analyses and an increased understanding of the monuments themselves, Vitruvius has remained an important source. Yet each period has considered his ideas and statements within the context of their own theories of architecture. Their understanding of Vitruvius as well as the concepts they choose to transmit are thus very much reflections of their own times. Because of their impact on current opinion, it is