

Abstract

This article scrutinizes the analogies between architecture and language from a historical perspective. It traces linguistic analogies in architecture from their early formations to the contemporary modes. The author suggests that linguistic analogies have stimulated architectural design thinking, and they have performed as cognitive tools for the production and interpretation of architectural knowledge. Analogies are often employed to understand and explain the unexplored nature of complex and less known entities by likening them to something familiar and approachable. Through analogical reasoning, the knowledge that exists for one substance transfers to another substance, about which there may not exist a clear cognition. Within the architectural context, the less known architectural substance has become observable through the more recognizable insights of other domains. It is evident, though, that not all analogies are rewarding; but, linguistic analogies in architecture sustained a centuries-long tradition due to their contribution to the expansion of the theoretical frontiers of architecture. A historical inquiry into the linguistic analogies in architecture thus unveils both the predicaments and ideals in architecture.

Keywords: Analogy, Architecture, Architectural Knowledge, Architectural Theory, Language.

A Historical Inquiry Into The Linguistic Analogy In Architecture

Mimarlıkta Dil Analojisine İlişkin Tarihsel Bir Araştırma

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Genişletilmiş Özet

Bu makalede, mimarlık alanında asırlardır varlığını sürdüren dil analogileri tarihsel bir perspektiften incelenmektedir. Başka bir deyişle, mimarlıktaki dil analogilerinin, en erken oluşumlarından çağdaş yaklaşımlara kadar uzanan bir süreçte, izi sürülmektedir. Burada amaç, dilsel analogilerin mimari tasarım düşüncesini farklı yönlerden harekete geçirdiği ve mimari bilginin üretimi ve yorumlanmasında bilişsel araçlar olarak işlev gördükleri savını sunmaktır. Analogiler genellikle, karmaşık ve daha az bilinen varlıkların keşfedilmemiş doğasını, onları tanıdık ve sezgisel olarak yaklaşılabılır bir şeye benzeterek anlamak ve açıklamak için kullanılır. Analogik akıl yürütme yoluyla, bir olgu için var olan bilgi, hakkında net bir bilinç bulunmadığı başka bir olguya aktarılır. Bu anlayış mimari bağlama aktarıldığında, daha az bilinen mimari öz, daha tanınabilir olduğu öngörülen diğer bir alanın içgörülerini aracılığıyla gözlemlenebilir hale gelmektedir. Tahmin edilebileceği gibi uygulanan tüm analogilerin bu hedefe ulaşamadığı açıktır; ancak bu makalenin ortaya koyduğu üzere mimaride dil analogileri, mimarlığın kuramsal sınırlarını genişletmiş ve yüzyıllara yayılan bir sürekliliğe sahip olmuştur. Araştırmacının işaret ettiği gibi, mimarlıktaki dil analogilerini irdelemek, mimarlığın tarihsel süreç boyunca sahip olduğu açmazları ve idealleri açığa çıkarmaktadır.

Mimarlık, özellikle bilgi üretimi açısından oldukça karmaşık ve çok katmanlı bir disiplindir. Mimarlar, farklı kuramsal yaklaşımlar oluşturmak, bu yaklaşımları geliştirmek ve iletmek, ve yeni bilgi üretmek için yaratıcı düşünme bağlamında, analogiler de dahil olmak üzere, pek çok farklı yöntemden yararlanırlar. Analogilere olan eğilim, kaçınılmaz olarak analogilerin mimari düşüncede işlevsel araçlar olarak nasıl değerlendirildiği sorusunu gündeme getirir. Elbette, sadece mimarlıkta değil, birçok farklı alandaki araştırmacılar, karmaşık varlıkların doğasını, daha bilindik olana benzeterek açıklamak ve anlamak için analogileri kullandılar. Yüzyıllar boyunca, iki farklı olgunun yapısal olarak benzetilmesi yoluyla, analogik düşünme bir karşılaştırma aracı olarak tanıdı. Dahası, yeni bilgi edinme sürecinde güçlü bir ilişki kategorisi olarak analoginin bilişsel rolü, birçok bilimsel çalışmanın odak noktası oldu. Öte yandan, analogiler mimaride önemli miktarda söylemsel ve metinsel varlık kazanmış olsa da, mevcut mimari literatürde analogilere ilişkin dikkate değer çok az bilimsel araştırma bulunmaktadır.

Yukarıda değinildiği üzere, analogiler, iki temsil arasında soyut eşleşmeler içerir. Elbette daha kapsamlı bir eşleşme, söz konusu analogiyi daha iyi bir mekanizma haline getirir; ancak bir analogiye güç sağlayan, genel özellik örtüşmeleri veya somut benzerlikler değildir (Gentner, 1983). İknâ edici bir analogi, bir olgu için geçerli olan bilgiyi, hakkında kesin bir anlayışa sahip olunmayan başka bir olguya aktarır. "Mimarlık dil gibidir" analogisi de mimarlığın, dilin bilgisini kendisine aktarabileceği iddiasıdır. Gentner'in argümanına uygun olarak, buradaki temel fikir; bu analoginin, dilin kendi bilgi alanında iyi kurgulanmış ve kavranmış ilişki yapısının, mimarlığın daha az aşına olunan bilgi alanına da uygulanabileceğine dair varsayımsal bir doğrulama sunmasıdır. Dilin yapısal potansiyelinden ve analogiye uygunluğundan cesaret alan bu makale, dilsel analogiyi çoklu rolleri aracılığıyla incelemekte ve mimarlığın doğası hakkında neyi açığa çıkardığını tartışmaktadır. Buna bağlı olarak, ortaya konması gereken, dilbilimden ilham alan korelasyonların ve analogik kurguların (dil ve mimari, metinler ve binalar, kelimeler ve tektonik formlar gibi) mimarlığa dair derinlikli bir anlayış sağlayıp sağlamadığıdır. Bu çalışmayı motive eden ve bağlamsallaştıran, öncelikle, analogik akıl yürütmeyle esnek, dönüşümlü, kavramsal ve ilişkisel düşünmenin bir yolu olarak ele alması, ve ikinci olarak, mimarlığı çeşitli ilişkilerin, nesnelere, olguların, kuramların, paradigmaların ve temaların söylemsel bir alanı olarak görmesidir. Bu anlayış çerçevesinde, analogiler aracılığıyla hayata geçen ilişki düşünme, disiplinlerarası mimarlık bilgisine ilham verebilir, zenginleştirilebilir ve sistematize edilebilir. Mimarlıkta dilsel analogi, mimari düşüncenin sınırlarını genişletmeye teşvik eden bir unsur olarak görülebilir. Dilsel analogiler; kimi zaman, başka disiplinleri de etkisi altına alan bir dil coşkusunun, kimi zaman, dilbilimdeki atımlardan aktarım yapma isteğinin, çoğu zaman ise, yenilikçi bir yaklaşımı güvenilir bir benzetme yoluyla güçlendirme gereğinin mekanizması olarak ortaya konur. Bu farkındalıkla, yüzyıllar boyunca dilsel analogilerin mimari bağlamdaki dönüşümünü irdelemek, örneğin, Vitruvius'a uzanan erken izleri açığa çıkarmak, on sekizinci yüzyılda ilk kez kuramsal bir araç olarak kullanımına tanıklık etmek, ve yirminci yüzyıla damga vuran dilbilimin mimarlıktaki etkilerini irdelemek, araştırmacıyı mimarlığın kuramsal zemini hakkında ilginç saptamalara ulaştırmaktadır.

Anahtar Kelimeler: Analoji, Mimarlık, Mimari Bilgi, Mimari Kuram, Dil.

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1. INTRODUCTION

Architecture is a complex field, especially regarding its production of new knowledge. Architects draw on many different methods for creative thinking, including plenty of analogies, to construct, develop, and convey theories and produce new knowledge. The tendency towards analogies brings a question of how analogies can be considered functional tools in architectural thinking. The researchers of different areas have employed analogies mainly to explain and understand the nature of complex entities by likening them to something familiar and intuitively approachable. For centuries, they have recognized analogical thinking via the structural alignment of two entities as a comparative tool. Moreover, analogy's cognitive role as a powerful relational category in the process of acquiring new knowledge has started to be the focus of many recent scholarly works (*Gentner & Hoyos, 2017; Goldwater, 2017; Chan et al., 2012; Dwyer et al., 2010; Doumas et al., 2008*). On the other hand, although analogies have covered a considerable amount of discursive ground in architecture, few remarkable inquiries into analogies exist in the current architectural literature (*e.g., Caballero, 2013; Moloney, 2011; Bordeleau, 2009; Klingmann, 2004*).

Analogies involve abstract matches between two representations. Of course, a greater match makes an analogy better, but what provides a good account of an analogy is not the overall degree of featural overlaps or literal similarities (*Gentner, 1983*). Rather, a cogent analogy transfers the knowledge that exists for one substance to another substance about which there may not be a certain understanding. The analogy of "architecture is like language" is an assertion then that architecture can transfer the knowledge of the language. In line with Gentner's argument, the principle notion here is that such an analogy presents a hypothetical affirmation that a relational structure that generally applies in the well-understood domain of language can be applied in architecture's unfamiliar domain. Encouraged by the potential of the relational structure

of language and its analogical relevance, this article examines linguistic analogy through its multiple roles and discusses what it illustrates about the nature of architecture. It investigates whether linguistically inspired correlations and analogical correspondences (*such as language and architecture, texts and buildings, and words and tectonic forms*) have provided a deeper understanding of architecture. What motivates the context of this study is first its consideration of analogical reasoning as a way of flexible, reflexive, conceptual, and relational thinking, and secondly, its conception of architecture as a discursive domain of various relations, objects, theories, paradigms, themes, and concepts. Within this understanding, relational thinking may inspire, enrich and systematize the interdisciplinary knowledge of architecture. The linguistic analogy in architecture can be seen as a stimulating agent of architectural thinking. By associating the past linguistic enthusiasm with a revived meaning, this article overviews analogies and inquires about the usage of linguistic analogy in architectural context throughout the centuries. It successively examines the early traces of linguistic analogy, its initial usage as a theoretical tool in the eighteenth century, and its elaboration in the nineteenth century. The late sixties of the twentieth century are the times of linguistic passion in various fields. Many different disciplines, including architecture, transferred a linguistic perspective into their theoretical domains. In addition to the effects of a worldwide linguistic passion, the multitude of linguistic analogies in architecture shows architecture's propensity for implementing prevailing paradigms to reinforce its intellectual base. Moreover, the expectations scholars held for language connection characterize the growing concern in those years over the dominance of modernism's professional aspects of architectural thinking over architecture's philosophical insight.

In almost every discipline, historical analyses enable one to make classifications, observe continuities, and diagnose

how different fields of knowledge are intertwined. No disciplinary field, including architecture, could have reached its current state by developing its concepts and principles in a rational and uninterrupted consistency. In fact, historical descriptions in various fields often reveal which theoretical approaches were put forward with which motivations, possibilities and methods. Hidden in the recesses of the past, some historical documents and involvements may unpredictably untangle the discursive relationships and elucidate priorities of the relevant period. Realizing how facts, approaches and events that may seem unrelated or random, can be considered as part of a pattern develops a distinctive consciousness. Clarifying the blurriness of the past through rigorous historical research and creating an archive of knowledge about the relevant field simultaneously facilitate a better understanding of the current time. In architecture, which has a very distinguished position in terms of awareness of its historical development, the effort to reveal what is still partially buried, matters. As conveyed by this study, the sometimes obscured footprints of the relationship between architecture and linguistic analogy, dating back to Vitruvius' treatise, are important not only for those who are devoted to language studies in architecture but also for the ones who want to trace how architectural theory and thought developed throughout history. Historical inferences show us that the surface movements of today's knowledge have deep sections and intertwined layers.

2. AN OVERVIEW OF ANALOGY

The Greek origin of the word analogy has a mathematical meaning referring to the proportionality and equality of ratios. Analogy's first use in philosophy is by Plato, who introduces it to indicate proportions, which are not mathematical or numerical (Mondin, 1963). It designates proportionality or similarity of relations, or sometimes a direct similarity of two things, two concepts, or two ideas. As Mondin emphasizes through Plato, the

analogy becomes a cognitive component of philosophy, especially in the domains of epistemology and ontology. And, Aristotle advances the usage of analogies, so that analogy transcends the connotation of physical likeness and becomes a cognitive tool in logic and science.

The conceptual power of analogy marks it as a useful tool for explaining and interpreting things and concepts, constructing and supporting arguments, and examining and extending knowledge. As Paul Bartha states, analogical arguments have been distinctive features of philosophical and scientific reasoning since ancient times (Bartha, 2016). An early version is René Descartes' analogy between his ontological argument and a geometrical demonstration. Descartes develops this analogy in the seventeenth century by comparing the self-evidence of God's existence to the clarity of basic mathematical truth related to the right triangles. To support his claim, Descartes extends his geometrical analogy to the Pythagorean Theorem for those who need proof in perceiving the facts proposed (Nolan, 2015). Another example from the history of science is the analogy constructed in the eighteenth century by Joseph Priestly to support his hypothesis of the electrostatic force. Priestly draws a similarity between the electrostatic force and the gravitational force as described by Isaac Newton's law of universal gravitation both of which follow an inverse square law (Bartha, 2016). As these two examples demonstrate, analogies can be different in their structures depending on their purpose of usage and reasoning.

3. ANALOGIES WITHIN THE FIELD OF ARCHITECTURE

Sources generally define architecture as the art and science of creating the built environment. Such definitions emphasize the essence but do not fully express the complexity, depth, and broadness of architecture that deals with domains ranging from culture to politics, from philosophy to psychology, from art to technology. Architectural thinkers have approached the architectural substance in a multiface-

ted nature for centuries. Hence, architectural knowledge has expanded the borders of a straightforward understanding, which associates architecture merely to the physical shaping of the environment. Theoreticians, scholars, and architectural practitioners have attempted to identify and express the more that their field owns. Various analogies in the field of architecture, usually creative and resourceful but sometimes superficial and shallow, can be seen as tools for constructing arguments about the complex nature of architecture (Figure 1).

Among these analogies, one can find linguistic, biological, mechanical, mathematical, musical, philosophical analogies, and many others with their particular purposes and arguments (Figure 2).

Biological analogy in architecture, for instance, draws similarities between buildings and organic entities and interprets architecture as a biological process. This analogy compares the correlation of different organs of a living body and the relationship between the parts of a building; thus, it highlights the significance of the relationship between the parts of a

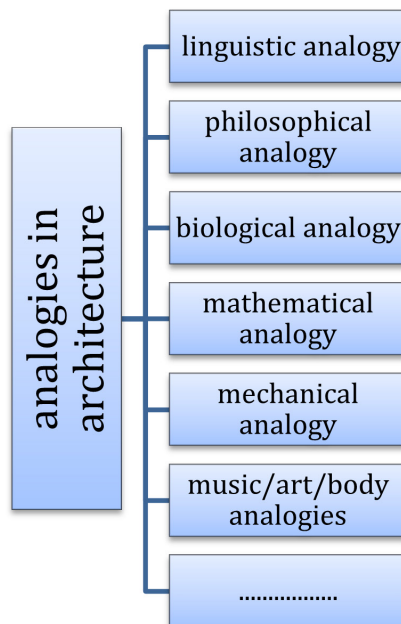
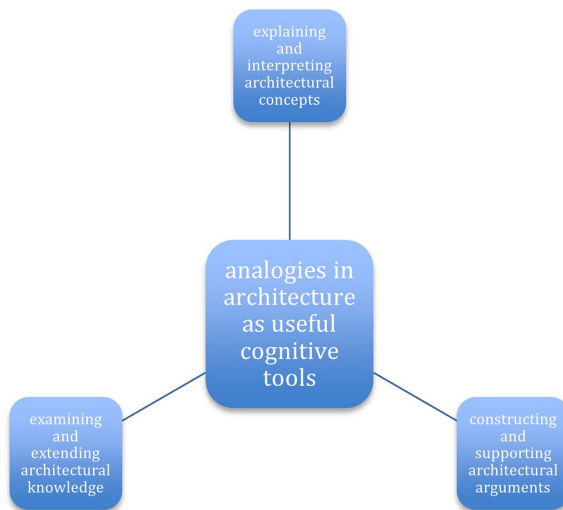


Figure 1 An abstract scheme illustrating the promises of analogical reasoning in architecture (prepared by the author)
Figure 2 Analogies reigning in the field of architecture (prepared by the author)

building. Biological analogy also links the relationship of organisms to their environment with buildings' relationship to their environment; that is to say, it analogously introduces some new ideas in architecture by connecting them to biology's already understood or at least familiar ideas (Collins, 1988). Architects have examined natural growth processes to develop design methods and design thinking since the nineteenth century. The human body, plants, and animals have inspired architects, especially for form-finding. Analogies made between the evolution of organisms and building production processes have developed various theories and arguments in architecture, ranging from building typologies to computational design methods (Steadman, 2008). Innovative technologies stimulated by biology, have found application areas in recent years by transferring ideas from biological phenomena to architectural design (Gruber, 2011). As Jules Moloney identifies, a current account of biotechnical determinism appeared in the form of a "contemporary recycling of biological analogy in architecture" together with new computational techniques and building information models (Moloney 2011, 213).

Mechanical analogy in architecture puts forth some resemblances between machines and buildings. Mechanical analogy users aim not only to develop the doctrines of functionalist modern architecture but also aim to familiarize the related audience with the new architectural ideas. As Peter Collins states, one can trace this analogy in sketchy forms in the architectural writings of the nineteenth century, which would be later sophisticated and popularized by Le Corbusier in the early twentieth century (Collins 1988). Le Corbusier uses a mechanical analogy to express his modernist ideals in architecture in *Towards a New Architecture*. He introduces the potentiality of function and standardization by presenting liners, airplanes, and automobiles as the excellent products of the spirit of the new epoch to the world of architecture, which was then, for him, "stifled by custom" (Le

Corbusier 1986, 3-4). Analogies can serve for constructing a critical tendency as well as having an affirmative role to support an idea. In his introduction to the second edition of *Theory and Design in the First Machine Age* Reyner Banham emphasizes the eagerness to the unconventional machine aesthetics through which Modern Movement in architecture gained its momentum in the early twentieth century (Banham, 1980). For Banham, decades later in the 1970s, "bursts of creativity" of the designers of Pompidou Center or Sainsbury Center come from "men fired from Machine Age enthusiasms" (Banham 1980, 10). Relied upon an implied mechanical analogy, one can assert that these structures reveal a second machine aesthetics with subtle equivalences to Le Corbusier's analogous understanding. Anna Klingmann, on the other hand, constructs a conceptual analogy with *Towards a New Architecture* to show how programmatic and aesthetic attributes of commodities of the modern era once explored by Le Corbusier through their conditional relationship to the socio-economic and technological dynamism, can still be applied to the contemporary architectural discourse of the information age (Klingmann 2004). By employing Le Corbusier's analogous understanding, she presents a critical inquiry into the twenty-first century's premise that "architecture is a cultural commodity that supports and substantiates aspects of late capitalist commodity production" (Klingmann, 2004). The enthusiastic embrace of different domains, such as nature or technology, represents a similar tactic of relational thinking, yet to support different theoretical positions. Depending on their purpose of construction, analogical arguments in architecture either support and inform a certain way of design understanding and practice; or produce a dominant view to interpret and discuss architecture through a set of general principles. Similar to what Rosario Caballero claims for metaphors, analogies pursue knowledge in architecture. By proposing a cognitive schema, analogy "mediates the various

stages involved in architectural design as well as the discussion on finished buildings in different genres” (Caballero 2013, 3). Linguistic analogy as an influential one in architecture has also operated in such a dual manner. Many architects, architectural theoreticians, and critics have established distinct correlations of language and architecture regarding the strategy and purpose of the employed analogy. Although this study suggests a superiority of the analogy as a cognitive tool over its reflections in building design imagery, its disciplinary efficacy can be observed in both ways. Within this conception, the usage of linguistic analogy should be understood both as a medium for inspiring the design process and a tool for the production and interpretation of architectural knowledge.

4. LINGUISTIC ANALOGY IN ARCHITECTURE

Linguistic analogy in architecture suggests the existence of resemblances between the systems and structures of language and architecture. Architecture and language have come into contact in various frameworks and contexts throughout history, and understandably, not always in the analogous form of architecture as language. Thus, any attempt of examining the analogical relationships between architecture and language requires accurate emplacements of researchers for their investigation. Identifying the operational rules and circumstances that bring analogy into being is important. Another important aspect is, distinguishing the formation of the linguistic analogy that might be individuated according to the architectural understanding and knowledge of the time.

4.1 Early traces of linguistic analogy

The difficulty of identifying the early traces of the linguistic analogy relating uniquely to architecture stems from the commonly accepted conception of architecture as a type of visual art, like sculpture or painting. With an awareness of this fact, some vague traces of linguistic analogy in architecture in the sense

of correspondence between language and visual arts date back to Ancient Roman architect Vitruvius Pollio (c.90-c.20 BC), the author of the oldest treatise on architectural principles. The Renaissance thinkers adopted an analogy after centuries by drawing a parallel between the Latin classical rhetoric and the classical order of architecture (Clarke & Crossley, 2000). Georgia Clarke and Paul Crossley explore the roots of the connections between architecture and language within the years 1000 and 1650. Their research shows that language was suggested as an ideal archetype since the very early ages for all symbolic systems, including architecture. Architectural thinkers associated architectural rules with grammar; they pointed out structural resemblances between architectural and literary styles; some architects likened sentences to buildings. Clarke and Crossley claim that this association gave to architecture a “theoretical framework”, a “vocabulary of criticism” and enhanced its “academic respectability” (Clarke & Crossley 2000, 1). Certainly, one can detect some origins from which the succeeding eras’ architectural theories and vocabulary were inspired. For example, Italian architect and philosopher Leon Battista Alberti (1404-1472) modeled his definition of architecture on rhetorical methods by borrowing concepts from classical treatises; thus, it can be considered a foundation for the architectural discourse of the succeeding centuries (van Eck, 2000). There were concerns about the ambiguous correlations between the architectural form and the spoken word; but, the similarities between architecture and language as systems of expressions emerged in the architectural writings till the end of the seventeenth century (Figure 3).

architecture	language
<i>architectural form</i>	<i>spoken word</i>
<i>classical order</i>	<i>classical rhetoric</i>
<i>architectural style</i>	<i>literary style</i>
.....

Figure 3 Vague resemblances of architecture and language as systems of expressions in the early linguistic analogies in architecture until the 18th Century (prepared by the author)

The more dynamic conceptions of language in the eighteenth and nineteenth centuries revitalized a motive for a remarkable scientific interest in linguistic analogies. Linguistic analogies initiated new theoretical positions, disciplinary patterns, and new knowledge due to the more scientific approaches. Analogies, in this sense, entailed not only plentiful possibilities of evaluating architecture's materiality through which new architectural forms and a critical language could develop, but also triggered interest in architecture's relationship with history, culture, and philosophy.

4.2 Eighteenth-century linguistic analogies as theoretical initiators

Referring to the assertion of the Italian historian Giambattista Vico (1668-1744) that "all art is a type of language", Collins draws attention to the architectural conception of the eighteenth century (1988, 173). Based on Collins' indication, one can state that art's general relationship with expression and meaning, thus, its relationship with language, somehow spontaneously, adopted linguistic analogy into architecture in the past. Especially, the Italian writings designated architecture as one of the three sisters of art, together with sculpture and painting. In this respect, for a clear identification of linguistic analogy in architecture, architecture needs to be differentiated from art, where analogy addresses directly the particular character of architecture. Here, the more mature French attitude of the eighteenth century towards architecture can be mentioned, whereby the functionality of architecture, besides its aesthetic substance, was emphasized in contrast with her so-called sisters. Linguistic analogies practiced by French thinkers can be acknowledged as coherent for an early but comprehensive

theory of architecture. Germain Boffrand (1667-1754), who in 1745 asserted similarities between the parts of a building and the parts of a speech in his work *Book of Architecture*, can be marked as the very initiator of linguistic analogy in architecture. In the mid-eighteenth century, to emphasize the importance of each detail in construction and their harmony as a whole, he says, "the profiles of moldings and the other members that compose a building, are in architecture what words are in a discourse" (Boffrand 2002, 9). In the introduction of the book, Caroline van Eck notes that Boffrand also suggests a comparison between the architectural styles and languages. To a certain extent, he launches a new field of endeavor by presenting the significance of structural and stylistic aspects of architecture analogously through linguistic associations.

In 1785, the late Enlightenment art and architecture theorist Antoine Chrysostome Quatremere de Quincy (1755-1849) compares the inventions of architecture and language as the two significant attributes of mankind that cannot be ascribed to one single individual (Collins 1988, 174). One can interpret this as an early consciousness of the societal essence of architecture. Sylvia Lavin, in *Quatremere de Quincy and the Invention of a Modern Language of Architecture*, shows how this profound theorist systematically analyses some similar and dissimilar characteristics of different types of architectural structures analogous to common genres of speech and particular features of distinct languages (Lavin, 1992). Quatremere de Quincy suggests cave, tent, and hut as the three essential types in architecture representing the sequential historical development of hunters, shepherds, and farmers. He employs a linguistic comparison to substan-

tiate his suggestion and better define his particular understanding of architectural type, architectural character, and style. He develops a theory of architectural type through the linguistic associations, upon which contemporary discussions on typology are established. To explain the origins and principles of architecture, Quatremere de Quincy asserts that “*Type, character, and style can have analogical correspondence to a universal grammar, while columns, lintels, arches, cornices, walls, and roofs correspond to the syntax of a particular language*” (in Younes 1999, 38).

There emerged a new theoretical position for architecture that broadens the ways of disciplinary thinking through the multifaceted analogical approach of Quatremere de Quincy, which relies upon the norms, components, and mechanisms of language. The connections he draws, such as syntactic forms and the style of a building; meaning in architecture and the semantic essence of language; a particular grammar and a particular architectural type, advance a precision of analogy, rather than generalizations. The significant issue here is his twofold consciousness of the limits and properties of the linguistic content that one would transfer from the field of language to the field of architecture. Another important point is his pioneering role for further theoretical frameworks based on the potential of the established analogy.

4.3 Progressive nature of the nineteenth century and linguistic analogies

There occurs a more widespread usage of linguistic analogies in architectural literature during the nineteenth century. British architect James Elmes’ (1782-1862) writings on architecture include significant examples for analogical ideas. Elmes applies a simple but creative analogy of the alphabet when revealing the true and false methods of adoption of the architecture of a certain country or a period. He addresses alphabet, the basic elements/sounds of a language, to express the difference between these methods and defines the

method as follows: “*The true mode is less an imitation than adoption, and consists in receiving as an alphabet, in their entire shape, the system, the rules, and the taste of the style of an architecture.*” (Elmes 1823, 78). Accordingly, he expresses, for instance, how Romans adopted Greek architecture.

For Elmes, the same could be supposed for the nations of modern Europe who were at the time “abandoning the Gothic and the incongruities of the Middle Ages” and “appropriating the Greek and Roman styles by legitimate adoption” (Elmes 1823, 78). His discussion on imitation and adoption furthers with skillful adoptions and adaptations of an existing alphabet through the works of Michelangelo in Vatican, Palladio in Rome, Wren in London. On the other hand, he warns the copiers of form about the risk of plagiarism by stating, “the false mode of imitation” through the extensive importing of a foreign or ancient style is plagiarism; and the ones who merely import the forms, but not within the logic of using or cultivating an alphabet are “mean copiers” (Elmes 1823, 80). Perceiving the alphabet as a generative tool is indispensable to carry its qualities to architecture. Elmes in *Lectures on Architecture* acknowledges the alphabet as a system through which various complex thoughts and entities can get shaped. The alphabet analogy does not only make his argument sharper and stronger, but it also develops a theoretical basis for a scholarly explanation of the historical movements in architecture. He initiates new venues for architectural thinking transcending its artistic dimension and constructional essence by using analogy as a cognitive tool.

The linguistic analogies that architectural thinkers formulated in the eighteenth and, especially, in the nineteenth century can be considered significant fragments of the multiple attempts that demanded a new understanding of architecture. The linguistic analogies, along with the biological and mechanical ones, demonstrate the raised demand for a new non-romantic and

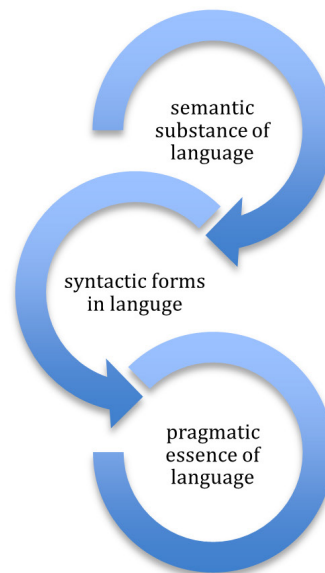
non-revivalist architecture by the theoreticians of the mid-nineteenth century, as Collins implies (*Moholy-Nagy, 1967*). Their historical trace unfolds the inherent fact that language and architecture relationship should not be recalled merely by the twentieth century's popular architectural manifestos that seem to shadow the previous centuries' attempts. Architectural theoreticians and historians undoubtedly desired their discipline to be consistent with the nineteenth century's progressive nature; therefore, they wished for some associations with science and engineering. Analogies that helped the perception and production of architecture as a forward-looking discipline should be viewed within this concern.

Developing an idea that conceives architecture not as a struggle of creating or imitating beautiful forms but conceives as a social entity has resulted in different types of analogies. The scholarly interest in the anonymous architecture of non-western society and its societal resonances was another field of architectural research where analogies were employed by thinkers of the time. Analogies, which claim similarities between, for instance, the wooden structures of the Chinese society and the local linguistic properties of a certain community, can be considered within this perspective.

The rationale and the concepts, even the vocabulary that was required to explain the new theoretical emplacement, could be achieved through the relational thinking abilities of analogies. The unknown or the less known architectural substance, architectural thought, or architectural argument, became observable through the more familiar or recognizable insights of other disciplines. Linguistics, the disciplinary field of language, has been frequently visited by the architectural theoretician. In a way, linguistics indirectly contributed to the theoretical frontiers' expansion in architecture through analogical reasoning (*Figure 4*). Moreover, the examination of analogical practices in a certain period assisted the future historian or the future theoretician to decipher the prevailing concerns and ideals of that period.

Architectural journals grew in number during the second half of the nineteenth century. They provided new and diverse platforms for discussing the current issues in architecture and interrogating its status and content. Within this enunciative medium, the journal authors generously disclosed various ideas by referring to the popular subjects of the time. Linguistic analogies that constructed several connections between language and architecture were remarkably among these subjects.

Figure 4 The disciplinary field of language (semantic, syntactic and pragmatic aspects) stimulating architecture's analogical thinking (prepared by the author)



Not only did the mid-nineteenth century's voguish phrases like the architectonic alphabet and architectural language frequently appear in the journals. The articles there introduced new architectural styles as new languages. Some matches between "modern literature" and "modern architecture" were also established towards the end of the century as the two important products and reflections of the "modern civilization" (Collins 1988, 176). After its strong declaration in the *Architectural Record* by Montgomery Schuyler (1843-1914), the founder of the journal and a leading critic, the literature analogy echoed around the architectural milieu.

The leading publications of the era frequently mentioned the relationality of architecture and language but the architectural world did not completely accept it (Collins 1988, 175-176). Some significant theoreticians of the nineteenth century, such as Leonce Reynaud (1803-1880) and James Fergusson (1832-1907), explicitly rejected the correlations drawn between these two dissimilar fields.

In 1850, in *Traite d'Architecture*, Reynaud declared that the differences between architecture and language were greater than their similarities. According to him, architecture did not display a comparable expression to that of language. Regarding the correspondences built with vernacular tongues, Collins underlines how Reynaud endeavored to demonstrate that architecture lacked the diversities of vernacular speech (Collins 1988, 176). Despite his opposing viewpoint, he did not ignore the efficacy of the linguistic analogy. Reynaud rigorously explained, for instance, why basic tectonic elements of architecture could not be considered as the words within the speech. He refuted this common and straightforward analogous relationship by claiming that the arbitrarily built form of words could not explain the permanent and universal laws inherent in the formation of architectural tectonic elements. Of course, not all analogies in architecture established meticulous relationships between the tectonic elements of architecture and

the syntax of a language. Architectural discourse had plenty of premature or nonspecific linguistic analogies as well as vague or flamboyant analogical usages, which make the French architectural theoretician's doubt reasonable. Despite his doubts, Reynaud did not fail to describe each era's particular architectural style as the idioms within a distinct language as Collins wickedly identifies.

James Fergusson classified architecture as a technical art, an amalgam of construction and aesthetics in *An Historical Inquiry into the True Principles of Beauty in Art*, where he specifically examined architecture (Fergusson, 1849). For him, architecture was different than the phonetic arts; yet, similar to Reynaud, he also could not hinder himself from mentioning why buildings do not narrate; and, how they can become phonetic by the addition of a sculpture and painting. According to Fergusson, architecture tells no tale: "*It is true that the phonetic arts can express this (architecture): words can describe it, ... but the converse is not true. Architecture can repeat no narrative, ... illustrates nothing: it tells no tale, and barely manages to express an emotion ... It is true that by the addition of a sculpture and painting a building may become phonetic but we must not here confound two distinct modes of utterance: the voice is in the last-named arts not in the technic.*" (Fergusson 1849, 121).

Fergusson's argument on the impossible proportionality of architecture and phonetic arts and his way of interpreting the linguistic connection as a pure correspondence with architecture were critical in terms of the relational thinking manner of analogies. On the other hand, we see how he used a linguistic analogy effectively both for structuring and communicating his ideas on the field of botany. Fergusson encouraged naturalists to imitate the grammarians to classify the plants better, especially the irregular ones. For a well-constructed and functioning system of classification, in which one could, for instance, follow the relation of one plant to another, he drew attention to the natural

complexity of words in grammar. “As words are classed naturally in grammar into nouns, adjectives, verbs, etc. and subdivided into declensions and conjugations”, Fergusson said, “it is no doubt very useful to have plants classed naturally” (Fergusson 1849, 50). His discontent with the mechanism of “forcing the irregular ones into places where they do not fit” resulted in a successful analogy, which maintained a certain distance between the two components of analogy (Fergusson 1849, 50). Fergusson’s analogy here addresses rightfully the similarity between two systems and not on the similarity of two entities; thus it is worth mentioning as a masterful niche for analogical reasoning.

4.4 New modes of analogies in the linguistic passion of the twentieth century

Previous discussions pinpoint that analogies are useful and sound scientifically insofar as one does not consider them as mechanisms of equating the parts of different entities. The success of an analogy relies on correlating the systems that these entities possess. Within this understanding, the analysis of language as a system plays a crucial role. The Swiss linguist Ferdinand de Saussure’s (1857-1913) revolutionary conceptions altered the then existing thoughts about the language. His innovative inquiry marked linguistics as a science indisputably in the late nineteenth century. Saussure’s theories concentrated on the structural and relational aspects of the language, unlike the common scholarly interest in the development of languages. His commitment to these aspects was related to his criticism of the insufficient doctrines and methods regarding language issues. Aside from the prevailing doctrines and methods of the period, the lack of guiding principles in linguistic research must have motivated him. Saussure’s emphasis on how the relationships between various linguistic parts formed a system of relations inspired linguists to investigate further the substance of language. He transformed many other disciplines’ current ways of looking

at their fields. The fundamental contributions of Saussure were, respectively, the study of signs, known as semiotics; signifier and signified as the components of sign; langue and parole as the structural system and concrete use of language. His theories on these linguistic domains directly or indirectly shaped new modes of thinking and produced effects in various areas and disciplines including architecture. And, interestingly Saussure favored architectural analogies to express his novel concepts in linguistics.

It is remarkable how Saussure used an architectural analogy in his lectures to better explain the characteristics of a linguistic unit to the disciples. According to the famous linguist, a linguistic unit was similar to a determined part of a building. One can find these architectural analogies in *Course in General Linguistics*, the noteworthy book which was edited by Charles Bally and Albert Sechehaye comprising Saussure’s lecture notes between 1906-1911 at the University of Geneva. Saussure explains the character of a unit analogously as follows: “From the associative and syntagmatic viewpoint a linguistic unit is like a fixed part of a building, e.g. a column.” (Saussure in Bally & Sechehaye 1966, 123-124) He furthers his analogy by explaining the role of a column within a structural system and stylistic accordance. In his own words, “On the one hand, the column has a certain relation to the architrave that it supports; the arrangement of the two units in space suggests the syntagmatic relation. On the other hand, if the column is Doric, it suggests a mental comparison of this style with others (Ionic, Corinthian, etc.) although none of these elements is present in space: the relation is associative.” (Saussure in Bally & Sechehaye 1966, 123-124)

His endeavor shows that Saussure finds architecture sound and familiar to introduce his innovative ideas on language. The usage of architectural analogies by the very eminent linguist represents an impactful sign of structural and semantic similarities. In a way, this usage illustra-

tes, from the very first hand, why architects have addressed linguistic analogies to express new ideas frequently.

Undoubtedly, such structural and conceptual similarities with architectural elements introduced by Saussure have informed and encouraged the analogical works within architecture. In addition to Saussure, one should also mention the American philosopher and scientist Charles Sanders Peirce (1839-1914) to reveal the linguistic developments with intellectual and philosophical influences. The study of semiotics and the concepts of representation, reference, and meaning attained a high degree of sophistication through his linguistic sign theory. As Pharies stated, “the importance of a doctrine of signs for linguistics is obvious since language is the most elaborate and conspicuous body of signs” (Pharies 1985, 5). The semiotic doctrine of Peirce helped to resolve some problematic issues in various disciplines via introducing the components of representation and meaning to their discussions.

The twentieth-century architectural intelligence adopted extensively semiological elements to express structural, conceptual, and stylistic architectural substances. The attempts within the second half of the twentieth century were much more mature than analogical approaches of the previous centuries, depending on the scientific articulations of the language as an established discipline with its principles, definitions, classifications, and theories. The architectural meaning was detected through the pair, architectural signifier and signified, during the sixties. Architecture, and sometimes the building itself, was interpreted as a complex system of signs by some architects, theoreticians, and critics. The semiotic approach of George Baird to architecture in the late sixties presented a novel insight into the then fatigue nature of Modernist milieu by identifying buildings not as physical tectonic entities but moreover as cultural artifacts with meaning (Baird 1969). In his view, buildings were like Saussurean signs

at the heart of a larger social context. On the other hand, all social phenomena with a semiological insight, including architecture and cities, were communication systems. By addressing Saussure’s langue and parole distinction, Baird reminded, “for semiology, every social phenomenon is made up of langue and parole”; thus, made up of codes and messages (Baird 1969, 42-43). Architecture, in this respect, could be interpreted as a system of codes where messages through individual buildings were created by use of the code that the related socio-cultural context involved.

Human sciences endorsed the linguistic paradigm with a theoretical eagerness similar to the phenomenological paradigm in the sixties. “The discovery of the determinative role of language in all human sciences”, as Julia Kristeva identified in *Desire in Language*, was crucial for the critical atmosphere of these years. Kristeva explains this role within the context of the relationships between meaning and society as follows: “*If it be true that the light thrown on the enigma constituted by meaning as well as by society came from the relationships discovered between them and the structures of language, one did nevertheless, from then on and in parallel fashion, question the metaphysical premises on which rest not only the sciences of language but their exportations to other domains.*” (Kristeva 1980, vii) The linguistic turn highly affected the non-linguistic domains and invigorated a profusion of linguistic analogies with some strengths and weaknesses as instruments of relational thinking once more in the twentieth century.

Despite the claims that language analogy lost its governing role after the mid-nineteenth century, various kinds of “analogies between linguistics and architectural theory went on in the twentieth century when the linguistic turn and structuralism became powerful trends from literature to philosophy” (Jarvinen 1992, 12). Architectural literature frequently recognized the conception of architecture as language; this conception guided not only the

scope of the works but also appeared in the titles. Two books in two different theoretical veins, Charles Jencks' *The Language of Postmodern Architecture* (1977) and Christopher Alexander's *A Pattern Language: Towns, Buildings, Construction* (1977), must be mentioned regarding their popularity and influence. Architectural historian Manfredo Tafuri put an analogical perspective on the language of architecture in the opposite direction. He stated that such a language has already formed in history, therefore, rather than a utopian "establishment of a general grammar", what one could do was recognize and describe "syntaxes and codes" that were historically defined (Tafuri 1976, 228).

It was not only the new scholarly developments in linguistics, which encouraged new forms of analogical usages in architecture. Modernism's abstract and purely formed buildings and spatial configurations initiated criticisms that they lacked any societal communication. It is possible to assert that the criticism of the Modern Movement regarding the absence of meaning in the modernist built environment nourished twentieth-century linguistic analogies in architecture. The basic incentive there was the assumption that the tectonic preferences of modernist architects were not corresponding to the preferences of ordinary people. A rejection of Modernism was constructed then upon the issue of meaning that could be attached to the buildings through which people could comprehend and appraise them. It would not be incorrect to state that this rejection gained a theoretical basis and started the postmodernist understanding of architecture, where linguistic analogies played fundamental roles. Geoffrey Broadbent, who had a deep interest in linguistic analogy, stressed how architectural meaning was suppressed severely by the modernist architectural understanding for the past fifty years. Broadbent claimed that there was still hesitation in the architectural milieu on how buildings carry meaning. He said, "*that's why the various concepts from*

Saussure, from Peirce, and from others promise to be so helpful in suggesting with greater precision just how the meaning can be carried" (Broadbent 1978, 482).

An influential architect of postmodern culture Michael Graves, who embraced figural architecture, employed a linguistic analogy, where he equated standard forms of language with buildings and poetic forms with architecture (in Nesbitt, 1996, 84). According to some architects, such forms of communication in architecture were too close to the functioning of human language. However, in language's assumption as a model, where building elements would be likened to words to read, or the building and its function would be the signifier and the signified respectively there existed inevitable confusions. As Chris Abel remarked, literal interpretations, that buildings say something via their bird-like or sail-like analogical forms failed to notice the deeper functions of human language (Abel 1988, 173). Obviously, "language is more than being just a form of communication" since it provides societal and cultural frameworks for the individual (Abel 1988, 173). An awareness of the complex functioning of human language might have directed architects and critics away from inappropriate analogies and moved them towards the social context of meaning which had some traces in earlier centuries. Buildings as works of architecture similar to works of art involve meanings as they change the environment physically and inform the human experience through various avenues (Goodman, 1985). Within this broader understanding of meaning-making through social processes, all configurations of human culture are regarded as signs that mean something to individuals thus communicate in various forms. Hence, it was reasonable that buildings could be interpreted as signs, which represented social realities and cultural identities rather than expressions of some isolated meanings. The real world we perceive and interpret is integrated with the language we use in a semiological understanding. Analogists, who focused on societal meaning in architecture, be-

nefited from semiology in their relational thinking process. They wanted architecture to be acknowledged amongst real-life instruments where “social reality is encoded” (Abel 1988, 178). In the late seventies, Donald Preziosi claimed that the built environment has always been a panhuman phenomenon like verbal language, and every human society communicated architectonically. By adopting the concepts of semiotics he wrote: “*In the broadest sense, communication consists of the transmission of information regarding the perception of similarities and differences. The system of the built environment, like any semiotic code, is a complexly-ordered device for the cueing of such perceptions.*” (Preziosi 1979, 1)

Preziosi aimed to analyze architectonic elements and their relationships in a new mode while importing these concepts from semiotics to architecture. His approach had a particular point to be underscored that the object of such an analysis was not merely formative variations, but “rather the relationships between formative variations and variations in meaning and reference” (Preziosi 1979, 2). Understanding of the built environment as a complex system of signs specified associations between architectonic formations and meanings. Such an understanding may be considered arguable for many reasons, but it still helps to explore architectural essence from various sociocultural lenses.

The energy of the semiotic motivation in architecture in these years also came from the intention of elaborating new models for architectural theory through interdisciplinary studies. An architectonic theory that saw the built environment as a sign-system regarding some correlatives in the design features of architectonic and linguistic systems then should also be reviewed as such a task of understanding the origins, organizations, functions, and forms of this non-verbal communication system. However, such a task is to be differentiated from “the plunge into the muddy waters of linguistic analogy” which brought little to architecture in the conditioning of “real

illumination” as Preziosi stated in his book entitled *Architecture, Language, and Meaning*, (Preziosi 1979a, 3). He distinguished the semiotics of architecture carefully from the phenomenon where architecture was rendered as an autonomous system of signs (Preziosi 1979a, 3). Recently, Patrik Schumacher marks language analogies of the twentieth century as failed attempts and promotes a new semiotic analogy that would better fit the twenty-first century’s parametricism in architecture. Schumacher suggests revisiting the semiological analogy; yet, with a radical dismissal of all historical content of semiotics that architecture once imported. The main mistake of seventies’ analogies for him was the unawareness that the semiotic system could neither be reduced to syntax nor to semantics. And, what he suggests now is the construction of a new spatio-visual language in analogy to the artificial programming languages. He supports an operational semiology in architecture, which can succeed as a rigorous tool of design research (Schumacher, 2016).

Architectural conceptions display changes in time regarding the complexity of societal, cultural, or technological framings. Spatial formations and built environment considerations vary according to the dominance and interplay of certain discourses. Even ontological discussions in architecture may show differences regarding new concepts and categories of the current age. Interdependency of architecture and society triggers new ideas and initiates relational thinking to encompass new patterns, processes, and networks. Analogical reasoning within these vague and complicated contexts offers reliable guides and associations to architectural thinking especially when new thinking schemas come into play via the plausible domain of linguistics.

5. CONCLUDING NOTES

When one thinks about the conclusions that can be drawn from the widespread usage of linguistic analogies, it seems indispensable to correlate this fact with the long-standing theoretical enthusiasm

of architecture. The scholarly attitude in architecture aims at increasing the impact of architectural thinking through theories as an antidote to the social, cultural, environmental, political, and economic difficulties of the time. Theories in architecture have always addressed the prevailing paradigms; thereby, architecture adjusted itself to new circumstances and approached current issues as well as historical substances with new and interdisciplinary insights. Language has always offered a structural and semantic model to researchers throughout history as a solid system of thinking and communication. The linguistic material and its semantic component stimulated interest in various disciplines because it was realized as “an original and powerful tool for humanistic analysis” (Pharies 1985, 5). The development of the scientific nature of language as a sign system, which is composed of syntactic/structural and semantic/meaning dimensions, thus created changes in many other fields. Architecture adopted linguistic conceptions extensively as one of the most willing fields. Analogies, as useful comparative tools, enabled scholars to introduce and establish their arguments upon the conventions of architecture. A linguistic analogy, architecture is a meaningful cultural product, brought new perspectives to architecture. Semiology provided instruments in defining the architectural perceptions of, for instance, a historical town or an exotic space as distinctive “fields of meaning” (Baird 1969, 53). On the other hand, interpreting entire architecture as a general language thus a social institution, and building as a personal speech within this institution opened up new areas of meaning in architecture. The well-established relations of form and meaning in the language and the possibility of analogous thinking inspired architects to once more focus on the core question of architecture regarding the constantly changing relationship between spatial form and sociocultural meaning. Interdisciplinary knowledge and theories have always held a fascination for architecture. From this point of view,

analogies have activated a broad range of purposes and ideals in architecture that encompass various themes and arguments to reinvigorate architecture’s philosophical insight. The particular line of architectural thinking analogous to that of linguistic reflections lies at the intersection of two seminal questions of what architecture will offer and how architecture will be understood.

From the perspective put forward by this study, the longstanding role of linguistic analogy in architecture has been continuous throughout history. This continuity has existed textually more consistently than some other analogies that have been functional in architecture. Throughout the ages, very significant figures of the architectural domain, such as Vitruvius Pollio (c.90-c.20 BC), Leon Battista Alberti (1404-1472), Germain Boffrand (1667-1754) and Quatremere de Quincy (1755-1849), have emphasized architecture’s similarity to the structure of the language to construct, explain and deepen the architectural concepts. Accordingly, it seems conceivable to assert that the influence of linguistic analogy has become noticeable in architecture while describing the historical, cultural and philosophical expansions beyond architectural design. Although architecture’s desire to intellectually renew, criticize and represent itself has become more noticeable in recent times, the historical inquiry here indicates that the roots of this desire cling to the past.

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