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A critical look at vitruvius

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ABSTRACT

scientific, historical, and interpretive methods to conduct the study. We intend to answer the questions below: How can the time of Vitruvius be interpreted? How did Vitruvius conceptualize architecture? What did Vitruvius emphasize most on in his study? Are there any surviving buildings from the time of Vitruvius, and if there are, how exactly do they fit the explanations of Vitruvius? What can we offer our peers as results of this study? Did he, in fact, ever live and is there really a book called *De Architectura*? It is argued that neither such a book nor the author existed in the first century before the birth of Jesus. This study's hypothesis is that neither the man nor the book *De Architectura* existed. We intend to criticize the sources and attempt to reveal the truth on the subject.

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Introduction

Archer, Togan, and Stanford's ideas on methodology are used in this paper, and this study is prepared according to the methodology of interpretative architectural history^{6,7,8,9}.

Research is defined by Archer as a systematic enquiry whose goal is communicable new knowledge or understanding. It is 'systematic' because it is pursued according to some plan. It is an 'enquiry' because it seeks answers to questions. It is 'goal directed' because the objects of the enquiry are posed by the task description. It is 'knowledge or understanding directed' because the findings of the enquiry must go beyond providing mere information. It is 'communicable' because the findings must be intelligible and located within some framework of understanding for an appropriate audience⁶.

Popper argues that because not even a very large number of confirmations of a rule will ever prove it, the scientist must seek to disprove his hypothesis. One counterexample will suffice, but the more people who try to disprove a rule unsuccessfully, the greater the likelihood that it approximates to the truth. If observation successfully refutes it, then the hypothesis is altered to take into account this observation so that a new hypotheses arise that are closer to the truth. Thus, hypotheses that are always mental constructs are shaped and reshaped by contact with reality to bring them nearer to the truth⁸.

Togan defines three types of history: reference, pragmatic, and genetic. Reference history narrates without any effort at analysis and systematization. Pragmatic history deals with learning about a historical event and aims to generate a useful conclusion. Genetic history deals with asking the 'why' and 'how' about events and aims to clarify the developmental steps of humanity and the reasons behind them⁷.

The aim of history is to find the truth. It is a comprehensive science concerned with identification or experiments. There are certain facts that have been identified by this science, along with

inconclusive findings, which do not undermine the scientific validity of a study. The backbone of the history method is "intikad", criticism. It is divided into two branches: external criticism and internal criticism. Being conscious of whether a source leads to the truth is external criticism. Research scholars in history read the source and judge whether it is useful for throwing light on the event being researched. This is called internal criticism⁷.

Building remnants are regarded as a source in the science of history. For example, a house built for providing shelter, or a bridge built to connect two banks are remnants from the past and are our inheritance. Old buildings, bricks, iron or steel bodies, city walls, water arcs, bathrooms, mosques, churches, monasteries, and lodge remnants are all important sources of history. Old civilizations are learnt about via these artefacts rather than via books. Moreover, hand-written manuscripts are considered to be remnants of their times. Remnants (if not fake) are always trustworthy, because they are a part of the old life. However, our judgments about them may be biased or wrong. We must be controlled with regard to our judgments. We see a bridge and present it as a bridge of Sinan. We make judgments on the characteristic properties of master Sinan's architecture. Later, it may be understood that this building belongs to another architect. Therefore, our judgments on both bridge and characteristics of the master become irrelevant. However, the bridge is still a monument of a certain period⁷.

Stanford identifies three cardinal sins that should be avoided at all costs. The first is subordinating history to any non-historical theory or ideology, whether it be religious, economic, philosophical, sociological, or political. The second is neglecting breadth (i.e., failing to take all considerations into account and do justice to all concerned). The third is ignoring or suppressing evidence⁸.

The first step in coming to a historical conclusion is to evaluate all the views found in the references and subjecting them to criticism. Some researchers have hidden or deleted evidence according to their worldview in the process of translation. This is contrary to the main aim of historical research, which is to reveal the truth. A decisive part in studying history is not the verification but interpretation of the sources. Source criticism is only the first step in basing knowledge on reliable sources. Humanists of the fifteenth and sixteenth centuries began to consider the established picture of the classical authors of the antiquity as distorted. Until then, the traditions of the classics had been based on generations of handwritten copies that had altered the texts either because their content did not correspond with the religious and moral beliefs of the copyists or because of mistakes in the process of reproduction. As a consequence, humanists understood antiquity as a lost world that had to be recovered from its remnants. Anything that was thought to belong to the age of the Roman Empire or the Greek city-state (*polis*) was considered to be worthy of conservation¹¹.

Criticism of the Sources Analyzed

Twenty-nine references are evaluated that related to our subject. Generally, there is extensive knowledge on the biography of Vitruvius and the work *Ten Books on Architecture*, which is likely to have been written by him. However, there is no further evidence on this. Moreover, when the sources are compared to each other, it is found that the relevant information about Vitruvius is contradictory. Even the name 'Vitruvius' varies in the sources¹.

Four main four references are used to interpret Vitruvius. The main sources are Kruft (1994), Gwilt (1826), Rowland (1999), and Güven (1990). Biographical information about the authors of these main sources is presented in the appendix. Archer, Togan, and Stanford are used as references for methodology^{2, 3, 4, 5, 6, 7, 8, 9}.

When the literature is surveyed, it can be seen just how much intellectual effort has been put into understanding Vitruvius and his ideas on architecture. These efforts began in the era of Renaissance and are still in progress. In almost every country where architecture is studied, academics have published papers on Vitruvius and his book *De Architectura Libri Decem*. A Turkish translation of this book is also available in Turkey.

There are three main scholars who guide research from the methodological point of view: Archer, Stanford, and Togan. Bruce Archer is an experienced design professor. His book *On the Method of Research* has influenced the academy in Turkey. The book is published in both Turkish and English in a clear style. It is used by design researchers as a guide. A recent version of the book may be much more useful. Michael Stanford used to be a senior lecturer and holds degrees in philosophy and history. His book may be considered a modern guide for history researchers regarding methodology. The book seems to be a result of dense academic study. It would be more helpful, however, if there were specific examples of historical research texts. Zeki Velidi Togan is one of the influential intellectual characters of our time. He held a degree of Ordinary Professor, and his book of history methodology is used as a reference book for history studies in Turkey. The contents of the book are not well ordered, however, and the language used is a bit difficult to understand. A modern translation would be much more useful for young scholars¹.

Although it is stated that the treatise had survived from the ancient times, there is no evidence to prove this in the studied sources. Thus, the originality of *De Architectura* is debatable and will be evaluated in the information about *De Architectura* section. These general statement texts are highly informative but less falsifiable. For example, the aim is to explain that a man called Vitruvius never existed on earth, never mind having any great influence on his followers. Neither Güven nor Gwilt and Morgan discuss the hermeneutics of the text. Only two sources are closer to a modern understanding of historical research. These are the works of Rowland and Kruft. They both searched for early versions of the manuscripts, but they fail to emphasize that original manuscripts are lost and unavailable to the modern reader. This kind of source criticism reveals the truth about Vitruvius. It must be noted that Book III is organized differently in the version of Gwilt. Gwilt and Morgan organized Book III in different chapters, but the contents seem to be similar¹.

Time of Vitruvius

There are various contradictory pieces of information about Vitruvius' name, his birthplace, birth date, occupation, works, and managers in varying references.

There are several alternatives to his name. Vitruvius is the most common one, but other commonly used names in the sources are Pollio and Marcus. Thus, his name is considered to be Vitruvius Pollio Marcus. There is no valid information about this so-called author. It is guessed that he might have been born around 80 B.C., in the Bay of Naples, Campania, or Rome (Figure 1).



Figure 1. Possible Birthplace of Vitruvius

After receiving a thorough education in Greek philosophy and science, he possibly served as a Roman architect and engineer. In his book, he states that he built a basilica in Fano. He was possibly involved in the activities of both restoring the empire and attacking enemy forces. He may likely have designed weapons, siege machines, bridges, and water supply systems. During the last years of his life, he is said to have written the book *De Architectura* (Figure 2).



Figure 2. Basilica Fano of Vitruvius

During his lifetime, he possibly served the emperors Julius Caesar, Octavianus Augustus, and Octavia. Octavia is said to have given him a pension, which ensured him a carefree old age. This economic freedom might have provided a basis for the narration of the book. His death may have been in 15 B.C.

It would be quite plausible that he was born and raised in the area of Formia or the Bay of Naples. This area produced many of the innovations of Roman architecture in the last centuries of the republic, such as the first amphitheatre (that at Pompeii, 80 B.C.), the first stone theatres in Italy (second century B.C.), and even the invention of Roman concrete (as early as 300 B.C.); presumably it produced many of its professional architects as well. He was probably born 80–70 B.C., and raised and educated in Campania or in Rome Itself.

The time of Vitruvius may said to have been affected by turmoil, beginning with the very first introduction of Gracchi’s reforms in 130 B.C. and ending with the Pax Augusta in 30–20 B.C. He wrote his book in the first decade of the Pax Augusta, 30–20 B.C. This was a decade of renewed peace and prosperity following two or three generations of brutal turmoil and civil war, starting with the conflict between Marius and Sulla in the 90s (or the reforms of the Gracchi in the 130s) and culminating in the civil war of the second triumvirate and the defeat of Marc Antony and Cleopatra at Actium in 31 B.C. It was a time of renewed building, both architectural and cultural, a time endowed with a confidence that the world was being made anew. It was also a time when an educated person seeking to visualize this new world order could draw on a rich international Hellenistic and Italian culture of science, technology, literature, arts, and architecture ^{1, 15}.

Evaluation of Vitruvius and His Book *De Architectura*

Vitruvius wrote a comprehensive book on architecture. It is argued that its aim was to contribute to the Emperor Augustus’ reconstruction program. Vitruvius mentions theory and practice in his book and presents three main concepts: functionality, durability, and beauty. The book was dedicated to Caesar of Rome. It influenced later scholars, such as Alberta, Perrault, Da Vinci, and Palladio. Figure 3 shows an illustration by Da Vinci inspired by a passage in the book. Dissemination of the book was limited in ancient times, but it was published numerous times during the Renaissance and used by researchers of the field of architecture. Figure 4 shows a page from the later editions. In A.D. 300, Faventius used the book as a reference, mentioning some peripheral parts of it other than traditional column architecture. Alberti used the book as a reference for his own publication. A surviving handwritten manuscript copy dates back to the eighth century. The first rediscovery of the book was by Bracciolini in 1414 ^{1, 12, 14, 16}.



Figure 3. Vitruvian man by Da Vinci

De Architectura comprises ten books, each with a separate preface. Book I, after a long introductory section defining the nature of architecture and the personality and ideal training of the architect, discusses town planning in very broad terms. Book II covers building materials (brick, sand, lime, stone, timber) and methods. Books III and IV are devoted to religious architecture and to a detailed discussion of the classical orders, and book V to other forms of public architecture, with special emphasis on the theatre. Book VI deals with domestic architecture, and Book VII with such practical matters as types of flooring, stuccowork, painting, and colours. Book VIII turns to the sources and transport of water, by conduit or aqueduct. After a long excursus on astronomy, Book IX describes various forms of clocks and dials, and Book X covers mechanics, with particular reference to water engines, the odometer, and artillery and other forms of military engineering. The illustrations that accompanied the text were already lost when the earliest surviving manuscripts were transcribed ¹.



Figure 4. Page from the Irish Edition of the Book in 1770

The dominant theme of the book comprises the classical orders, such as Doric, Ionic, and Corinthian. The existence of the supposed rules for these styles has been falsified on numerous occasions by later researchers. For instance, the Teos Temple in Asia Minor (Figure 5), the Mausoleum in Halicarnassos, and the column removal of Hermogenes conflict with surviving ruins supporting the existence of such rules. Upjohn argues that although Vitruvius, a Roman architect of the first century before Christ, codified rules of design for the several orders, existing remains show that no rigid system of proportions prevailed ^{1, 10}.

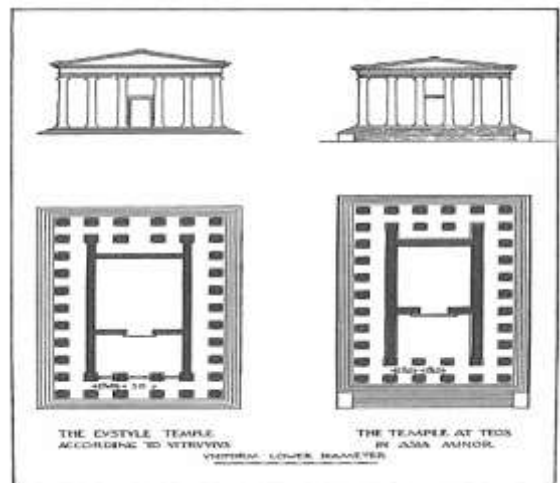


Figure 5. Comparison of Eustyle Temple with Teos in Asia Minor

Results and Discussion

Architecture is an applied science, as Vitruvius observes, composed of theory and practice. It is obvious in the case of Vitruvius that practice does not fit the theory. He gives detailed information on the proportions of columns, but when compared with the real examples, many differences have been identified. Humanists of the fifteenth and sixteenth centuries began to consider the established picture of the classical authors of the antiquity as distorted. Until then, the traditions of the classics had been based on generations of handwritten copies that had altered the texts either because their content did not correspond with the religious and moral beliefs of the copyists or because of the mistakes in the process of reproduction. As a consequence, humanists understood antiquity as a lost world that had to be recovered from its remnants. Anything that was thought to belong to the age of the Roman Empire or the Greek city-state (polis) was now considered to be worthy of conservation. Figure 6 shows the Maison Carree at Nîmes, which has survived from the age of Vitruvius.



Figure 6. Maison Carree at Nîmes

Vitruvius was not present physically, and neither was his book. Even if there was a suspicion that he had lived, his work is so full of mistakes and untrue statements that it would cause doubts about its authenticity. The only living thing is the debate and the theory building on his efforts. Under any circumstances, his synthesis has led to a better understanding of architecture.

Thus, studies of building remnants from antiquity and their restoration, both physically and in the virtual world of the computer will be a contribution to this age. The identification process of the buildings mentioned in the book is shown in Figure 7. An interpretative study of Vitruvius from a genetic historian's point of view is offered. The content of the book may be related to the religion-dominated society of medieval times. An outcome of the study is the obvious positive effect on the authority of information about the development of architecture

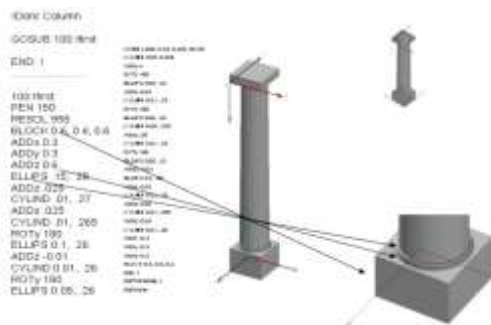


Figure 7. Definition of Doric Column in Computer Environment

It is concluded that there is nobody called Vitruvius; he never lived. Like the oral tradition of the Hodja Nasrettin or Karagöz Hacivat, this is a scripture tradition. He is as human as the anchovy-pizza-eating comic strip ninja turtles. Evidence-based theoretical studies are offered for our time, especially for modern Turkish architecture. It is impossible to give detailed information about the author when the only present evidence is a scriptoria (handwritten manuscript copy) produced about seven centuries after his death. It is argued that information given about him is a work of mere imagination.

The purpose of this paper is not to ignore or neglect the value of architectural history. On the contrary, it is intended to start a debate and enable a better understanding of Vitruvius in a critical and sceptical way. Is this not the aim of historical research?

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Appendix: Information on the Authors of the Main Sources

Hanno Walter Kruft¹ was an international research professor who studied subjects ranging from fourteenth-century Italy through the Renaissance, the Baroque, and the Age of Goethe to the present day. His study included painting, sculpture, architecture, urbanism, and art theory, with the central theme being the contributions of Italian art to the art history of Germany, Holland, France, Spain, England, and America. He worked for three years as an assistant at the Central Institute for Art History in Munich and as a fellow at the Kunsthistorisches Institut in Florence. In 1972, at the Technical University of Darmstadt, Kruft habilitated a monograph on the Sicilian Renaissance sculptor Domenico Gagini and his workshop. His major work is the monumental *History of Architectural Theory* (Munich 1985). In 1982, he was appointed to the newly established Kruft Chair of Art History at Augsburg. Here, he developed, within a short time, excellent study conditions as well as the cultural life of the city. In 1991, Kruft and Markus Völkel published an annotated edition of the Rome diaries of Ferdinand Gregorovius, a work equally valuable to historians and art historians of the nineteenth century² [17].

The second main source is the translations of Joseph Gwilt³ (January 11, 1784 to September 14, 1863). An English architect and writer, he was the son of George Gwilt, an architect surveyor in the county of Surrey, and was born at Southwark. George Gwilt the younger was his elder brother. He was educated at St. Paul's School, and after a short course of instruction in his father's office, in 1801, he was admitted as a student of the Royal Academy. That same year, he won the silver medal for his drawing of the tower and steeple of St. Dunstan-in-the-East. In 1811, he published a *Treatise on the Equilibrium of Arches*, and in 1815. After a visit to Italy in 1816, in 1818, he published *Notitia architectonica italiana*, or *Concise Notices of the Buildings and Architects of Italy*. In 1825, he

published an edition of Sir William Chambers's *Treatise on Civil Architecture*. Among his other principal contributions to the literature of his profession are a translation of the *Architecture of Vitruvius* (1826), a *Treatise on the Rudiments of Architecture, Practical and Theoretical* (1826), and his valuable *Encyclopaedia of Architecture* (1842), which was published with additions by Wyatt Papworth in 1867. In 1833, he was elected a member of the Royal Astronomical Society [18].

The third source is the comprehensive study by Ingrid Drake Rowland, named *Vitruvius, Ten Books on Architecture*. She is a classical scholar, professor, and author, born on August 19, 1953. She is a professor at the University of Notre Dame School of Architecture. Based in Rome, Rowland writes about Italian art, architecture, history, and many other topics for *The New York Review of Books*. She is the author of the books *Giordano Bruno: Philosopher/Heretic* (Farrar, Straus, and Giroux, 2008); *The Place of the Antique in Early Modern Europe*; *The Culture of the High Renaissance: Ancients and Moderns in Sixteenth Century Rome*; *The Roman Garden of Agostino Chigi, Horst Gerson Memorial Lecture* (University of Groningen, 2005); *The Scarith of Scornello: a Tale of Renaissance Forgery* (University of Chicago Press, 2004). Her essays in *The New York Review of Books* were collected in *From Heaven to Arcadia: The Sacred and the Profane in the Renaissance* (New York Review Books, 2005). Rowland completed her Bachelor of Arts degree in classics at Pomona College and earned her Master's and Ph.D. degrees in Greek literature and classical archaeology, respectively, at Bryn Mawr College. She has several awards and honors [19].

The fourth and final main source is the translation of Morgan's work by Suna Güven, who was a doctor at the time of publication (2005). Güven received her B.Sc. degree in Architectural Studies from Wellesley and her M.Sc. and Ph.D. degrees in the History of Architecture from Cornell. She is a professor at METU [8]. Her study is based on the book of Professor Morris Hicky Morgan, who was born in Providence, Rhode Island, on February 8, 1859. He prepared for college at St. Mark's School, Southborough. After graduation, he was a tutor in Latin and Greek at St. Marks' for two years and was head tutor of the school in 1883–1884. For the next three years, he studied classical philology at Harvard, receiving an A.M. and Ph.D. in 1887. From the autumn of 1887 until his death, he taught at Harvard under various titles. He was first instructor in Greek, then tutor, and later assistant professor of Latin and Greek. In 1896, he became assistant professor of Latin, and three years later, on the death of Professor F. D. Allen, professor of classical philology. In 1904, he lectured on Greek literary criticism at the Summer School at the University of California⁴[20, 21].

1 In his book *A History of Architectural Theory from Vitruvius to the Present*, he states that the book is written to give his architecture students answers in architectural theory. From 1972, the author gave a series of lectures on the history of architectural theory and seminars at the Technische Hochschule in Darmstadt.

2 The name of the informant Adrian von Butlar from the newspaper *Neue Zürcher Zeitung*, September 21, 1993.

3 The author has dedicated *The Architecture of Marcus Vitruvius Polio* to the king.

⁴ This information has been adapted from *The Harvard Bulletin*, March 23, 1910.