THE ANALYSIS OF LIVING SPACES USED IN SCI-FI MOVIES: THE CASE OF JOSEPH KOSINSKI

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THE ANALYSIS OF LIVING SPACES USED IN SCI-FI MOVIES: THE CASE OF JOSEPH KOSINSKI

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Design Studies.

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ABSTRACT

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The Master`s Program in Design Studies

Bekmezci, Cansu

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Since the beginning of the cinema history, space has been the most important representing instrument of scenario. Therefore, architecture and cinema influence each other. In Sci-Fi cinema, the relation of Sci-Fi cinema and architecture is at the forefront. Sci-Fi cinema designs the future space by being inspired from today's architecture. In addition to this, architecture discipline can find the answers of the searching about future space design in the spatial predictions for future represented by Sci-Fi cinema. From this point of view, this study aimed to search the contribution of Sci-Fi cinema to future space design through spaces used in 21st century Sci-Fi cinema.

In the direction of thesis' aim, firstly the searches of literature and the Sci-Fi movies were made. In the direction of thesis' scope, the movies of "Tron: Legacy" (2010) and "Oblivion" (2013) belonged to Joseph Kosinski who is an architect and a director were selected. Selected two Joseph Kosinski movies were studied through the conceptual frame formed by architecture discipline to understand and analyze the notions of 'virtual' and 'existing' living spaces which are designed and formed by Joseph Kosinski according to the scenarios. In addition, the meanings of 'home' and 'house' belonged to 'virtual' and 'existing' living spaces were analyzed through evaluating the relations between user and living space.

As a result of the study, the contribution of Sci-Fi cinema to architecture discipline and future space design was determined and evaluated through analyzing of ‘virtual’ and ‘existing’ living space represented in Joseph Kosinski’s movies.

Key Words: sci-fi cinema, Joseph Kosinski, concept of living space, design future space, future living spaces, existing space, virtual space, home, house

ÖZ

BİLİMKURGU FİLMLERİNDE KULLANILAN YAŞAM ALANLARININ ANALİZİ: JOSEPH KOSINSKI ÖRNEĞİ

Tasarım Çalışmaları Yüksek Lisans Programı

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Sinema tarihinin başlangıcından itibaren mekân, senaryoyu görselleştirmek için önemli bir temsil aracı olmuştur, bu yüzden mimarlık ve sinema arasında özel bir etkileşim süregelmiştir. Bilim kurgu sineması mimarlık ve sinema arasındaki ilişkinin en üst noktaya ulaştığı bir türdür. Bilim kurgu sineması geleceğe ait olan mekân tasarımlarını bugünün mimarisinden esinlenerek oluşturur. Aynı zamanda mimarlık disiplininin geleceğe yönelik mekân tasarımı arayışı cevaplarını, bilim kurgu sinemasının sunduğu geleceğe yönelik mekânsal öngörülerde bulabilir. Bu noktadan yola çıkarak bu çalışma, 21. Yüzyıl'a ait bilim kurgu sinemasının kullandığı mekânlar üzerinden, bilim kurgu sinemasının geleceğe yönelik mekân tasarımına katkılarını araştırmayı amaçlamıştır.

Tezin amacı doğrultusunda literatür ve bilim kurgu türünde film araştırması yapılmıştır. Tezin kapsamı doğrultusunda mimar ve yönetmen olan Joseph Kosinski'nin "Tron: Legacy" (2010) ve "Oblivion" (2013) filmleri seçilmiştir. Filmlerin senaryolarına göre Joseph Kosinski tarafından tasarlanıp oluşturulan ve temsil edilen, geleceğin 'sanal' ve 'mevcut' yaşam alanlarını anlamak ve değerlendirmek için seçilen iki Joseph Kosinski filmi mimarlık disiplini ile oluşturulan kavramsal çerçeve aracılığıyla incelenir. Buna ek olarak, kullanıcı ve yaşam alanı arasındaki ilişki değerlendirilerek 'sanal' ve 'mevcut' yaşam alanlarına ait 'ev' ve 'konut' anlamlarının analizi yapılır. Çalışmanın sonucu olarak, seçilen iki

Joseph Kosinski filminde temsil edilen ‘sanal’ ve ‘mevcut’ alanların değerlendirilmesi üzerinden bilim kurgu sinemasının mimarlık disiplinine ve geleceğin mekân tasarımına katkıları saptanmış ve değerlendirilmiştir.

Anahtar Kelimeler: bilim kurgu sineması, Joseph Kosinski, yaşam alanı kavramı, geleceğin mekân tasarımı, geleceğin yaşam alanları, mevcut mekân, sanal mekân, ev, konut

To My Family

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Sci-Fi	:	Science Fiction
CGI	:	Computer Generated Imager
AI	:	Artificial Intelligence
IMDb	:	Internet Movie Database

1. Introduction

1.1. The Aim of the Thesis

The future has always been a key concern for humanity. There are a lot of predictions for the future; some of them are based on dystopic scenarios and some of them on utopic ones. However, the reality of the world needs more and includes both dystopic and utopic scenarios to design the future. The future lifestyle is also a key concern also for architecture and there are number of questions about the relation between the future lifestyles and the wellbeing of humanity within the context of architecture. In this respect, the contribution of architecture to the human comfort comes into the scene as a significant issue; to be more specific ‘the design of the living spaces’ requires a detailed survey in relation to the future lifestyle.

The search for the comfort of human beings in future as an architect brings forth the need for a wider horizon, an extra source of inspiration or a different field of reference. At this point cinema, which is both an auditory and a visual branch of art seems to have the potential to extend a helping hand to architecture and among different genres of cinema ‘Sci-Fi cinema’ may be the best source of inspiration for making special predictions about the future lifestyle, consequently the future environment.

The thesis aims to search for the possible contribution of Sci-Fi cinema to the future of architectural design through analyzing of space use in Sci-Fi movies that is made by architectural approach. In according with this aim, the future living spaces created by an architect and represented by an architect's point of view are evaluated within the frame of scenario.

1.2. The Scope of the Thesis

Any environment is in need of being designed for future as well as today since considering the spaces as temporary may have negative impacts on the world of tomorrow in terms of various environmental, climatic, even social problems. In this respect forecasting the future life turns out to be of great importance for the architects; therefore, a visionary analysis of today's developments and lifestyle may result with a satisfactory environment of the future.

When the main concern of architectural design is accepted as the human needs, the projects should be developed according to the requirements and demands of the human beings. Hence, the primary step is to understand the human being deeply, and architecture by its nature can analyze and respond the needs of people via their 'living spaces'. Despite the fact that architecture cannot be reduced to a basic living unit, within the frame of this study 'home/house' will be the focal issue within the frame of this study.

Also, the architecture aims at improving the physical and psychological quality of the spaces following all kind of changing conditions. Among these the technological developments have great impact on architectural design. It is quite obvious that the spaces will not be the same even after a short period time due to the rapidly changing world. In order to predict the requirements of the future life the architects need to follow the accelerated movement in technology, which are usually screened in Sci-Fi movies. Among number of genres it is the Sci-Fi cinema that focuses most on presenting the future on a scientific background. This means that the technological developments can be witnessed before they are fully put into practice in real life. The 'technology' introduced in these movies, which may appear as 'utopic for the past or even present, will be another issue to be discussed.

Sci-fi cinema presents a wide panorama covering the lifestyles of the coming generations. The future life is reflected in those movies is determined by the scenarios, and the environment used in Sci-Fi movies is designed according to the scenario. Similar to the architectural practice, ‘use’ determines the outlines of the stage set. Although there are other limits that affect the design of the film set such as camera moves, the spaces/places to be shot are organized according to the requirements of the scenario. The design of these spaces is mainly based on the use of the characters in the film thus reflects the needs and lifestyles of those ‘users’. Therefore, ‘scenario’ is another issue to discuss Sci-Fi cinema as a source of inspiration for the future designs. As Sci-Fi scenarios are based on scientific truths and the Sci-Fi cinema visualizes the scenarios, Sci-Fi movies are analyzed to understand the needs of future architectural design. Within the context of this thesis, the two Sci-Fi movies of Joseph Kosinski, who is an architect and also a director are selected to analyze, because living spaces used in movies are created and represented by Joseph Kosinski.

Until the 2000 there used to be a large number of highly significant and leading Sci-Fi movies; nevertheless, in this thesis, the 21st century science fiction cinema has much more importance. In the late 1990s and the early 2000s, the technology developed rapidly and had immediate reflections on almost every field of life including architecture and cinema. In addition to this, the Sci-Fi movies which were shot during that period had more realistic approaches about the future. Following the year 2000, Sci-Fi cinema used the most advanced technology for visualizing scenarios and also for representing the future. As the future living space can more easily be predicted through Sci-Fi cinema which is created by the most advanced technology, the basis of the study is built on ‘21st Century’ Sci-Fi cinema.

Living spaces, which respond to the basic needs of the human being have always given specific information about the technological

advances, social structure, natural and environmental conditions, and lifestyles of the human beings. As the smallest living units, living spaces can refer to all issues of social, cultural, economic, psychological, perceptual, experimental, cognitive and existential structures of a society. Correspondingly, in this thesis, the two of relevant Joseph Kosinski movies: "Tron: Legacy" (2010) and "Oblivion" (2013) were selected. The movies provide the possibility of comparing the ‘virtual’ and ‘existing’ living spaces with reference to the main classification done for the analysis. The spaces used in the Sci-Fi movies can either be studied as ‘existing’ or ‘virtual’ ones so each one of these films represents one type of space consecutively. Additively, both films give the chance to focus on the living environment thus discuss the concepts of ‘home’ and ‘house’. Another reason for focusing on Joseph Kosinski movies is that he is an architect who designed the living spaces of the movies as well as being the director of the movies.

In this thesis, first of all, architecture and Sci-Fi cinema were examined, the movie genre of the Sci-Fi and the differences of the Sci-Fi from the other genres were defined. The relationship of the Sci-Fi to the architecture was analyzed in the historical background. Afterwards, the spaces used in Sci-Fi movies were explained, existing and artificial spaces were defined. The two Kosinski movies were selected, because of the use of different space. One of them is “Tron: Legacy” (2010) which represents virtual space. The other movie is “Oblivion” (2013) which represents existing space. The existing spaces and virtual spaces used in the movies were examined through the concept of ‘living space’. In conclusion, within the scope of all analyses and reviews, the contributions and the guidance of the Sci-Fi cinema to the architecture for the future designs were evaluated.

In this study, as the question of the thesis is about future lifestyles and the requirements of the human being, and future space design, the relation of Sci-Fi cinema and architecture is scrutinized from the

architectural perspective through Joseph Kosinski's Sci-Fi cinema. This study has an important position among the relevant studies, because the movies analyzed in this thesis are created by an architect and the spaces used in those movies are designed and represented by the architect who is the director of the movies. In addition to this, among the other studies about the relation of Sci-Fi cinema and architecture, the number of the studies built on 21st century Sci-Fi cinema are less than the number of the studies built on 20th century Sci-Fi. Because of the needs of watching and understanding the changes caused by the technological advances of 21st century on future living space design, the study can be an assister to the following studies.

1.3. Methodology of the Thesis

This thesis which focuses on the relation between Sci-Fi cinema and architecture was formed by the notions of 'existing space' and 'virtual space'. These notions were examined by way of Sci-Fi cinema's 'living space' which consists of the notions of 'home' and 'house'. In this phase of the thesis, relevant literature was reviewed and evaluated. As a consequence of literature review, David T. Fortin (2011)'s book called "Architecture and Science-Fiction Film", the Ph.D. thesis by Gül Kaçmaz Erk (2004) called "Architectural Space in the Digital Age: Cyberspace, Hyperspace, and Exospace through Science Fiction Films", the book of "Bilimkurgu Sinemasında Cyberpunk" belonged to Oğuzhan Ersümer (2013), the book of "Ütopik Sinema Bilim Kurgu Sinemasının Tarihi ve Mitolojisi" belonged to Bernhard Roloff, Georg Seeßlen, and the book belonged to Abraham H. Maslow (1954) called "Motivation and Personality" were primary sources for this thesis. These sources were the guides, while foundations of the thesis were being laid. The start point of the thesis is to understand the relation between architecture and cinema, in addition, in the center of both two discipline there is human

being. The genre of Sci-Fi is more special than the other genres for architecture, because its point of interest is future. Architecture which is continuously a changing discipline with the factors of human being, technology and environment can make use of the future predictions of Sci-Fi scenarios to design future spaces through analyzing Sci-Fi movies. These literature sources provide a basis for analyzing the Sci-Fi cinema in terms of spatial and also they provide a viewpoint to analyze future possible lifestyle of human being from the architectural perspective.

Sci-Fi cinema is always in a relation with technology, and the most advanced technology can be more helpful for future predictions. Starting from this point, the 21st century Sci-Fi movies were used in this thesis. Firstly, Sci-Fi movies' list was made through using the web page called IMDb and some criteria were determined to eliminate the movies. According to the criteria, the movies should be feature length, the release date is between the 2000 and the 2017, and the genre is Sci-Fi. As a result of this, there are more than 3000 21st century Sci-Fi movies in the list, most of which use the notion of space to represent the future. In this context, the frame of the thesis was restricted. In this thesis, Sci-Fi cinema was investigated from the architectural perspective. Consideration of the focus point of the thesis, one can say that, the movies which uses the concept of 'living space' as an instrument to represent the future can provide a lot of opportunities to analyze, evaluate and understand the future space design. Therefore 21st century Sci-Fi movies were searched and eliminated through consideration of the directors of the movies. Director is the most important factor in the process of movie making, the scenario is visualized by the director. The research was restricted in this direction and as a result of this, Joseph Kosinski's Sci-Fi movies were selected to analyze. Although the other 21st century Sci-Fi movies are created by the important creative directors and spaces used in those movies are designed by architects; the spaces are not represented from the architectural perspective. Kosinski's Sci-Fi movies provide a viewpoint which is from the architect's perspective to

the space designed by and architect. Joseph Kosinski is the 21st century Sci-Fi movie director who has a bachelor of architecture degree. Kosinski uses the concept of 'living space' in his Sci-Fi movies effectively to represent the future. Kosinski represents the futuristic living spaces by the architectural perspective. At the same time, while creating space for a movie he effectively uses CGI techniques which are the most advanced technology of today effectively. There is a common point of the movies; both movies have the notion of 'living space'. As a consequence of this, there is a chance to analyze the movies through the notions of 'home' and 'house'. In addition, scenario is one the most important issues of the movie. The characters and the environments are shaped by scenarios. In Sci-Fi cinema, similar to architectural practice, the spaces are designed and built according to user's requirements. Accordingly, Kosinski used two type of spaces which are 'existing' and 'virtual' that are described and determined by scenarios. Spaces used in Sci-Fi movies are built and formed in studios or in computer environment by today's technology, but these spaces are designed for representing future lifestyles and future technology. Therefore in this thesis, the spaces are analyzed according to the scenarios which give form and function to these spaces by excluding their real construction techniques and real function. As a consequence of this, scenario is one of the important factors which is analyzed in Kosinski's two movies. In Kosinski's two movies, two different spaces which have different characteristics are used. One of them called *Sky Tower* is located on the earth and it is physically existing space constructed by a construction technique which is traditional or nontraditional according to the scenario. This kind of spaces are identified as 'existing' in this thesis. On the other hand, the other space called *Safehouse* located in a computer system that is totally artificial environment is physically nonexistent space. This kind of spaces are identified as 'virtual' in this thesis.

The ‘existing’ and ‘virtual’ living spaces belonged to Kosinski’s movies, “Tron: Legacy” (2010) and “Oblivion” (2013), are investigated according to the criterions. These criterions are determined by architectural design principles which assist to give a form to a living space. In this direction, a table called *Living Space Evaluation Table* was created for the analyzing of the living spaces by using the criterion. The table comprises four main headings physical characteristics, technology, use/user, and psychological characteristics that are shaped according to the architectural design principles in real life. The physical characteristics consist of color, texture, lighting, scale, form, function, and style of living spaces, and also space organization, the relation of interior and exterior of living spaces, the relation between environment and living spaces, and at the same time, natural condition of living spaces' locations. Analyzing the physical characteristics of ‘existing’ and ‘virtual’ spaces help evaluate and determine possible future requirements of human beings. On the other hand, technology represented and introduced in the movies is another factor which shapes the living spaces. Analyzing technology represented in Kosinski’s movies provide an opportunity to understand the future lifestyles and also future building construction methods. In addition, technology used by user in the living spaces of the Kosinski's movies can be evaluated, and can be analyzed that how it affects future architectural design. The user and use factors are the other important criterions of architectural designing. Social, economic, political and cultural issues have to be analyzed to understand how the factors of user and use influence the architectural design. Analyzing these factors in the Kosinski' movies through the notion of living space give an idea about the possible lifestyle of human being in future. Lastly, evaluating the psychological characteristics of the spaces aids to understand the meaning of living spaces for users. In this contexts, the living spaces are defined as ‘home’ or ‘house’. By the Kosinski’s movies, the notions of ‘home’ and ‘house’ are evaluated. Analyzing the psychological characteristics of living spaces can help understand the future

expectations of human being from the future living spaces. The expectations from a living space can be only satisfying physiological requirements or the sense of belonging in addition to satisfying physiological requirements.

In this thesis, by the help of literature sources and the selected movies, the relation of Sci-Fi cinema and architectural design was evaluated. The contributions of Sci-Fi cinema to future architectural design were analyzed through Kosinski's two Sci-Fi movies. 'Existing' and 'virtual' living spaces which refer to 'home' and 'house' were compared and evaluated over the movies of "Tron: Legacy" (2010) and "Oblivion" (2013).

2. The Architecture and the Sci-Fi Cinema

What kind of architectural designs awaits us in the future? What will the users want, what will they expect from architects? It is a key concern that how the architects will design ‘home’ in other words ‘domesticity’ in the future? How about a space which is presupposed but is nonexistent? There are many questions about future architecture, and also there are infinitely many answers. Answers will be closely related to technology. As Nick Bostrom mentions, the future requirements of human being are shaped by technology:

> *Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering and our confinement to the planet earth. (Bostrom, 2005, p.6)*

Science Fiction is one of the most important genres of literature, cinema, video games and also TV series to describe and visualize the future humanity. However, Sci-Fi cinema is the primary mechanism, which uses visuality and technology as main elements to represent future. In fact, Sci-fi cinema and architecture have been transforming parallel to each other since the early 19th century. All Sci-Fi movies have at least one architectural space, because human being needs spaces to live. Each Sci-Fi movie has its own architecture created by its unique scenario. By this means, while Sci-Fi cinema is suggesting new thinking ways about future space designing and the future construction techniques to architecture, today's architecture is suggesting new forms of space to Sci-Fi cinema. Two disciplines, architecture and Sci-Fi cinema interact each other and they are also affected by the factors such as technology and human. Sci-Fi cinema presents the future life style in frame of a scenario and visualizes the possible future living spaces of humanity according to the scenario. To deeply understand the relation

between the two branches, it is important to start with the definition of Science Fiction and a brief survey through its history in relation to cinema and architecture.

2.1. The Definition of 'Science Fiction'

Science Fiction is one of the most specific genres of literature and cinema. Until today, a lot of critics, novelists, film directors have defined Sci-Fi, also many discussions and contradicting views have come up in the Sci-Fi world. Firstly it is need to define the notion of 'science' in Sci-Fi. Science as a term is easy to identify, but science as a concept in "Sci-Fi" is hard to define. To quote Gwyneth Jones:

> *'Science' in Science Fiction has always had a tacit meaning other than that commonly accepted. It had nothing, in particular, to say about the subject matter, which may be just about anything so long as the formal conventions of future dress are observed. It means only, finally, that whatever phenomenon or speculation is treated in the fiction, there is a claim that it is going to be studied to some extent scientifically—that is objective, rigorously; in a controlled environment. The business of the writer is to set up the equipment in a laboratory of the mind such that the "what if" in question is at once isolated and provided with the exact nutrients it needs. (Jones, 1999; p.4)*

Bainbridge mentioned that, written work of Sci-Fi had qualifications of experiments and entertainments until the mid-1920s. Hugo Gernsback, who was an editor of Sci-Fi magazine called "Amazing Stories", gave name to the narrations which were in style of H.G. Wells, Jules Verne, and Edgar Allen Poe through using the term 'Scientifiction' for the first time in magazine. In his second magazine titled "Science Wonder Stories", he used the term 'pseudo-science' which means 'fake

science stories'. The term of 'pseudo-science' was criticized that the term is not scientific enough so he decided to entitle the type as 'Science-Fiction' (Bainbridge, 1986). The term science within Sci-Fi stands for 'technology'. The genre of Sci-Fi reflects the experiments of scientific and technological innovations of civilizations through the instrument of literature and cinema.

In the 18th century, when fear, admiration, and mystery which referred to perception of future combined with art, social criticism, philosophy, explorations, and observations; *prescientific*[1] imaginations became apparent. With the momentum of the Enlightenment, science began to take shape and closely associated with the technological development, and by force of evolving technology, science advanced. In the "History of Science Fiction", according to Adam Roberts;

> *'Science' as the term is generally understood means, roughly, a discipline which seeks to understand and explain the cosmos in materialist (rather than spiritual and supernatural) terms; a deductive, experimental discourse characterized by what the German philosopher Karl Popper (1902-1994) called "falsifiability", whereby the accumulation of empirical data can disprove but never actively prove a theory. (Roberts, 2006; p.4)*

'Science' used in the 19th and the 20th century Sci-Fi was thoroughly instrumental because of the Industrial Revolution. Therefore, the visible, touchable or easily perceptible future were more attractive than the other disciplines of science such as mathematics, chemistry, geology, geography, psychology, and biology. On the other hand, the future was a mysterious and intriguing concept and the technology was

[1] Relating to the time before the development of modern science or the application of scientific method. (Pre-scientific | Definition of pre-scientific in English by Oxford Dictionaries. (n.d.). Retrieved August 20, 2017, from https://en.oxforddictionaries.com/definition/pre-scientific)

thought to shape the thoughts and predictions about the new future which was newly founded. As a consequence, a significant part of Sci-Fi was built on the nonexistent and advanced fiction technology.

During the French Revolution, irrational thoughts began to dominate. A new kind of novel, which is called ‘Gothic’ came into the scene. As stated by Somay, ”Gothic literature and so the form of fear were parts of romanticism that opposed rationalism of the eighteenth century and the movement of classicism." Gothic literature as an opposition to the rationalism of the 18th century favored Romanticism (Somay, 2004; p.38). Gothic novels include fairies, zombies, witches, haunted houses, and magician, in other words, gothic novels had all items belonged to fantastic fiction. Merry Shelley, one of the notable authors, influenced the gothic movement who wrote “Frankenstein” (Mary Shelley, 1818); in other words “The Modern Prometheus” (Mary Shelley, 1818). “Frankenstein" is the most important work of its period because the story includes not only fantastic facts but also technologic facts thus a new type called Science-Fiction has emerged.

The emergence of the genre of Sci-Fi was a turning point. Sci-Fi, which refers to the undefined future, caused obscurity in human mind. Although obscurity stirs fears, *novum*[2] is interesting because of the mystery it contains. In Sci-Fi, the borders which are about the physical rules, the social structures and the environmental conditions of today's world, can easily be removed. The wild imagination of the human brain draws the borders on the condition of being based on scientific facts. In Sci-Fi movies, alternatives of today or predicted future can be visible. Cultural theorist Scott Bukatman claims that “[the] precise function of science fiction, in many ways, is to create the unlimited and infinite stuff

[2]Early 20th century; earliest use found in Science. From scientific Latin nomen novum from classical Latin nōmen + novum, neuter singular of novus. (Nomen novum | Definition of nomen novum in English by Oxford Dictionaries. (n.d.). Retrieved August 20, 07, 2017, from https://en.oxforddictionaries.com/definition/nomen_novum)

of sublime experience, and thus to produce a sense of transcendence beyond human finitude." (Bukatman, 1999; p.256). Depending on this claim, cinema and media theorist and cultural critic Vivian Sobchack defined Sci-Fi as follows;

> *The science fiction film is a film genre which emphasizes actual, extrapolative, or speculative science and the empirical method, interacting in a social context with the lesser emphasized, but still present, transcendentalism of magic and religion, in an attempt to reconcile man with the unknown. (Sobchack, 1987; p.63)*

As Sobchack mentioned, the genre of Sci-Fi follows the scientific truths, on the contrary, the genre of fantasy explained all events with magic or miracles which belong to our real world. Sci-Fi always struggles with fantasy through its doubtful and factual approaches. The term fantastic means imaginary, fabulous, unbelievable, extraordinary, weird and bizarre; fantasy literature came forward as a reaction against positivism of the 19th century. Tzvetan Todorov's definition of fantastic is "…fantastic is indecision of a subject, which perceives nothing but only its own natural laws while facing an event which seems to be supernatural" (Todorov, 1973). According to Todorov, fantastic refers to a limbo which is originated from continuity of strange, unbelievable and extraordinary situations. A subject, an event or a situation narrated can be explained by the law of known facts, it is called 'uncanny', and also they can be explained by completely other truths; it is called "marvelous." The subgenre of 'scientific-marvelous' is the narration that strange and extraordinary events are explained by laws of the narrated world. On the other hand, 'marvelous' classified by Todorov is known as 'fantasy' or 'fantastic fiction' both in literature and cinema. However Sci-Fi and fantasy seem to have different definitions and characteristics, Sci-Fi needs fantasy to maintain the narration despite its scientific truths and fantastic surrealism (Ersümer, 2013; p.7-15). According to one of the

most influential Sci-Fi writers Philip K. Dick, the border between Sci-Fi and fantasy tends to the authors' and readers' points of view;

> *This is impossible to do, and a moment's thought will show why. Take psionics; take mutants such as we find in Ted Sturgeon's wonderful MORE THAN HUMAN. If the reader believes that such mutants could exist, then he will view Sturgeon's novel as science fiction. If, however, he believes that such mutants are, like wizards and dragons, not possible, nor will ever be possible, then he is reading a fantasy novel. Fantasy involves that which general opinion regards as impossible; science fiction involves that which general opinion regards as possible under the right circumstances. This is, in essence, a judgment call, since what is possible and what is not possible is not objectively known but is, rather, a subjective belief on the part of the author and of the reader. (Dick, 2002, in a letter)*

The fact remains that there are three approaches to 'fantastic' in the Sci-Fi narration; first of all, if a Sci-Fi character faces a fantastic item, the character perceives that as normal and does not react to it. Secondly, the character perceives the item as strange and all scientific power of the character is used to explain the mystery and to reveal the scientific truth. Lastly, the notions of imaginary, fabulous, unbelievable, extraordinary, weird and bizarre belonged to fantastic are admirable for the Sci-Fi character, so the character has a sense of wonder, and s/he is struck with consternation about the fantastic. It is a common thought among Sci-Fi fans that the senses of wonder and surprise felt by the readers or moviegoers are used to describe Sci-Fi in the best way. In other words, fantastic is an inseparable part of Sci-Fi (Ersümer, 2013; p.7-15). After mentioning the differences and relation between Sci-Fi and fantastic, Dick defined Sci-Fi as;

> *The conceptual dislocation -- the new idea, in other words -- must be truly new (or a new variation on an old one) and it must be intellectually stimulating to the reader; it must invade his mind and wake it up to the possibility of something he had not up to then thought of. Thus "good science fiction" is a value term, not an objective thing, and yet, I think, there really is such a thing, objectively, as good science fiction. (Dick, 2002, in a letter)*

According to Căplescu, Sci-fi in the field of architecture can be analyzed in four main categories. The first one is the ‘technological future’. It is known that technology is an essential component of future, so the technological future is built on this thought and it consists of three parts as ‘utopia’, ‘dystopia’ and ‘colonies, bases or settlements’. ‘Utopia’ represents a peaceful future scenario, on the contrary, ‘dystopia’ represents oppressive theme. The ‘colonies, bases or settlements’ refer to containers, capsules or pods and also space stations because most of them function as a ship with living quarters and not as a town, almost all spaces are in confined areas, and there are no buildings. The second category is ‘post-apocalyptic’ earth. In this scenario, survivors struggle to stay alive and build a new life after a huge disaster such as a nuclear holocaust, a trouble of artificial intelligence, a deadly virus for a human being and so on. The third category is ‘alternative reality’. These kind of scenarios take place in our day, but the alternative reality can easily demolish reality perception of a human with its theories. Alternative reality can address a different or an alternative past. The last category which is called ‘other world’ consists of ‘alien worlds and space opera’ and ‘virtual worlds’. The alien world is entirely different from our world that composed by various atmospheric conditions, different environment, plants and creatures and so on. Space opera which is a sub-genre in Sci-Fi literature represents the heroic, exciting, extraordinary adventures in space. Lastly, ‘virtual world’ composed by cyberspace and dream world can alter the

rules of physics like gravity, balance or impossible curves (Căplescu, 2015).

2.2. The Brief History of Sci-fi Cinema

The adventure of architecture and Sci-Fi cinema started at the beginning of the 20th century. The movie of “Le Voyage Dans La Lune” (Georges Méliès, 1902) is a first Sci-Fi movie of the history. The movie represents the expectation of humanity from technology through visual and artistic way. Roloff and Seeßlen mentioned that the movie is inspired from the novels of “De la Terre a la Lune” (Jules Verne, 1865) and “The First Man in the Moon” (H. G. Wells, 1901), and thus, Sci-Fi cinema created a strong connection with Sci-Fi literature which has more respected and older history (Roloff and Seeßlen, 1995). Sci-Fi cinema was originated from the reverberation motion of after Industrial Revolution and the motion of cinema. Sci-Fi cinema is about a journey of humanity to future civilization in the light of technological advancements. While generating alternative answers to the question of “how will be future world?”. Sci-Fi cinema criticizes the technological developments.

The other movies of the early 1900s are “The Airship Destroyer” (Walter R. Booth, 1909), “La folie Du Docteur Tube” (Abel Gance, 1914) and “Genuine” (Robert Wiene, 1929). In addition, the movie of “Metropolis” (Fritz Lang, 1926) which represents futurist metropole projections has an important position in Sci-Fi cinema. The movie embodies the future predictions of architecture on the cinema screen. Serim mentioned that, Lang shoots the movie, after his trip to New York. He makes the studio mockups which are formed by origami architecture and different materials that look like huge architectural structures through using light, projections, cameras, masks, and mirrors (Serim, 2011).

The next important example of Sci-Fi cinema is “The Shape of Things to Come” (William Cameron Menzies, 1936). The movie is

originated from the idea about questioning of technologic advances. The imaginary city called “Eveytown” that belonged to year of 2050 represents the modern understanding of the period. In architecture, use of the minimalist components which are the smooth whitewash surfaces and horizontal and simple lines is directed by László Moholy-Nagy from Bauhaus and Walter Gropius. In addition, the panoramic elevators and televisions are in the technological projections of the movie.

In the end of the 1930s, the movies of “Flash Gordon” (Mike Hodges, 1936) and “Buck Rogers” (Ford Beebe, 1939) were in great demand. Sci-Fi movies that were produced in the 1940s and 1950s had scenarios about occupation, cold war, and interplanetary wars. The most important examples of the period are “The Day the Earth Stood Still” (Robert Wise, 1951) and “War of the Worlds” (Byron Haskin, 1953).

In the 1960s, the themes of the apprehensions about nuclear war and nuclear bomb were discussed in Sci-Fi cinema. One of the example is “The Day the Earth Caught Fire” (Val Guest, 1961). In that years, the thoughts of space explorations, AI, and encountering with aliens were developed under the influence of landing on the moon firstly. The most important movie of the period is “2001 Space Odyssey” (Stanley Kubrick).

In the 1970s, the themes of intelligent robots and AI were represented through the improvements of informatics. The most important movies of the period are “Star Wars” (George Lucas, 1977), “Close Encounters of the Third King” (Steven Spielberg, 1977), and “Alien” (Riddley Scott, 1979).

In the 1980s and 1990s, the movies used in advanced visuality through advanced computer animations and cinema techniques were made. The major examples of the period are the movie series of “Star Wars” (George Lucas, 1980, 1983, 1999), the movie series of “Terminator” (James Cameron, 1984, 1991), “Total Recall” (Paul Verhoeven, 1990) and “Fifth Element” (Luc Besson, 1997). The most

important examples of the period is the movie of “Blade Runner” (Ridley Scott, 1982). In the movie, a special technique called ‘stratification’ was used by Scott and the set designs with abundant details of spaces can be represented. Ridley Scott worked with the setting designer Syd Mead and a detailed world was created in “Blade Runner” (Ridley Scott, 1982).

At the late of the 20th century, Sci-Fi cinema came under the influences of artificial spaces. The theme of ‘cyberspace’ was started to be used. The movie of “Final Fantasy” (Hironobu Sakaguchi, 2001) is an important example which is created through using virtual reality techniques. The movie was completely created in computer environment. The most important characteristic of the movies is that the movie does not look like real. Although the movie give the sense of artificiality, it is not understood that the movie is created by the computer

2.3. The 21st Century Sci-Fi Cinema in Relation to Space Design

The world we live in is evolving every day. Also the day we wake up to is the same neither yesterday nor tomorrow; we already experienced yesterday, we live in today with past experiences, and we give form to tomorrow with today’s experiences. As the living conditions of human change, the requirements increase. Most of the people on the earth are living, working, spending time in various spaces. A human being has been in existence with space, since the beginning of life, so the spacelessness has been an unimaginable notion; with Merleau-Ponty’s words, existence is spatial *(Merleau-Ponty, 2002).*

According to Carroll, cinema can describe a space, architecture, time, an individual, an object, a story, an idea, and a sense, in short, everything. The scenarios represented by cinema are perceived as if they are real by audiences; but, the perception is actualized under the normal

conditions with the consciousness of being representation and interpretation (Carroll, 1988). Although, cinematic space does not have all characteristics of architectural space. According to Jarvie, the movies cannot be smelled, touched, and tasted but they can be absolutely heard as seen (Jarvie, 2012). With regard to this statement, it can be said that the space is converted to sound and image. Cinema represents its statements through using space, in just the same way as architectural changes lead to form lifestyle. Space is potently used by cinema, as a result of this, the importance of space experiences is realized. As space is formed by cinema, existing and artificial spaces are experienced in different ways. Even though, in cinema, the experience of space is lacking in sensorial, it can be more intense in meaning.

Cinema is like a laboratory to design and organize a space, and a director has fewer limits than an architect as creating space because cinema provides an enormous freedom to the director. Director can create completely different or nonexistent world from today's world which has own physical, social rules. The buildings cannot built by present technology, on the contrary, the buildings are built by the future predicted technology represented in Sci-Fi cinema, and artificial nature formed by using predicted technology can be easily represented through the techniques of cinema. Özakın mentioned that, designers can benefit from Sci-Fi with creating new worlds through Sci-Fi methods and analyzing the previous Sci-Fi world (Özakın, 2001).The last product as movie is akin to virtual reality, and director uses the advantages of the virtual reality to make its own world. Director can manage the experience of audiences to use color, light, and shadow, contrast, the angle of the shot, scale, sound, music, special effects, and space. Use of the space is one of the most important factors in cinema; space can directly reflect the statement of the movie to visual and other perceptions of the audiences without any extra explanations. According to Bordwell and Thompson, in cinema, both space and time are reformed. Determining and forming space

depend on time, at the same time, space is the evidence of time. A change of ‘space’ effects time and a change of ‘time’ effects space. Cinema is an art of space as is an art of time (Bordwell and Thompson, 1986).

Almost in all sorts of movies, there is a space perception which is referred to all sorts of living spaces as a room, a small town or a city. Space can easily explain the statements of the story about social structure and physical characteristics of environment by making references to real life, without any subtexts. The directors represent and use spaces through cinematic techniques, thus space can be used as being never before. While directors are using spaces in Sci-Fi cinema, spaces are reinterpreted and associated with created images. In addition, new meanings and identities are defined to space through deforming. The implicit meanings utilized in Sci-Fi cinema’s space use are formed by the manner of space use directly or contextual.

The two branches of art, Sci-Fi cinema and architecture have converged on one question that “how future technology will affect the concept of ‘living space’ of mankind?” and these two branches have been in communication with each other to answer the question since the beginning of Sci-Fi cinema. Sci-Fi cinema can assist the traditional architectural understanding to add new perspectives and open new horizons of time and space. On the other hand, the architects can take advantage of Sci-Fi cinema to have experience of designing future, to comment on the new world of future and to make a basis of discussion about issues for future. According to Oskay, panic, apprehension and curiosity which are the senses against to new one are not satisfied by the fable and narrations which are told by old narrates, they are satisfied by the fantasies which are industrial output created by consciousness industry. A dreamy person is directed to pursue the dreams which eases the effects ‘shocks’ about perceiving of life instead of understanding and knowing of ‘real’ (Oskay, 1982).

With the genesis of the cinema in 1895, the space perception is being used as a representation instrument of scenario. Use and representation of spaces changed within years. Use of space in Sci-Fi cinema is a journey from the stage settings to the virtual reality.

Since the beginning of the stage and performing arts, the scenarios have been visualized and represented through using the concept of 'mise-en-scene'. In the simplest term, 'mise-en-scene' means to make a story audiovisual. Mise-en-scene composes of five main elements; stage settings, costumes and makeup, facial expression, color and lighting, the positioning of the objects, and actors within the frame. These five elements can make portray a story. Stage and performing arts are made of live performances and those performances are staged in one space with one or two settings. With the beginning of the cinema, the performances are started to record with the use of the camera. In addition to this, stage settings became varied, because it is not an obligation to perform the whole scenario only one time on the contrary to live performances. Within the years, use of the stage settings gave way to set piece, and ultimately thanks to the portable cameras, it was possible to make films in existing spaces. As a consequence of all these, use of space became a significant part of the cinema to represent the scenario.

Until the 2000s, Sci-Fi cinema had changed rapidly, because of the technological advances, social, political and natural issues. However, by 21st century, new era called 'Information Age' began with the acceleration of technological developments; humanity met the new advanced technology which had already existed within Sci-Fi movies. First and foremost, communication facilities have increased by laptops, tablets, and smart phones. In addition, the life on earth has accelerated and space is formed by the human being's requirements, lifestyles, and technology of the day. At this point, Sci-Fi movies can provide an opportunity to predict about the future space through using nonexistent but possible technology described in scenario. According to Yıldırım, the

freedom of cinema about placing story line of time and space to any plane and lack of connective facade used for describing and revealing the truth are the reasons of being captured the notions which are searched after by architects firstly in cinema (Yıldırım, 1998).

In the 21st century, use of advanced special techniques and plausibility of the artificial spaces have been increased by the advanced technology, so the sense of reality has increased in Sci-Fi cinema.

Spaces are shaped according to intended use. In some movies, space is a main character which creates and formed the narration. In those movies, space as an inseparable part of the movies represents the narration through visualizing. In some movies, space is a complementary element of the movie. In other words, space supports the narration of the movie to strengthen the effects of the movie.

The disciplines of architecture and Sci-Fi cinema are interested in the notion of 'space'. Sci-Fi cinema uses two kinds of spaces, one of them is existing and the other one is artificial space. In a Sci-Fi movie, only existing spaces, only artificial spaces or both are used together. Space is one of the important parts of the Sci-Fi cinema.

Sci-Fi cinema builds alternative worlds which are independent of the notions of present time and present spaces through the inspiration of today's world. In the alternative worlds, different and new life is described. The new and different life is represented by spaces. In Sci-Fi cinema, the 'existing' and 'artificial' spaces are used for representing the new and different life styles. Sci-Fi cinema enlarges the limits of the notion of space by fictionalizing the future spaces.

In the process of creating the spaces, the visual constructs are more flexible and creative. Because it is assumed that spaces used in Sci-Fi cinema are created by the technology which is nonexistent in today. Spaces used in Sci-Fi cinema are independent of social and physical limits in contrast with constructed space. Spaces used in Sci-Fi

cinema are located on the earth, the atmosphere, near or far from the centrospheres, outer space or space stations because of fictional predictions about future. Sci-Fi spaces represent the dynamics and the messages of the movies better because of the adaptability of artificial spaces. Sci-Fi spaces which are independent of restrictive factors such as physical, social, political and economic become inspiration to the architects.

It is known that there are some building designs being inspired by Sci-Fi cinema. “Star Wars House” in suburban South Korea by *Moon Hoon Architecture* was designed having been inspired by “Star Wars” (1977-2019, George Lucas) movie series. In France, the multimedia amusement park called “Futuroscope” by Denis Laming was designed with inspiration from “Death Star” which is the most deathful gun of the empire in the movie series of “Star Wars” (1977, George Lucas).

While architects are using Sci-Fi cinema as a source of motivation; directors, stage setting designers are influenced by the architects’ designs. In Sci-Fi cinema, architecture designed by famous architects are used. While these structures are being used in movies, a new meanings and a new uses are identified. “The Tate Modern” in London by Swiss architects *Herzog & de Meuron* was used in the Sci-Fi movie of “Children of Men” (Alfonso Cuarón, 2006). The other building called “Ronald Reagan Building” in Washington by James Ingo Freed was used in the movie of “Minority Report” (Steven Spielberg, 2002). At the present time, architects play active role in productions team of Sci-Fi cinema, too.

Cinema is always attractive art branch for architects. Some in design teams and some as either consultant or director, there are a lot of architects who are interested in cinema and work for the industry. The architects working for cinema industry have a different approach to spaces used in movies. One of the most important architects, Joseph Kosinski works in cinema industry as a Sci-Fi movie director, a movie

maker and a scenarist. What's more, he has the undergraduate degrees in architecture and mechanical engineering. He as a director keeps carrying out a lot of important projects some of which are commercial and feature films. The commercial films belong to car brands and games. He is interested in computer graphics and his works include impressive CGI scenes. His most important movies released are “Tron: Legacy” (2010) and “Oblivion” (2013). Both two movies are in genre of Sci-Fi. In the two movies, Kosinski used both existing and artificial spaces to represent the narrations.

2.3.1. Existing Spaces in Sci-Fi Cinema

In Sci-Fi cinema, there is always an extraordinary scenario about humanity and technology. The representation of a room, a home, a building or a city is one of the most important factors in a Sci-Fi movie to explain the story. Architecture is the best co-starring and sometimes starring in a Sci-Fi movie. Especially living spaces and the daily routine of people supply much more information about the styles of the day which are described in the scenario, so the real spaces could make the audiences find the movie convincing. The easiest way to make Sci-Fi movie convincing is to use the existing spaces. In Sci-Fi cinema, space can be embodied in its artificial universe by being created again.

Existing spaces are transformed on the purpose of being a part of future through different users and different intended use. In Sci-Fi cinema, interpretation and representation of existing space is made by different techniques from the other movie genres’, because of the future concept of Sci-Fi. Spaces used in Sci-Fi movies are created by some techniques one of which is to unite together different interior and exterior space shootings for creating a holistic perception. The other creating technique is to use the factors of lighting and colors for the psychological effects of the movie. Sci-Fi spaces are formed by the existing spaces

which are purged from its own identification and moved beyond the present time. Existing spaces which are created by fragmentation and recombining through mentioned techniques are used as a means of constructing predictions for future. While Sci-Fi cinema represents an alternative fiction which is independent of the present environment and present time, it mediates to represent existing places as different spaces which does not belong this age. On the other hand, before the Information Age, existing spaces were transformed into futuristic spaces with the techniques of making a physical alteration, adding animations or camera moves. With the Information Age, computer-aided architectural design became more widespread. Especially after the 2000's, technology proceeded with significant steps, consequently of this, representation of cities and spaces commonly began to be made through computers for satisfying the sense of reality. In Sci-Fi cinema, space is created upon director's requests and the requirements of the scenario. The perception and the experiences of the director builds the director's requests about movie. Accordingly, the director reshapes existing spaces for a Sci-Fi movie in the frame of its own perception and experiences and wants audiences to experience reshaped spaces.

"Children of Men" (Alfonso Cuarón, 2006) is a Sci-Fi movie which uses existing space. In the movie, the city of London is used. Although, the city architecture belongs to today, it is represented as ruined. The city has a lot of desolated and derelict buildings. In other words, the forms and use of existing spaces are transformed according to the dystopic scenario of the movie. (Figure 1).

Figure 1. The city view. – "Children of Men" (Cuarón, 2006).

The other Sci-Fi movie which uses existing space is "Ex-Machina" (Alex Garland, 2014). In the movie, the real-life hotel called Hotel Juvet is used as a residence. Hotel Juvet designed by *Jensen & Skodvin Architects* is located in northwestern Norway. Although the movie narrates the most advanced technology, untransformed existing spaces are used and the structure is located in a forest. There is an oppositeness between nature and the technology mentioned in the movie, the building's location, however the building is designed in a harmony with nature (Figure 2).

Figure 2. The exterior of the home. – "Ex-Machina" (Garland, 2015).

Existing spaces used in Sci-Fi cinema are reshaped spaces by reinterpreting. Although, Sci-Fi movies which include preserved existing spaces can be represented with its own user and own intended use; the

existing spaces used in Sci-Fi cinema transformed by different user and intended use is shaped and limited by the director. The use of existing space is different from movie to movie. In each movie, a space can be represented in different ways. According to Janser, the cinematic processes make recreating of the real world possible (Janser, 1997). Sci-Fi cinema gives a new and a critical point of view to the architects through questioning the recreated existing architecture. In addition, fictionalized by benefiting from actual spaces, Sci-Fi cinema presents the alternative uses of buildings transformed by scenarios of different situations which can be real in the future.

2.3.2. Artificial Spaces in Sci-fi Cinema

According to Tong, technology enables the transformation of human beings from the industrial society to information society. Rapid changes in microelectronic and information technologies, and universal pollutions originated from consumption culture causes new architecture. Technological changes are underlying causes of the origin of postmodern architecture. Today, the new technologies break in the limits and meanings of space-time, as a consequence, the new technologies cause the coming into existence of the notion of ‘artificial’ (Tong, 2005).

The notion of ‘artificial’ is a situation of lack of physical presence. According to Jean Baudrillard, representation is about reality, however artificial does not have any references about reality. Although, it is perceived, it is not in there physically. Reality addresses existence and artificial addresses nonexistence. Artificial is produced by computer. In artificial spaces, an object is not felt assets; the object is reproduced in here and this reproduced object refers to itself (Kaçmaz and Uluoğlu, 2005). Artificial spaces are created by inspiration of metaphors of their own time. As a consequence of this, artificial space can be evaluated as a criticism about the contemporary architecture. This assessment

provides a different point of view to the notion of ‘space’. Sci-Fi movies which use artificial space present a different experience for audiences and create ideational spaces.

In Sci-Fi movies, fictional spaces were represented by mockups, or stage settings. However, in today’s Sci-Fi cinema, the fictional spaces are represented by artificial spaces created by computers thanks to the advanced technology of the 21st century. The spaces shaped by different environmental conditions and technology give the architects an opportunity of thinking from a different view point. Most of the time, an existing space cannot provide a basis for a Sci-Fi movie. Because the narration depends on future, futuristic elements are needed. Although the sets which are designed and installed for the story help represent the statements of the scenario, they sometimes fail to satisfy about reality. Space which has not been built yet and has not been used yet in the real world is needed to be defined and created. At that point, the computer-based spaces become a part of the movie. The computer-based spaces, in other words digital spaces, can be created with more free approaches in terms of physical rules and construction technology of today. The spaces can be designed entirely independent of physical and social issues.

In the movie “Total Recall” (Len Wiseman, 2012), the interior of the factory worker, Douglas Quaid’s house is in the same ballpark with today’s smart houses; even though Quaid’s house seems more mediocre than today’s houses. However, the city design gives the sense of being in future. In the scene where Quaid goes out to his house’s balcony, the buildings built from the sky to the earth are seen and this scene makes sense of high technology. It is a fact that it is hard to build such a city with today’s technology but it can be possible in the future (Figure 3).

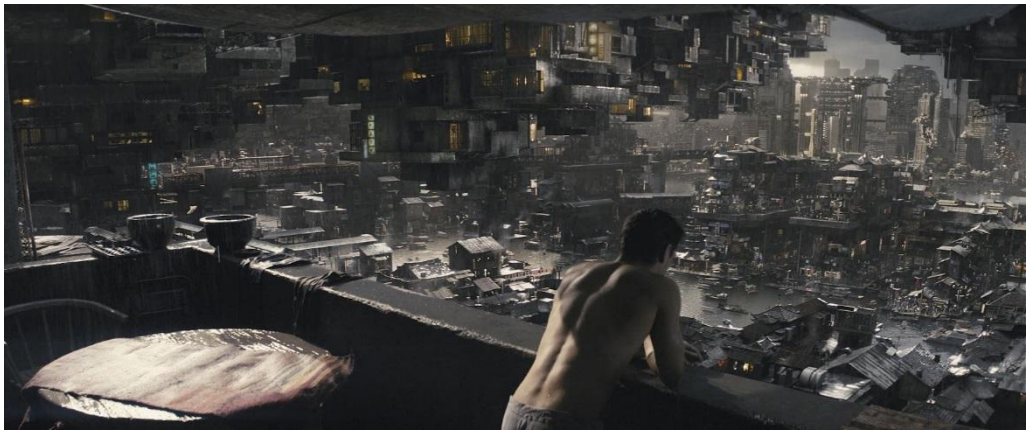

Figure 3. The city view from the balcony of Quaid's house. – "Total Recall" (Wiseman, 2012).

According to Kaçmaz, there are three digital spaces used in Sci-Fi cinema called 'cyberspace', 'exospace', and 'hyperspace' (Kaçmaz, 2004). The first of all is "cyberspace" which is an information space comprised of the interconnected computers[3]. The movie of "Thomas in Love" (Pierre-Paul Renders, 2000) is one the greatest example to make sense of the cyberspace. Thomas lives alone in a house and he supplies all needs within the help of a computer, and even he lives as if he is a part of a digital world (Figure 4). The second is 'exospace' which is designed for living in the exoatmospheric digital supported spaces. The movie of the "Interstellar" (Christopher Nolan, 2014) is a marvelous example of the exospace (Figure 5).The last digital space is called 'hyperspace'. Virtual reality techniques create the hyperspace in Sci-Fi cinema as augmented reality, simulated reality and pervasive computing. The move of "The Call-Up" (Charles Barker, 2016) is a perfect example of the hyperspace (Figure 6).

[3] A network of computers and other electronic equipment connected together to create a communication system between other communication points/systems. They can be under local area network, wide area network, metropolitan area network, nationwide network, and others. (What is Interconnected Computers? (n.d.). Retrieved August 20, 2017, from https://www.igi-global.com/dictionary/interconnected-computers/15223)

Figure 4. The scene represents the world of Thomas as the example of cyberspace. - "Thomas in Love" (Renders, 2000).

Figure 5. The scene represents the Cooper Station as an example of the exospace. - "Interstellar" (Nolan, 2014).

Figure 6. The scenes which show augmented reality, simulated reality and pervasive computing from the movie. - "The Call Up" (Barker, 2016).

The virtual reality movies are the products of Information Age that show the effects of the technology of computers on the world and humanity. "The Call-Up" (2016) is an example of the category. The theme

of the movie is about the virtual reality game. In the movie, game players are transferred from an ordinary and known space to an entirely different world through using unique technological instruments such as the gloves, the eyeglasses, the helmets and so on. The spaces utilized in the movie are not so much futuristic, but the way of transport from the real to the virtual belongs to the future technology. Although it has been known that it is a virtual world, the adventure which looks like an innocent entertainment turns into a real struggle because the virtual world appeals to the five senses and the consequence of this, the feeling of reality can get lost.

The notion of augmented reality means that the reality is changed and strengthen by the computers with the components of sound, image, and graphic. On the contrary of virtual reality, in augmented reality there are not designed animated spaces; there is a real space which interacts with its environment and users. Space includes artificial components and knowledge connected with the real world. The most appropriate example is a Sci-Fi TV series of “The Doctor Who” (Sydney Newman, 1963-present). The story is based on the adventures of an extraterrestrial creature who looks like a human, called Doctor. The Doctor has a spacecraft called TARDIS (Time and Relative Dimension in Space). From the outside, TARDIS looks like a police box belonged to 1950s, but the interior of the box is a massive fictional time machine (Figures 7-8).

Figure 7. TARDIS exterior. – “Doctor Who” (Newman, 2013).

Figure 8. TARDIS interior. - "Doctor Who" (Newman, 1963).

In simulated reality, the computer simulation and the reality are intertwined; therefore it is hard to distinguish between the real and virtual. The simulated reality is quite different from virtual reality. In virtual reality, the reality of the current situation is beyond any doubt; on the contrary, in a simulated reality, there is always a doubt about reality. The movie called "Matrix" (Lana, Lily Wachowski, 1999) has the characteristics of simulated reality. In the movie, there is a digital world, and the world includes unsparingly realistic elements which are authenticated by all senses of human being even though out of physics laws. In the movie, the 'white room' does not have any spatial limits as floor, ceiling or walls. Although, the 'white room' is not a real place, it is used as a space (Figure 9).

Figure 9. White room. - "Matrix" (Lana Wachowski, Lilly Wachowski, 1999).

The notion of pervasive computing is used for the concept of ubiquitous computing. Pervasive computing refers to the computers which are included in spaces. In addition to this concept, ubiquitous computing refers to wearable technology. The idea of smart-home is a product of these concepts. This technology always interacts with its user and can change or transform according to the situations or needs. “Minority Report” (Steven Spielberg, 2002) includes a lot of elements of pervasive computing as computer systems, cars or homes (Figures 10-11).

Figure 10. Home of John Anderton. – “Minority Report” (Spielberg, 2002).

Figure 11. Home of John Anderton. – “Minority Report” (Spielberg, 2002).

3. The Concept of ‘Living Space’ in Sci-Fi Cinema

For the creation of spaces used in Sci-Fi cinema, available spaces used in present are the source of inspiration. As a consequence of this, Sci-Fi cinema enables architecture to approach the notion of ‘space’ with a critical point of view. Sci-Fi cinema criticizes the spatial thoughts which exist in discourse. While spaces used in Sci-Fi cinema are being designed, the present meanings of them are criticized. The notion of ‘space’ is reconsidered and probed the characteristics through spaces used in Sci-Fi cinema. Correspondingly, Sci-Fi cinema mentions the changing and transforming social life criticism easier than the other genres of cinema through using different spaces and its argumentative characteristic. According to Fortin, an essential function of Sci-Fi is to provide an experience of 'cognitive estrangement' which can be created by describing a noticeable home or 'zero world' against which a strange new world with new technologies can be compared. In addition, he discusses how early Sci-Fi movie presented visions of our future homes, which valued 'newness' and were based largely upon ideas of rationality (Fortin, 2011).

Sci-Fi cinema builds ideational predictions for future by benefiting from the changing requirements and requests of human being with technology. In this manner, future society structure, future social life, cultural and social changing in future are narrated through described domestic life. At the same time Sci-Fi cinema supplies to gain a different viewpoint for architecture by criticizing the concept of living space. Sci-Fi cinema should be evaluated as a means which represents the process of changing, transforming, and criticizing the concept of ‘living spaces’. According to Fortin, although the notion of 'home' is presented as a reference point in Sci-Fi cinema, it can change continuously. During the process of reinterpretation, a new world that was as strange can finally become a real home. With this new thinking, Sci-Fi needed to represent a future times from now on, and also, Sci-Fi cinema was in need of telling

the stories from anytime and architecture used in cinema was in need of belonging all times and all locations (Fortin, 2011).

In Sci-Fi cinema, future assumes the leading role. In this context, a director designs space with a futuristic approach. Although, the cities or urban areas as large-scale spaces can give a general idea about the structure of social, cultural, economic and the natural forces in the scenario of a Sci-Fi movie, the notion of 'living space' which refers the simplest unit of living can give the most specific ideas about the lifestyle of humanity in future.

In real life, while a living space is being designed, a basic story which consists of the user's lifestyle, habits is used in addition to technology, physical factors such as color, lighting, materials, location, and natural conditions. Basic stories help understand and evaluate lifestyle of users. A living space is shaped according to its use aim and user. In Sci-Fi movies, living spaces belonged to the characters of scenario are shaped by the factors that are environment, the technology of the day, social order, mental structure of society and sometimes perception of society. Essentially, it can easily be said that human beings shape the spaces and besides that they are affected by the spaces which are shaped by the humans.

3.1. The Notions of 'Home' and 'House' as Living Space in Sci-Fi Cinema

Living space occupies an important place in architecture because of its aim and meaning. As a result of need for shelter, human beings build spaces. Heidegger mentioned that existence form on the earth of human being is to dwell which is the aim of to build; also dwelling is one of the most basic features of existence. According to him, dwelling is for building, and building is for dwelling (Heidegger, 1996). Human being is

a part of environment through dwelling and the fact of sheltering shapes the human needs. The needs of dwelling cause to build space, and human being is in existence to live in spaces built.

The need for sheltering is an existential feature of human being. Human beings live in spaces in accordance with the requirements of social, physical, psychological conditions to protect themselves from external factors and to exist. These spaces are shaped by social, cultural, political, economic, and psychological structures of society and technology of that day. Ersoy mentioned that, the form of life on the earth is called dwelling. The objective and physical dimensions of dwelling are represented by the notion of 'home'. The psychological process, social relation, and behavioral, experimental dimensions are represented by the notion of 'home'. According to this, the notions of 'home' and 'house' which constitute the concept of sheltering and also complement each other are structurally the same. Abraham Maslow who is a famous psychologist collects the human needs under the five tier model instead of making a list of the needs. At the same time, the five tiers model builds a hierarchical structure called *Maslow's hierarchy of needs which is a pyramid (Maslow, 1954),* (Table 1). According to the pyramid, the undermost needs should satisfy to be satisfied the uppermost needs. Maslow stated that;

> *It is quite true that man lives by bread alone — when there is no bread. But what happens to man's desires when there is plenty of bread and when his belly is chronically filled?*
>
> *At once other (and "higher") needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still "higher") needs emerge and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency (Maslow, 1954, p. 38).*

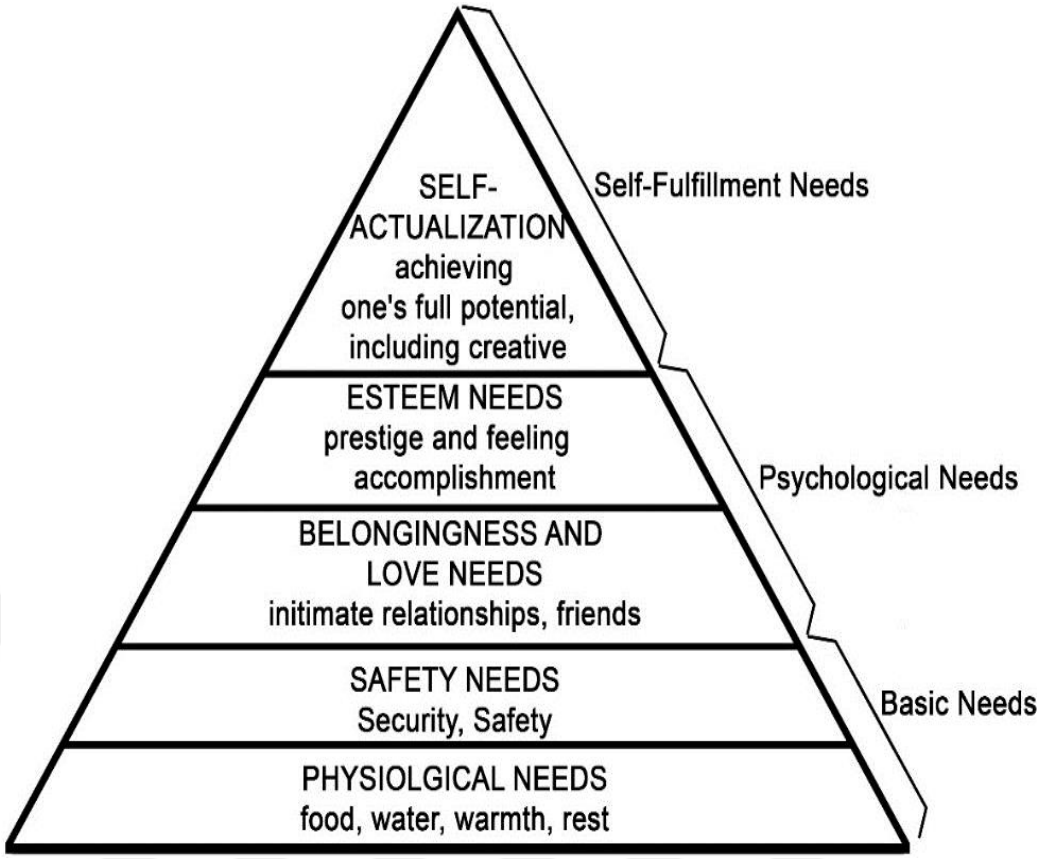

Table 1. Maslow's Hierarchy of Needs Pyramid.

(https://www.simplypsychology.org/maslow.jpg)

According to Maslow, firstly basic needs which are physiological and safety needs are satisfied. The basic needs refer to the physical characteristics of a place. In other words, human beings first of all need a framed place which is isolated from environment and has the field for eating, drinking, and sleeping. The basic needs refer to sheltering. The upper stage of basic needs is psychological needs and if only the previous stage is done, the stage of psychological needs is reached. The psychological needs are the feelings of belonging, loving and success. Satisfying the psychological needs causes an emotional bond between the user and the space. When the two undermost tiers' conditions are fulfilled, the last tier which is about self-actualization is reached. Although architecture is interested in all tiers because of the factor of user, basic

and psychological needs are more determinant characteristics, while designing a ‘home’.

The notion of ‘house’ is a specific comfortable and regular space used for bodily basic requirements and actions. The notion of ‘house’ is an important structure which satisfies the physical needs, besides, protects the human being from environment and creates a bond between the users and environment. Space organization of ‘house’ determined by requirements and movements of human being is shaped by the environmental, social, cultural, political, and technological factors of that day. Likewise, the notion of ‘house’ affects the social and cultural structure through its space organization which determines the lifestyle. The notion of ‘house’ is a special space that provides an opportunity to observe the social transformation.

The notion of ‘home’ has an important role in human life, because the notion of ‘home’ surrounds the human being both physically and psychologically. The notion of ‘home’ is a physical shelter and in the same time, it is a fact which involves experience and lifestyle of human being. In Sci-Fi cinema, a narration is adapted into a movie by various metaphors, but in fact, the basis of the story addresses to homelessness, home occupation, finding a new home, a journey from home to far away. David T. Fortin mentioned the notion of ‘home’ in Sci-fi as follows;

> *…In fact, most Science Fiction narratives seemingly center on notions of homelessness, homecomings, threats to and invasions of home, and journeys from it. Independent of the film’s narrative, however, home is also considered within Science Fiction as the place of the audience member, spatially and temporally, the distinction of which is critical for establishing the alien encounter with the putative future world (Fortin, 2011, p.11).*

'Home' as a smallest unit of living represents the lifestyle and it is a unique space which reflects the perceptions, movements, and

experiences of its users. Sci-Fi cinema represents the future life style of individual and society by the notion of ‘home’. In Sci-Fi cinema, a new model of living for future is argued through the notion of 'home'. The notion of ‘home’ is a matchless means to search the relation of Sci-Fi cinema and architecture. According to Fortin, recreating of Sci-Fi narratives by the movies is necessary to criticize the notion of ‘home’ belonged to modern globalization world (Fortin, 2011). While the future predictions of Sci-Fi cinema are represented, audiences experience the notion of ‘home’ used in the movie. Fortin said that, in alien themed movies with envisaged future world, audiences perceive the described world as their own world. In addition, the notion of ‘home’ in described world is an important spatial and temporary area for audiences (Fortin, 2011). In Sci-Fi cinema, the notion of living space is used as a means to represent the characteristics, lifestyles, values, living, and psychological state of the movie characters. In addition to this, the notion of ‘home’ is used as a movie character on its own.

In this context, human being is in need of space which can be described as ‘home’. Space is formed towards the requirements and use of user. Today’s architecture is formed by today’s user’s requirements and use. Each space has distinctive characteristics of physical, social, technological, and psychological environments. However, space contains information about the time. The factors of environment, social structure, technology and user are used as guides to design space. Sci-Fi cinema represents all factors by the help of scenario through using space as an instrument. Analyzing spaces used in Sci-Fi provide an opportunity to observe future social structure, environmental factors, technology and the user requirement. Designing more functional space for future can be possible through prophetic predictions presented by Sci-Fi.

3.1.1. Physical Characteristics of 'Living Space'

In tangible meaning, the form of space is shaped by the environmental factors and aesthetic apprehensions. As İzgi mentioned that in architecture, formation of space depends on instruction of the data connected with functionality of space. In addition, organizing surfaces which restrict space, reaching aesthetic degree in constructing space in terms of plenary, creating statuesque and artistic environment are the principles of space formation (İzgi, 1999). Architecture is a space designing work. While space is being examined, a lot of features which are related, which are independent can be observed. The form of space is determined by its borders. In conjunction with form, the other elements which determines the border of space can state the scale of space.

Space comes under the influence of mathematical proportion by the apprehensions about order and harmony. According to Tanyeli, architecture has been subdued by geometry until modernism. However, it was based upon a scientific foundation and rationalized in 16th century, and then the efforts of rationalizing and scientification remained (Tanyeli, 2002). On the contrary, according to Graves, the geometry militates in favor of modern architecture. As a consequence of cultural developments, the composed poetic form is weakened. In addition geometry gives priority to the notion of form which emphasizes the techniques (Graves, 2002). Wright evaluates space with its location, and criticizes the statement of "form follows function" (Wright, 2002). Tschumi settled the space organization to a plane and he queried the notions of order and unity. According to Tschumi, in the project of *Parc de la Vilette* (1996), space is shaped according to user's activity and requirements instead of a specified function. Accordingly, he claims that, there is not any logic in space organization (Tschumi, 2000).

Space encloses the existence of human beings. By seeing the forms and objects, the impressions of interior and exterior can be felt.

The form of space, lighting quality, scale, and dimensions depend on the borders which are determined by the elements of whole form. Space becomes an organism by being surrounded and through the elements which create the form of space. Roth identified space that, a volume which has borders is space (Roth, 2000). Physical space is limited visually.

According to Özakın, the process of creating Sci-Fi world has similarities with architectural design. Both of them create the new universes as God (Özakın, 2001). Imagination and realization interlock and new ideas about future technology are represented. Space is used for both architecture and Sci-Fi movies. Sci-Fi cinema addresses to notion of 'space' from a different viewpoint belonged to future and it provides human being to approach to architecture from a new viewpoint. Sci-Fi represents technological developments and the developments are evaluated from the aspect of the director. In addition, Sci-Fi movies are used as an experiment areas in seeking new creative architecture for future.

Özakın defines Sci-Fi movie making team as 'high-talented army' and they work rather systematically in the process of making movie. The basic components of the systematics are scientific researches and brainstorming done to create the most convenient future panorama of scenario. In this context, the last products of Sci-Fi cinema which are artificial environments have a strong possibility of involvement to real life in future (Özakın, 2001).

Space cannot be handled as an intangible fact or independent of its environment. According to Day, "Our experience of the built environment may be both exhilarating and banal. Often we do not examine our surroundings but breathe them in" (Day, 1990). Space refers to culture and society through its environment, design, and expression. Space can give a lot of clues about individuals and society in reality. In

Sci-Fi cinema, space is used as the same with real life. Even though space designed for future and represented in Sci-Fi cinema is accepted as utopic and unachievable, the space can be built under proper circumstances. Space is one of the main factors of visuality of Sci-Fi cinema, and space is in interaction with the other elements which constitute the cinematic language. In Sci-Fi cinema, space is used for the sense of reality. Space determines the time and the characters' movement of movie. In this context, space and its environment are designed to comply with statement of the narration.

On the other hand, the color as a feature of the construction material has kept almost the most constant environment characteristics of the geographical area in which the space is built. With the awareness of the importance of color in space, the effort of harmonizing the chromatics of space with the environment of creating a chromatic language in order to establish an emotional relationship between space and human being, caused a rethinking of the role and of the relationship of color with the environment. Lancaster mentioned that,

> *... For the human eye there is no space without its color; and no color that does not create its own space. When you open your eyes the texture of the entire visual field consists of one thing: and that is color ... (Lancaster, 1996).*

Color and light in architecture is considered in relation to the atmosphere, the perception of space is directed through using the factors of color and light, as a result of this, a pleasant environment is created for user with these factors. Given the roles of color and light on the individual awareness and psycho-physiological reactions to color, they have new meanings and thus the effect of color and light on the environment and human being is important. According to Mahnke, in architectural environment, the major factors are color and light. The factors of color and light have impact on psychological and physiological

well-being and affect human being on the basis of visual and nonvisual (Mahnke, 1996).

3.1.2. The Notion of 'Technology' in 'Living Space'

After the mid-20th Century, radical changes about technology were starting point of future visions. Technological developments lost the visual and tactual features. These changes are reflected on spaces which are experimented or lived in by human being. In Sci-Fi movies, technology is a future prediction created by inspiration of available technology. The wars, economic depressions weaken the optimistic approaches to technology. In Sci-Fi movies, technology is described as a fact which changes the life style, communication, and makes human being insensitive and isolated. Technology takes place of the weak human relations. According to Roloff and Seeßlen, Sci-Fi tries to make the mental and emotional requirements of human being objective. In other words, the social issues become technological issues (Roloff and Seeßlen, 1995).

The most important characteristic of Sci-Fi cinema is having a scientific background. There is a directly proportional relation between science and technology; as science is developed, technology develops. As a consequence of developing technology, technological products belonged to previous Sci-Fi movies can be termed undeveloped in comparison with technological products described subsequent Sci-Fi movies. However, technologies described in both earlier movies and subsequent movies are based on science. According to Roloff and Seeßlen, in Sci-Fi movie, the technological development which is spatially symbolized at the beginning presents us with well-worked images of technological utopianism. Just like the utopia projects produced by architecture, the images offered by science fiction also give ideas that push the boundaries of imagination about architectural works

of the future (Roloff and Seeßlen, 1995). As a consequence of this, the notion of technology is one of the keystones of Sci-Fi cinema. According to Erk, Sci-Fi cinema is a representation of architecture, at the same time it is a psychic of technology (Erk, 2005). In Sci-Fi cinema, future technology is designed by inspirations of today's technology. In addition, at the present time, spaces which are described in Sci-Fi movies are being actualized thanks to developing technology.

Asimov mentioned in 1976 that the matter of Sci-Fi is about whether surviving as technological society or not. Sci-Fi presents a lot of choices, some of them are changes for the better, and some of them are changes for the worse. Human beings voluntarily have to choose the changes for the better. This is an interpretation of the role of Sci-Fi (Asimov, 2007). In Sci-Fi movies with utopic theme, technology is only way to make human being happy and living in peace, on the other side, in Sci-Fi movies with dystopic theme, technology is represented as a detrimental fact which harms the nature and the earth irrevocably. Philip K. Dick stated about Sci-Fi movies with dystopic theme, the world lost the faith about science and scientific developments. As a consequence of the situation, there is inevitably a concussion in the area of Sci-Fi. Because of the faith losing about improvement ideas and brighter future, the negativity of Sci-Fi is not a reason, it is a consequence (Kellner and Best, 2007).

Sci-Fi movies are inspired from the real world and represent the social structure, sociable order, human relations, and living spaces which are changed by technology. Sci-Fi movies can be evaluated as a reading means which shows the possible conclusions of the changes. According to Oskay, Sci-Fi cinema is like a narcotic for human being who has false consciousness. Because Sci-Fi cinema tries to represent the reasons of the dangers about life style and relation of human being in the age of advanced science and technology (Oskay, 1982).

3.1.3. The Factors of ‘User/Use’ in ‘Living Space’

‘User’ and ‘use’ are the most important factors in the process of designing space. The factor of ‘user’ is the center of space, a space is shaped by user’s social, economic and cultural situations in addition to the requirements and movements. The bound between space and social, cultural developments has the power to change the perception of space. Architectural space is a physical space which has form, color, and texture. Architectural space determines the limits of movement, in addition, the borders of space are changed by movements of human beings. Spaces are used by human being regardless of spaces’ characteristics. In this context, human being is the most essential factor of space design, and while a space is being designed, the factor of human being should be understood thoroughly physical and perceptual dimensions.

Social, economic, and cultural issues in the world cause the changes and the transformations on the social structure. The Sci-Fi movies are affected by the changes and transformations, and these movies represent the ideational scenarios to the audiences. In Sci-Fi movies, new kinds of life styles are identified. The identified new life styles are represented by fictional spaces and social structure. The social structure descriptions are the subjects of the future lifestyle alternatives. The descriptions of social structures are created by inspirations of today’s social structure. Consequently, Sci-Fi cinema offers an opportunity to evaluate the current social structure with a critical approach through the social structure described and represented through the notion of ‘space’ in Sci-Fi movies. According to Roloff and Seeßlen, as technology presents new opportunities, society has a change. As a consequence of this the needs for new architecture arise in addition to social requirements. Developments bring with inevitable changes and hypothetical designs are made and scenarios are created through inspirations of the inevitable changes. Built settings and space which

shoot a scene in described future from the aspect of architecture and sociable (Roloff and Seeßlen, 1995).

Sci-Fi cinema which reveals the ideational scenarios about the future communal living consists of two approaches as utopic and dystopic. In utopic approach, an optimistic scene which includes social conditions, politics, and ideal order with provisions and laws is represented. On the other hand, in dystopic approach, the worst case scenarios are represented. Sci-Fi evaluates the facts belonged to today and future with a critical approach, therefore the dystopian perspective is preferred to be represented.

In Sci-Fi cinema, critics of dystopic social structure are represented by several metaphors. Critics of social order are represented through nonexistent human relations, objectified social requirements, the systems of control mechanisms which cause social disintegration, nonexistent private life. In Sci-Fi cinema, these issues are represented by the metaphors such as artificial intelligence, robotization, clones, encountering with aliens. These methods provide an opportunity to percept and to make a different sense of the today's issues from different point of view. Changed perceptual structure provide a basis to evaluate and criticize the individual, daily living and political orders.

In Sci-Fi cinema, the management system is one of the base emphasized issues. The components of the social structure refer to the governments which have controlling and directive steamroller. According to Roloff and Seeßlen, the social spheres handled from the aspects of dominance and government are distinguished more than the relations of society and individuals (Roloff and Seeßlen, 1995). It is possible to observe the representation of governments by evaluating social life through space. Individuals' sociological and psychological conditions consisted of their social life, life style, identities are represented by

spaces. The individuals which represent the described governments are science people, lawyers, robots or different groups.

Sci-Fi movies represents the communal living through spaces which are under control of governments. In future scenarios, a social order which is under control of dominant order and makes away with the notions of individual and right to life is described. As a consequence of the control mechanisms of the dominant order, spaces become transparent and communal living is brought under control. The fact of transparency formed by cameras, technological systems and the structural materials is used as a control mechanism of the order.

According to Roloff and Seeßlen, the socialization process of individual in Sci-Fi is handled in cyclicality approaches which include new beginnings. In a society which is in a historicalness order individuals continuously adapt themselves. Individuals survive during the social growth process and social downsizing processes (Roloff and Seeßlen, 1995). In Sci-Fi, individual issues represent the social issues. In dystopic Sci-Fi movies, the social structure which is formed after the global and interplanetary wars or ecological disasters is described. After the mentioned issues, the world is extinct or livable spaces are limited. Individuals adapt to changed conditions and they maintain the life to be in search of new living spaces. In this kind of descriptions, there is not a continuity between the social structure before the changes and new social structure.

According to Aksoy, in addition to express space physically, the relation between human being and space can be expressed (Aksoy, 2004). In human life, some spaces make much more impression on minds much more. These kinds of spaces cannot only be expressed physically. The aim of architecture is to design space which appeals to all senses of human being through physical elements of space.

The physical characteristics of space can be expressed tangibly. In addition, the geometrical forms which create space can be reviewed tangibly. Therefore, the form of space is determined by the movements of user. First of all, space is perceived sensorial by user, and then space is perceived mentally through timewasting in space and experiencing space. Architectural space is a limited part of outer space which is perceived by user. It is unavoidable that there are perceptible borders to be determined by user. However, the borders easily perceived by human brain are not always clear and specified. Even though these borders cannot always enclose the volume, but most of time sufficient to form space. During the life time of human being, some spaces are more meaningful than the other spaces. The effects of space on human being, the experiences in space, and the memories about space are important factors to make space livable and permanent.

Motion in space is one of the important issues. The user who moves in space changes the perception of space through motion. Holl explained the changed perception by motion in space that; while moving in space, perspectives are opened and closed and lights are visible and invisible. In other words, successive occasions occur and the perception of human being is based on those occasions. This kind of perception can refer to the perception in Sci-Fi cinema. In other words, cinematic space and space which is formed by motion in time and used in Sci-Fi cinema can enable architectonic comprehension of space (Aker, 2000).

3.2. ‘Living Space’ as an Image in Joseph Kosinski Movies

Joseph Kosinski is one of the most important directors who attaches more importance to architectural design. While Kosinski is creating a movie, he uses the living spaces effectively in his movies through using his architect skills. One of the reasons of analyzing Kosinski’s movies in this thesis is that the director designs and creates the living spaces used in movies with his architect identity and uses living spaces as a leading instrument to represent future in his movies. In addition to living space used in Kosinski’s Sci-Fi movies is created by an architect, space is represented from the aspect of an architect. The other reason of analyzing Kosinski’s movies is that the two Kosinski movies selected and analyzed include two kinds of spaces created by different techniques. One of them is built as stage setting, the other one is created by computer. Kosinski’s these two Sci-Fi movies have different kind of scenarios which have to be represented with different kind of spaces. These spaces are created to represent the future lifestyle fictionalized in the movies. In other words, these two movies represent ‘existing’ living space on the earth and ‘virtual’ living space in the computer. Although these two living spaces are created and represented by today’s technology, when the two movie are analyzed in the frame of scenario through being independent of all the matters and notions belonged to today, future life style and future architecture can be understood easily. Therefore, the Kosinski's Sci-Fi movies are analyzed by considering represented future technologies of the movies which are construction technologies of 'existing' and 'virtual' living spaces. As a result of these, the two Kosinski movies provide an opportunity to analyze and understand living spaces in future through ‘existing’ and ‘virtual’ living spaces represented in the movies.

Kosinski’s selected two Sci-Fi movies are “Tron: Legacy” (2010) and “Oblivion” (2013). The movies are Kosinski’s two important works which discuss the issues of home, homelessness, being far from home,

arriving home and the living spaces used in movies are created to represent these issues within the frame of scenario. These spaces were built by different techniques and technology in practice from the technique and technology narrated and represented in the movies. In the movie of “Tron: Legacy” (2010), virtual spaces created by CGI are used and in the other movie “Oblivion” (2013), existing spaces built and located in film studio are used. The living spaces used in the movies of “Tron: Legacy” (2010) and “Oblivion” (2013) have different characteristics of physical, technological and psychological. In addition, the factors of use and user which are identified by scenario are totally different.

In this part of the thesis, the living spaces used in Kosinski’s two movies are analyzed according to their physical, technological characteristics and the factors of use and user which are described by scenario. In this context, a table is formed and the living spaces used in the movies are reviewed according to the table (Table 2).

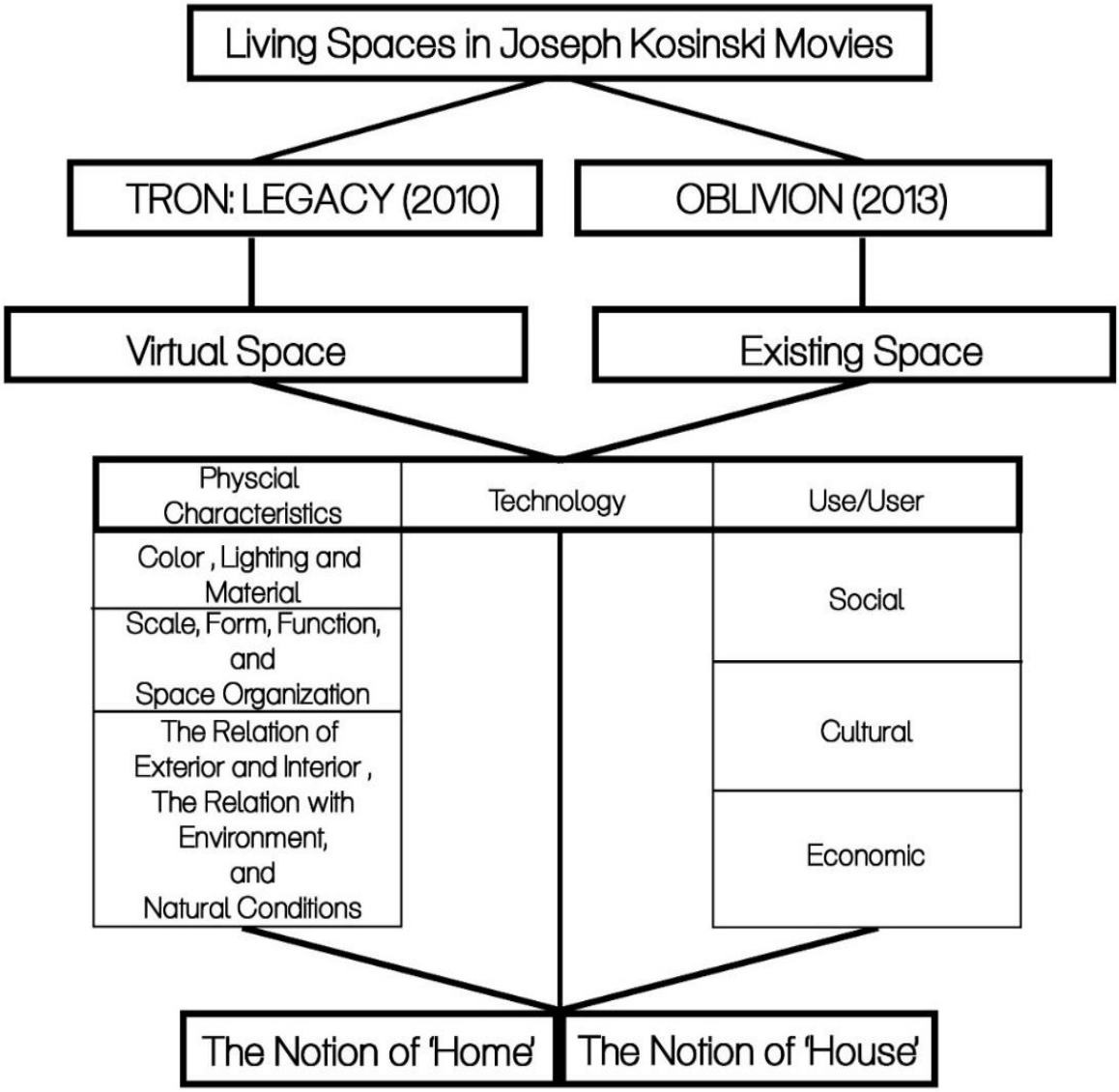

Table 2. Living Space Evaluation Table.

In cinema, scenario is the main determinant which gives shape to the environment physically and psychologically. The characters, time, spaces, nature, technology are described by scenario. Sci-Fi scenarios offer predictions of future and Sci-Fi cinema makes the scenarios visual. As a result of this, living spaces used in the movies of “Tron: Legacy” (2010) and “Oblivion” (2013) are evaluated for each of the movies in its own frame of each scenario.

The scenario of “Tron: Legacy” (2010) is about the digital dystopia. One of the main characters called Sam Flynn enters the digital world named Tron created by his father. The father called Kevin Flynn is a computer programmer. The father is found materialized inside computer system created by him for over twenty years in the digital world. As a consequence of this, he created a ‘living space’ called Safehouse in there. The spaces of the movie are created by the techniques of CGI in computer as per the scenario. The movie of “Tron: Legacy” (2010) provides an opportunity to analyze the ‘virtual living space’.

The other movie of “Oblivion” (2013) has a post-apocalyptic dystopian scenario. As a consequence of a big war, the world becomes unlivable and humanity leaves the world. There are two people who have a mission on the earth. A ‘living space’ called *Sky Tower* is built for two. *Sky Tower* is designed by the director Joseph Kosinski and built in real life and used as a stage setting. The movie of “Oblivion” (2013) provides an opportunity to analyze the ‘existing living space’.

3.2.1. Physical Characteristics of Safehouse and Sky Tower

In this part, physical characteristics of *Safehouse* and *Sky Tower* are analyzed. In this context, form, function, scale, space organization, color, light, texture, material, the relation with environment, the relation of interior and exterior, and natural conditions which are described are compared.

Physical Characteristics of Safehouse in "Tron: Legacy" (2010):

According to the scenario, a computer system belonged to the digital world has been created by Kevin Flynn who is creator of the system, and all spatial limits of the system have been determined by the creator. The computer system has a center as city center and has identified spaces. Although the world is virtual, spaces can be used as tangible. The creator called Kevin Flynn is the only human who lives in the virtual world for years, the other organisms which looks like human and called 'programs' are the parts of the system.

Kevin Flynn was materialized inside the digital world and he does not have an opportunity to go back to real world. He had to create a space to live in. Two person live in that space. One of them is Kevin Flynn and the other one is an 'ISO' called Quorra. ISOs are self-created programs in computer system and ISOs are like a magic of the computer system. Therefore, Kevin Flynn protects her in *Safehouse.* The spaces of the world include perfect symmetry, perfect angles. There are four main colors used in the movie such as white, black, blue and orange.

Safehouse is a living space which has a minimal design with small scale. The function of living space is described as hermitage. The form and plan of the building is quite simple. *Safehouse* is entered through a garage built to park a Light Runner. The building's entrance is hidden in

the base of a rocky hill. The garage is connected to the main hall by an elevator platform, large enough to carry a light cycle, which rises directly into the hall. There are not any vertical bearing elements and also the use of partition wall and the door are very few. The only rest rooms are separated from main section with doors and walls. The sections of living space are separated by elevation differences of the floor. The sections of entrance and hall are at top elevation and the sections of dining room and sitting room are at low elevation (Figures 12-13-14).

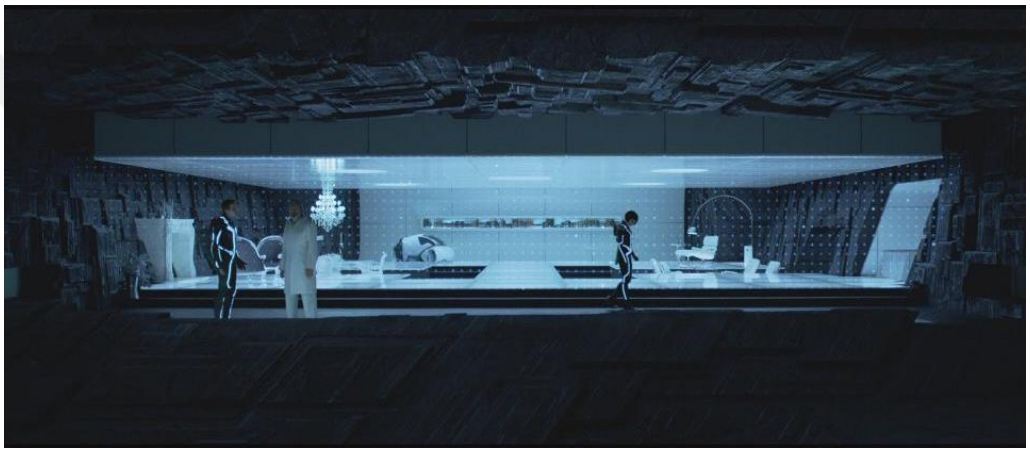

Figure 12. The facade of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

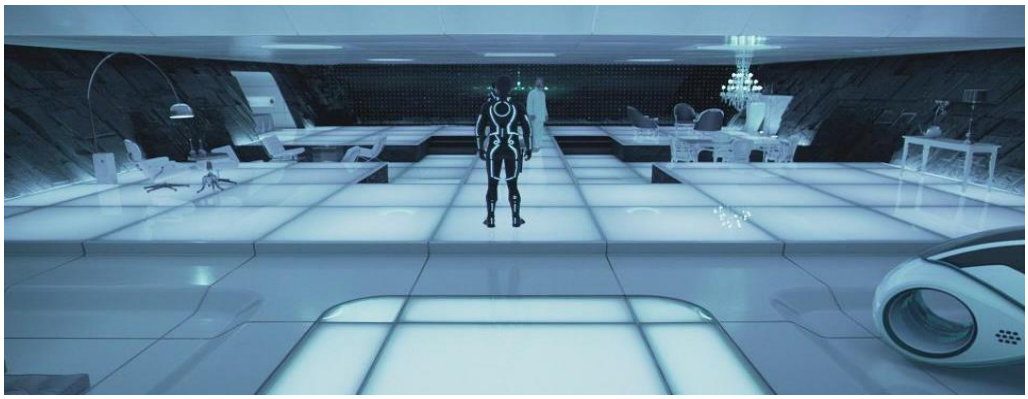

Figure 13. The interior of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

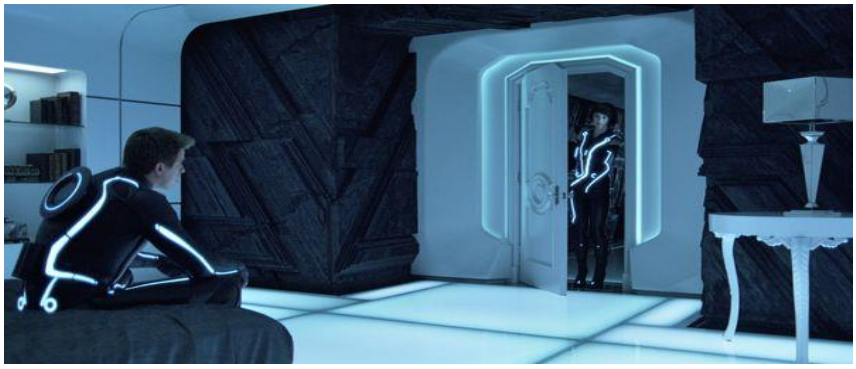

Figure 14. The rest room of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

The main walls are black brickwork and rustic stone which look like irradiated by light. The main floor is composed by 180-by-180-centimeter illuminated glass panels. Each panel is rigged so their up-lighting could be controlled independently and also the ceiling is a thin raw fiberglass panels. The floor and ceiling are made by high luminosity objects to make the space more spacious and peaceful.

The interior of *Safehouse* has a design which blends the old with new, and also the look of interior is smooth and rough. In addition, cold bluish hues light is used. The dining room table is clear acrylic and chairs are white lacquer. In opposition of the lightened surface and simple design, the chandelier hanging in the dining room and the furniture have quite ostentatious style. *Safehouse* is designed and formed through the inspirations of both two worlds which are real and virtual, because of the factor of human (Figures 15-16).

Figure 15. The dining room of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

Figure 16. The interior details of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

Safehouse is located in the outlands of the computer system (Figures 17-18). The location area is just like a rocky hill and the building has digital world view through its transparent glass front facade. The digital world does not have sky; the artificial lights are used in center of the world. As moving away from the center, darkness is dominant in the digital world, except *Safehouse*. The digital world does not have a nature. The environment of *Safehouse* looks as a veritable darkness wasteland.

Figure 17. The location of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

Figure 18. The view of digital world from front of Safehouse. - "Tron: Legacy" (Kosinski, 2010).

Physical Characteristics of Sky Tower in Oblivion (2013):

According to scenario, as a result of a big war, the earth become unlivable. Humans leave the earth and settle as colonies in Tet, which is a temporary space station. And two persons stay on the earth. They need a living and working space, and thus *Sky Tower* is built. They have a mission on the earth, there are two weeks to complete it. After mission completed they will leave the earth for good. In other words, *Sky Tower* is a temporary space to live.

Sky Tower is a living space which is small scale, at the same time it is a command center and heliport above 900.000 meter up. The only way of transportation is an advanced helicopter called *Bubble Ship. Sky Tower* is made from metal and glass-like materials (Figures 19-20-21).

Figure 19. Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 20. Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 21. Heliport of Sky Tower. – "Oblivion" (Kosinski, 2013).

There are three levels in the building. The lowest level is a storage and repair bay area for 'drones' and other equipment. This level has no visible windows, but on the right side in this level of the building there are two gates one of which leads to the stairway. The other one is a large door used as a bay that allows drones to enter and exit. Second level is the main level of the building. The level is surrounded by three glass facades which are floor to ceiling, and also except front facade, right and left sides have wrap-around balcony. The main level has elevation differences in itself. Dining and sitting parts is low level than main hall. The highest level is a command center as a control tower. That level is the smallest part of the building and it consists of one glass and three metal facades. In front of the main level, there is a walkway and beneath that a transparent-based reflecting pool lies. The pool has a long rectangle shape and appears to be deep enough to allow a person to stand on the bottom above water with the head. The three levels are interconnected with each other by a spiral staircase (Figures 22-23-24-25-26).

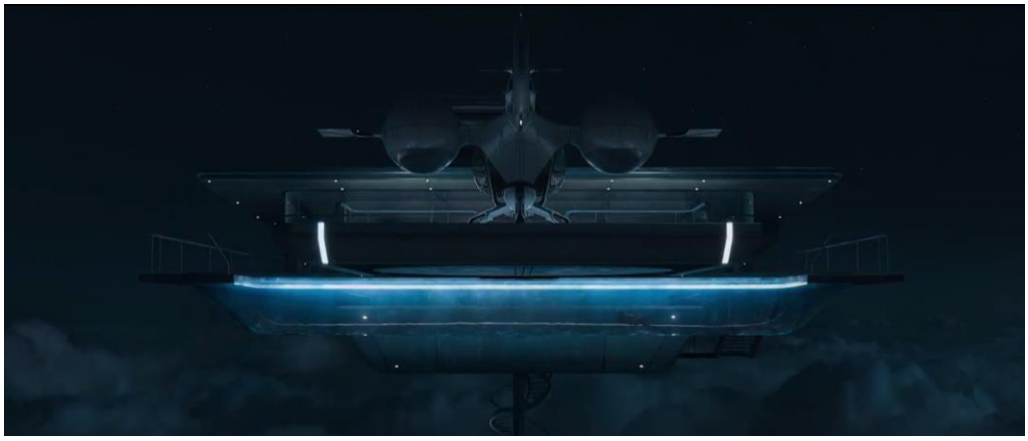

Figure 22. Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 23. The facade of Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 24. The highest level of Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 25. The main level of Sky Tower. – "Oblivion" (Kosinski, 2013).

Figure 26. The lowest level of Sky Tower.

The foundations of the building are single thin steel columns which are unaffected by wind. The building has the sky and earth view. The environment is disrupted because of the devastated moon. The climates are changed, green areas are destroyed, and the sources of nature is decreased day by day.

Comparison of the Physical Characteristics of Safehouse and Sky Tower:

According to Luis Bunuel, the architects take the place of set designers and the cinema is used to represent the bravest imaginations of the architects (Neumann and Albrecht, 1996). Kosinski is one of the architects who represents the future space design. The buildings, *Safehouse* and *Sky Tower,* were both designed by Kosinski.

Although, *Safehouse* is virtual place located in digital world and *Sky Tower* is existing place located on the earth, both two buildings have similar futuristic designs which include glass facades, white and smooth surfaces, less partition wall uses, and indirect lighting. Both two buildings are located high above ground, and they are reached with the same way. Although, both movie has dystopic scenarios, the living spaces designed for movies are peaceful and calm places.

When the physical characteristics of the existing and virtual living spaces are analyzed, it can be said that, both two kind of living spaces can be said to have the similar characteristics. Even though they have environmental differences, *Safehouse* and *Sky Tower* are formed by protection and safety requirements of human beings. After the buildings provide protection and safety which are the most dominant characteristics of buildings, they supply other requirements of living.

A living space is formed by requirements of human being as well as climate, topography, and the building materials of its geography. Moreover, the factors of changed environment and natural conditions are affected by the requirements of human beings. Correspondingly, it can be said that there is a relation between living space and its environment. ‘House’ is the most basic structural unit of physical environment. According to Ersoy, ‘house’ is a physical structure which supplies the needs of basic and special acts and requirements of human being and, which is connected with its environment (Ersoy, 2002).

In the movie of “Oblivion” (2013), *Sky Tower* is located on the earth and it is made from earthly materials. Therefore, one can say that the physical contact between human being and space is comprehensible. Furthermore, in the movie of “Tron: Legacy” (2010), the notion of physical contact is different than the movie of “Oblivion” (2013). In the virtual platform, mind can move, but body cannot. In other words, in virtual platform, the ‘virtual’ space which is cognitive is created on the contrary

of the ‘existing’ space which is physical. With the possibilities of digital technology, the notion of ‘virtual’ was originated. After it, with the advancing digital technology, there is new definition about integration of virtual to physical commenced. The relation of ‘virtual’ space and physical existence in “Tron: Legacy” (2010) can be explained by Anders. According to him, there are three situations between virtual and physical; the situation of being discrete, situation of intersection, and situation of being identical. In the situation of being discrete, there is differentiation between physical and virtual. In the situation of intersection, the data is infiltrated into the essentialness. In the situation of being identical, there is an overlapping of physical and virtual. The relation of human and cyberspace is put in code to the building. The space is unmitigated hybrid *space.* Cyberspace is inserted in the physical correlate of hybrid space (Anders, 1998).

3.2.2. Technology Represented in Safehouse and Sky Tower

In this part of the thesis, the technologies of *Safehouse* and *Sky Tower* were analyzed. The technologies used and described in the movies of “Tron: Legacy” (2010) and “Oblivion” (2013) are different and they have different effects on human being and thus on living spaces.

Technology of Safehouse in Tron: Legacy (2010):

In the movie of “Tron: Legacy” (2010), Kevin Flynn said about the digital and real worlds that “Our worlds [real and digital] are closer than they are known.” The digital world created by Kevin Flynn aims to be faultless. The computer system was built on this aim. The system is evolved without ceasing. The movie states that the digital world cannot be defined and estimated through the earthly notions. It is emphasized that the digital world is unknown.

Although, the digital world is independent of the earthly notions of gravity or atmosphere, Kevin Flynn cannot get rid of the concept of space because of being human. Kevin Flynn who is in need of protection and safety creates *Safehouse* through instinctual aim. *Safehouse* is built in high-technology by high-technology. All elements of building are virtual and Kevin Flynn's figments of the imagination. The movie does not represent how to build *Safehouse*, but it is known that the building is in existence by being programmed.

Technology of Sky Tower in Oblivion (2013):

In the movie of "Oblivion" (2013), the technology represented in *Sky Tower* is as similar as today's technology, except for Victoria's work table that is in the highest level of *Sky Tower*. Its surface is a wide display unit with touch screen that allows Victoria to simultaneously monitor a variety of diverse operations. Meanwhile Victoria communicates with the commanding officer in Tet station through the screen. There is a limited communication with the commanding center. However, this situation is not queried. Another technology descried in movie is advanced helicopter used by Jack. In addition, the helicopter is the only vehicle to reach *Sky Tower,* and also the front of the building is designed as a heliport.

Also, the detail of the foundation of the building which is a single thin steel column unaffected by wind is interesting. The constructing technology represented is rather advanced because there is a perfect balance along 900.000 meter thin steel column.

The other technologies described in the movie are AI represented by Tet station, advanced biotechnology represented by the clones of Jack and Victoria, as well as drones, vehicles and weapons.

Comparison of the Technologies of Safehouse and Sky Tower:

The technologies described in “Tron: Legacy” (2010) and “Oblivion” (2013), are nonexistent technologies in today, but they can possibly be existing in future. In the movie of “Oblivion” (2013), the building is built in real in a studio to represent the future ‘existing’ living space on the earth for the movie. In other words, *Sky Tower* is built by the today’s technology. In the movie, the future is represented through the ‘existing’ space by benefiting the cinema techniques such as camera or computer technology. Pursuant to the scenario, AI is continuously present and the balance of nature is disrupted. The order is under the control of AI, and human beings do not question about it because they lost their memories and they believe the past stories fictionalized by AI. *Sky Tower* are equipped with advanced technology and supply requirements of human being. The advanced technology which is offered to human beings by *Sky Tower,* blocks the access to the true information. According to Özakın, In Sci-Fi cinema, the human relations weaken. The meanings of the notions of belonging, identity, self-respect, relations are questioned. The different communication systems are identified, and these systems substitute for human relations. In addition to this, it is expected that the gap created by technology is again filled by technology (Özakın, 2001).

On the other hand, although, communication is main issue of advanced technology, there are quite different technological topics in digital world. Therefore, communication remains in the background in digital world. In the movie of “Tron: Legacy” (2010) the technology is more advanced than the movie of “Oblivion” (2013). On the contrary of built ‘existing’ space as *Sky Tower,* the ‘virtual’ space used in the movie of “Tron: Legacy” (2010) presents new kind of experiences about designing, creating and use of space. According to Novak, in digital world architecture can be completely fluid. In digital world architecture is independent of the materials. Architecture cannot be satisfied from form,

space light which are earthly notions. In digital world, architecture is a relationship of intangible elements which wave with each other and is like music (Novak, 1994)

Although *Safehouse* has a determined form, that does not have to be as hard edged as *Sky Tower*'s form. The needs for safety and protection derived from instincts and habits of Kevin Flynn give a form to *Safehouse.* According to Davies, architecture which is the advancing form of ecology, organism, network and nature is not physical, but mental. This kind of architecture is a reflection of advancing digital and biological technologies in cyberspace for now. Tendency is the separation of idea and material, imaginary and real, virtual and actual, ultimately, of architecture and construction (Davies 1999).

3.2.3. The Factors of 'User/Use' in Safehouse and Sky Tower

A living space cannot be designed without users. The factors of user and use identify the meaning and form of living space. In this part of the thesis, *Safehouse* and *Sky Tower* was analyzed through the aspects of the use and user factors. In this context, the social, economic, cultural, and political situations of users were analyzed and evaluated. In addition, the factor of use was analyzed through the user's movement which is determined by lifestyle in space.

'User' and 'Use' Factors of Safehouse in Tron: Legacy (2010):

Although the computer system created by Kevin Flynn aims at excluding the earthly approaches from the digital world, and some notions about basic instinct and humanistic values infiltrates into the digital world. The digital world is independent of the notions of time and economy, but the world needs an order to avoid from chaos. Clu, which is created as a program, revolts and takes the control of the digital world to make the computer system perfect and flawless. Even though, Clu is a human-made program, as a result of this, it is hard to make a man-made fact independent

of the earthly notions. Human is a social being, therefore a human without culture cannot be thought. The culture is a fact gained by birth, and this fact affects and determines the acts and thoughts of human.

While Kevin Flynn is creating *Safehouse,* he is under the influence of the digital world's order and his culture. In addition, Kevin Flynn is a real human and belongs to real world. He lives in the digital world due to the lack of chance to leave. As results of the totalitarian regime of Clu, lack of chance to leave, psychological and physiological needs, Kevin Flynn designs *Safehouse.* Therefore, *Safehouse* is a living space dominated the color of white and located out of the digital world center. The lightest and brightest space of the movie is *Safehouse.* The living space is decorated with the objects of floor bed and floor cushions. Kevin is in need for making meditation because he lives in seclusion. In addition to this, the furniture styles refer to his culture. The images of traditional sofas and chairs come from his earthly background. On the other hand, in both rest and sitting rooms, the bookshelves with old books attract the attention. All of these details can refer to efforts of making *Safehouse* permanent.

'User' and 'Use' Factors of Sky Tower in Oblivion (2013):

In the movie of "Oblivion" (2013), Jack and Victoria who are the users of Sky Tower are purified from the notions of economic, political, cultural, and social issues through deleting their memories and consciousness by Tet. Jack and Victoria also do not have individual memories and backgrounds, so they do not question anything. Likewise, their rights of getting information and improving themselves are completely revoked by Tet. They are controlled by AI through *Sky Tower.*

According to the scenario, *Sky Tower* is built by Tet, i.e. by AI, but Jack and Victoria do not know that. Neither the form nor the decoration of *Sky Tower* has a special privatized identity. *Sky Tower* is a building which is built meticulously to satisfy the vital requirements of its users, and at the same time it is quite isolated from the environment. In addition, Victoria and

Jack do not exert an effort to make *Sky Tower* personal, because they think that they live in *Sky Tower* temporarily.

Comparison of the 'User' and 'Use' Factors of Safehouse and Sky Tower:

Both two living spaces, *Sky Tower* and *Safehouse* can be evaluated as similar buildings which have futuristic designs. However, both living spaces can give information about the social, economic, political, and cultural issues of the era they belong to through the scenario. According to Özön, space which is one of the major visual elements intends to form a frame for social environment and create the atmosphere of movie. Each movie has own atmosphere and space is a major component to create that atmosphere (Özön, 1984).

In the movie of "Tron: Legacy" (2010), the Clu's order of the digital world which is similar to the real world order indicates that the digital world cannot be freed from the notions of real world that are represented via the use of *Safehouse* in the movie. Whereas, in the movie of "Oblivion" (2013), the totalitarian regime is as similar as the order of Clu in the movie of "Tron: Legacy" (2010). However, *Sky Tower* is not used for representation of totalitarian regime of Tet, on the contrary the building is used for disguising the totalitarian regime. *Sky Tower* which supplies all the basic requirements and comfort is a utopian living space for users. According to Shaik, Sci-Fi is a prediction which is imagined by a singular vision. Sci-Fi creates critical future scenarios which have their origins in today through inevitableness of scientific rationalism, linearity of time and historical changing. That is to say Sci-Fi is an experimental alienation art that includes a hypothesis about radically change of something belonging today. The creators of Sci-Fi try to represent the social, ideological and ethical scientific disputes through moving the discussion to another time and physical environment, so that they attempt to hypothetically show the results of the discussion (Özen, 2006).

3.2.4. The Notions of ‘Home’ and ‘House’ in Kosinski’s Movies

In Kosinski’s movies which have post-apocalyptic and dystopian scenarios, the need for shelter is quite conspicuous characteristic. Therefore, the lowermost four tiers of *Maslow's five tier model* that refers to basic needs and psychological needs help analyze *Safehouse* and *Sky Tower* with regard to the notions of 'home' and 'house'. As it was mentioned that the basic needs consist of physiological and safety needs while the psychological needs incorporate belongingness and love needs, and esteem needs. The notion of ‘house’ is explained by the capacity of satisfying physiological needs, the notion of ‘home’ is explained by the capacity of satisfying both physiological and psychological needs.

Safehouse is a ‘virtual’ hideaway space used by a real human. Although it is located in digital world, it has familiar physical characteristics with the real world spaces. *Safehouse* is a building designed with regard to provide the basic requirements of a human beings. *Safehouse* consists of dining, resting, sitting rooms and the kitchen. The bathroom is not represented, but it is presupposed. In addition, *Safehouse* provides for safety through its location. In other words, *Safehouse* satisfies the basic needs. Besides, Kevin Flynn has to live in digital world in undetermined period of time, maybe until the end of his life. Therefore, the ‘virtual’ living space created by Kevin Flynn includes some individual objects such as floor cushion for meditation, floor bed and old books. Kevin Flynn has to spend his whole time in *Safehouse*. Therefore, he adopts *Safehouse* and has efforts to personalize the space. In addition, *Safehouse*’s simple form and decoration, and calm lightings make Kevin Flynn peaceful. The needs of belongingness and esteem are satisfied by *Safehouse*. As a

consequence of these despite being a ‘virtual’ living space, *Safehouse* can be evaluated as if it was a physical space and can be identified as ‘home’. According to Hill,

> *Home is the one place, the one architecture that is perceived to be truly personal. Home always belongs to someone. Philip Tabor defines ‘home’ as a metaphor for not only a threatened society but also a threatened individual selfhood. The ‘safety’ of the home is really the sign of its opposite, a certain nervousness, a fear of the tangible or intangible dangers inside and outside (Hill, 1999, p.7).*

Sky Tower is an ‘existing’ space which is located in the post-apocalyptic world. The building has resting, dining, and sitting rooms, a bathroom and an open kitchen. The building is designed with regard to supply the basic needs of human being and also it caters more than basic needs with its swimming pool and working area. In addition, *Sky Tower* protects its users from the environmental factors through its location. On the other hand, the users have a mission on the earth, and when the mission is completed, they will leave the earth. For this reason, they do not have an effort to personalize the *Sky Tower,* which is a temporary space for users. In other words, the needs of belongingness, love and esteem cannot be supplied by the *Sky Tower.* Therefore, the building supplies only the first two level of *Maslow’s five tier model* and the building can be identified as ‘house’. According to Hill,

> *The house is supposedly a stable vessel for the personal identity of its occupant(s), a home for, and mirror to, the self. But the concept of home is also a response to insecurity and the fear of change. The home must appear to be stable because social norms and personal identity are actually shifting and slippery (Hill, 1999, p.7).*

4. Conclusion

This research concludes that science fiction has a crucial relation with the present and future of the architecture. Science fiction cinema offers an experimental environment that facilitates the production of spaces in people's minds. It does that by using the existing one, modifying it, fictionalizing different future scenarios, and unfolds every possibility. Hence, the traces of tomorrow become detectable with the help of today's data.

Architecture consists of different disciplines such as design, planning, philosophy, art and technology. Thus, architecture, which constantly interacts with other disciplines, has to be handled with multi-dimensional inquiry due to its interdisciplinary nature. While progressing through interaction system, particularly with the changes in the information-communication technology, the theoretical structure and the profession praxis changes accordingly, and this alteration is rapidly being shared all over the world. Particularly the progress of technology has led to an emergence of different spatial and environmental relations, and led the debates to another dimension. In this context, “place”, common area of architecture and cinema, that is handled within not only the physical, but also the virtual dimension, was seen as the most important cause of bringing two of the disciplines closer. In the direction of this relationship, it was focused on the interaction of architectural discipline with science fiction, a cinema genre.

Aim of the thesis was to examine the potential of the relation between architecture discipline and science fiction cinema over the concept of ‘living space’. Along with the social life that is shaped by scientific and technological developments, prevailing system, new life styles and future scenarios, science fiction cinema also offers new architectural designs.

Sci-Fi cinema represents the ideational scenarios which are fictionalized by being inspired from the real world by way of ‘virtual’ and ‘existing’ spaces use. As a result of these, cinema is influenced from architecture through using space intensively; also Sci-Fi cinema provides to architecture opportunities of seeing from a different perspective, different way of thinking, and different way of representing, thus architecture has a new perspective which helps improve itself.

In this direction, having critical point of view and being source of inspiration, Sci-Fi cinema is thought to be a substantial resource for the architecture. Correspondingly, it can be stated that Sci-Fi cinema contributes to the architecture.

Sci-Fi cinema represents ideational predictions and present world through different space concepts, fictional and experimental environments. In addition to this, Sci-Fi forms a basis to discuss space from the critical perspective in order to open new horizons for architectural concepts, and provide new ways of thinking. As a result of science fiction films reflect the period in which people live, Sci-Fi cinema should be regarded as an important instrument in which the social and cultural changes and transformations are documented within the historical process, as well as changing images of cultural sustainability and communal memory are read. In addition to documentation of social and cultural changes, the political critics of the causes of these changes and new living formed by these changes are represented by the way of using metaphors which are robots, AI, and spaces. Moreover, Sci-Fi cinema gives the architects some clues by the way of the experimental environments which are fictionalized for future life and creative ideas, thus Sci-Fi cinema has the characteristics of source of inspiration.

The relation of architecture discipline and Sci-Fi cinema was analyzed from the perspective of ‘living spaces’ belonged to Joseph Kosinski’s movies in an attempt to give a different and unique point of

view to the thesis. Joseph Kosinski who is a director reflects his identities of architect and designer to his movies and to space used in movies.

Within the scope of the thesis, the similarities and differences between the ‘existing’ and ‘virtual’ spaces used in Joseph Kosinski’s movies were analyzed through the notion of living space. The factors which cause the similarities and differences were revealed. Correspondingly, the contributions of Sci-Fi cinema to architecture were emphasized through the inferences which were the outcomes of the analysis. It is thought that, the notions referred to in the thesis are stated more effectively through using Joseph Kosinski’ movies.

In this thesis, selected two Joseph Kosinski’s movies were studied through the conceptual frame formed by discipline of architecture to analyze and understand the notions of ‘virtual’ and ‘existing’ living spaces. Also, the frame which consists of the notions of architecture helps analyze the notions of ‘home’ and ‘house’ through searching and evaluating the bonds between users and space.

In fictional and ideational predictions of Sci-Fi, the movies are used as representation tools that state the future social structure, the changing value judgements of individuals by the effects of social life, the lifestyle, the psychological states, and the facts of ‘home’ and ‘house’. As a result, selected movies question and criticize the meanings of the notion of ‘living space’ through the predictions about future experiences which are represented from the aspects of ‘virtual’ and ‘existing’. In addition, selected movies aim to provide an ideational experience through living spaces fictionalized in future predictions and to provide new critical point of views for the meanings of living spaces. In the movies, the notion of ‘house’ which is a physical dimension of dwelling and the need for ‘home’ are universal and existential cases. As consequences of analyzing the relation between architecture discipline

and Sci-Fi cinema through the 'existing' and 'virtual' living spaces as follows:

- The concept of housing as a physical place of the idea of ‘shelter’, is shaped by the technological development and prevailing system. Prevailing system has utilized technology in the framework of its own mentality. New living patterns are formed while social structure is shaped and reformed by fabricated housing units due to the new technological systems and new design techniques.

- The future predictions of cinema, considering physical environment and spaces, have inspiring characters for the architects. Not only physical, but also digital places are shaped by rising design capacity due to technological evolution. The formation of the 'home' concept is a mental process, and it merges with the experience of the individual. The mental, psychological and existential needs of individuals are universal and unalterable. In the intellectual experiences, nourished by the films, it is seen that the individuals can not be identified since there is no feeling of belonging, and are alienated due to the inability of the concept of 'home' to occur. Examination through dystopic films within the absence of feeling of belonging, alienated individuals cause an insecure and unbalanced social structure.

- The mental needs of the individual in life-space designs are important and should not be neglected. Seeking shelter is a holistic situation with the design and production process of the dwelling and the formation of the house. While the virtual and real living areas of the characters are examined in the film, it is difficult to clarify only through the concept of housing or home since it seemed to be that these two concepts complement each other.

In this study, it is concluded that the results of interaction of architecture and science fiction cinema can be transferred to the knowledge field of architecture and used as a source of inspiration to the

future space design. The physical, sociological, and cultural dimensions and technology represented in Sci-Fi cinema are observed and evaluated from the perspective of architecture and a result of these, Sci-Fi cinema can be used as a source of inspiration for future space design. In addition, 21st century Sci-Fi cinema used in this thesis provides a wider and more realistic perspective for future spaces design. The scenarios belonged to before 21st century represents the future by the technology of that day, however the 21st century Sci-Fi cinema scenarios provide more extensive viewpoint from today to future by the technology of today. 21st century Sci-Fi cinema is created the most advanced technology of today and more advanced technology than today's technology is represented in 21st century Sci-Fi cinema. Analyzing the latest and the most recent scenarios formed in today become more helpful to make well directed predictions about future. It is foreseen that this multidimensional relationship contributes to the development of the architectural discipline in a way that the interdisciplinary working environment has to be updated.

This thesis was built on Joseph Kosinski's Sci-Fi movies, because of the architectural perspective of him. Although there are a lot of important Sci-Fi movies which use the notion of 'space' effectively before and after the year of 2000. However, Joseph Kosinski and his works are more important for architecture discipline. In Kosinski's movies, the statements of the scenarios about future are visualized through spaces, in other words, spaces are used as leading roles. The movies of "Tron: Legacy" (2010) and "Oblivion" (2013) are represented by the director, Joseph Kosinski, who is the architect of the spaces used in the movies. Analyzing Kosinski's Sci-Fi movies provides an opportunity to observe the future space designed by an architect and represented from an architect's viewpoint.

The 'virtual' and 'existing' spaces in the movies "Tron: Legacy" (2010) and "Oblivion" (2013) were evaluated and compared within the help of *Living Space Evaluation Table*, through the concepts of living

space. These two films are regarded as the sources of dystopic intellectual predictions constructed with different space concepts that are showed in a critical perspective. The two Kosinski movies have different statements about living space concept in future. In the movie of “Tron: Legacy” (2010), it is predicted that living in a ‘virtual’ space is possible in future. Considering the today’s technology, building or creating this kind of spaces is not a remote possibility. Thanks to the movie of “Tron: Legacy”,(2010) architects are prompted to think about and work on virtual spaces which are possible to use in future. On the other hand, in the movie of “Oblivion” (2013) predicted that, when nature is corrupted and environmental conditions become unfavorable to live on the earth, a living space should be supply all the vital needs. Considering human population, the amount of natural sources on the earth in today, one can say that the dystopic scenarios can became real. In that situations, human being can be much more in need of living spaces which supply vital requirements. The movie prompts architects to work on dystopian scenarios and to design more equipped living spaces for future in this direction.

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