



PERCEPTUALITY OF COLOR IN ARCHITECTURE: DE STIJL AND BRUTALISM EXAMPLES

MİMARLIKTA RENGİN ALGISALLIĞI: DE STIJL VE BRÜTALİZM ÖRNEKLERİ

Adil Ömer ÇAMAŞ¹, Emine KÖSEOĞLU²

Received: 03.11.2022

Research Paper

Accepted: 27.12.2022

Abstract

Color, which is a function of light, is one of the architectural design components and features that make up the physical environment, and it affects the perception of space through the sense of sight. The use of color in spaces creates different experiences and meanings by affecting the atmosphere of the space. In this context, in this study, the perceptual reflections of the concept of color in space were examined and exemplified through De Stijl and Brutalism movements. This study was designed in a qualitative research design. De Stijl and Brutalism are handled as cases, in this respect the research is a holistic multiple case study. The data collection technique applied to the cases is document review. Hermeneutic phenomenology was chosen as the analysis method. According to the analysis made, as a result of the De Stijl movement focusing on three basic colors, it can be concluded that the color acts as a landmark for other installations in this movement. On the other hand, in the Brutalism movement, it can be concluded that while the color takes its existence from the selection of the material, it can provide an appearance of integrity embedded in its background in an unnatural physicality.

Keywords: Color, Space, Perception, De Stijl, Brutalism.

Öz

Işığın bir fonksiyonu olan renk, fiziksel çevreyi oluşturan mimari tasarım bileşenlerinden ve özelliklerinden biri olmakla birlikte, görme duyusu yoluyla mekân algısını etkiler. Mekanlarda renk kullanımı, mekân atmosferini etkileyerek farklı deneyimler ve anlamlar oluşturur. Bu bağlamda, bu çalışmada, mekânda renk kavramının algısal yansımaları irdelenmiş ve De Stijl ve Brütalizm akımları üzerinden örneklenmiştir. Çalışmada, nitel araştırma deseninde kurgulanmıştır. De Stijl ve Brütalizm birer durum olarak ele alınmıştır, bu yönüyle araştırma bütüncül çoklu durum çalışmasıdır. Durumlara uygulanan veri toplama tekniği doküman incelemesidir. Analiz yöntemi olarak hermenötik fenomenoloji seçilmiştir. Yapılan analize göre De Stijl akımının üç temel renge odaklanması sonucu, bu akımda rengin diğer kurulumlar için bir işaret öğesi gibi davrandığı, genel sonucuna ulaşılabilir. Öte yandan, Brütalizm akımında, renk varlık sebebinin malzemenin seçiminden alırken, doğaya aykırı bir fiziksellik içinde arka planına gömülü bir görünüm bütünlüğü sağlayabildiği izlenimine varılabilir.

Anahtar Sözcükler: Renk, Mekân, Algı, De Stijl, Brütalizm

¹ Adil Ömer Çamaş, Mimar Sinan Güzel Sanatlar Üniversitesi, Mimarlık Yüksek Lisans Öğrencisi. Mimar Sinan Fine Arts University, Master of Architecture Student, adilomercamas@gmail.com, ORCID ID: 0000-0003-1268-991X.

² **Corresponding author:** Assoc. Prof. Dr. Emine Köseoğlu, Fatih Sultan Mehmet Vakıf University Faculty of Architecture and Design, koseogluemine@gmail.com, ORCID ID: 0000-0003-2457-7659.

- **Citation:** Çamaş, A.Ö. ve Köseoğlu, E. (2023). Perceptuality of Color in Architecture: De Stijl and Brutalism Examples. STAR - Sanat ve Tasarım Araştırmaları Dergisi, 4(6), 1-9.
- **Plagiarism / Ethics:** This article has been reviewed by at least two referees and it has been confirmed that it does not contain plagiarism and complies with research and publication ethics. <https://dergipark.org.tr/pub/stardergisi/policy>

Introduction

The way people communicate with their environment is shaped according to their needs. The concept of design emerged with the need for basic shelter; however, it has become an important tool for the physical, psychological, social and cultural relations that people establish with their environment (Norberg-Schulz, 1974: 27, 85, 167, 195). The concept of design and its products of all sizes regulate and affect not only the relations of people with their environment but also their relations with other people through the environment. In this context, it becomes possible to talk about various tools and features of communication. These objects as the outputs of such communication mechanisms which are the products of design at different scales and whose number can be increased, such as cities, buildings, buildings, building elements, equipment, tools, materials, printed and digital publications, make human life possible and facilitate while the perceptual dimensions, features and characteristics of the products in question. Color is one of these tools or features (Birren, 1969: 397) that provide the reciprocal interaction between human and their environment. In this sense, the meanings are also designed and/or become the subject of design. In other words, resulting from the features of the mediating tools like color, meanings also direct this interaction.

In this context, the phenomenon of color in design comes to the fore both as a design object and as one of the perceptual elements and features that design products reflect. The aim of this study is to re-read the perceptual characteristics of color in De Stijl and Brutalism from the perspectives of the authors of this study using hermeneutic phenomenology. In the study, this re-reading through was realized by subjectively interpreting basic information about the movements and images of selected prominent buildings, collected from the literature.

The Concept of Color in Architecture and Its Perceptuality

While the colorful drawings made on the cave walls about 40,000 years ago depict the environment of human beings, revealing the instinct of reflection; more recently, the color wheel (Kalaycioğlu and Aras, 2015: 964-965), created by Isaac Newton in 1666, continues to take its place as one of the basic art subjects in today's architectural education by being transmitted for centuries. On the other hand, the effects of the use of color in architecture on space design have been examined under various headings in the research literature (Wilber, 1942; Caivano, 2006; Convertino, Di Turi and Stefanizzi, 2017; Rahimi and Dabagh, 2018; Zimnicka, Balanicka and Kroll, 2022; Adamska, Nocuń, Ratajczak and Záruba, 2022). For example, the use of color can make the physical features of the space relative by affecting the perception of space; it can also change, transform, increase or reduce space by producing symbolic, associative and cognitive meanings (Gibson, 1954: 304, 307). In this context, perceptually, color can create thermal effects, mass effects, dimensional effects, time effects, and auditory effects in space (Kalaycioğlu and Aras, 2015: 970-971).

In studies on the emotional and semantic counterparts of color, it has been found that red activates power, joy and happiness; it creates a dynamic and lively effect in the space where it is used. It has been found that orange energizes and stimulates creativity and ambition.

Yellow brings joy and reveals wisdom, intuitive understanding; green creates a peaceful and serene environment that relieves physical and mental fatigue; blue evokes calmness and hope. It has been found that white is a representation of purity and cleanliness (Manav, 2015: 22-23). However, color preferences in spaces or the way colors are perceived may differ according to the gender (Köseoğlu and Çelikkayalar, 2016: 60-64), age and culture of the user or the person perceiving the space (Özdemir, 2005: 395-397).

Despite the varying effects caused by the user, the designers were able to shape their designs by consciously using the effects of colors on the space. In this respect, it can be said that the use of color can be directed, manipulated and objective by the designer. Color is an important design tool in manipulating and perceptually directing the dimensions of the space. According to Özdemir (2005: 395, 397-398), warm colors give a feeling of closeness and cold colors give a sense of distance, but this effect is determined by the saturation of the colors before their temperatures. For example, warm colors and dark values cause spaces to be perceived as inferior.

Color, on the one hand, together with natural and artificial elements, has an important effect on the creation of the border, which is one of the important components that define the phenomenon of space (Altan, 2015: 36-61). On the other hand, with the use of color, orientation in a space can be achieved and the space can be easier to read. It becomes possible to mark a place and make it visible with color (Yıldırım et al., 2019: 108-115; Hidayetoğlu, Yıldırım and Akalın, 2012: 54-57). In addition, colors can be local and/or global components in creating the identities and collective images of spaces and cities (Zybaczynski, 2014: 88-91). For example, the Greek island of Santorini is a place that has created an image in the minds with its blue-white colors.

Furthermore, phenomenological reflections could be noted in addition to the above-mentioned symbolic meanings of color in architecture. For instance, contemporary architects such as Peter Zumthor and Tadao Ando, while highlighting the phenomenological dimensions of spaces, knew very well the gray neutral of concrete, which stands behind, forms the background, and disappears according to its place, sometimes emphasizing/caring what is in front of it/inside, prioritizing light, function and meaning. They have clearly demonstrated this in their construction. The gray nudity of concrete has been able to show in the buildings of architects that simplicity is the means and even the founder of the direct relationship created with what is seen.

Methodology

This study was designed in a qualitative research design. De Stijl and Brutalism are handled as cases, in this respect the research is a holistic multiple-case study. The reason why both movements were chosen as research subjects is that they are tools for experiences of several spatialities, although the color is apparently at the forefront. In the use of color in De Stijl, three basic colors were used physically, but the use of color became a tool in the formation of mass, form and space. In the Brutalism movement, on the other hand, although the color of

the buildings is the most dominant feature, color reveals its existence with the material. Making a sensory-experiential-perceptual reading of color in the context of the aforementioned cross-relationships constitutes the originality of this study. The data collection technique applied to the cases is document review. The information and photographs selected from the literature were examined by the authors to create an experience about the movements. Hermeneutic phenomenology (Seamon, 1982; Seamon, 2016) was chosen as the analysis method. The interpretative reflections of the selected situations by the researchers constitute the findings.

Description of the Cases in Relation to Color

De Stijl

The birth of the De Stijl movement takes place on June 16, 1917, with the publication of the first issue of the magazine called De Stijl by Theo van Doesburg. Other founding names of the movement, whose names were pronounced by Van Doesburg, are painters Piet Mondrian and Vilmos Huszar, architect Jacobus Johannes Pieter Oud and poet Anthony Kok. The concept comes from the German word for “style”; it describes an installation of a high level of simplicity and abstraction in architecture and art, using only horizontal and vertical lines and rectangular shapes (Krispyn, 1976: 59-62). Besides, the color-box of the current is limited to the three basic colors red, yellow and blue and the three basic values black, white and gray (Figure 1).

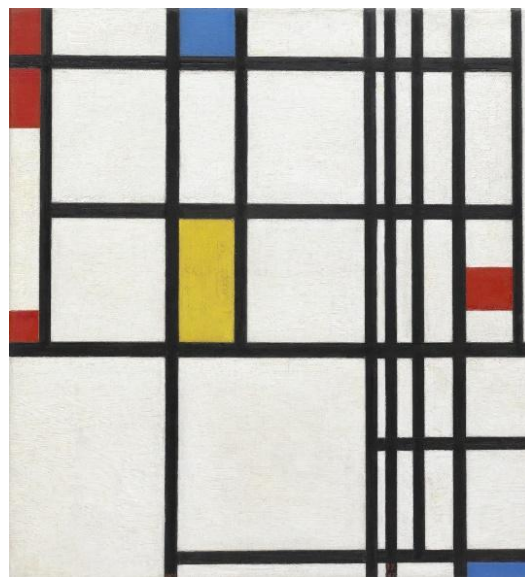


Figure 1. Piet Mondrian, Composition.

Undoubtedly, the most prominent painter of De Stijl is Mondrian. Influenced by analytical cubism, Mondrian finds this approach insufficient on the grounds that it does not contain a pure abstraction. Mondrian sought an art form with a level of clarity and order that could fully support his religious and philosophical views; such that in this artistic approach all representative components should have been disabled. Only basic geometric components (straight lines, planes, rectangles) and basic colors (red, yellow, blue) and neutrals combined

with them (black, white, gray) would be sufficient and necessary for such simplicity and clarity. Therefore, it is possible to say that in the De Stijl movement, the elements in the compositions moved away from nature as plastic and the elements in the compositions moved away from natural forms. In this respect, it is seen that the movement is one of the predecessors of abstraction (Karabaş and Güdür, 2016: 332-336).

De Stijl's counterpart in architecture is characteristically found in the Schröder House designed by architect Gerrit Rietveld in 1924 (Figure 2). The Schröder House, as an abstract color sculpture, would become De Stijl's built manifesto (Klinkhammer, 1999: 224).



Figure 2. Schröder House of Gerrit Rietveld.

Brutalism

When discussions of Modernism began after World War II, Brutalism was the first trend to criticize modern architecture and discuss its positive and negative aspects. Two types of Brutalism can be mentioned in the architectural history literature. While the first is the trend of the 1950s and later, following Corbusier and his works; the second is the Brutalism of Smithson's followers. The second one is referred to as New Brutalism in the literature, and it puts its ground on an intellectual plane, expressing much more than the built environment. However, the common feature in both is the way the structure, material and function of the building are expressed, and most importantly, the material is presented with the most natural, "hard" appearance and with unpretentious honesty (Altun, 2016: 1) (Figure 3).



Figure 3. Saint Marie De La Tourette Monastery, Le Corbusier, close to Lyon, France, 1960.

Brutalism in architecture, on the one hand, together with a massive, monolithic geometric image, imagines the use of concrete in its plain and bare state (Figure 4).



Figure 4. Trellick Tower, Ernő Goldfinger, 1972, London.

Brutalism in the 1980s, on the other hand, was perceived as the architecture of the forgotten lower classes; in grey, he was like an ugly dystopian symbol of soullessness. Rather than describing bare concrete, it evoked a dark vulgarity. Especially, after Tom Wolfe's work "From Bauhaus to Our House" published in 1981, Brutalism began to be mentioned as a representative of what is wrong in modern architecture and a phenomenon to be hated. Before long, however, as the 20th century ends, the gray naivety of concrete will begin to be understood and accepted again.

Findings: Hermeneutic Phenomenological Reading of the Chosen Architectural Movements Regarding Color

The use of color in creating meaning and influencing perception, through its manifestos, has been used in the 20th century. It has also been an important design component and a sensory and intellectual tool for architectural movements. In this context, De Stijl and Brutalism movements are discussed respectively in the following sections in a hermeneutic phenomenological manner which reflects the interpretations of the authors of this study.

De Stijl

The color phenomenon in De Stijl movement is a representative of the senses of pureness and simplicity as it uses three basic colors in a very salient manner and in a way that led to the legibility of geometric elements for both the exterior space and the interiority. The architectural object-mass slightly differentiates itself from the nature and the environment it locates while not weighing down on it where color is one of the helping elements for this constitution.

In Rietveld's design, walls appear as planes and lines forming them that slide over each other, flow, but can stand together so harmoniously as to be inseparable. Meanwhile, the basic colors used, together with the neutrals, give the feeling that the existing object is not a functional building, but an abstract expression floating in infinity, exactly as the painter Mondrian demanded. It is possible to note that despite its high level of abstraction, the building has been given a sculptural quality with the basic colors used at its critical points. Form and color flow over each other, creating tension; color is positioned as a second accent after form in this structure. Walls, furniture and structural elements become integral parts of the structure through color.

Brutalism

In Brutalism which has a collective mental image with its usage of material, the color becomes a somehow "hidden" protagonist. The color here is the main feature of the material that does not receive any intervention where modesty and assertion embody together. The sense of beauty of architectural object concretizes through the usage of architectural material concrete in its very basic visual appearance. The relationship of this "color" with nature enhances this beauty sensation as despite its assertion it looks as if, in a way, melting into the ground.

In this approach, leaving the material in its purest form establishes an intellectual background, while gray, the characteristic color of concrete, creates mental images about the textural, tactile, emotional and phenomenological dimensions of the material, allowing a color to be perceived with different dimensions and to describe architecture. Components such as concrete blocks laying solid-void appearances that form the masses or parts of the masses in horizontal and vertical directions, and the differing sensory qualities of these components such as color and texture help us to make sense of and position the phenomenological connotations of exposed concrete. The beauty phenomenon brought by the simplicity of the concrete material fascinates the sighted subject; "neutral" gray, which is opposite to nature but can also get lost in nature mysteriously, will establish a "brutal" structure for the eye that cannot see these aspects.

Conclusion

The use of color in architecture plays a critical role in constructing, designing and manipulating the perceptual, cognitive, symbolic, semantic, descriptive and emotional dimensions of space. Although the phenomenon of color, which can be associated with the use of materials, seems to be a dimension related to visual perception. Moreover, colors can stimulate different senses and feelings in space users. For these reasons, color in architecture has been one of the basic design elements as a space-constitutive and defining element.

Thanks to all these counterparts, color has taken its place in the founding manifestos of the movements formed in certain periods in the history of architecture. In this study, the De Stijl movement, which uses the basic colors blue, yellow and red, and the Brutalism movement, which exists with the neutral color of concrete, which is a building material, were interpreted.

This study attempted to reveal the perceptual reflections of color in architecture through two distinguished 20th century movements in terms of sensory, semantic and sentimental aspects of it relating to phenomenological and atmospheric extents. More studies discussing how physical characteristics of color result in several psychological responses for both designers and users would be beneficial.

References

- Adamska D., Nocuń, P., Ratajczak, T. & Záruba F. (2022). Color in medieval castle architecture in present-day Poland and Czech Republic. *Arts*, 11(1), 28.
- Altan, İ. (2015). *Mimarlıkta mekan kavramı*. İstanbul: Ofis 2005 Publishing.
- Altun, D. A. (2016). Brutalism now: rethinking Brutalism in contemporary world architecture. *Arts*, (5)3, 1.
- Birren, F. (1969). *Psychological implications of color and illumination*, Color Consultant, New York.
- Caivano, J. (2006). The research on color in architecture: brief history, current developments, and possible future. *Color Research & Application*, 31, 350-363.
- Convertino, F., Di Turi, S. & Stefanizzi, P. (2017). The color in the vernacular bioclimatic architecture in Mediterranean region. *Energy Procedia*, 126, 211-218.
- Gibson, J. (1954). The visual perception of objective motion and subjective movement. *Psychological Review*, 61(5), 304-314.
- Hidayetoğlu, M. L., Yıldırım, K. & Akalın, A. (2012). The effects of color and light on indoor wayfinding and the evaluation of the perceived environment. *Journal of Environmental Psychology*, 32, 50-58.

- Kalaycıoğlu, H. & Aras, U. (2015). İç mekan mobilyalarında renk faktörünün etkisi. *Selçuk University Selçuk-Technical Journal*, Special Issue-1, 92-973.
- Karabaş, P. A. & Güdür, A. (2016). Neo-plastisizm akımı kapsamında De Stijl hareketi ve Piet Mondrian. *International Journal of Cultural and Social Studies (IntJCSS)*, (2)2, 330-339.
- Klinkhammer, B. (1999). *The spatial use of color in early modernism*. Paper presented at the 87th ACSA Annual Meeting Proceedings, Washington, USA. Retrieved from <https://www.acsa-arch.org/proceedings/Annual%20Meeting%20Proceedings/ACSA.AM.87/ACSA.AM.87.49.pdf>
- Köseoğlu, E. & Çelikkayalar, E. (2016). Yapılı çevrede renk tercihleri. *The Journal of Architectural Sciences and Applications (JASA)*, (1)2, 57-65.
- Krispyn, E. (1976). Literature and De Stijl. In: Bulhof, F. (eds) Nijhoff, Van Ostaijen, "De Stijl" modernism in the Netherlands and Belgium in the first quarter of the 20th century. Dordrecht: Springer.
- Manav, B. (2015). Renk-anlam-mekan ilişkisi. *The Turkish Online Journal of Design, Art and Communication*, (5)3, 22-27.
- Norberg-Schulz, C. (1965). *Intensions in architecture*, Cambridge: The MIT Press.
- Özdemir, T. (2005). Tasarımda renk seçimini etkileyen kriterler. *Ç.Ü. Social Sciences Institute Journal*, (14)2, 391-402.
- Rahimi, N. & Dabagh, A. (2018). Study the mental effect of color in the interior architecture of the hospital spaces and effect on the patient tranquility. *Amazonia Investiga*, 7(13), 5-16.
- Seamon, D. (1982). The phenomenological contribution to environmental psychology. *Journal of Environmental Psychology*, 2(2), 119-140.
- Seamon, D. (2016). A phenomenological and hermeneutic reading of Rem Koolhaas's Seattle Central Library: buildings as lifeworlds and architectural texts. R. Conroy Dalton & C. Hölscher (Ed.), *Take one building: interdisciplinary research perspectives of the Seattle Central Library*, in (pp.67-94). London: Routledge.
- Wilber, D. N. (1942). The role of color in architecture. *Journal of the American Society of Architectural Historians*, 2(1), 17-22.
- Wolfe, T. (1981). *From Bauhaus to our house*. New York: Picador.
- Yıldırım, K., Hidayetoğlu, M. L., Gökbulut, N. & Müezzinoğlu, M. K. (2019). Effects on students' perceptual evaluations of the wall colors used in design studios by the virtual reality method. *ICONARP International Journal of Architecture and Planning*, 7(1), 99-120.
- Zimnicka, A., Balanicka, E. & Kroll, A. (2022). Evolution in approach to colour in tall buildings' architecture on the Isle of Dogs, London, UK. *Arts*, 11(1), 9.
- Zybaczynski, V. M. (2014). Colour - important factor in preserving the local identity. *Urbanism Arhitectură Construcții*, (5)4, 87-92.

References of Figures

- Figure 1. Wikipedia (Web Source), (Date: February 20, 2021). Name of the image: Mondrian - Composition in Red, Blue, and Yellow, 1937-42, Access date: 27.10.22. https://commons.wikimedia.org/wiki/File:Mondrian_-_Composition_in_Red,_Blue,_and_Yellow,_1937-42.jpg
- Figure 2. Santos, Filipe (Photographer, Artist), (Date: March 31, 2018). Name of the photo: Schröder House I, Holland: Utrecht, Access date: 27.10.2022. https://www.behance.net/gallery/67976893/Schroeder-House-by-Gerrit-Rietveld-Utrecht?tracking_source=search_projects%7CRietveld+Schroder+House https://mir-s3-cdn-cf.behance.net/project_modules/fs/6e448267976893.5b4d2001d8589.jpg (This image is used with the special permission of the photographer).
- Figure 3. Schapochnik, Fernando, (Architectural Photographer), (Date: June, 2014). Name of the photo: No name, France, Éveux, Access date: 27.10.2022. <http://fernandoschapo.com/index.php> <https://www.archdaily.com/96824/ad-classics-convent-of-la-tourette-le-corbuiser/56ddcef6e58ecea4a000001-ad-classics-convent-of-la-tourette-le-corbuiser-photo> (This image is used with the special permission of the photographer).
- Figure 4. IK's World Trip (Photographer), (Date: April 25, 2010). Name of the photo: Trellick tower, England: London, Access date: 27.10.2022. <https://www.flickr.com/photos/ikkoskinen/4552525570/in/photolist-7WhSSU-7WhTfb>