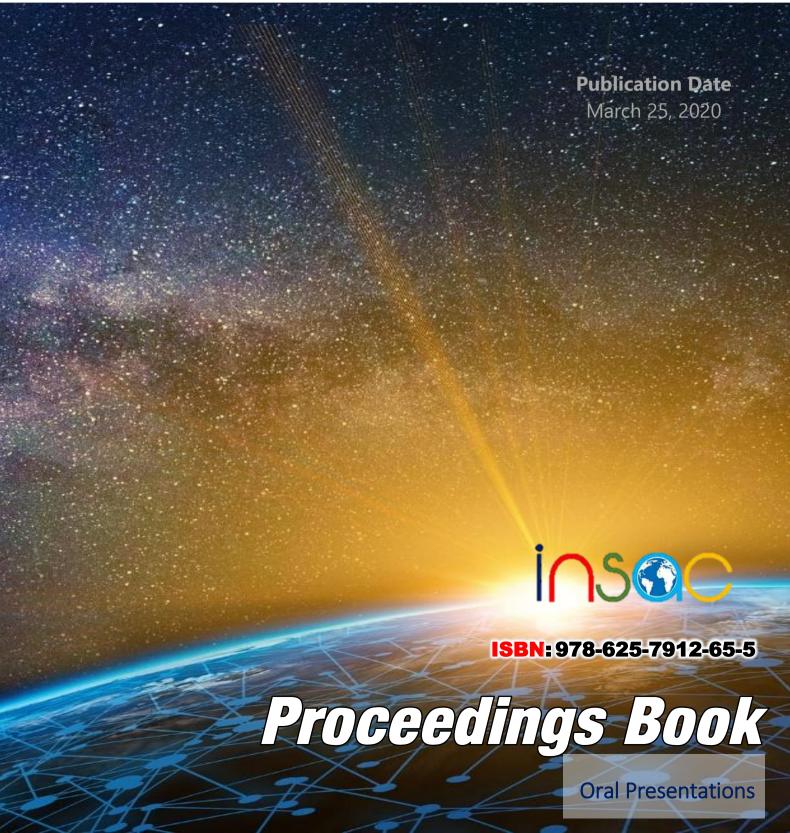


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Questioning the "Analogical Approach" in the Architectural Design with Examples (Emine Yıldız Kuyrukçu)



# Questioning the "Analogical Approach" in the Architectural Design with Examples

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Abstract: Today's architecture appears to have been produced in the context of different mass searches, thought systems or concepts, especially in the past decade. So theorists, researchers, practitioner architects or educators architects state that these developments in architectural discipline should be accepted as a new era. Non-architectural factors such as computer technology, scientific developments and advances in access to information are effective in the formation of this environment. However, the most important point is the most striking feature of the new period whose existence is accepted. It is the production or evaluation of architecture through visual images, forms and similarities.

The aim of this study is to examine the analogical approach of the recent architectural design practice in the architectural design studio. For this purpose, within the scope of architectural design-identity lesson, the literature on the use of analogy in philosophy and architecture from past to present has been researched, the sample analogical structures from the world have been analyzed and classified and "Why does the architect make analogy inspired by nature?" The answer to the question was sought.

As a result, it was determined in the analysis made with the students that the inspiration from nature in architectural design, the analogical approach has a structure that develops with a natural choice or impulse. However, architectural design is not just an intellectual discipline that requires designing prestigious, iconic structures. It is also a design process that has social and social responsibility and must combine them with parameters such as function, architectural program, local values and formal anxiety. Based on this, it should be accepted that formal, conceptual and creative images are equally important when using analogy in architecture. It has been concluded that when the architect produces correct messages with correct references in the design, successful structures are formed, but when he uses them as simple analogies in the form of postmodern images, which we sometimes call imitation and do not add comments in his design, failures occur and reactions arise.

Keywords: Inspiration from nature, sources of inspiration, analogical design, architectural form, architectural design education, creativity

#### 1. Introduction

In order for the architecture to fulfill its purpose of communication; based on the visual traces that a structure leaves in visual memory, it is necessary to analyze and make sense of the perceptions of images in human memory. Meaning in architecture is a phenomenon that is open to various perspectives, varies from person to person, and can be discussed in separate planes. In order to solve this phenomenon, the fields of semiotics, interpretation, communication, philosophy are focused on. In architectural designs, they have relationships that describeddepicting, displayed-indicative, meaningful and the meaning. These relationships also form a bridge between the designer, the person who uses the building and the people who follow the building. In this context, the thoughts of the architect are reflected in visual images while designing. These images create various fictions in people's minds. The formation of this reflection and fiction is provided in various ways. It is the concept used by architects to reflect their feelings, aspirations, hatreds and truths to their structures, to make analogy inspired by nature and to



express sensory facts and actions. Undoubtedly, the interest of architecture in natural sciences is not new. Since Vitruvius, architecture has dealt with different images in nature in different ways, and has analogical relationships. This analogical relationship related to the science of natural science has continued until today with different focuses in various periods of architectural history. The use of analogy in architecture can be defined briefly as an attempt to imitate what is observed in nature by establishing a functional / formal similarity with nature.

Since ancient times, people have expressed their desire to tell with their designs, by adding meanings to a number of objects, inspired by some objects that exist in nature (living or inanimate), or by influencing architecture approaches from previous periods. These designs either conceptually adapt to the sources they are inspired by or are completely similar to them. In this kind of design process realized by architects, "analogies" parallel to "emulation", which is an important step, takes an important place.

In this study, the concepts of "analogical design" and "metaphoric design" inspired by nature were analyzed within the scope of the identity lesson of architectural design. In addition, the classification of analogical design in architecture was made in the studio. Samples from the world were analyzed. Students were asked to prepare powerpoint presentations and posters describing the analogical classification. This study aims to question the emergence of architectural designs obtained by using the analogical approach as a design strategy and the designs obtained. As a result, the diversity and distinction of a different design approach in the studio was questioned. It aimed to make students think critically and experience a process that nourishes creativity.

#### 2. Metaphor and Analogy Concepts

Analogy, though essentially different, is the basis for things that show similar characteristics. In Greek, the main logo: "according to a ratio" is the similarity in proportional relationships. This similarity may be between two forms of different scales (example: two triangles) or between two separate quantities. Another form of analogy used by the Greeks is the way to deduce the function similarity, known as "concluding with relationship". Aristotle gives the formulas of these two types of analogy: "As A is to B, so C is to D"; and "As A is in B, so C is in D".

Broadbent (1973) says "In architecture, analogical design is the most effective source of creative ideas". Architectural history is filled with examples of forms taken from historical and local structures, with natural and artificial objects (Figure 1).

Analogy is suitability with proportion. However, Metaphor is transfer. It is a way of explaining a definition by transferring it to a different object. Analogy is a concept used mostly in logic and grammar, while Metaphor is the concept used in rhetoric (Broadbent, 1973).

According to Mc Ginty, metaphors also indicate relationships between objects such as Analogies. These relationships are very abstract without being one to one. Metaphors describe the pattern of parallel relationships possible, and analogies describe one-to-one relationships (İnceoğlu and İnceoğlu, 2004).



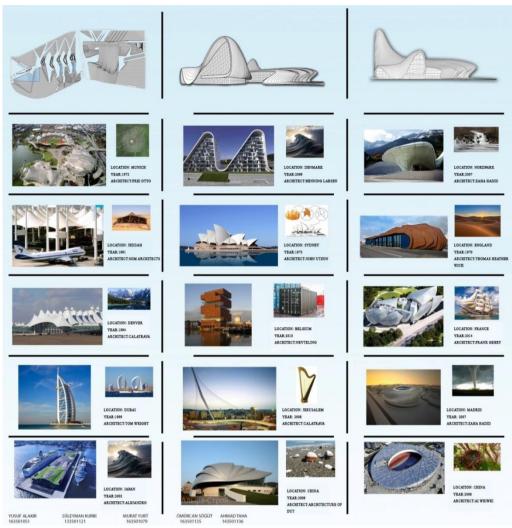


Figure 1: Analogical Design Examples from the World

Antoniades (1992) metaphor in architecture:

- Attempt to transfer relations from one concept or object to another;
- Behavior of seeing a concept or object as something else, something different;
- It defines the focus of our research, which focuses in one area, to another area or from one review to another in order to better understand the subject we are considering.

Difference between Metaphor and Analogies; both imply one-to-one relationships between objects. Metaphors describe the pattern of parallel relationships possible, while analogies describe one-to-one relationships. Analogy is proportionate. Metaphors are in line with analogies. However, Metaphor is an analogical analogy loaded with semanticity. Unlike analogy, the use of metaphor in architecture is a method used for reaching creativity or creating meaning. The architect interprets the metaphor he chooses as a starting point for the design process. The project evolves and results on this interpretation. The architect transfers an image to the building with metaphor. The resulting product reflects this metaphor. Metaphor adds figurativeness to the structure. It is much easier to say what is metaphor than to say what it is. Metaphor is never a direct relationship. Metaphor is always an indirect form of relationship. In fact, talking about something is talking about something else. In this case, metaphor never tells us what something is. Metaphor consists of making two things related in a structure (Akder, 2009).



#### 3. Classification of Analogies in Architectural Design

In the historical process of architectural design, many architects make their designs using some inspiration. These sources of inspiration are some objects that were found alive or lifeless in nature, currents and architecture approaches that occurred in earlier periods. In architectural structures that use analogies in their designs, analogies such as Venturi's duck structure in Vegas, as well as direct, concrete, one-to-one, and indirectly used examples by loading abstract meanings are frequently seen. This led to the necessity to examine the new classification under two headings, either direct or indirect analogies (Özbudak Akca, 2012) (Table 1).

Direct analogy: when dealing with formally or mechanically, Indirect analogy: there are symbolic, cultural and linguistic analogies.

Table 1: Classification of Analogical Design (Özbudak Akca, 2012)		
1.	Direct Analogy	Indirect Analogy
	Formal	Symbolic
	Mechanical / Non-Mechanical	Linguistics
		Cultural
2.	According to the Reference Object	
	Vivid Nature	Inanimate Nature
	Biological	
	Anthropomorphic	

While direct analogy is considered formal or mechanical, indirect analogy has symbolic, cultural and linguistic analogies. In the classification, in the analogies used while creating the structures, based on the idea of emulation to nature, evaluation was made as a living and inanimate nature. It can be designed in harmony without harming nature, as well as being in control of nature, opposing the laws of nature or inspiring from them by using certain objects existing in nature. Another form of analogy used as structures are designed by inspiring from the basic structures such as living things (human, animal, plant) or their skeletal system, cell structures and DNA. It is possible to examine them under the title of biological analogies. Since the beginning of the 20th century, due to the development of digital technologies, technological developments, developments in computer use systems, the use of internal and external structure features of organic assets has come to the agenda in architecture. Since this new movement, called zoomorphic architecture, introduced its topological logic to architecture, it has become easier to make organic views that evoke forms in nature (Aldersey-Williams, 2003).

#### 4. Student Studies

In the 2019-2020 fall semester, discourses and classifications related to the concepts of analogy and metaphor within the scope of architectural design identity lesson were examined by searching the literature from the internet, related books and periodicals. Samples from the world were analyzed.

As a result of the research, it was determined that Özbudak Akca (2012) made the most comprehensive classification in this regard. Analogical classification of Akca (2012) was taken as basis. At the end of the semester, students were divided into 4 groups and asked to analyze an analogy class from each group and prepare a powerpoint presentation and poster. Each poster contains examples from the world specific to the analogy class, sources of inspiration and the identity of the projects (Figure 2-3-4-5).



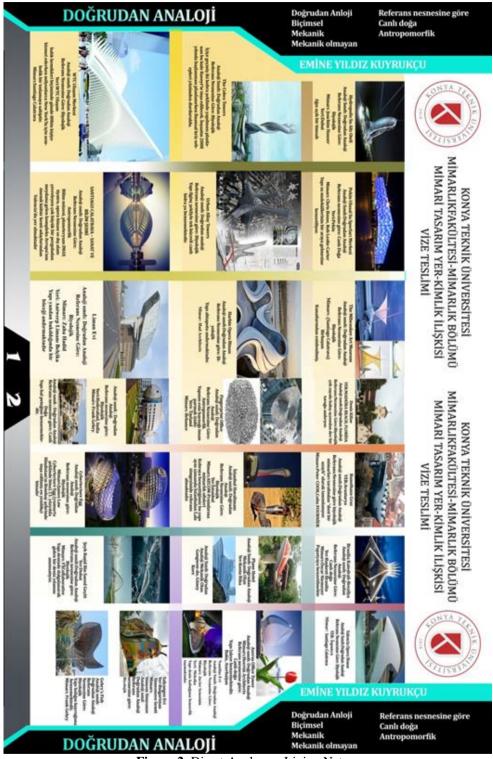


Figure 2. Direct Analogy - Living Nature



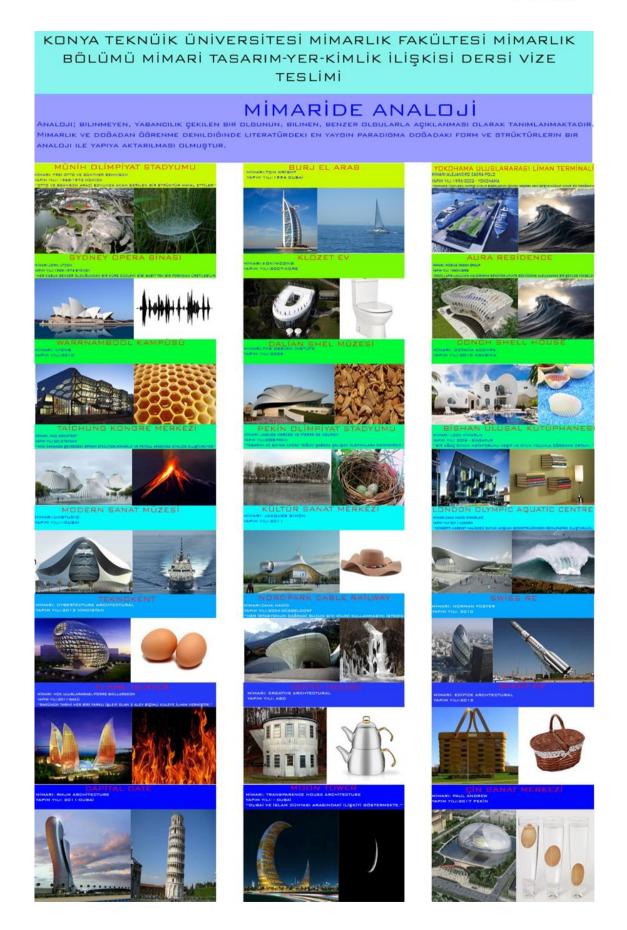




Figure 3. Direct Analogy-Inanimate Nature

#### KONYA TEKNIK ÜNİVERSİTSİ MİMARLIK FAKÜLTESİ MİMARLIK BÖLÜMÜ

MIMARI TASARIM YER KİMLİK İLİŞKİSİ - DR Emine YILDIZ KUYRUKÇU

AMAAR MORDAA 153501124 ZEHRA AZIZI 163501105 MAYAS ZEIZA 153501076

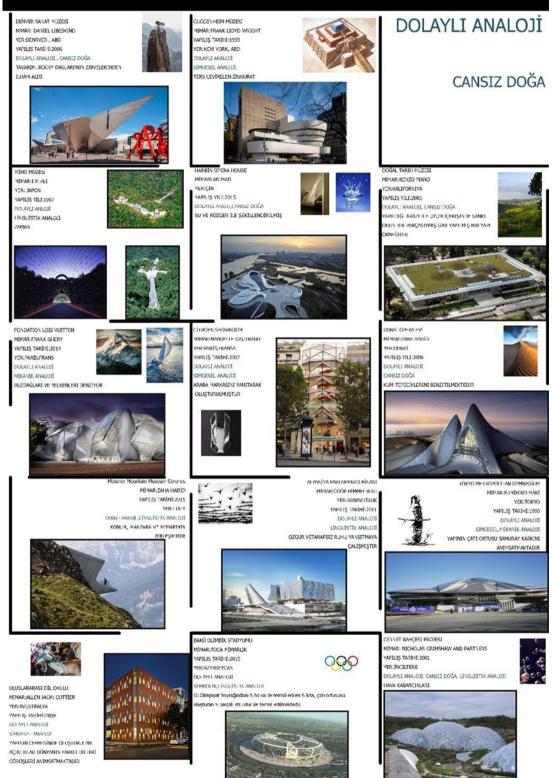


Figure 4. Indirect analogy-Inanimate Nature



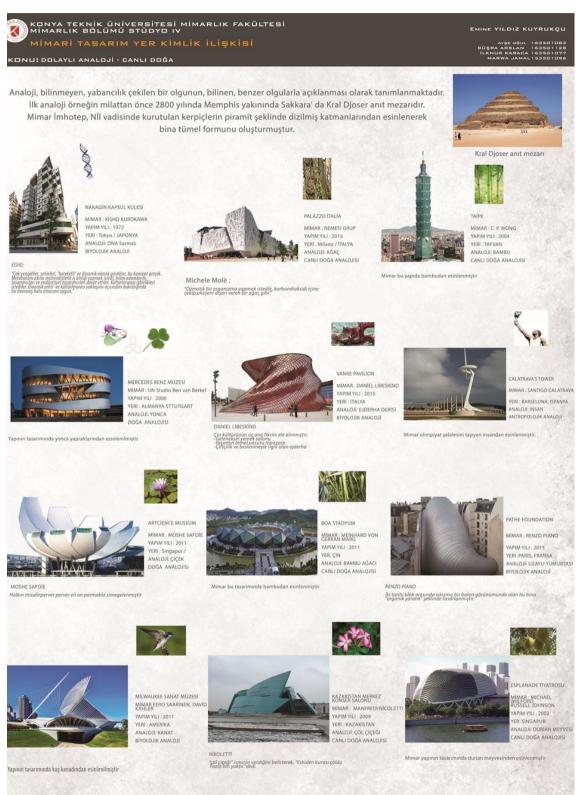


Figure 5. Indirect analogy-Living Nature



#### 5. Conclusion

In architecture, the relationship of nature, which affects many disciplines, goes back to ancient times. It is thought that human beings are simultaneous with observing natural formations and structures, and trying to learn, feeling the need for shelter. Mankind, who learned to live in communities, observed the formations in nature with the need for shelter, not only used the materials obtained from nature, but also started to develop the first building techniques by observing or imitating conscious or unconscious nature constructions (Selçuk and Sorgue, 2007). When looking at the art of architecture under the title of "emulating nature". Vitruvius (90-20 BC), one of the leading theorists of architectural art. It is seen that he describes architecture as an imitation of nature. The works of A. C. Quatremere de Quincy (1755-1849), one of the early art critics of the 1800s, are also the first documents that accept nature as a guide (Karagöz, 2007). The aim of this study is to question the analogical approach in recent architectural design practice. The literature on the use of analogy in philosophy and architecture from past to present has been researched; examples from the world have been analyzed. As a result of studio studies, students what is the analogical approach in architectural design? and "why does the architect design analogically?" They sought answers to their questions. In architecture, it has been determined that the analogical approach has a natural selection or a structure that develops with impulse. Architects from past to present, while making analogical design; They have used postmodern images called imitation, sometimes inspired by what exists, sometimes unfortunately not adding comments. Only imitation understanding causes artificial images, it remains a symbolic communication devoid of depth. A thoughtless imitation, untested, exaggerated, inefficient and shallow, based solely on attention sometimes it can lead to funny designs (Aldersey-Williams, 2003). The continuous evolution of architecture can only succeed with an attitude towards abstraction and predicting the future. Creativity will be ensured by known ideas coming together in an unknown way, creating different, surprising but at the same time functional results. At this point, Eugene Tsui said, "I do not see nature as an inspiration to imitate, as other architects do. I am concerned with the depth of mind of nature, by understanding how nature and the universe are designed, through mind and heart, and how nature and the universe are designed (Tsui, 1999)". The point of view is to grasp the essence of nature.

In order for the analogical approach designs to be permanent for many years. The architect should interpret the source of inspiration he inspired, reflect it on the architectural work and solve the building in terms of facade function and aesthetics. One-to-one imitation analogical approaches are designs that can be consumed quickly.

As a result, it was determined in the analysis made with the students that the inspiration from nature in architectural design, the analogical approach has a structure that develops with a natural choice or impulse. However, architectural design is not just an intellectual discipline that requires designing prestigious, iconic structures. It is also a design process that has social and social responsibility and must combine them with parameters such as function, architectural program, local values and formal anxiety. Based on this, it should be accepted that formal, conceptual and creative images are equally important when using analogy in architecture. It has been concluded that when the architect produces correct messages with correct references in the design, successful structures are formed, but when he uses them as simple analogies in the form of postmodern images, which we sometimes call imitation and do not add comments in his design, failures occur and reactions arise.



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