

The Digital Nature of Gothic - Lars Spuybroek & John Ruskin

Mustafa Dallı¹ , Asena Soyluk² 

¹ Res. Asst., Gelişim University, Faculty of Fine Arts, Department of Interior Architecture and Environmental Design, İstanbul, Türkiye.

² Assoc. Prof. Dr., Gazi University, Faculty of Architecture, Department of Architecture, Ankara, Türkiye.

Abstract

Gothic architecture is a movement that has influenced world architecture, including today's architecture, since its active period. Although it is known for some of its features such as flying buttresses, pointed arches and vaults, John Ruskin examined the characteristics of Gothic architecture except from its physical features and examined it under 6 main headings. Lars Spuybroek, the founder of Nox Architects, one of the names that come to mind when talking about digital architecture today, described these characteristics of Ruskin as the "digital nature of Gothic". He examined 3 of these 6 characteristics and analyzed them in the chapter titled with "The Digital Nature of Gothic" in his book "The Sympathy of Things: Ruskin and the Ecology of Design". In this study, based on the work of Spuybroek, his work with Nox Architects, the debates on beauty and elegance he encountered in his journey to the nature of Gothic, and why he named gothic architecture digitally were examined and some discussions were made on this subject.

Keywords: Aesthetics, Design Theory, Digital Design, Gothic Architecture, John Ruskin, Lars Spuybroek.

Corresponding Author: mdalli@gelisim.edu.tr
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INTRODUCTION

Gothic architecture is an architectural style that was used from the middle to the end of the Middle Ages, especially in Europe. The Gothic architectural style characterized by arches, vaulted ceilings and small stained-glass windows evolved from Romanesque architecture which is a medieval aesthetic.

John Ruskin, an English writer, poet, art and society critic who lived in the 19th century, characterized Gothic architecture under 6 main headings with its "invisible" features in contrast to its known physical features.

The famous Dutch architect Lars Spuybroek, the founder of Nox Architects and an academic at various universities, is known for being an architect who creates his designs with an architectural style that has recently started to develop and adds computer support to his designs. Although he has an understanding of using the power of technology extremely well, he is also an architect deeply committed to the concepts of aesthetics and elegance.

Spuybroek is an architect who discusses today's modernism, mass production and how they affect beauty and aesthetic of today's buildings. Even in the beginning of his book "The sympathy of things: Ruskin and the ecology of design" he wrote this "We must find a way back to the concept of beauty that modernism took from us". Based on the articles he wrote and the designs he produced, this technology has the understanding of combining the concepts of aesthetics, beauty and elegance that today's technology has taken. Lars Spuybroek, on the other hand, examined these features of Gothic architecture in the "Digital Nature of Gothic" section in his book "The Sympathy of Things: Ruskin and the Ecology of Design", which he wrote based on these features of John Ruskin.

Within the scope of this study, Lars Spuybroek's works, his perception of beauty and grace, and his thoughts on the digital nature of Gothic were examined and inferences were made about why he made this judgement.

LARS SPUYBROEK

Spuybroek was born in 1959 in the Netherlands. He graduated from Delft University in 1989. He established his office called Nox Architects, which he directed from 1995 to 2010. He has been working as a professor at the University of Georgia since 2006. Since 2010, he has been working as more of a writer and theorist.

Nox has an understanding that is highly conceptual, inspired by art and theories, related to the environment (interactive) and combining them with today's digital technology. A company that is not eclectic, has a holistic understanding and aims to make symbolic structures.

Nox Architecture

NOX was founded in 1999 by Lars Spuybroek in Rotterdam and differs from other offices both by the unusualness of its approach, the extreme plasticity of its productions (models and constructions) and its multidisciplinary activities. NOX structures generally aim to create a thin space without right angles or flat surfaces on the one hand. On the other hand, these structures were built with an understanding that aims at the integrity between the structure-body-environment, or in other words, not to be eclectic, and is based on combining technology and digitality at the same time (Figure 1).

Spuybroek approaches this architectural understanding as "textile way of thinking" in his writings. In NOX's projects the textile concept appears at different levels, either at the purely aesthetic level of undulating surfaces, or at the structural level of weaving and braiding of steel members, or at the methodological level of using techniques 'instead of ideas' to generate architectural form (Spuybroek, 2004).

Beauty & Grace

In general, the concept of "aesthetics" mentioned when describing Nox architects is very important to Lars Spuybroek, because the concepts of "Beauty, Elegance and Radiance" have a significant impact on Lars Spuybroek and his relationship with Gothic, which forms the main idea of the article.

At this point, it is necessary to look at some beauty debates. To talk about the concepts of beauty; Spuybroek speaks of beauty as a perceived act. And he states that the concept

of beauty is a cyclical form that emerges from the whole in the form of radiation, and that it returns as a whole (Spuybroek, 2014). And he mentions that the concept of radiance describes the general form of beauty, the concept of grace or *charis* which known as "charisma" describes its social form, the concept of giving describes its operational form, and the concept of existence is related to its general form and concept (Figure 2).

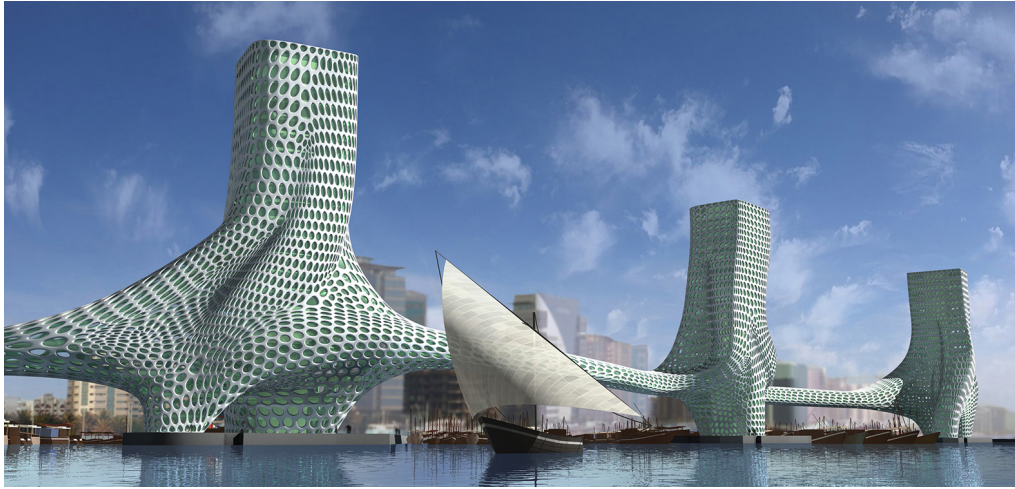


Figure 1. "Three Graces" design by Nox Architects (URL 1)

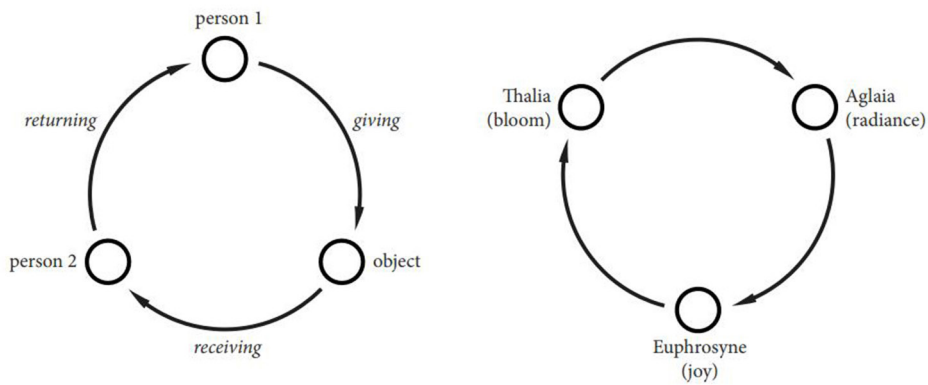


Figure 2. The three-step procedure of gift-giving (left) and its representation in the Three Graces (right) (Spuybroek, 2014)

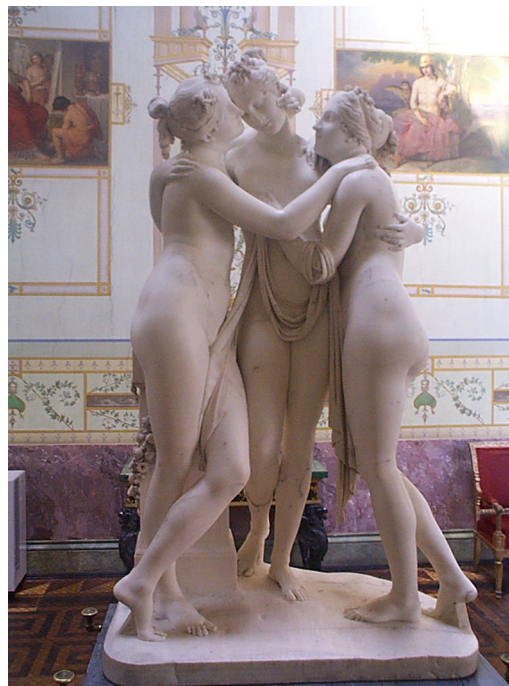


Figure 3. Three Graces sculpture by Antonio Canova (URL 2)

For the concept of grace, Spuybroek mentions that the concept of elegance is a form of action of beauty and argues that the concepts of elegance and beauty are inseparable. In explaining this concept of elegance, he often refers to the concept of charis in Greek mythology. And again, he tries to explain the charis in this Greek mythology with the three graces sculpture and gifting culture, which is the artistic representation of charis (Figure 3).

Radiance, Existence & Visibility

In this point, the concept of radiance needs to be mentioned. Spuybroek tries to explain the concepts in his works by using the Sun as an example. He supports his argument by saying that the sun is the pure representative of a radiance, the act of giving with infinite generosity and visibility (Spuybroek, 2014). And he suggests that radiation cannot exist without an interruption, but that this interruption should be perceived not as a pause, but as a change or development, a change in direction and magnitude, that is, a deviation. Which tries to support this concept of deviation with the concept of Lucretius' deviation (Figure 4).

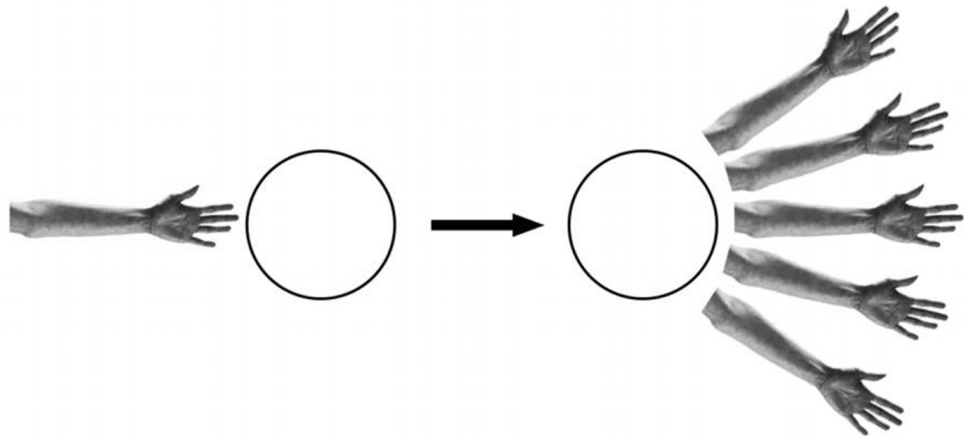


Figure 4. Beauty as a "Gift"; as a diagram of the gift's transformation into beauty(Charis), defining generosity (left) and radiance (right)(Spuybroek, 2014)

The concept of existence was mentioned before; Spuybroek evaluates this concept as the existence of beauty can only be achieved by having the potential to exist together. In other words, he mentions that beauty in general is a wholeness, that is, a concept of movement that spreads from a whole and affects the other and returns to itself (Figure 5).

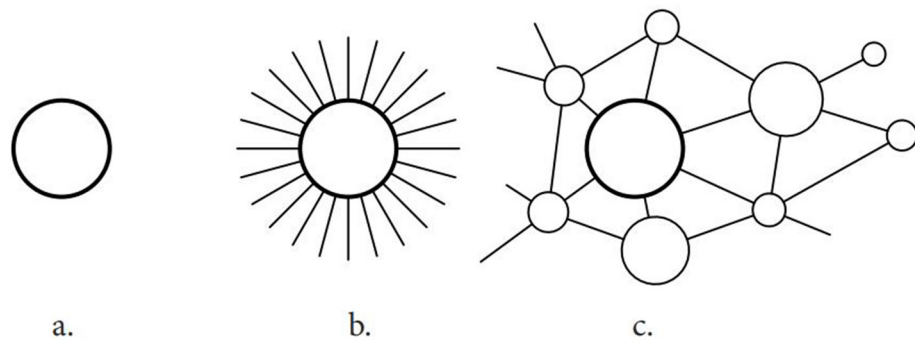


Figure 5. Three states of existence: a. things as cut off; b. things as radiant; c. things as related (Spuybroek, 2014)

JOHN RUSKIN

John Ruskin is a philosopher, writer, and art critic who lived in the 1800s. He is a person who has produced a wide range of works from geology to education, from art to architecture, from politics to botany. Ruskin grew up in a conservative and protective family. While he received a strict religious education from his mother in his childhood, literary works were taught by his father. In fact, in his works and perspectives, we can see the results of this two-headed education he received in his childhood. John Ruskin was also influenced and inspired by William Turner and his works, one of the pioneers of Romanticism and his work, because, while talking about him, he said that he painted light and especially the power of nature magnificently and that he awakened deeper feelings than looking at a painting (Figure 6).

In addition, Ruskin is a person who believes in nature, the natural and its beauty, and attaches great importance to concepts such as handicraft-labour-craft, against modernization and mass production. He has the idea that industrialization and mechanization alienate people. However, the alienation here should not be perceived as the alienation of humans from nature, which Karl Marx mentioned in the German ideology, but the second alienation mentioned in the book, that is, a mechanization, an alienation created by Capitalism and industrialization. His ideas deeply influenced William Morris, who is known as the initiator of the Arts and Crafts movement and contributed to the birth of this movement.

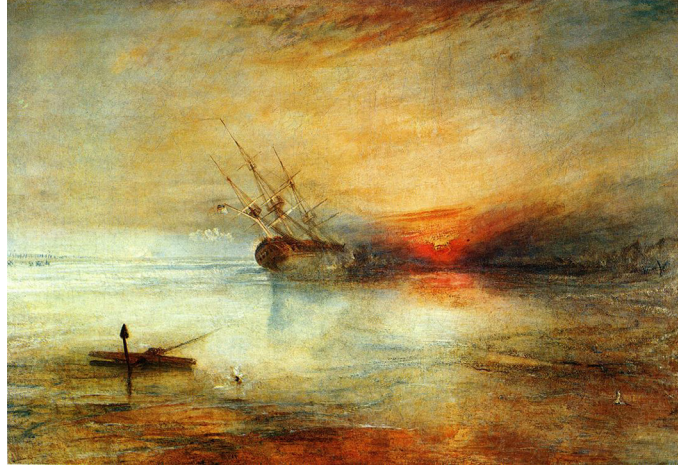


Figure 6. Fort Vimieux by William Turner – 1831 (URL 3)

Vital Beauty

On the other hand, it is important to continue with the vital beauty concept that belongs to John Ruskin, because this concept is an important concept for Spuybroek. And it's actually a concept that forms the basis of all this Gothic ontology work. Ruskin first mentioned this concept in his book *Modern painters* in 1843. Although the beauty accepted before is expressed in magnificent symmetry, measures, proportions. Ruskin speaks of beauty not as forms but as sympathy for emotions, feelings and living things, vitality, imperfect, naturalness, in short, divine feelings. And speaking of this, he explains that the two sides of our face do not have a magnificent symmetry, the mountains do not have perfect symmetry or measure, or the branches of a tree do not elongate in the same way, but we still feel sympathy for them or find them beautiful.

THE DIGITAL NATURE OF GOTHIC

Before investigating Ruskin's Gothic characteristics, Gothic should be understood shortly. Gothic is the name given to the architectural period between the 12th and 16th centuries, especially in Europe. An architectural trend that was born in France and then spread to Europe, overcoming the Romanesque style. And for the first time in the 16th century, the Italian artist Giorgio Vasari used Gothic to humiliate it, meaning "Barbarian", referring to the barbarian Goths who destroyed the Romans (Figure 7).

However, Ruskin studied Gothic architecture during his travels to Venice and wrote these works as "The Nature of Gothic" in a part of his book called *Stones of Venice*. In this section he talked about the Gothic characteristics. We know Gothic with its physical features such as pointed arches, rib vaults, pointed towers, and flying buttresses. However, the characteristics he mentioned here were not visible but rather felt ones. And these characteristics are examined under 6 headings (Ruskin, 1853). These are; Savageness, Changefulness, Rigidity, Naturalism, Grotesqueness and Redundancy. Since Spuybroek examines the first three characteristics in his book, in the present study, these characteristics were examined.

Gothic Architecture & Characteristics Savageness

Spuybroek investigates firstly "savageness" from the Gothic characteristics of John Ruskin. When it is said savagery, of course, unpleasant concepts can be understood. But the savagery mentioned here is mostly in the sense of vital beauty, in the sense of the savageness of nature. The first reason of savagery was that the first examples of Gothic structures were made by Northern savages, because the conditions of production

were primitive, just like their characters, mistakes sometimes occurred during material production or construction. And most of the time, employees left them as they were. According to Ruskin, this was the concept that gave Gothic architecture its unique and vital beauty (Figure 8), because when Ruskin talks about the savageness in the nature of the Gothic, he says, "Being imperfect is directly related to being human, because in order to make a flawless production, gears must be attached to the hands of the craftsman and scales on his arms. Which makes it mechanical" (Spuybroek, 2016).



Figure 7. Strasbourg Cathedral (URL 4)

However, Spuybroek says the concept of savagery can't be explained simply as "something goes wrong during production and construction", because in Gothic architecture, we can talk about the freedom of craftsmen, masters and workers to do their work. He mentions that there is an architect concept as a manager, but that this is not an architect who draws a section-view-plan facade as known as today. He mentions that this division of labour, this freedom, and the decisions made during the implementation in this place lead to an improvisation, that is, asymmetries in the buildings. In other words, we can say that this situation leads to the concept of vital beauty of John Ruskin. Spuybroek summarizes this situation as follows; "We should perceive this situation in Gothic structures not as a body without organs, on the contrary, as a body in which organs come together and are free in their own parts" (Spuybroek, 2016).



Figure 8. Asymmetry in Rouen Cathedral (URL 5)

Changefulness

The second characteristic is changefulness. Changefulness is of course a concept related to the concept of savageness, because the mentioned asymmetry in structures in savageness subject, was directly an example of changefulness. However, the changefulness mentioned in this characteristic is a softer and more internally related change. In other words, the variability of the parts is reflected in the whole. When explaining this concept, Spuybroek mentions that the typology of the columns seen in classicism is the same. He says it could be elongated - shortened or narrowed in diameter - but still its typology would remain the same. However, as we can understand when we look at Ruskin's column plan scheme, each of the plans in Gothic is variable in itself and has different variations when combined. Spuybroek calls this variability "like a snow crystal" (Spuybroek, 2016) (Figure 9).

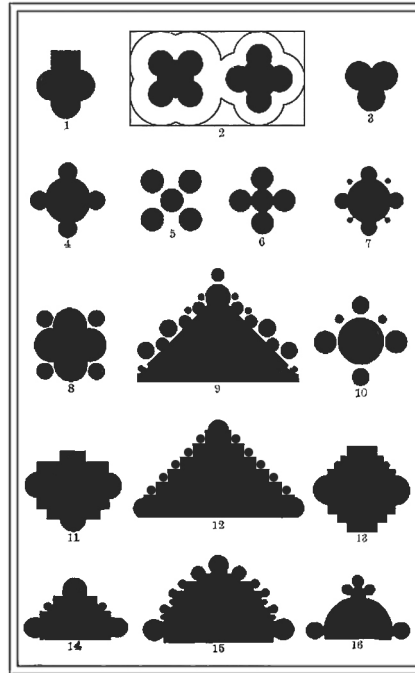


Figure 9. John Ruskin's "Plans of Piers" drawings in "The Stones of Venice" (Ruskin, 1851)

While talking about changefulness, it should be mentioned the concept of rib used by Spuybroek. He calls them as the heart and most important members of the Gothic, due to their ability to bend and twist the ribs, to evolve straight-curved or thin or thick forms. He says that thanks to the ribs, the windows, walls and vaults are all together, and that these ribs differ in each encounter, that is, in forming a form or structure. And that's why he defines the concept of rib as the most basic member of Gothic because of its feature that allows changefulness and even provides changefulness (Figure 10).

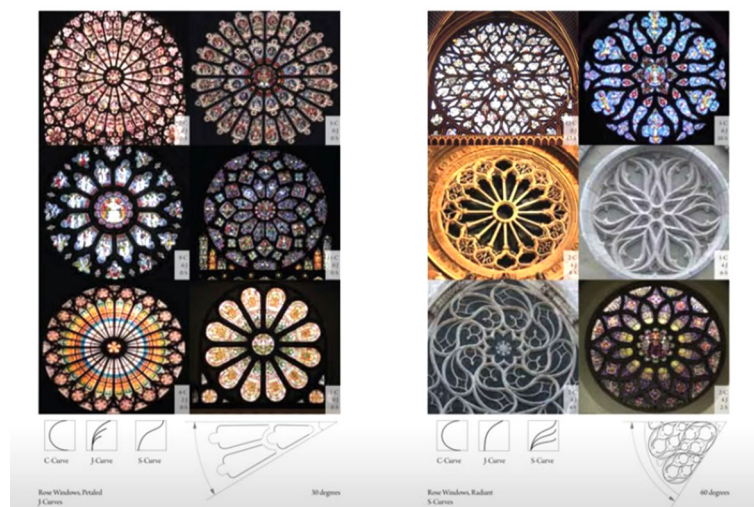


Figure 10. Variety in rose windows (URL 6)

Rigidity

The third characteristic is Rigidity. Ruskin describes the rigidity character as "Active Rigidity". Spuybroek defines this active rigidity as "The joint movement and activity of elements, forms or structures on a structure".

And in order to explain the subject better, he makes a comparison between Classicism and Baroque architecture and Gothic in this sense, because a structure was produced in classicism and baroque and the decoration was done afterwards. However, he says that in Gothic, the decoration constitutes a structure and the structure constitutes an ornament. In other words, the elements are active in themselves, but the combination does not have an eclectic style, they come together in a fluent and natural way. That's why he says that in Gothic architecture, structure and ornamentation are indistinguishable from each other (Spuybroek, 2016) (Figure 11).

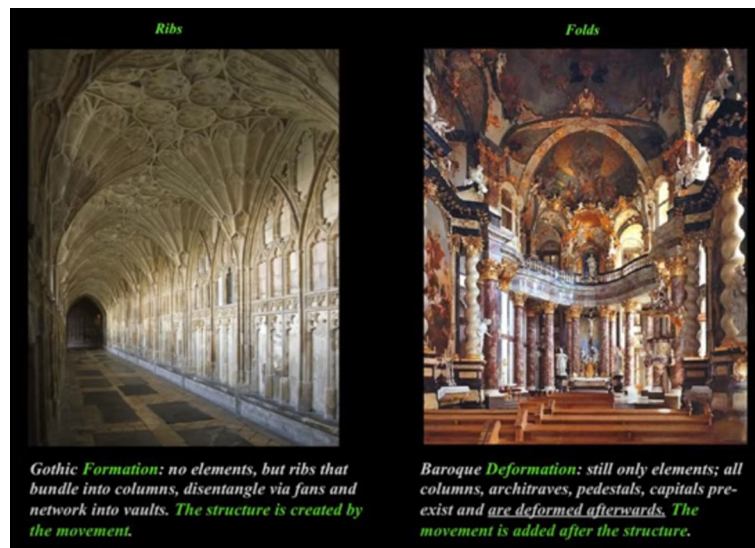


Figure 11. Gothic architecture, where ornament and structure cannot be separated from each other and Baroque architecture with an eclectic style (URL 7)

Digital

Why does Lars Spuybroek name Gothic as digital? As can be seen in all the Gothic characteristics that were mentioned in this study, the common point of the characteristics is that they differ, have variations, have a fluency and are holistic while doing this. When comparing the Gothic and today's digital, Spuybroek thinks that; every figure in today's digital is "variable" in its own way. The figures consist of points that can be moved in different directions and the lines coming from these points. However, such movements - motifs - are limited to the definition of the figure. In short, this variation of variability is parametrically controlled by a continuous function. However, in Gothic architecture, this variability is not controlled by a function. A rib can naturally bend or lengthen to form a vault or a nave (Spuybroek, 2017).

Also, as examined in the stiffness section, there is the concept of "active rigidity" in Gothic architecture. In other words, structure and decoration are together and inseparable from each other. In fact, rigidity, which is also very related to the concept of variability, is manifested in today's digital designs in an inseparable manner. However, as mentioned in the previous paragraph, a function controls the coexistence of this structure and ornament. If there is an operation that went wrong, it is corrected, and there is active rigidity only to the extent that digital allows.

Spuybroek perceives the features of them digitally. When we hear the word "digital", the first thing that comes to our mind is electronic calculations. However, here, it has the meaning of a soul and a beauty created manually. And he talks about what he actually wants to be digital. He criticizes that this is the point that today's digital design misses - it is a soulless digital (Spuybroek, 2017).

That is the reason why Hansmeyer's works were put here. Even the works are designed with variability and these designs are produced using digital design tools. It is impossible to talk about an asymmetry, or variability resulting from the improvisation decisions of the craftsman, which we see in Gothic in these productions and designs. What exactly that Spuybroek criticizes is the digital that the craftsmen do not add to their souls. (Figure 12).

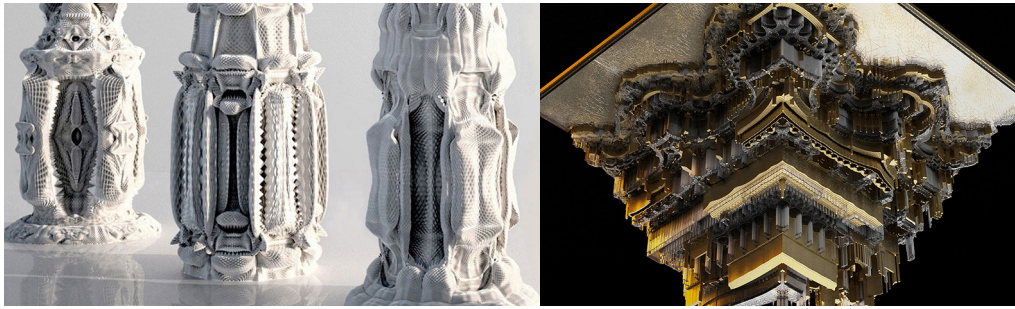


Figure 12. Subdivided Columns (Left) and Muqarnas (Right) works of Michael Hansmeyer (URL 8)

RESULTS & DISCUSSIONS

Gothic architecture has always been an architectural style that has influenced architecture and architects since its reign. It is an architectural trend that always attracts the attention of researchers because of its physical features, namely flying buttresses, pointed arches, vaults and generally creating religious structures. However, the English philosopher and critic John Ruskin, who lived in the 1800s, examined quite different characteristics of Gothic architecture. These characteristics, beyond the physical characteristics just mentioned, manifested as "invisible characteristics" in Lars Spuybroek's words.

On the other hand, Lars Spuybroek, who stands out among today's parametric designers, has signed many parametric or, in his own words, "digital designs" with the "Nox Architects" architectural office, of which he is the founder. He researched the philosophical principles of architecture such as beauty, grace, radiance or vital beauty and produced works in this direction.

In his book "The Sympathy of Things: Ruskin and the Ecology of Design", which he wrote in 2016, Spuybroek included 3 of these characteristics of John Ruskin in his book and discussed why Gothic architecture is "digital". He discussed the savageness, changefulness and rigidity characteristics mentioned throughout the study and compared them with today's digital and discussed why the original digital is Gothic architecture.

Since, as can be seen in other works by Spuybroek, he completely rejects the brutality and monotony brought by modernism. However, there is a phenomenon that gives Gothic architecture its variability, rigidity and brutality. This phenomenon is the creator of Gothic art, that is, the imperfection of man, because Ruskin says this; "The second reason is, that imperfection is in some sort essential to all that we know of life. It is the sign of life in a mortal body, that is to say, of a state of progress and change. There is no living thing that is or can be rigidly perfect and to banish imperfection is to destroy expression, to check exertion, to paralyse vitality."

In other words, being perfect means moving away from being human. However, as the "savageness" characteristic shows, the masters who created the Gothic works made mistakes. However, these mistakes, imperfections, distanced them from perfection and turned them into a work of art. Each structure, that is, each ornament (stiffness characteristic) was different from each other. So it had an imperfect variability. They had variations within themselves, and together they had other variations. So in a way, this is what today's digital promises us. Infinite freedom of variation. However, Gothic architecture did not use detailed analysis by creating flawless calculations or flawless algorithms while doing this.

This is what Spuybroek was proposing throughout the entire piece. As mentioned in the digital part, "digital" can be created with today's technology. Artifacts or structures with endless variations can be created. However, the human-made "beauty of imperfection", that is, "vital beauty" that Gothic architecture has, will never be captured with today's digital.

Conflict of Interest

No conflict of interest was declared by the authors.

Authors' Contributions

The authors contributed equally to the study.

Financial Disclosure

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Ethics Committee Approval

Ethics committee approval was not required for this article.

Legal Public/Private Permissions

In this research, the necessary permissions were obtained from the relevant participants (individuals, institutions, and organizations) during the survey and in-depth interviews.

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URL 7- <https://youtu.be/CfAgl4dhuFs?t=2720>

URL 8- <https://www.michael-hansmeyer.com/projects>

BIOGRAPHY OF AUTHORS

Mustafa Dalli completed his undergraduate education in Kocaeli University, Faculty of Department of Architecture in 2019. He started his graduate education in Gazi University, Department of Architecture in 2020 and still continues his graduate education. In addition, he has been continuing his academic career as a research assistant at Istanbul Gelişim University, Department of Interior Architecture and Environmental Design (English) since 2021.

Assoc. Prof. Asena Soyluk completed her undergraduate education in 2000, graduating from Erciyes University, Department of Civil Engineering. She completed her graduate education in 2003 from Gazi University, Department of Construction Education. She completed her doctorate education at Gazi University, Department of Architecture. She has been continuing her academic career as a faculty member at Gazi University Faculty of Architecture since 2012.