

# A diachronic linguistic framework for a systematic historical study of Iranian architecture

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## Abstract

Despite numerous descriptive studies on the historical understanding of Iranian architecture, there remains a clear need for analytical and theoretical approaches to elucidate its structural, cultural, and semantic dimensions. A fundamental gap in this field is the absence of a systematic framework that transcends mere physical descriptions of buildings to address their structure, meaning, and cultural transformations. The focus of this article is to propose a methodology for research in this field. By drawing on linguistic approaches, it explores the theoretical and analytical potential of linguistics for understanding Iranian architecture. The fundamental similarities between language and architecture, as structured cultural systems, enable the application of linguistic concepts to architectural analysis. Among these, the diachronic linguistic approach, which examines language evolution over time and analyzes its structural, semantic, and functional changes, offers a conceptual framework for studying Iranian architecture. The central research question is: How can diachronic linguistic theories be applied to formulate a theoretical framework for the historical understanding of Iranian architecture? Employing a theoretical and qualitative approach with an analytical-comparative method, this study investigates the possibilities and modalities of applying this framework. The findings demonstrate that a diachronic linguistic approach provides a coherent framework for analyzing architectural structures, meanings, and historical transformations, revealing the structural and semantic evolution of architectural components. Furthermore, it elucidates how architectural elements acquire meaning and undergo transformation within the context of intellectual, social, and cultural developments. This approach facilitates the identification of archetypal patterns and kinship networks among architectures across different regions and clarifies the mechanisms of intercultural interactions and their semantic transformations.

**Keywords:** Iranian architecture; systematic study of architecture; historical study; diachronic linguistics; structural analogy

## 1. Introduction

Historical studies of Iranian architecture have expanded significantly in recent decades, with scholars examining various dimensions of this tradition. Nevertheless, much of this research has not yet been integrated into coherent analytical and theoretical frameworks and remains largely focused on describing physical features and documenting styles and events. Yet Iranian architecture, throughout its formation and development, embodies multiple cultural layers and rich conceptual meanings that call for an analytical approach. From this vantage, deficiencies in what may be termed *systematic study of architecture* as a distinct analytical sub-field within Iranian architectural research remain clearly evident (See: Qayyoomi Bidhendi, 2007, 5; Qayyoomi Bidhendi, 2005, 4; Golijani Moqaddam, 2007, 15).

*Systematic study of architecture* is an analytical approach that moves beyond merely describing the physical or historical aspects of buildings. Instead, it focuses on uncovering fundamental structures, recurrent patterns, cultural meanings, and processes of transformation within their historical, cultural, and social contexts. The aim is to

construct a coherent framework for systematically analyzing architectural transformations and their cultural–semantic significance, in a manner comparable to how linguistics investigates the internal order and diachronic evolution of language.

In contrast to what may be termed *descriptive architectural historiography*—an approach that concentrates on assembling data and crafting linear narratives of buildings and styles and, though valuable and necessary, has been judged insufficient by many historians<sup>1</sup> (see, e.g., Kostof, 1995)—one may posit *systematic historical study of architecture*. This approach does not stop at historical description; rather, it investigates structures and identifies enduring patterns as well as semantic and cultural transformations over time. It poses deeper questions about why and how architectural change occurs and seeks to uncover internal relations among spatial elements, meanings, and cultural contexts. In short, whereas *descriptive architectural historiography* tends to remain at the level of description and documentation, *systematic historical study of architecture* adopts an analytical stance to explain and interpret architecture within its historical and cultural setting.

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Despite the importance of this perspective, systematic analytical studies remain comparatively scarce in Iranian architectural scholarship, and strengthening the *systematic historical study of architecture* can open new horizons for understanding the cultural and conceptual layers of Iranian architecture.

The significance of theory in the study of Iranian architecture lies in its ability to move beyond mere description and contribute to a deeper understanding of its structures, meanings, and historical transformations. While descriptive studies primarily focus on collecting and documenting the physical and external features of buildings, theory—as an analytical and conceptual tool—offers deeper insights into the nature and dynamics of architectural change. Among the theories that have played a major role in the social sciences in recent decades, linguistics stands out. Disciplines such as anthropology, aesthetics, and philosophy have been profoundly influenced by linguistic approaches, adopting them as analytical models. Architecture, too, has drawn upon linguistic analogies, yet compared to other fields, systematic efforts in this regard have been relatively scarce. Mario Gandelsonas argues that one of the main reasons for this lies in the limitations of architecture in referencing linguistics and transferring its concepts into architectural discourse (Gandelsonas, 1998, 114). Similarly, Thomas A. Markus and Deborah Cameron emphasize that although the analogy between architecture and language has long been proposed, language has often remained a neglected subject in architectural discussions (Markus & Cameron, 2002, 4).

Linguistic theories are generally realist in orientation, emphasizing on how languages function and what relationships exist between them. They investigate the operational mechanisms of languages and their interconnections, relying on empirical observations and analysis. By contrast, architectural theories tend to be more prescriptive and abstract, often concerned with what architecture should be rather than what it is or how it has historically evolved. In a country with such a rich history and culture, it is essential that theoretical discussions about architecture remain connected to its historical context. Yet there appears to be a significant gap between architectural theory and history. Contemporary architectural theory in Iran is largely shaped by Western discourses, which do not always align with the distinctive historical and cultural realities of Iranian architecture. Moreover, the lack of systematic studies on the history of Iranian architecture further deepens this divide.

Linguistics is a discipline that examines the long history of languages and analyzes their relationships in a realistic manner. This field examines languages within their historical contexts, tracing how they evolve over time and exploring the mutual influences among them (Gamwell Moulton, 1971, 383-384). One of the approaches in linguistics is historical linguistics, also known as the diachronic study of language. Within the historical sciences, historical linguistics is, in many respects, the most advanced and the "most scientific" of them (Arlotto, 1981, 231). It analyzes linguistic change across time,

examining structural, semantic, and functional transformations while identifying both internal and external factors that drive such developments. By doing so, it reveals underlying patterns and networks of interconnection. Historical linguistics, therefore, can significantly contribute to advancing theoretical studies and bridging architectural history with architectural theory—particularly in a country like Iran, which possesses a vast and rich architectural legacy. Accordingly, this article proposes a systematic theoretical framework—adapted from diachronic linguistics—for the historical study of Iranian architecture. The premise of this research is that architecture can be read as a language. Based on this assumption, the research aims to approach architecture as a linguistic phenomenon and, just as linguists study language, use linguistic studies to understand Iranian architecture.

The aim of this research is to examine the application of a suitable scientific methodology for the systematic study of Iranian architecture and to highlight certain overlooked aspects within this field. Many orientalists have studied Iranian architecture through rigorous scientific methods, yet often without entering into a meaningful dialogue with it. By contrast, linguists approach language from a cultural perspective, grounding their research in cultural understanding. Similar culture-based approaches are essential for the study of Iranian architecture—approaches that move beyond purely objective and scientific examinations to consider architecture's relationship with the lived world of people over time. While the study of Iranian languages has revealed characteristic features and structural patterns, studies on Iranian architecture have often neglected its cultural dimensions. In this respect, linguistic methodologies can offer valuable insights.

The central question of this study is: How can diachronic linguistics be employed as a systematic theoretical framework for the historical analysis of Iranian architecture? To address this question, the article adopts an analytical-comparative approach: first, it examines the theoretical foundations of diachronic linguistics and its potential for analyzing cultural systems; subsequently, it evaluates the applicability of this potential to the systematic study of historical architecture.

## **2. Research Background**

The background of this study is examined in two parts: first, an overview of historical research on Iranian architecture and its limitations in systematic analysis; and second, a review of studies that have applied linguistic approaches to the understanding of architecture.

### *2.1 The Background of Historical Architectural Studies of Iran*

Studies of Iranian architecture can be traced back to the late Qajar period (late 19th century), with numerous Iranian and foreign scholars contributing to this body of research. These scholars approached Iranian architecture through diverse methods shaped by their expertise and intellectual orientations, producing works on its historical, formal, cultural, social, phenomenological, and other dimensions. For example, Arthur Upham Pope, André

Godard, and Donald N. Wilber focused on historical aspects; Klaus Herdeg on formal analysis; Titus Burckhardt, Henry Corbin, Nader Ardalan, and Seyyed Hossein Nasr on phenomenological and semantic interpretations; and Seyyed Mohammad Beheshti and Mahdi Hodjat on cultural perspectives, among others.

In this section, only works carried out on the historical dimension are discussed and from the available researches, only a selected number of published books on the subject are introduced. The intent here is to distinguish between descriptive “historiographic approach” and “systematic studies of architecture.” Then we shall continue to discuss the application of “diachronic linguistics” in the “systematic study of architecture.” Historical studies of Iranian architecture are categorized here into three groups according to the scholars’ areas of expertise and their approaches: art historians, archaeologists, and architects. Nevertheless, this is a general categorization, since some scholars have adopted multi-dimensional perspectives in the study of Iranian architecture, but in this discussion, their dominant approach is considered.

Art historians, as is expected of them, adopt a historicist perspective in studying architecture, categorizing it in accordance with historical periods or styles. Arthur Pope, André Godard, and Donald N. Wilber are among this group.

Arthur Upham Pope was a famous American art historian who was an expert of Persian art. Some of his important works include *Persian Architecture: The Triumph of Form and Colour*, the sixteen-volume series *A Survey of Persian Art*, *Masterpieces of Persian Art*, and *An Introduction to Persian Art since the Seventh Century A.D.* In *Persian Architecture: The Triumph of Form and Colour*, Pope studies Iranian architecture categorized according to historical political periods, Elamites, Achaemenids, Parthians, Sassanids, Samanids, Ghaznavids, Buyids, Seljuks, Mongols, Timurids, and Safavids, and in each period, describing physical features of buildings such as their measurements and artistic features (Pope, 1995). In *A Survey of Persian Art*, he studies Iranian art and architecture from prehistory to the Safavid period, once again, according to historical political eras, investigating the physical and architectural features of space2 (Pope & Ackerman, 2008). Pope used the term “Persian art” as a concept distinct from Islamic and Arabic art, considering the unifying element of Persian art to be the “Persian race” with its own specific aesthetics. He emphasized the decorative aspect of Persian art, an approach influenced by the formalism of English critics Roger Fry and Clive Bell. However, Pope regarded this characteristic as the reason Persian art is superior to Naturalist Western art and the art of other parts of the world (Maziar, 2024).

Donald Newton Wilber was a researcher of the history of Iranian and Islamic architecture. In *The Architecture of Islamic Iran: The Il Khānīd Period*, he describes the architectural changes during the Il-Khānīd period regarding building construction, materials, building features, and architectural drawings, methods, and

ornamentation materials (Wilber, 1986). “This book presents a new type of historiography of Iranian architecture, which is considered a theoretical development in scholarship on Iranian architecture. Contrary to previous works where discussions of architecture were placed as subordinate to art history or archaeology, in Wilber’s book, architecture has a central position, and “stylistic features” form the basis of architectural analysis of monuments” (Haj-Yassini, 2021, 78).

Before the 1979 Revolution, art history in universities was a subfield of archaeology, therefore, the archaeological approach dominated the study and teaching of art history (Maziar, 2024). Archaeologists often took on an objectivist perspective when describing the physical features of buildings and the reason for their construction at a given geographic location or cultural landscape. Roman Ghirshman (1895-1979), a French archaeologist, has written many books and articles on the archaeology of sites where he excavated, such as Gian Tepe at Nahavand, Lorestan, Asad-Ābād, Tepe Sialk at Kashan, Bishapur, Susa, and Chogha-zanbil. Among his most important researches are *Tchoga Zanbil (Dur-Untash)*, *Perse, Proto-iraniens, Mèdes, Achéménides*, *Persian art: Parthian and Sassanian dynasties*, *Terrasses sacrées de Bard-è Néchandeh et Masjid-i Solaiman: l'Iran du sud-ouest*, *L'Iran des origines à l'islam*, and *Persia: The Immortal Kingdom* (co-authored with Ernst Herzfeld).

Ghirshman’s approach to Iranian architecture was primarily based on archaeological analysis. He examined Iranian architecture as a reflection of historical and cultural developments, focusing on the transformation of architectural elements and the reciprocal cultural influences. In works such as *Persian art, Parthian and Sassanian dynasties and The Arts of Ancient Iran: from Its Origins to the Time of Alexander the Great*, he aimed to trace the evolution of architectural elements from the pre-Achaemenid period to the Sassanian era. However, his research was more focused on describing the physical characteristics of buildings and their connection to previous architectural traditions, and his studies were largely grounded in archaeological methods (Ghirshman, 1962; Ghirshman, 1964).

Ernst Herzfeld was one of the most prominent German archaeologists and Iranologists, whose work has had a significant impact on the studies of archaeology and the history of Iranian architecture. The main characteristic of Herzfeld’s work is his deep focus on examining ancient artifacts from an archaeological perspective. He endeavored to analyze Iranian architecture within its cultural and social context. Some of his most important works include *Archaeological History of Iran*, *National Monuments of Iran*, *Iran in the Ancient East*, and *Rapport sur l'état actuel des ruines de Persepolis et propositions pour leur conservation*. In *Ancient Iran on the Basis of Archaeology*, Herzfeld examines the history of ancient Iran based on archaeology, describing and explaining in detail the ancient artifacts to tell the story of Iran’s history (Herzfeld, 1975).

David Stronach, a Scottish archaeologist and an expert on

the history of Iran and Iraq, conducted research on Tepe Nush-i Jān, Pasargadae, and Median monuments. His works include *Nush-i Jān I: The Major Buildings of the Median Settlement* (Stronach & Roaf, 2011), and *Pasargadae: A Report on the Excavations Conducted by the British Institute of Persian Studies from 1961 to 1963* (Stronach, 2000). Stronach studies the physical details of architectural remains in Tepe Nush-i Jān, as well as their measurements and reasons for construction (Stronach & Roaf, 2011). André Godard and Maxime Siroux, who were both French architects and archaeologists, wrote in *Athār-é Irān* a description of the physical and technical features of monuments from an archaeological perspective (Godard et al., 1992). They also suggested new interpretations of historical events and architectural works in line with socio-political and, to some extent, cultural and historical contexts (Nadimi et al., 2019, 15). In addition, in *The Art of Iran*, Godard offered a concise descriptive account of Iranian architecture, focusing on the physical and artistic features of monuments, with little theoretical or comparative analysis (Soltanzadeh, 2020, 2-4; Soltanzadeh, 2022).

The third group of Iranian architecture studies consists of those conducted by architects. Mohammad-Karim Pirnia was one of the first among them. Pirnia, a prominent theorist of Iranian architecture, introduced a new methodology for studying Iranian architecture, which became the academic methodology of architecture education in Iran for decades and remains highly prominent to this day (Maziar, 2024). Pirnia, inspired by Mohammad-Taqi Bahar's stylistics for Persian literature, developed a stylistic approach for Iranian architecture. In "Stylistics," he stated that the styles of Persian poetry suggested by Iranian scholars are logical and appropriate, whereas the architectural styles of Iran, which have been proposed sporadically by non-Iranian researchers, have meaningless names (Pirnia, 2008, 50). Based on this, Pirnia classified Iranian architecture according to the location where it developed and evolved within its geographical context, excluding political periods from his categorization. He categorized Iranian architecture into the styles of Parsi, Parthi, Khorasani, Razi, Azari, and Isfahani, and in each style, he sought to examine the changes in terms of architecture, construction, and ornamentation (Pirnia, 2003). Pirnia, in his works, did not merely provide historical and descriptive information about Iranian architecture; rather, he sought to offer a systematic and analytical structure, relying on theorization, for a deeper understanding of Iranian architecture.

After Pirnia, two groups of architects conducted research on the history of Iranian architecture: one having a theoretical view aiming to define or complete a "systematic study of Iranian architecture," and the other aiming primarily to describe Iranian architecture. One of the scholars who can be considered as having a theoretical approach is Gholamhossein Memarian, an architect and historian of Iranian architecture. Some of his foremost research works include *Iranian Architecture: Construction* (Memarian, 2018); *Iranian Architecture:*

*Systems* (Memarian, 2020); *Introduction to Iranian Domestic Architecture: Introverted Typologies* (Memarian, 1996); and *Introduction to Iranian Domestic Architecture: Extroverted Typologies* (Memarian, 1992). In *Iranian Architecture: Construction*, he describes vaulting types and ceilings and their construction methods in Iranian architecture (Memarian, 2018). In *Iranian Architecture: Systems*, he asserts that there were known systems in Iranian architecture within whose frameworks architects designed. He introduces five systems in Iranian architecture: the dome, iwān, pillared halls, dome-iwān-courtyard, and composite systems, and explains each (Memarian, 2020). His studies are a combination of field research and theoretical analysis, and have had a significant impact on the education and understanding of Iranian architecture.

Mohammad-Reza Ha'eri, an architect and urban planner, in *House in Culture & Nature of Iran: A Study of Architecture of Historic and Contemporary Houses to Compile the Process of House Design* traces the evolution of Iranian houses from the past to the present, and analyses the spatial organization of traditional and contemporary houses (Ha'eri, 2016). Haeri's research adopts an analytical approach that combines both theoretical and descriptive perspectives. In his work *House, Culture, Nature*, he not only describes the evolution of Iranian houses from the past to the present, but also analyzes these changes in relation to culture, nature, and social transformations from a theoretical standpoint. In contrast to purely descriptive studies that only explain the physical characteristics of buildings, Haeri focuses on the fundamental concepts of architecture, spatial organization, and the reciprocal influence of the environment and culture on the formation of the house.

One category of diachronic studies in understanding Iranian architecture is typological studies. From the mid-eighteenth century AD, taxonomy was used extensively as a method to study and classify plants and animals in botany and biology (Memarian & Tabarsa, 2013, 104). From the late eighteenth century, typology was used as a method to study and classify works of architecture as well as a method for architectural design (Memarian, 2005, 170). In the beginning, the typological study was inclined toward simplifying and reducing forms to their basic geometries. However, its reach is far beyond reduction. Typological studies range from construction details to socio-political interactions (Pfeifer & Brauneck, 2008, 10). The English -logy suffix in typology distinguishes it from simple classifications (Memarian & Dehghani Tafti, 2018, 22), as classifications merely highlight superficial similarities, whereas typology provides a more in-depth analysis of the nature and characteristics of objects, offering more comprehensive information (Bastani Rad & Mardoukhi, 2013, 24).

The classification of monuments in Iran begins with the work of Mohammad-Karim Pirnia. In *Introduction to the Islamic Architecture of Iran*, he classifies monuments according to their use: mosque, madrasa, bazaar, house, water reservoir, bathhouse, caravanserai, tower, garden,



etc., and studies the characteristics of each group (Pirnia, 2002). Robert Hillenbrand, professor of Islamic art at the University of Edinburgh, Scotland, surveys monuments of the Islamic period in Muslim countries in *Islamic Architecture: Form, Function and Meaning*. Each chapter of the book is devoted to one architectural type: mosque, minaret, madrasa, mausoleum, caravanserai, and palace, whose characteristics are discussed (Hillenbrand, 2016). During the 1980s, Seyyed Mohsen Habibi carried out research on the housing typology of various regions of Iran (Habibi, 1989). Christian Bromberger studies the housing typology of Gilan in *Habitat, architecture et societe rurale dans la Plaine du Gilan* (Bromberger, 1989). Gholamhossein Memarian classifies housing types in *Introduction to Iranian Domestic Architecture: Extroverted Typologies* (Memarian, 1992) and *Introduction to Iranian Domestic Architecture: Introverted Typologies* (Memarian, 1996). After the above-mentioned, many research works have been undertaken with the approach of Iranian architecture typology.

The standard typological studies of Iranian architecture can be divided into two groups: first, typology as the study and classification of monuments and their characteristics, and second, typology as the study of a basic architectural type and its course of development. The bulk of research on Iranian architecture has been on the classification of monuments and explanation of their characteristics according to the research topic. Few pieces of research examine the course of development of a single type. Among them, Khadem-zade, Memarian, and Salavati try to introduce the basic type of mosque in Kurdistan and its development over time by carrying out a survey of mosques of Kurdistan in "Analytical Typology of Historical Mosques in the Cultural Kurdistan Region" (Khadem-zade et al., 2017).

As Table 1 and discussion above indicate, the studies of Iranian architecture have developed through different disciplinary orientations. Art historians such as Pope and Wilber adopted a historicist perspective, organizing architecture primarily according to political dynasties and stylistic periods. Archaeologists like Ghirshman, Herzfeld, and Stronach concentrated on excavation reports and detailed physical descriptions, often grounding architectural interpretation in material culture and geographical context. In contrast, architects such as Pirnia, Memarian, and Ha'eri introduced systematic and theoretical approaches. Pirnia established a stylistic framework independent of political chronology; Memarian emphasized structural "systems" as the organizing principles of Iranian architecture; and Ha'eri linked the evolution of domestic architecture to cultural and environmental factors.

### *2.1 Background of Studies on the Application of Linguistics in Understanding Architecture*

The analogy between architecture and language has deep historical roots, beginning with Vitruvius and becoming one of the foundations of architectural theory during the Renaissance. In this period, architectural styles were explicitly compared to literary styles; architecture itself

was likened to rhetoric, the evolution of architectural forms was understood as the gradual emergence of a "language," and the elements of a building were regarded as equivalent to words within sentences (Clarke & Crossley, 2000, 1-5).

In his foundational treatise *De re aedificatoria* (1452-1512), Alberti presented architecture as a legitimate art, worthy of scholarly inquiry, analysis, and verbal description. Influenced by the classical rhetorical tradition, he structured his writing in the manner of oratory and argued that architecture, like rhetoric, could convey meaning and cultural values. However, Alberti did not extend this analogy further: he did not attribute to architecture its own syntax or vocabulary. In his view, architecture was an art that could be expressed, but not a full-fledged language with its own grammar and lexicon (van Eck, 2000).

In the eighteenth century, this line of thought was articulated more explicitly by Germain Boffrand in *Book of Architecture* (1745), where he drew direct analogies between the physical components of a building and the "vocabulary" of speech, noting that the profiles of moldings and the other parts that constitute a building play in architecture the same role as words do in speech (Collins, 1998, 174).

In the late eighteenth century, Quatremère de Quincy transformed the metaphor of "architecture as language" into a coherent theoretical framework. He regarded architecture not as a reflection of nature, but as a construct shaped by social conventions, whose meaning and development unfolded within history. In this sense, he is recognized as one of the first theorists to analyze architecture as a language embedded in processes of social transformation (Lavin, 1992). Building on this intellectual trajectory, Quatremère was also among the founders of architectural typology, formulating the idea of a typological approach to design at the end of the eighteenth century (Pfeifer & Brauneck, 2008, 10). Drawing on the distinction between "universal grammar" and "particular languages," he conceptualized architectural types as comparable to a universal grammar that provides a shared foundation for all architectures, while their specific manifestations correspond to national languages with their own rules and local variations. Within this analogy, architectural elements such as the column or the arch function like words in language—at once serving universal structural purposes while carrying distinct cultural meanings in each tradition (Noble, 2000). James Elmes, in *Lectures on Architecture*, conceives of architecture as a language, arguing that in order to adopt a foreign style one must first learn its "alphabet"—that is, to embrace the entire system, rules, and taste of that style in its integrity. Furthermore, influenced by the intellectual climate of comparative philology in his time, and echoing ideas akin to those of Sir William Jones, Elmes maintained that just as languages share common roots and genealogies, architectural styles likewise possess a comparable kinship and can be traced back to a common "origin and lineage" (Elmes, 1823, 78-84).

Table 1  
Background of Historical Studies on Iranian Architecture

<b>Scholars</b>	<b>Expertise</b>	<b>Books and researches</b>	<b>Fields of Iranian architectural studies</b>
<b>Arthur Upham Pope</b>	Famous American art historian	- <i>Persian Architecture: The Triumph of Form and Color</i> - <i>Masterpieces of Persian Art</i> - <i>A Survey of Persian Art</i> - <i>An Introduction to Persian Art since the Seventh Century A. D</i>	- Studying Iranian architecture according to political periods - Describing physical features of buildings such as their measurements and artistic features
<b>Roman Ghirshman</b>	French archaeologist	- <i>Terrasses sacrées de Bard-è Néchandeh et Masjid-i Solaiman: l'Iran du sud-ouest</i> - <i>Tchoga Zanbil (Dur-Untash)</i> - <i>Perse, Proto-iraniens, Mèdes, Achéménides</i> - <i>Persian art: Parthian and Sassanian dynasties</i> - <i>Persia: The Immortal Kingdom</i> - <i>Iran: from the earliest times to the Islamic conquest</i>	- Studying the history of architecture before Islam based on political periods - Archaeologic Studies
<b>André Godard</b>	French architect and archaeologist	- <i>Athār-é Īrān</i> (co-authored with Maxime Siroux) - <i>The Art of Iran</i>	Description of the physical and technical features of monuments
<b>Robert Hillenbrand</b>	British art historian	- <i>Islamic Architecture. Form, Function and Meaning</i> - <i>Islamic Art and Architecture</i>	Studying the architectural typology of Islamic countries; Investigating the characteristics of mosques, minarets, schools, tombs, caravanserais, palaces in Islamic countries
<b>Ernst Herzfeld</b>	German archaeologist and Iranologist	- <i>Archaeological History of Iran</i> - <i>Iran in the Ancient East</i> - "Rapport sur l'état actuel des ruines de Persépolis et propositions pour leur conservation"	- Investigate the history of ancient Iran based on archaeology - Explaining and describing archaeological works in detail
<b>Donald Newton Wilber</b>	Researcher of the history of Iranian and Islamic architecture	- <i>The Architecture of Islamic Iran: The Il Khānid period</i> - <i>The Islamic Architecture of Iran and Turan: The Timurid Period (with Lisa Golombek)</i> - <i>Persepolis: The Archaeology of Parsa, Seat of the Persian Kings</i> - <i>Persian Gardens and Garden Pavilions</i>	- Describes the architectural changes during the Il khānid and Timurid period - Investigation of Iranian gardens in different periods
<b>David Stronach</b>	A Scottish archaeologist and an expert on the history of Iran and Iraq	- <i>Nush-i Jan I: The Major Buildings of the Median Settlement</i> - <i>Pasargadae: A Report on the Excavations Conducted by the British Institute of Persian Studies from 1961 to 1963</i>	Explaining and describing archaeological works in detail
<b>Maxime Siroux</b>	French architect and archaeologist	- <i>Athār-é Īrān</i> (co-authored with André Godard) - <i>Caravanseails d'Iran et petites constructions routieres</i>	- Description of the physical and technical features of monuments - Classification of Iranian Caravanserais
<b>Sheila Blair and Jonathan M. Bloom</b>	Canadian-born American art historian and Jonathan Max Bloom	<i>The Art and Architecture of Islam, 1250–1800</i>	- Examination of the physical characteristics of the monuments - A comparative study of art in Islamic countries
<b>Mohammad-Karim Pirnia</b>	Researcher and theoretician of Iranian architecture	- <i>Stylistics of Iranian Architecture</i> - <i>Introduction to the Islamic Architecture of Iran</i>	- The study of the architectural changes - Classification of monuments according to their use
<b>Gholamhossein Memarian</b>	Iranian architect and architectural historian	- <i>Iranian Architecture: Construction</i> - <i>Iranian Architecture: Systems</i> - <i>Introduction to House typology in Iran, Courtyard houses</i> - <i>Introduction to house typology in Iran, House without courtyard</i>	- Describing vaulting types and ceilings and their construction methods in Iranian architecture - Introduction of Iranian architectural systems House typology in Iran
<b>Mohammad-Reza Ha'eri</b>	Architect and urban planner	<i>House, culture, and nature</i>	Investigating the evolution of Iranian houses from the past to the present, and analyzing the spatial organization of traditional and contemporary houses

Owen Jones, in *The Grammar of Ornament* (1856), was the first to seek a systematic understanding of ornament as a language. Drawing on the analogy with linguistics, he regarded ornamental elements as a “vocabulary” and their principles of combination as “syntax,” formulating one

hundred principles for the organization of ornament in architecture and the applied arts. This work was not only a pioneering attempt to classify ornaments comparatively across diverse cultures, but also a significant step toward systematizing the study of art and architecture through the

linguistic metaphor (Jones, 1868). Later, Charles Blanc, in *The Grammar of Painting and Engraving* (1867), explained the visual arts—painting and engraving—through the same metaphor of “grammar.” He argued that, like language, art possesses its own “vocabulary” (basic elements) and “syntax” (principles of composition). Blanc’s analogy represents one of the earliest attempts to apply the idea of grammar more broadly to the analysis of the visual arts (Blanc, 1874).

In the twentieth century, with the emergence of linguistic paradigms, this approach was revived. During the 1960s, increasing attention to meaning and symbolism in architecture led architects to draw on analogies between language and architecture in order to incorporate linguistic concepts and knowledge into architectural discourse (Agrest & Gandelsonas, 1996, 110).

Continuing this tradition, John Summerson, in *The Classical Language of Architecture*, described classical architecture as a language whose vocabulary consisted of elements such as windows, columns, and cornices (Summerson, 1964). Subsequently, Bruno Zevi, in *The Modern Language of Architecture*, emphasized the necessity of language in architecture (Zevi, 1978), and similarly, Charles Jencks, in *The Language of Post-Modern Architecture*, defined architecture as a language composed of meaningful units or “vocabulary” (Jencks, 1977, 60).

In the following decades, scholars engaged more deeply with the analogy between architecture and language, turning to the structural analysis of architecture. Among them, Christian Norberg-Schulz (1980), in *Meaning in Western Architecture*, influenced by Heidegger’s philosophy, conceived of architecture as a symbolic language of disclosure and analyzed the development of Western architecture from a semantic perspective (Norberg-Schulz, 1980). He further advanced this view in *Architecture: Presence, Language, and Place*, where, drawing on the metaphor of language, he argued that both architecture and language are the “house of Being” and share a comparable structure. In this framework, the “adjective” in language corresponds to “form” in architecture, while the connections between nouns in language—established through prepositions—find their architectural parallel in the spatial relations organized through spatial composition (Norberg-schulz, 2000).

Georgia Clarke and Paul Crossley, in *Architecture and Language: Constructing Identity in European Architecture*, adopt a historical perspective to examine the analogy between language and architecture and its role in shaping European architectural identity (Clarke & Crossley, 2000). Adrian Forty, in *Words and Buildings: A Vocabulary of Modern Architecture*, conceptualizes architecture as a distinct language with its own rules and vocabulary, emphasizing the importance of understanding this language in order to grasp architecture itself (Forty, 2000). Along similar lines, Thomas A. Markus and Deborah Cameron, in *The Words Between the Spaces: Buildings and Language*, highlight the often-overlooked role of language in architecture, arguing that analyzing linguistic practices can provide deeper insight into

cultural contexts and inform design strategies (Markus & Cameron, 2002). Likewise, Nicholas Temple, in *Architecture and the Language Debate: Artistic and Linguistic Exchanges in Early Modern Italy*, investigates the intellectual and artistic exchanges among architects, artists, and thinkers in early modern Italy, demonstrating that the emergence of links between architecture and new linguistic concepts constituted a central theme in architectural theory of the period. He explores a broad spectrum of linguistic debates—from grammar and rhetoric to philology, etymology, and epigraphy—showing that these discussions extended beyond language itself to shape architectural thought and practice (Temple, 2020).

Also Sayed Ahmad and Hweidi, in “*Space, Makan, Kūkan: Phenomenology of Space through Etymology*”, applied a “morphology of space through etymology” approach to compare the concept of “space” in three traditions—Ancient Roman, Islamic, and Japanese. They demonstrated that the lexical roots of the Latin *Spatium*, Arabic *Makan*, and Japanese *Kūkan* shaped spatial perception in these cultures: Roman space is grounded in the physicality of objects; Islamic space depends on actions within the domain, and Japanese space is temporal and intertwined with nature (Sayed Ahmad & Hweidi, 2023).

### **3. Theoretical Framework**

#### **3.1. Diachronic Linguistics and Its Branches**

Diachronic linguistics, also known as historical linguistics, is the branch of linguistics concerned with the study of language change over time. Ferdinand de Saussure made the influential distinction between synchronic and diachronic analysis, the former addressing language at a specific point in time and the latter examining gradual transformations across periods (Crystal, 2008, 142; Hale, 2007, 5-6). Modern historical linguistics took shape in the late eighteenth and early nineteenth centuries, when scholars began to investigate language relationships systematically. During the nineteenth century, research focused largely on historical and comparative linguistics, and it was in this period that the theoretical and methodological foundations of the discipline were consolidated (Gamwell Moulton, 1971, 600; Robins, 2016, 347).

Within this field, several branches can be distinguished, each contributing a particular perspective on language change: historical linguistics, comparative linguistics, etymology, the study of linguistic borrowing, dialectology, and typology. Although typology originally developed as a synchronic field, its diachronic extension has become a key component of historical linguistics, enabling the identification of recurrent pathways of language change (Croft, 2012, 232).

##### **3.1.1. Historical linguistics**

Historical linguistics is the discipline concerned with the study of language change over time and the factors that drive such transformations. These changes often serve as reliable indicators of cultural transmission within societies throughout history, and the outcomes of such research

play a key role in advancing the science of anthropology. In many respects, historical linguistics is “the most highly developed and the most ‘scientific’ of the historical disciplines” (Arlotto, 1981, 231). The most basic task in historical linguistics is to select two distinct stages of a given language—both of which have already been grammatically analyzed—and to formally describe the changes that occurred in the transition from one stage to the other. Depending on the language and the methodological approach, such transformations may occur in sound systems, phonetic and phonemic structures, grammar, and semantics (Ibid, 5).

Among these, semantic transformation is the dimension most closely tied to the life and culture of a community. It concerns the evolution of vocabulary—the most dynamic and flexible component of language—where meanings shift over time in response to social and cultural developments. A fundamental assumption in historical linguistics is that language change does not occur in a completely haphazard manner. Rather, it follows recognizable patterns that can be expressed through formal notation (Ibid, 165,6).

#### 3.1.2. Comparative linguistics

The comparative method lies at the core of historical linguistics. It systematically compares related languages in order to determine whether they share a common origin and, if so, how they have diverged from their ancestral form. By examining cognates—words inherited from a shared proto-language—scholars reconstruct earlier linguistic forms and trace the changes that descendant languages have undergone (Klein et al., 2017, 1; Campbell & Mixco, 2007, 34). Comparative linguistics thus has two primary tasks: first, to establish the existence and degree of genetic relationship among languages, and second, to reconstruct their earlier (prehistoric) stages, known as protolanguages (Anttila, 1989, 20).

#### 3.1.3. Dialectology

Dialectology<sup>3</sup> deals with regional variation within a single language (Campbell, 1999a, 191). Regional varieties of a language that differ in phonetics, vocabulary, and grammar are called *dialects*, while varieties that differ mainly in pronunciation are referred to as *accents*. Dialectologists investigate and describe the distribution of linguistic forms across geographical areas. They examine phonetic variation (different pronunciations of words), syntactic variation (different or common sentence constructions), and lexical variation (different words for the same or similar objects) (Arlotto, 1981, 24).

#### 3.1.4. Linguistic borrowing

Language is a dynamic and evolving system that continuously incorporates foreign elements through contact with other languages. No language develops exclusively from its native resources. The process by which a language or dialect adopts linguistic material from another and integrates it into its own system is called *borrowing* (Campbell & Mixco, 2007, 25).

Borrowing may affect multiple levels of linguistic structure, including sounds, phonological rules, the lexicon, grammatical morphemes, and syntactic patterns (Campbell & Mixco, 2007, 25-26). Among these, the

lexicon is the least stable component of a language; hence lexical borrowing is the most frequent type, while phonological and syntactic borrowing occur less frequently (Arlotto, 1981, 184-193). Loanwords are usually adapted to the phonological rules and phonetic patterns of the receiving language and gradually lose their foreign character (Modarresi, 2014, 90-95).

Borrowing may be direct or indirect. For instance, *yalda* and *shanbeh* (‘Saturday’) were borrowed directly from Syriac, while words such as *oqyānūs* (‘ocean’) and *astorlāb* (‘astrolabe’), originally Greek, entered Persian indirectly through Arabic. Borrowed items may be integrated with little or no change, or they may undergo phonological, structural, or semantic modification. (Safavi, 1995, 102-105).

Borrowing is also clear evidence of cultural contact. Many documented cases show that borrowing often occurs when a dominant social group imports or imposes its way of life on another (Anttila, 1989, 162). The main causes include the introduction of industrial and cultural phenomena, political and economic relations, intellectual exchanges, geographical proximity, and military encounters. Importantly, borrowing is not random; it follows systematic patterns closely tied to the social and political history of linguistic communities (Azizmohammadi, 2003, 71-72).

#### 3.1.5. Etymology

Etymology is the scientific study of the history of and transformation of words. The term originates from the Greek word *etymon*, meaning “the true sense of words.” Today, etymology refers to the investigation of the origin and development of words—both in form and in meaning—from their earliest attestations to the present. It examines when and from where a word entered a language, as well as the structural and semantic changes it has undergone over time (Abolghasemi, 1995, 11).

#### 3.1.6. Language Typology

The term *typology* has multiple applications in linguistics and beyond. In its common usage, it is roughly synonymous with *classification* or *taxonomy*, referring to the categorization of a phenomenon into “types,” particularly structural types. This definition has also been employed outside linguistics, for example in biology, which in the nineteenth century inspired developments in linguistic theory (Croft, 2012, 1).

In linguistics, typology is the branch that classifies languages according to structural similarities and grammatical features, examining systematic similarities and differences without necessarily considering historical relationships (Golfam, 2000, 171; Velupillai, 2012, 15). Typological studies analyze phonological, morphological, and syntactic levels systematically, and may be conducted synchronically (comparing contemporary languages) or diachronically (comparing languages at different stages of historical development) (Velupillai, 2012, 15; Dabirmoghaddam, 2007, 115).

Typology thus focuses on identifying systematic similarities and differences across languages (Dabir Moqaddam & Panj Tani, 2013, 68). Languages are classified according to structural units such as sounds,



words, and patterns of organization, while typological studies are subdivided into morphological, phonological, syntactic, and semantic typology (Velupillai, 2012, 19; Alborzi Verki, 2021, 6)..

In the tradition of typological studies, two major approaches can be identified: the *holistic* (integral) approach, and the *generalizing* (partial) approach. The holistic approach emphasizes broad, global classifications and posits the existence of a unique identity or essence within a language or group of languages. In other words, just as one can speak of the personality of an individual, one may also speak of the distinct features and identity of a language. According to von Humboldt<sup>4</sup>, this character manifests itself across all aspects of a language—from its alphabet to its worldview (Dabir Moqaddam, 2013, 4). By The generalizing approach, by contrast, focuses on specific linguistic features and compares particular constructions across languages to derive linguistic generalizations—for example, comparing passive constructions across different languages to identify cross-linguistic regularities (Dabir Moqaddam, 2013, 5-6).

In the twentieth century, following Greenberg's work, typology became more structured, with three major definitions:

**Typological Classification:** the categorization of languages according to structural features. This definition continues the atomistic tradition by classifying languages based on specific traits—for instance, the order of subject–verb–object.

**Typological Generalization:** the identification of systematic patterns across languages, leading to the discovery of implicational universals (e.g., if relative clauses follow nouns, demonstratives also tend to follow).

**Functional–Typological Approach:** going beyond identifying patterns to explaining why they exist. This perspective is closely tied to functionalism, which explains linguistic structures in terms of communicative, cognitive, or historical functions (e.g., interrogative sentences in many languages employ additional syntactic or phonological mechanisms because they involve greater cognitive processing) (Croft, 2012, 1-2; Golfam, 2000, 171).

### 3.2. Theoretical Model: Language–Architecture Correspondence

To apply diachronic linguistics as a framework for the study of Iranian architecture, it is necessary to establish a structural analogy between the units of language and the components of architecture. This analogy provides a theoretical foundation for systematically mapping linguistic concepts onto architectural forms, enabling us to move beyond merely metaphorical comparisons toward a structured and analytical model.

Language is a system of units that combine according to semantic relations. In linguistics, phonemes are the smallest meaningless units; they combine to form morphemes, the smallest meaningful units. Morphemes create words, and words, through syntactic rules, form sentences (Safavi, 2012, 50). In architecture, a comparable hierarchy can be identified. Architecture, too,

is constructed from components that convey meaning—namely, the way of human dwelling. Building materials function as the smallest meaningless units; through their combination they produce spatial elements (walls, columns, roofs, doors, windows), which constitute the smallest the smallest meaningful spatial units. These elements, when arranged together, form spatial units (such as the iwan, dome chamber, or hall), and spatial units, through spatial organization, constitute the architectural work as a whole. Thus, an architectural work can be regarded as a sentence in language (Table 2) (Alebouyeh et al., 2024, 10-11). While materials, spatial elements, and spatial units are not directly equivalent to phonemes, morphemes, and words, the analogy provides a rigorous theoretical basis for specifying architectural components and for mapping linguistic concepts onto architectural structure.

To apply diachronic linguistics to the study of architecture, it is necessary to clarify how each branch of this discipline can be employed at different architectural scales— from materials and elements to spatial units, spatial organization, and semantic layers— and what analytical capacities it offers for historical inquiry. Depending on the research question and the available data, each branch may operate across multiple architectural levels. Table 3 systematically summarizes these correspondences, presenting a conceptual framework that aligns linguistic analyses with their architectural counterparts. In this way, the framework demonstrates how diachronic linguistics can provide a coherent methodology for studying the structural, spatial, and semantic dimensions of Iranian architecture over time.

## 4. Research Methodology

This study adopts a qualitative and analytical–comparative approach with the aim of developing a theoretical framework for the systematic study of Iranian architectural history, based on the perspectives of diachronic linguistics. In the first stage, the theoretical foundations and scholarly sources related to various branches of diachronic linguistics are examined in order to extract principles and methods applicable to architectural analysis. In the second stage, the concepts and methods of each linguistic branch are mapped onto architecture, and their conceptual and analytical equivalents in this field are defined. Based on this mapping, a coherent framework is constructed that enables the identification and interpretation of architectural transformations over time, analogous to the analysis of linguistic change. In the third stage, the proposed framework is applied in a comparative manner to Iranian architecture in order to demonstrate how diachronic linguistic approaches can be employed to analyze architectural elements and to determine which indicators may be incorporated within the analytical model. At this stage, a limited set of well-known historical buildings from Iran are used as hypothetical case studies to illustrate the capacity of the framework to identify and explain architectural transformations.

Table 2

Structural Analogy between Linguistic Units and Architectural Components,

Linguistic Level	Functional Definition in Language	Architectural Equivalent	Functional Definition in Architecture
<b>Phoneme</b>	Smallest meaningless unit	<b>Building materials</b>	Smallest meaningless component in construction
<b>Morpheme</b>	Smallest meaningful unit	<b>Spatial elements</b>	Primary level of spatial meaning/function
<b>Word</b>	Independent meaningful unit	<b>Spatial unit</b>	Independent unit with spatial/functional identity
<b>Syntax</b>	Rules of combining units	<b>Spatial organization</b>	Rules for combining and organizing spatial units
<b>Semantics</b>	Semantic functions	<b>Meaning</b>	Cultural-social and symbolic connotations

Table 3

Systematic Correspondence between Branches of Diachronic Linguistics and Architecture

Branches of Diachronic Linguistics	Linguistic Analysis	Architectural Analysis of Iran
<b>Historical Linguistics</b>	Study of language changes over time: Phonological change Lexical change Grammatical change Semantic change	Study of architectural transformations over time and their underlying causes: Change in materials and construction techniques Change in spatial units Change in spatial organization Change in meanings/functions of spaces
<b>Comparative Linguistics</b>	Historical relations among languages	Historical relations among architectures
<b>Etymology</b>	Origins of words	Origins of spatial units
<b>Dialectology</b>	Study of linguistic varieties in a specific geographic region: Phonological varieties Lexical varieties Syntactic varieties	Investigation of architectural diversity across different geographic regions of Iran, based on: Material varieties Spatial unit varieties Spatial organization varieties
<b>Borrowing</b>	Borrowing of elements from another language: Phonological borrowing Morphology borrowing Lexical borrowing Syntactic borrowing	Study of architectural borrowings in terms of:  Borrowing of materials/decorative motifs Borrowing of spatial elements Borrowing of spatial units Borrowing of spatial organization
<b>Typology</b>	Classification of languages based on: Phonology Morphology Syntax	Classification of architecture based on: Materials Spatial elements Spatial organizations

## 5. The Application of Diachronic Linguistics in Understanding Iranian Architecture

By applying each branch of diachronic linguistics to architecture, we uncover systematic patterns of change, regional variation, cultural borrowing, and recurring typologies. This demonstrates the analytical power of the proposed framework in revealing the dynamics of Iranian architectural history.

### 5.1. Historical Linguistics and Architectural Transformation

Historical linguistics studies the evolution of language over time and examines the internal and external factors that drive such changes. A fundamental assumption of this field is that linguistic change is not random but follows identifiable patterns that can be formally described and classified.

By analogy, Iranian architecture can likewise be studied through its diachronic transformations. These include changes in building materials, architectural elements, spatial units, spatial organizations, and even semantic shifts in the meaning of spaces. Pirnia was among the first scholars to adopt a linguistic outlook in architecture, analyzing the evolution of components such as materials,

structural techniques, and ornamentation (Pirnia, 2003). However, less systematic research has been devoted to the transformation of spatial organizations and architectural meanings.

Semantic transformation, in particular, is deeply intertwined with social and cultural life. Just as words acquire new meanings over time, architectural spaces may undergo semantic reconfiguration. A prominent example is the central courtyard in Iranian houses: once the nucleus of family and social interaction, it has in contemporary architecture become a peripheral or marginal space. Such cases reveal the cultural dimension of architectural “semantic shifts.”

Another aspect of historical analysis is the role of internal and external factors in shaping transformation. In historical linguistics, these include the internal rules of the language as well as external socio-cultural conditions. Similarly, architectural change cannot be reduced to technical adjustments; even the simplest modification often reflects deeper cultural shifts. The transition from stone construction in the Achaemenid period to brickwork in the Sasanian era, for instance, was not merely a material substitution but a reflection of broader transformations in technology, economy, and the worldview of Iranian society.

Like language, architectural change is neither arbitrary

nor accidental. Linguists identify patterns of regular change—such as the systematic shift of initial *y-* to *j-* in the transition from Old Persian to Middle Persian—that reveal the order underlying linguistic evolution (Natel-Khanlari, 1968, 91). A similar approach can be applied to architecture: recognizing recurrent and rule-governed transformations in architectural components allows us to reconstruct developmental trajectories. Just as historical linguistics enables the reconstruction of lost elements of language, so too can the identification of architectural patterns provide a basis for reconstructing damaged monuments and for developing a more systematic understanding of the historical evolution of Iranian architecture.

### *5.2. Comparative Linguistics and the Reconstruction of Shared Architectural Traditions*

Comparative linguistics, through the comparison of languages, examines the historical relationships between languages and their kinship, identifying the path of evolution and shared elements, and reconstructing a hypothetical common language. However, in architecture, comparative studies are mainly limited to identifying similarities and differences, without delving into historical relationships and structural transformations in greater depth, nor drawing conceptual conclusions from these investigations.

Based on linguistic studies, comparative studies in Iranian architecture can aim to understand the historical relationships between different architectural styles and their kinship, as well as examine the evolution and shared elements between these styles, even reconstructing a hypothetical common architecture. This examination can be conducted at two levels: architecture in different regions of Iran and architecture in other cultures. Despite their differences, architectures across various regions of Iran share similarities, and some can be considered to belong to the same family. For example, comparing the architecture of desert cities and examining the similarities and differences between places like Kashan, Isfahan, and Zavareh. Such comparative studies can help identify the relationships between different architectural styles, their kinship, and the common elements they share.

On another level, comparative studies can focus on comparing Iranian architecture with global architecture. Hillenbrand in *Islamic Architecture: Form, Function and Meaning*, describes the characteristics of various architectural forms, such as mosques, schools, caravanserais, minarets, and others in Islamic lands (Hillenbrand, 2016). However, he only provides a descriptive account of the physical structures and does not explore the relationships between them, their common elements, or their kinship. Additionally, comparative studies like “Comparative Analysis of a Special Form in Troglodytic Architecture: Iranian Mehrabeh and Roman Mithraeum” have been conducted, but here too, the focus is solely on the similarities and differences between Iranian Mithraeums and Roman Mithraea (Labba-Khaniki, 2012).

### *5.3. Etymology and the Origins of Spatial Units*

Etymology is concerned with the historical study of words, their origins, the time of their entry into a language, and the structural and semantic transformations they undergo (Abolghasemi, 1995, 11). By analogy, this approach can be applied to architecture for understanding the origins and transformations of fundamental spatial forms. Although a few studies—such as *The Form of the Iwan in Iranian Architecture from Its Origins to the Early Islamic Centuries*—have examined the evolution of the iwan and its role in spatial organization (Rezaeinia, 2017), systematic etymological studies in Iranian architecture have yet to be pursued.

If spaces such as the courtyard, shabestan, hall, dome chamber, and iwan are regarded as the “words” of the architectural language, three fundamental questions arise:

- **Origin and time of entry:** When did the dome chamber enter Iranian architecture, and can its roots be traced to the four-columned spaces of the Achaemenid period, such as the columned halls of Persepolis?
- **Structural transformation:** How did this spatial type evolve from the Achaemenid four-column halls through subsequent stages, eventually continuing into the dome chambers of the Timurid period?
- **Semantic transformation:** What semantic shifts has the dome chamber undergone? These transformations, comparable to the semantic shifts of words, are deeply intertwined with broader cultural changes.

### *5.4. Dialectology and Regional Architectural Variation*

“Dialectology” in linguistics deals with the study of the geographical varieties of a language. Varieties that differ in phonology, vocabulary, and syntax are called “dialects,” while varieties that differ only in phonetics and phonology are termed “accents” (Dabir-moghaddam, 2008, 121). Dialectologists examine these differences across regions and trace changes through isoglosses. The emergence of dialectal diversity is typically the result of geographical distance and reduced interaction among speech communities (Arlotto, 1981, 24).

This conceptual framework can also be applied to the study of architecture. Due to geographical distance as well as cultural and climatic differences, diverse architectural varieties have emerged across Iran. Such differences may appear at the level of building materials and construction techniques, architectural elements and spatial units, spatial organization, or decorative treatments. For example, Vahid Ghobadian in *Climatic Analysis of the Traditional Buildings of Iran* classified architectural types based on climatic and structural distinctions, though his focus remained more descriptive than analytical of historical or structural relations (Ghobadian, 2003).

On this basis, one may propose a kind of “architectural dialectology.” In this approach, profound differences—such as changes in spatial organization or in the pattern of combining spatial units—are analogous to differences among linguistic dialects; whereas more superficial differences, such as variations in building materials or decorative methods, may be likened to accentual differences. Thus, the architecture of villages in Yazd can be seen as related varieties or “accents” of Yazdi

architecture, while the differences between the architectures of Yazd and Isfahan may, on a broader level, be analyzed as dialectal variations within a single architectural language. If pursued through systematic and field-based research, such an approach could provide a productive framework for understanding and analyzing the regional diversity of Iranian architecture.

#### *5.5. Borrowing and Cross-Cultural Transfer in Architecture*

Linguistic borrowing patterns can also be employed as an analytical framework for studying borrowing in architecture. Just as, in language, elements may be transferred at the phonological, lexical, or syntactic levels, in architecture borrowing can occur at different layers: from surface treatments and decorative motifs to spatial units and the overall organization of space.

Beyond the level of borrowing, the pathway of transmission is equally significant. In direct borrowing, an architectural element is transferred without mediation from one tradition to another. In indirect borrowing, the element is first stabilized and reinterpreted within an intermediary tradition before entering the new architectural context.

Another dimension of analysis is the process of adaptation and localization. Just as loanwords in language are reshaped according to the phonological rules of the host language, imported architectural elements are often reconstructed in accordance with the host's aesthetic sensibilities, functional requirements, and spatial patterns. Because of its geographic location, Iran has always been on the east-west international corridor and exposed to contact with different nations and cultures. These cultural contacts have brought about language borrowings, and architectural borrowings as well. The study of borrowing in Iranian architecture has thus far remained largely confined to the identification of imported elements. Qajar architecture has been studied regarding its borrowings from the west, sometimes even leading to biased conclusions. Other studies include Turkmens architectural borrowings from Russian architecture; Gilan architectural borrowings from Russian architecture; and industrial and military architecture of the late Qajar period and early Pahlavi period from Russian, German, Czech, and other European architecture. There are two papers by Montazer, Soltanzadeh, and Hosseini that investigate Russian influence on the architecture of Rasht: "Representing the Impact of Russian Architecture on Iranian Architecture in the Qajar Period" (Montazer et al., 2021) and "The Impact of Russian Neo-classic Architecture of the Eighteenth and Nineteenth Centuries on Iranian Service/Office Buildings: Qajar and Pahlavi I Period" (Montazer et al., 2019). There are also "Ta'sir-e me'mari-e khaneh-ha-ye choobi-e Russiyyeh bar khaneh-ha-ye choobi-e Gomishan" (Malek Mohammadi Bidhendi et al., 2022) and "Revising the Influence of Persian, Indian and Chinese motifs on the architectural decorations of Kerman from the Safavid time to present" (Khozaee et al., 2019).

However, few studies have addressed the mechanisms of borrowing, the channels of transmission, and the

structural or semantic transformations of elements within the new cultural context. By drawing on linguistic models, this gap can be filled and a systematic approach to the study of borrowing in Iranian architecture can be developed. Such an approach goes beyond the mere identification of imported elements, focusing instead on analyzing the reasons for transmission, the processes of adaptation and re-creation, and the role of historical and social factors in these transformations.

#### *5.6. Typology and Recurrent Architectural Patterns*

In architecture, as in linguistics, "typology" is a systematic approach to classification and comparison. From this perspective, the aim of typology is not merely the collection of buildings, but rather the discovery of patterns and structural similarities among them. By analyzing spatial organization, physical elements, and compositional methods, typological studies allow architecture to be examined as a system with an internal structure and logic.

Within the architectural studies based on the classical tradition of typology, two main types may be distinguished: holistic typology and partial typology.

**Holistic typology:** This approach emphasizes the overall character and identity of the architecture of a culture or a historical period. In this view, Iranian architecture possesses a distinctive quality that differentiates it from the architecture of other cultures—an intrinsic quality that permeates every level, from materials and proportions to spatial organization. This perspective makes it possible to investigate the "spirit of Iranian architecture," which can be traced both in intra-cultural comparisons (e.g., between different regions of Iran) and in inter-cultural ones (between Iran and other civilizations). Each region of Iran also bears its own distinctive features, evident in its language, art, and architecture. For instance, in an ethnographic study, Christian Bromberger examined the relationship between the spatial patterns of Gilan's architecture and its natural, cultural, and social conditions, demonstrating that the architecture of this region, beyond its physical form, conveys cultural identity and meaning (Bromberger, 1989). Nevertheless, his study remained intra-cultural and did not pursue comparative analysis. Broader investigations into the distinctive character of Iranian architecture, whether against other regions of Iran or in relation to world traditions, remain scarce.

**partial typology:** By contrast, this approach focuses on individual architectural components—materials, spatial units, organizational patterns. The aim is to uncover similarities and differences at the level of elements. Such an approach allows for both intra-cultural and inter-cultural comparative studies. For example, Gholamhossein Memarian compared extroverted residential houses in Masuleh, Gilan, and Abyaneh with counterparts in Japan, Germany, and Italy, analyzing their structural similarities (Memarian, 2005). This parallels partial typology in linguistics, which compares specific features such as the passive construction across different languages.

With the transformations of typology in the twentieth



century, architectural typology can likewise be rethought at three levels:

**Typological classification:** At this level, buildings are categorized according to distinct structural features. This corresponds directly to the partial tradition.

**Typological generalization:** Beyond mere classification, this level seeks to identify cross-cultural and universal patterns. For instance, comparing four-iwan mosques in Iran with examples in Central Asia or India may demonstrate that this spatial type constitutes a broader pattern across the Islamic world. Such an approach shifts architectural study from description to the discovery of *global patterns of spatial organization*.

**Functional–typological analysis:** This level addresses the *reasons* for the emergence of patterns, explaining them in terms of functional, cognitive, or cultural needs. For example, one may ask: why did the four-iwan type become consolidated in Iranian architecture? A functional account would show that this type responded to climatic needs (shade and ventilation), ritual purposes, and cultural traditions. In architecture as in language, the emergence of specific forms is closely linked to functional and cultural requirements.

Thus, typology in architecture can reveal both the overarching identity of Iranian architecture (holistic typology) and the comparative analysis of structural components (partial typology), while also enabling the discovery of universal patterns and functional explanations. This framework elevates the study of Iranian architecture beyond mere description of buildings, toward the recognition of the logic of change and continuity within their historical and cultural context.

## **6. Interpretation and Analysis of Findings**

The application of diachronic linguistics to the study of Iranian architecture opens a novel perspective that moves beyond purely descriptive limitations and enables the analysis of processes of architectural change and continuity as rule-governed patterns. This approach makes it possible to shift historical inquiries from descriptive questions (what existed and when) to analytical ones (why it existed and why it took the particular form it did). To systematize this approach, Table 4 demonstrates how each branch of diachronic linguistics highlights specific types of questions in architecture and illustrates the transition from description to analysis.

Each branch of diachronic linguistics reveals a distinct perspective on architecture. Historical linguistics enables the analysis of structural and semantic transformations in architecture over time, showing how physical elements evolve across historical stages. In contrast, comparative linguistics provides a valuable tool for examining architectural traditions across regions and identifying both shared and divergent patterns. Such comparisons can contribute to the reconstruction of “archetypal patterns” in architecture and offer deeper insight into the historical

interconnections among architectural traditions.

Dialectology, in comparative terms, provides a valuable framework for examining regional variations in Iranian architecture. Just as dialects reflect local and social conditions, architecture likewise manifests distinct local expressions which, while belonging to a broader system, generate internal diversity. This dimension is particularly significant in the case of Iranian architecture, given its vast geographical span and climatic diversity. Similarly, the analogy between linguistic borrowing and architectural borrowing demonstrates that the transfer of elements from one tradition to another is neither accidental nor passive, but rather follows a systematic and analyzable process—one often accompanied by localization and transformation.

Etymology and typology further enrich this framework. Etymology enables the identification of the origins and historical-semantic transformations of spatial units in architecture, clarifying the continuities and interrelations between older and newer layers. Typology, in turn, focuses on the recognition and classification of spatial organizational patterns that, in many cases, recur beyond specific historical or geographical boundaries. Taken together, these six branches, when viewed in relation to one another, construct an analytical and multi-layered model of architecture—one capable of explaining both processes of change and patterns of continuity simultaneously.

Nevertheless, this analogy should not be construed as a one-to-one correspondence. Language and architecture operate within distinct representational systems: language is a spoken–written system, whereas architecture is a spatial–material one. Accordingly, the aim of the analogy is not to establish a shared identity or essential equivalence, but to employ linguistic concepts and tools for the systematic analysis of architecture. The fundamental value of this approach is methodological: it provides a framework for understanding architecture as a communicative system—one that represents cultural meanings, sustains historical memory, and is continually transformed through its engagement with social and cultural contacts and changes.

This study also demonstrates that approaching Iranian architecture from this perspective can help bridge the gap between historical and theoretical analyses. While architectural historiography is often confined to the description of buildings and styles, and modern architectural theories sometimes emerge without sufficient attention to historical context, a diachronic linguistic approach enables a meaningful connection between the two. From this vantage point, the history of Iranian architecture can be understood not merely as a collection of past data, but as a dynamic system that continuously evolves within its cultural and social contexts.

Table 4

Diachronic linguistic branches and the analytical questions they highlight in the study of Iranian architecture

Diachronic Branch	Analytical Domain in Linguistics	Application in Architecture: Scales and Questions
<b>Historical Linguistics</b>	Tracing patterns of transformation over time; identifying rules of change and trajectories of evolution; analyzing causes of transformations	<b>Scales:</b> materials, spatial elements, spatial units, spatial organization, meaning <b>Questions:</b> What has changed, when, why, how, and under the influence of which internal and external factors?
<b>Comparative Linguistics</b>	Examining similarities to distinguish <i>kinship</i> from similarity arising from parallel conditions; reconstructing hypothetical proto-language	<b>Scales:</b> spatial elements, spatial units, spatial organization <b>Question:</b> Are architectural similarities the result of common ancestry, or do they arise from functional/climatic exigencies? Output: reconstruction of archetypal patterns
<b>Etymology</b>	Tracing the origin and formal–semantic transformations of words over time	<b>Scales:</b> spatial units + meaning <b>Questions:</b> What is the origin of a spatial unit? When and how was it introduced into architecture, and how have its form and meaning evolved from past to present?
<b>Borrowing</b>	Transfer and adaptation of linguistic elements from other cultures	<b>Scales:</b> across all levels of architecture—from decorative elements to spatial units and spatial organization <b>Question:</b> What was borrowed, from where, why, and how was it localized or adapted?
<b>Dialectology</b>	Studying linguistic variation across regions	<b>Scales:</b> spatial elements, spatial units, spatial organization <b>Question:</b> How is regional variation distributed?
<b>Typology</b>	Classical approaches: • Holistic typology: emphasizes the identity and distinct character of a language. • partial typology: focuses on specific elements or structures to derive generalizations. Modern (20th-century) approaches: • Typological Classification: grouping based on structural features. • Typological Generalization: identifying linguistic universals. • Functional Typology: explaining why patterns arise, based on functional, cognitive, or cultural needs.	<b>Scales:</b> spatial elements, spatial organization <b>Questions:</b> What distinguishes Iranian architecture from other cultures? What structural patterns are shared when Iranian architecture is compared to others? Why did these patterns emerge and persist, and what needs did they serve?

## 7. Conclusion

This study has demonstrated that the application of diachronic linguistics to the study of Iranian architecture is an analytical approach that can open up a new horizon for understanding architecture. The value of this perspective lies in its ability to conceive of architecture not as a static collection of past monuments, but as a living and rule-governed system that undergoes change, continuity, and renewal over time. The findings indicate that the transformations of Iranian architecture, much like those of language, occur within identifiable patterns that emerge from the dynamic interplay of internal and external forces. Thus, architectural history can no longer be understood solely as a sequence of styles; rather, it should be analyzed as a dynamic network of cultural, social, and historical relations. The primary contribution of this research lies in proposing a multilayered model which, by drawing on various branches of diachronic

linguistics—including historical linguistics, comparative linguistics, dialectology, borrowing studies, etymology, and typology—provides a systematic framework for historical analysis of architecture. Beyond bridging the gap between descriptive historiography and abstract architectural theory, this framework also fosters an interdisciplinary dialogue among linguistics, architecture, and cultural studies. Furthermore, it can serve as a foundation for future research aimed at reconstructing the fundamental patterns of Iranian architecture and examining processes of transfer and localization on both regional and transregional scales. From this perspective, the significance of the study lies not only in its interpretation of the past, but also in offering a pathway for approaching architecture as a dynamic and evolving system—one that is continuously shaped and reshaped through its ongoing interaction with culture and society, and one that always carries the capacity for the re-creation of meaning.

## Endnotes

- <sup>1</sup>. In recent years, a number of studies have undertaken a revision of the historiography of Iranian architecture (see: Gharipour, 2016; Golijani Moqaddam, 2007; Haj-Yassini, 2021).
- <sup>2</sup>. It should be noted that Pope approached architecture from a multifaceted perspective. One of Pope's approaches to Iranian architecture is the historical approach, which examines the reasons behind the construction of buildings and their relationship to the social, economic, cultural, and religious circumstances of their time, as well as the date of construction and the identity of the builder. Another approach is the physical and archaeological approach, in which he describes the physical features, dimensions, and measurements of the structures. The third approach is the aesthetic approach, focusing on the visual and stylistic characteristics, proportions, and aesthetic perceptions. The final approach is the architectural approach, which is based on understanding spatial values within the architecture of various periods. This book is one of the rare works in which architectural works are also analyzed from this perspective (Tahmasebi, 2007).
- <sup>3</sup>. Dialectology is currently considered a sub-field of sociolinguistics. But since it emerged out of historical-comparative linguistics, and dialect studies can be carried out both synchronically and diachronically, and in the historical-comparative approach, diachronic variations of dialects are assessed and compared, according to Anthony Arlotta's *Introduction to Historical Linguistics*, dialectology is categorized here as a sub-field of historical linguistics.
- <sup>4</sup>. Wilhelm von Humboldt (1767–1835) was a German linguist and philosopher who viewed language as constitutive of human understanding of the world, anticipating the emergence of ethnolinguistics.

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