



Light as an Element to Create Poetic Spaces: Case Analyses of Two Religious Buildings, Sancaklar Mosque and Church of the Light

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Abstract

Psychological and phenomenological definitions of space is separated from each other in literature. The first aim of this study is analyzing the understanding of 'light' in both two approaches. Second aim is investigating how the 'light' could create and increase the understanding of poetic space. To understand this phenomenological side of the light, two religious buildings that use the power of light in a sophisticated way are selected as case studies. First case is Sancaklar Mosque by Emre Arolat Architects, and second case is Tadao Ando's Church of the Light. All aspects of light, as physical element, have poetic value and space-light-phenomenology triad defined by the author and analyzed on these case studies. The paper introduces and discusses creating poetic space with a physical element; light. To make this discussion in an effective and efficient way, psychological and physical definitions about space and light are also introduced. The conclusion includes commentary about how light could be used as an element to create poetic spaces with the interpretation of definitions.

Keywords: Space, Light, Phenomenology, Church of The Light, Sancaklar Mosque

Introduction

In Oxford dictionary (2006) space is defined as "a place or an area that is empty or not used" (oxford dictionary, 2006). This *emptiness* is open to debate in phenomenological and psychological understandings. Space has both material and spiritual entitles. In addition to the materialistic expression of space, there is also a sense of space (Pallasmaa, 1996). Even though light is considered as physical or material entity of space, it helps to evoke senses and eventually creates a poetic value for the spirit of space.

This research aims firstly to analyze the understanding of 'light' in both of these two approaches. Secondly, to investigate how the 'light' could create and increase the understanding of a poetic space.

The main research question and two other sub-questions that lead whole research are constructed for the study.

- How does light contribute to the understanding of space?
- How could light be used to create poetic spaces?
- What is the relationship between light and convection of abstract feelings in some spaces?

To achieve aims and discuss research questions, the structure of this research consisted of four main sections. First section introduces space with phenomenological and psychological understandings and definitions. Second section explains basic physical qualities of light; third section includes phenomenological understandings of light. Fourth section introduces space-light-phenomenology triad defined by researchers as the coverage of other three parts of the research. To clarify these definitions and interpretations, two case studies are analyzed and compared with each other in sections.

Definitions of Space

As the research discuss phenomenological attitude toward space and light, it is important to provide background knowledge about space definition in psychology too. Because it is obvious that without understanding the approaches about space and its contents, it is not possible to make efficient comments. For this reason, this section of the research includes space definitions.

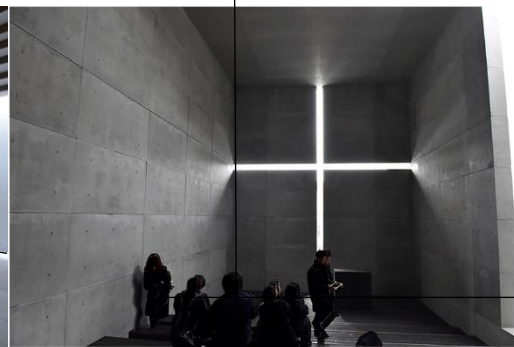
Phenomenology Oriented

Certeau (1980) explains that space could be mentioned when creatures take into consideration vectors of direction, velocities and *time* variables. Thus, space is consisted of intersections of mobile elements in time periods (de Certeau, 1980). In that regard, de Certeau considers *space as a practiced place* (de Certeau, 1980). The example given by de Certeau is briefly helping to understand the phenomenological definition of space, he explains that the street is created by urban planners in shape, but users (he says *walkers*) transform this geometry as space. In this attitude, geometry turns into a space if there is movement and physical interaction in it.

Merleau-Ponty also differs geometrical space from anthropological space (de Certeau, 1980). This distinguish comes from "space is existential" and "existence is spatial" (de Certeau, 1980) understandings. It means that geometrical space basically is the form of space that is understood from outside, however, existence in space includes feeling and understanding of the space it mainly requires 'being' inside of the space.

Bachelard also mentions dialectics of outside and inside (Bachelard, 1969). He criticizes this kind of geometrical division as borders that create outside and inside. He explains that inside and outside, as experienced by the imagination (Bachelard, 1969). In this regard, it could be thought that his opinions in coherence with Merleau-Ponty's attitude that 'existence is spatial'. Bachelard discusses this space idea with considering 'house'. Heidegger's quote '...poetically men dwells...' (Heidegger, Poetry, Language, Thought, 1971) comes mind when we think about this poetic understanding of Bachelard. He tries to analyze poetic understandings of spaces by giving examples of house (Bachelard, 1969). He claims that a home as a spiritual place provides a haven for dreaming, shields the dreamer from harm, and promotes peaceful dreaming. (Bachelard, 1969). This quotation could be thought of as house includes universe inside by allowing one to dream in it. Actually, this poetic characteristic of houses could be searched in other *sacred* spaces.

In this point of view, current research suggests that religious buildings could be read as poetic spaces. A religious structure includes 'vectors of direction, velocities and time variables' that turns a place as a space in phenomenological understandings (picture 1 and 2).



Picture 1 (left): A view from Sancaklar Mosque, **Picture 2(right):** A view from Church of the Light

Sources:

pic. 1: <https://www.archdaily.com/516205/sancaklar-mosque-emre-arolat-architects>

pic. 2: <https://www.archdaily.com/101260/ad-classics-church-of-the-light-tadao-ando>

Picture 1 and 2 reflects human usage and engagement with spaces in Sancaklar Mosque and Church of the Light. Two religious buildings open all the time, however usage density changes during the worship times of the day. In mosque architecture movement direction is shaped with the location of qiblah. In church architecture this direction controlled by the location of apse.

Ando's explanations in coherence with the phenomenological definitions of poetic spaces:

"In all my works, light is an important controlling factor. I create enclosed spaces mainly by means of thick concrete walls. *The primary reason is to create a place for the individual, a zone for oneself within society.* When the external factors of a city's environment require the wall to be without openings, *the interior must be especially full and satisfying.*" –Tadao Ando (Kroll, archdaily, 2011).

The mosque has representing Islamic materialization for Muslim societies as well as it emerges as landscape in city image (Batuman, 2018). The mosque is a socializing space for Muslims beside its religious entity (Batuman, 2018) and the structure of mosque is influenced by politics, times and culture. Sancaklar Mosque reflects modern characteristics rather than classical mosque structure. In this regard both structures reflect spiritual components, and unique architectural attitudes have been chosen for this research.

Religious spaces mostly include spiritual meanings without physical characteristics of spaces. For this reason, this paper searches for two religious buildings as poetic spaces.

In the next section, space definitions in psychology research are evaluated and on case studies, these evaluations are criticized. Next section also includes some references and comparisons with phenomenological definitions that are introduced in this section.

Psychology Oriented

In psychological approaches, experiencing the place combines individual, social, and cultural progresses (Canter, 1997). Place definitions and psychological research integration must actually be able to combine with human experience. (Canter, 1997). Now, it is possible to provide a more precise explanation of the components of places as they were expressed in psychological definitions, place experience, in a way that is amenable to scientific measurements and tests (Saegert & Winkel, 1990; Markus, 1982). For example, Canter (1997) also includes house examples to clarify place definition, but his example is quite different from Bachelard's (1969) point of view. Rather than poetic definitions and phenomenological explanations, Canter makes categorization of places with their functions (figure 1).

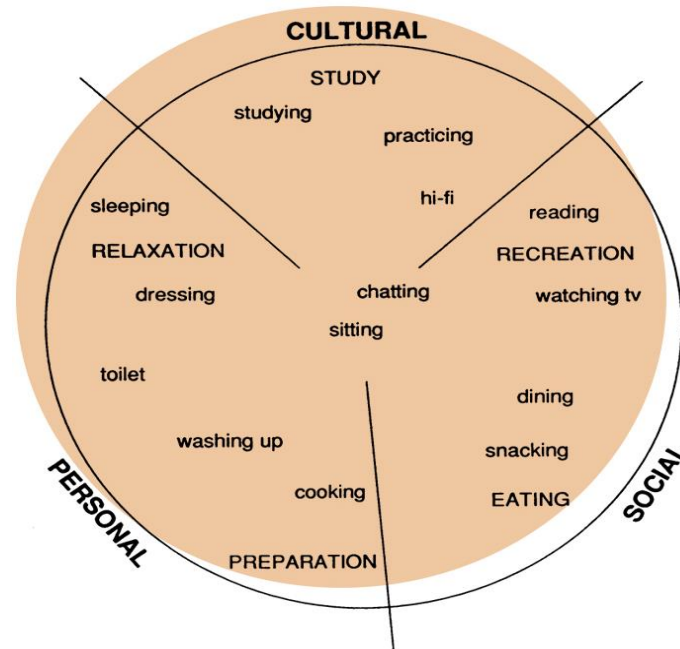


Figure 1: Canter's (1997) schematic representation of domestic activities at home

As can be seen in figure 1, psychology-oriented space definitions tend to categorize and interpret place relations with the consideration of physical and functional qualities. According to Canter (1997), one premise of the theory of place is the notion that specific patterns of behavior are connected to specific locations. This opinion is in the opposite side of Heidegger's (1971) attitude. Heidegger rejects counting or defining experiences with objective evaluations of positive sciences. However, current analysis includes both sides of these approaches. It means that to analyze and understand structures in an efficient way, it could be needed to include both psychological and philosophical approaches.

There is only one common point between these two approaches, it is *time*. If places change over time, it begs the question of what makes them what they are. In psychology, taking into account the individualized, interpersonal, and cultural dimensions of place experience may provide the solution. (Canter, 1997).

Markus (1987) explains "primary experiences of buildings" (p. 468). He referred to these as:

- a. The function, which is the experience of the inner or outer activities which a building space
- b. The shape, which is comprised of "the geometric properties, the proportions, articulation, color, ornamentation, and surface treatment... summed up under the term 'style' "
- c. Space, which includes "the number and location... sequence and linkage of spaces" (Markus, 1987: 469).

These three characteristics could be evaluated for Sancaklar Mosque and Church of the Light to understand differences. The function (a) could be seen as same for these two religious buildings. However, the form (b) of these two structures is completely different. Built in 2012, the Sancaklar Mosque in Istanbul exhibits a ground-breaking, out-of-the-box method of mosque design. Contrary to popular belief, the mosque is not built similarly to nearby structures. In contrast to traditional mosques, there is no dome and no provision for evenly lighted rooms. (Kumar & Pal , 2018). Outside of the structure is surrounded by high walls. The park on the upper courtyard of the mosque is surrounded by high walls that clearly demarcate the space between the bustling outside environment and the peaceful public space. The long canopy extending from the public space becomes the sole part of

the building that can be seen from the outside (figure 2). From a route leading from the upper courtyard through the park, it is possible to reach the structure, which is situated below this canopy. The mosque functions and melds with the geography when one enters it through the landscape, down the hill, and between the walls, leaving the outside world behind (archdaily, 2014).

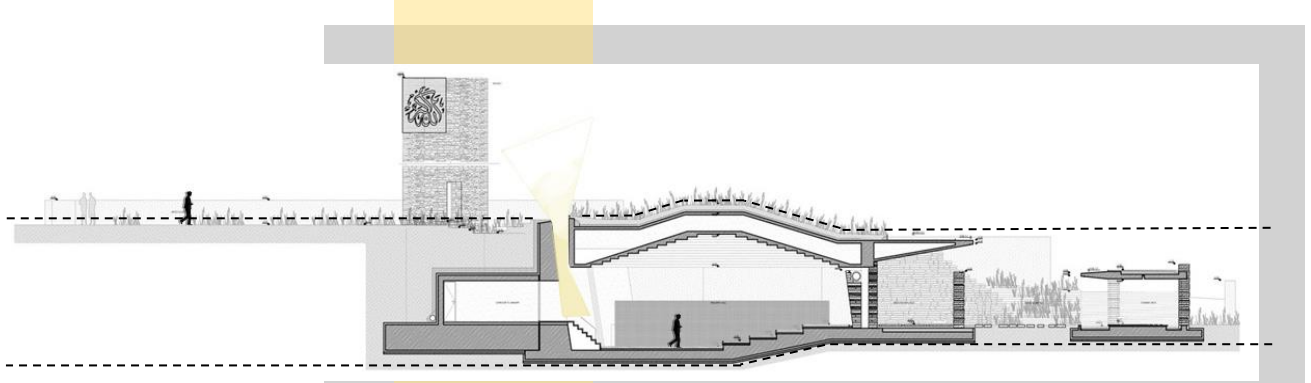


Figure 2: Section drawing of Sancaklar Mosque

Source: <https://www.archdaily.com/516205/sancaklar-mosque-emre-arolat-architects>

Figure 2 demonstrates the mosque's interior, which is a plain, cavernous area. It turns into a serene, lyrical, and spiritual setting for prayer and alone time with God. The Qiblah wall's slits and breaks define the directionality of the prayer area and let light enter the prayer hall. This gives this settlement spiritual meaning.

The Church of Light, a protestant church in Osaka (Japan), opened in 1989, was designed by the famous Japanese architect, Tadao Ando (Kumar & Pal, 2018). Rather than form differences, Church of Light is important by providing simple, without ornament and pure geometry and effective usage of the light.

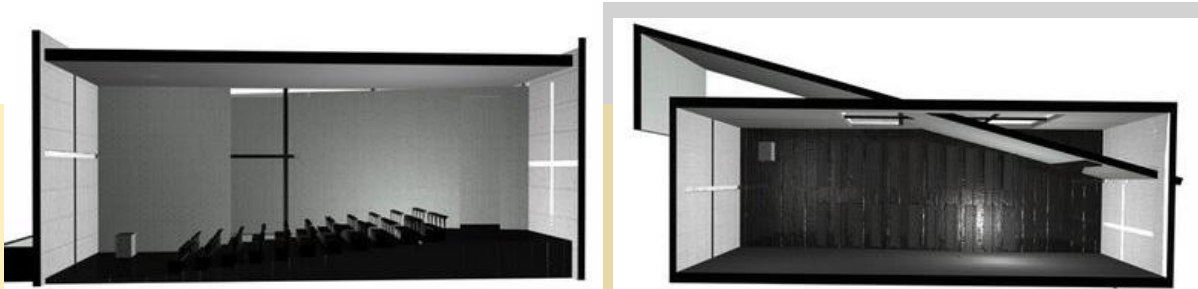
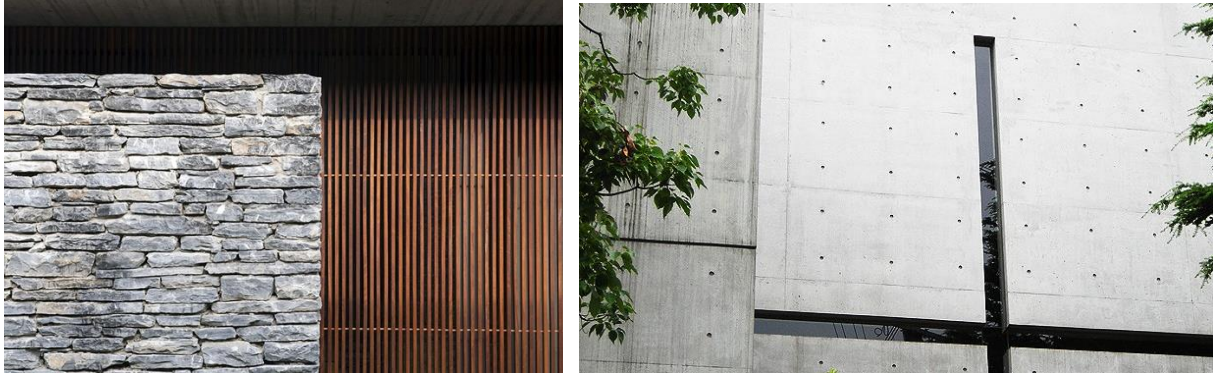


Figure 3 and 4: Side views of Church of the Light

Sources: <https://www.archdaily.com/101260/ad-classics-church-of-the-light-tadao-ando>

Usage of natural materials is similar for both structures. For Sancaklar Mosque, architects explain that the conflict between man-made and natural elements is a recurring theme throughout the project. This dual relationship is enhanced by the contrast between the thin reinforced concrete slab that forms the canopy and the natural stone stairs that follow the landscape's natural slope across a distance of more than 6 meters (archdaily, 2014).

In order to increase the sense of duality in the space, Church of the Light uses simple materials; the concrete building blurs the line between traditional Christian symbols and aesthetic. One material, concrete and pure glasses are preferred as simple materials (Kroll, archdaily.com, 2011). Picture 3 shows materials that are used in Sancaklar Mosque and picture 4 shows materials that are used for Church of the Light.



Picture 3 & 4: Materials for Sancaklar Mosque (left), materials for Church of the Light (right)

Sources:

pic. 3: <https://www.archdaily.com/516205/sancaklar-mosque-emre-arolat-architects>

pic 4.: <https://www.archdaily.com/101260/ad-classics-church-of-the-light-tadao-ando>

As these buildings include natural components in them, material selections are also chosen in this regard. As their form and material characteristics evaluated in space definitions parts, the usage of light is considered as crucial element of these structures by increasing the poetic sides of the structures. Continuing chapters focuses on the light usage in these structures and its unique character to create poetic spaces.

Light as a Physical Element of Space

Light is considered as a physical element of architectural atmospherics in psychological space research (Tantanatewin & Inkarojrit, 2016). This element is considered as evoke feelings, changing behavior by manipulating perception (Sachdeva & Goel, 2015; Russell & Lanius, 1984) in some spaces as it provides;

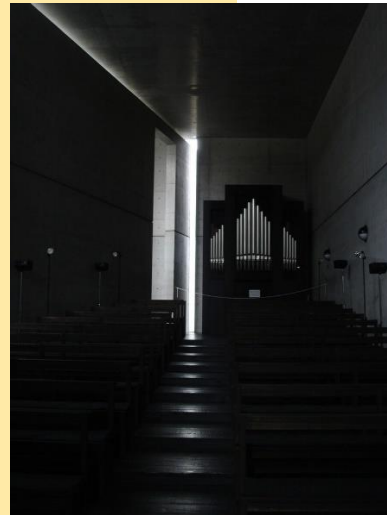
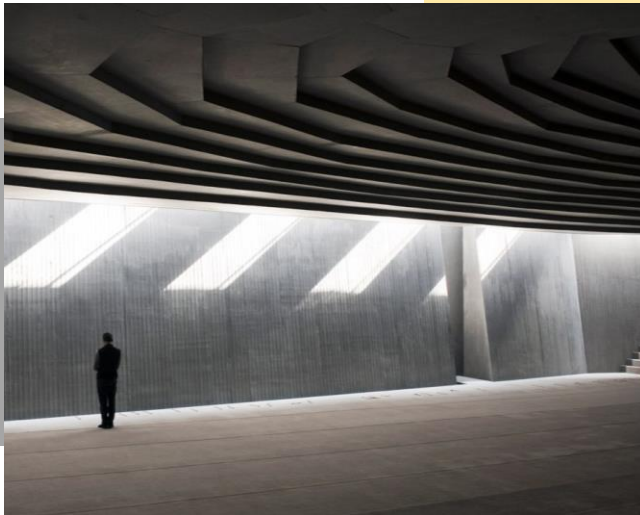
- Better visibility in spaces by changing lux levels and correlated color temperatures,
- More attractive products color rendering index of light, locations and angles of light could change perception and attraction of users. (Sachdeva & Goel, 2015).

Beside these pschological definitiions, in philosophical studies, architectural atmospheres also considered as creating experiences (Borch, Böhme, Ólafur , & Pallasmaa, 2014; Böhme & Thibaund, 2017; Guzowski, 2018). These references also mentions about *light* as physical element that improve the experimental quality of spaces.

Physical and scientific variables can be seen in light, but the light itself must strike something, even if it is only a small speck of dust, in order to be seen (Böhme & Thibaund, 2017). This is a rather odd, indeed paradoxical hypothesis, given that light is defined specifically as that which people see. Viewed from the perspective of physics, light is electromagnetic radiation within the visible wavelength band. Thus light is related to vision by its very nature and is not, to be precise, a purely physical phenomenon, even from the viewpoint of physics. This relationship between light and vision is even closer at the phenomenological level. In his Theory of Colors, Goethe defines light, to the extent that he is willing to articulate definitions at all, as "nature acting according to its laws upon the sense of the eye." (Böhme & Thibaund, 2017).

In both case studies (Sancaklar Mosque and Church of the Light) light is used in a wisdom way. It define spaces for pray, lead people for wayfinding and provide humble atmospheres for these religious buildings.

When a building's designer plans where it will go on a site, it is important to take the building's orientation into account from the outside in order to maximize the amount of internal sunlight and useable natural light (Phillips, 2004). In these case studies, architects used this significance carefully (picture 5 and 6).



Picture 5&6: Sancaklar Mosque light usage for orientation (left), Church of the Light light usage for orientation (right)

Sources:

pic.5: <https://www.archdaily.com/516205/sancaklar-mosque-emre-arolat-architects>

pic. 6: <https://www.archdaily.com/101260/ad-classics-church-of-the-light-tadao-ando>

In Sancaklar Mosque, in interior spaces, artificial lighting used dimly as a lit by or kept dark; natural light is used as the only "decoration". The qiblah is naturally lit to show the direction of Mecca. This is a bold step as an architect; there is just one light source is the one reflected off the qiblah wall, adds to the mystical effects created within the mosque. (Kumar & Pal , 2018)

In Church of the Light, to enter the chapel through an opening in a wall placed diagonally to the adjacent one; the visitors come from a space filled with light, into a comparatively dark room and immediately face an illuminated crucifix. The wall behind the altar has only this opening that allows natural light to enter. Oriented in the east, it allows the first rays of the sun to fall onto the floor of the chapel, which lights up the central aisle, while keeping the furniture and interior surfaces in the dark; this symbolises the presence of the Divine in the chapel, showcasing God and His light in an uncommon way. (Kumar & Pal , 2018). Both structures have dimly lighted, cozy atmospheres and generally (in the Church of the Light totally), daylight used to create illumination, provide orientation and define specific spaces. This usage of light could be considered as increasing level of spiritual usage. This usage could be regarded as light aids creation of poetic spaces.

Phenomenology of Light

In religious structures, where light is a key component of the symbolic relationship between adherents and their respective religions, lighting serves similar spiritual functions in both Islam and Christianity. Different lighting strategies may be needed in mosques and churches due to differences in architectural design. However, each religion's rituals and core beliefs share certain common criteria (Papadopoulos, Moyes, Sardi, & Motsianos, 2017). The essential connections between light and space within the variety of visual experience are the subject of light and space (Adcock, 1990). In this regard, the spiritual meanings of light for different religions are needed to convey.

As De Certeau explains metaphors are 'spatial expressions' that give a place spirit, *the light is also considered as the metaphor* in some philosophical approaches (Blumenberg, 1993; Vasseleu, 1998). According to Blumenberg, Descartes does away with light as a means of illumination for viewing phenomena in his conception of "method." Instead, he views light as a rationale tool that can be used to examine, separate, and put into context things. Most



technological studies center on the idea of using light as a tool, according to Blumberg (1993: 53). Light transforms into an all-encompassing medium of direct lighting's focused and metered rays. Heidegger makes a distinction between a more primitive openness of light and a more developed technological interaction between perception and light, which he refers to as the organizing light of "enframing" as opposed to a more primitive "clearing" of the forest (Vasseleu, 1998; Heidegger, 1961).

"Seeing light is a metaphor for seeing the invisible in the visible, or seeing things in an intelligible form that holds all that exists together but is itself devoid of sensible qualities.¹ By means of this metaphor Plato implies a natural relation between existence and truth, or a concept of reality based on an original self-presentation of beings which can be clarified through vision". (Vasseleu, 1998: 3)

In his analysis, or recall, of his works, Plato contrasts the eternal forms with how they look to humans. The incarnate soul remembers or is reminded of this forgotten joining together or participation of beings in the forms in the physical world it experiences through its senses. The soul has already experienced the light of the truth of the forms in its divine being (Vasseleu, 1998; Plato, 1955). Another interpretation of Plato's argument is that light is an essential component in understanding, feeling, and communicating perceptions about space, and that people can recognize and sense environments to the extent that light enables them to see.

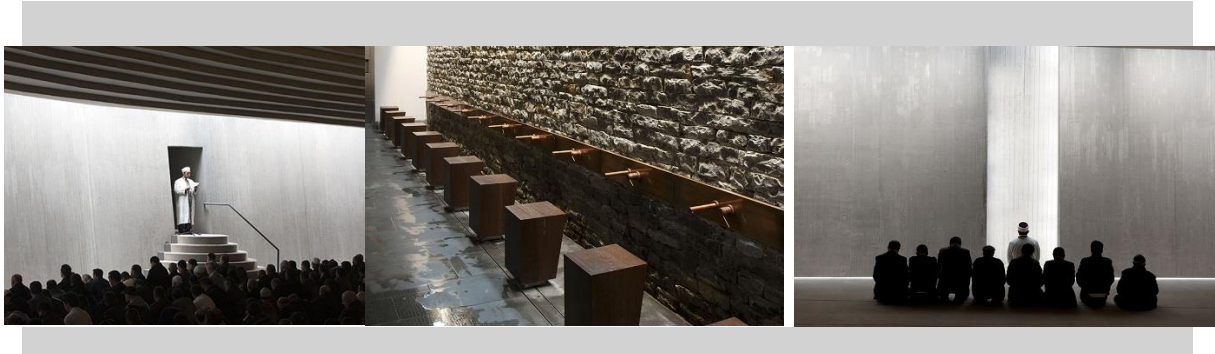
According to Derrida, metaphors of light are an integral part of philosophical discourse rather than serving as a way of conveying abstract ideas (Derrida, 1978). Derrida names the metaphor of "self-concealment and self-revelation," sometimes known as darkness and light, as the original metaphor of Western philosophy as metaphysics. This is true not only because it is photo logical - and in this sense, the whole history of our philosophy is a photology, the term used to describe a history of, or treatise on, light - but also because, in his judgment, it is a metaphor in and of itself (Derrida, 1978).

According to Böhme (2017), investigating the same natural principles that apply to the sense of sight is the study of phenomenology of light. When you talk about light as a phenomenon, it is absurd to assert that you don't see light itself. The assertion that lights itself cannot be seen does, however, have a more phenomenological (if weaker) meaning. It is a familiar experience that the rays of natural light appear as such when you enter a dark church because of the dust particles they come into contact with. To give an example, to say that there would be nothing but pure blackness between the church window and the floor that the light strikes is a massive abstraction if the church interior were spotless (Böhme & Thibaud, 2017). It is definitely a false conclusion that we cannot see light as such except when it strikes bodies, since when we look directly into a light source, we do see, without seeing anything specifically. We understand that, even in this weaker assertion that We are unable to see the light since it is pure tautology because of a presupposition, or more precisely, a bias or assumption. In reality, it is considered that seeing always entails seeing something, or more specifically, something material, an object. The assertion is then nugatory, since light is not something tangible (Böhme & Thibaud, 2017). According to these explanations, light is an abstract element rather than its physical definitions. Of course we need physics to create artificial forms of light however, all light forms evoke perceptions and emotions even if we cannot see them in a tangible way.

As Böhme also gives church example to clarify the spiritual effects of light, this poetic usage of light can be seen in most of the religious buildings in the history. Chosen case studies for this research are also important in usage of light (especially daylight). In both of these structures light has specific meanings on specific areas of the structure.

In Sancaklar Mosque, light is used as leading element that also brings sky and infinity effect to spaces. The light is also used in a wisdom way by leading people to pray (Akbulut & Erarslan, 2017). The Sancaklar Mosque marks a significant effort to liberate mosque

architecture from the predominate formal norms visible in the majority of contemporary mosques by eliminating any overt references to the historical mosque type and the utilization of any traditional mosque components (Gür, 2017). This 'free' design also defined with usage of light and each detail is highlighted with effective usage of light (picture 7,8,9).



Picture 7,8,9: Light as a leading element in Sancaklar Mosque

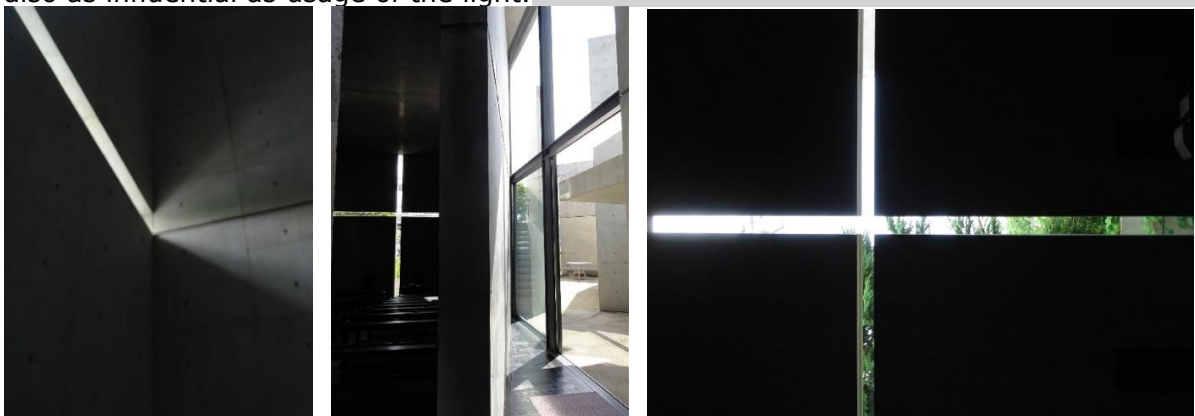
Source: <https://www.archdaily.com/516205/sancaklar-mosque-emre-arolat-architects>

Just by nature of its physical location, the Church of the Light, a very small area of about 100 square meters, can increase consciousness. This is because a little room appears to be connected to a huge creature due to the complex interaction between vacuum and light. One could immediately sense the spiritual and material sides of themselves and felt pushed to either move forward in obedience or retreat in shame. By transforming the church into a more modest, contemplative place of worship, the concrete itself increases the level of darkness of the building. (Nyawara, 2015). The power and influential character of Church of the Light directly comes from the logically usage of light.

Tadao Ando explains his approach toward usage of light as:

"Light is the origin of all being. Light gives, with each moment, new form to being and new interrelationships to things, and architecture condenses light to its most concise being. The creation of space in architecture is simply the condensation and purification of the power of light." (Nyawara, 2015)

In each detail, this conscious usage of the light is felt in the church (picture 10,11,12). If we compare two cases in usage of light, the power of Church of Light directly comes from the usage of light, however in Sancaklar Mosque, geometry, forms, and material usage is also as influential as usage of the light.



Picture 10, 11, 12: Light in each detail of Church of Light

Source: <https://www.archute.com/church-of-the-light/>

Space-Light-Phenomenology

Space-Light-Phenomenology triad is key term for this paper. Actually, whole sections are prepared for this triad, and it becomes the summary of the study. Eventually an end question occurred and tried to answer: "Is light an element in spaces or does it create spaces by itself?". This paper intended to answer both of these questions are correct.

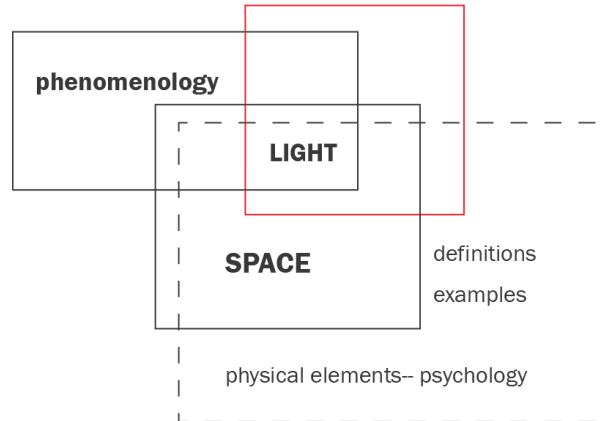


Figure 2: Space-light-phenomenology triad defined by researcher

This triad (light-space-phenomenology) is gifted to each other. For space and light definitions, psychological definitions are also given with examples of literature. This triad examined religious buildings as their public space characteristics and spiritual understandings that engage with creation of poetic environments.

The Church of the Light demonstrates how light may define and generate new spatial experiences similarly to, if not to a greater extent than, those of his concrete structures, so integrating Ando's philosophical connection between nature and architecture (Kroll, 2011).

Sancaklar Mosque is unique with its form, material and light usage. All spaces are created with spiritual consideration. Especially pray area is logically designed and light usage increased the poetic characteristic of the space. The Qiblah wall's slits and cracks increase the directionality of the prayer area and provide the way for light into the prayer hall (Mayer, 2014).

Conclusion

This paper mainly focuses on space understanding, lighting usage and definitions in different approaches by evaluating these headings in two case studies, Sancaklar Camii, İstanbul, Turkey designed by Emre Arolat Architects and Church of the Light, Osaka, Japan designed by Tadao Ando.

The structure of the paper is a sort of discussion and evaluation. Critical attitudes in phenomenology and psychology are covered and differences asserted. Firstly, space definitions for phenomenological aspects and psychological definitions are differentiated from each other. However, both attitudes are considered light as a crucial element that evokes feelings and defines space. In psychological regards, physical qualities of light and geometrical definitions with light are analyzed mostly. These studies evaluate light characteristics with usage of positive sciences and try to get objective results. In contrast, in phenomenology, researchers do not try to get objective results, their main aim is creating questions about situations. Psychological approaches generally tend to categorize spaces and functions. However, phenomenological attitude stands on the opposite side of these approaches.

The study presents a triad (space-light-phenomenology) and whole structure is built on this triad. Space and light are divided into chapters and phenomenology include all parts of the paper. The main aim was suggesting and supporting light usage is an important element to create poetic spaces. Case studies are main elements of all parts of the study to support the aim.

Case studies are chosen as two different religious buildings that use light as a poetic element in spaces. Light is interpreted in special ways through sacred architecture of different religions. Different kinds of openings and lighting equipment are preferred to create different spiritual ambiances for each religious structure. In Sancaklar Mosque and Church of the Light, this power of the light is crucial for these kinds of spiritual ambiances. Cases are strongly supported that light is an influential element to create poetic spaces.

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