


Uzay Araçları Mekânlarının İncelenmesi: “Passengers” Filmi Örneği

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Mekân görsel olarak ele alındığında, sanat türlerinden en çok sinema ile ilişkilendirilir. Kurgusal mekân sinemanın ayrılmaz bir parçasıdır ve tasarımcılara büyük bir deneyimleme alanı sunar. Günümüzde etkileyici ve revaçta olan uzay temalı filmler ise gelecek senaryolarını resmetmede en etkili araçlardan biridir. Gelecek ile ilgili senaryolara sahip uzay temalı filmlerde tasarımcılar, iç mekân ve mobilya kullanımları bakımından araştırmalar yaparak gelecek öngörülerini ürünler ortaya koymaktadırlar. Bu kurgusal mekânlarda çoğu zaman mobilyalar zaman-mekân vurgusunu yapmak ve desteklemek için ön plana çıkmaktadır. Dolayısıyla geleceği konu alan uzay temalı filmlerdeki mekân ve mobilya tasarımlarının konfor, ergonomi ve tasarım anlayışı açısından günümüzden farklı bir boyutta olduğu gözlemlenmektedir. Bu çalışmada da uzay temalı filmlerin en yenilerinden olan “Passengers” (Uzay Yolcuları) filmi çalışma konusu olarak seçilmiştir. Çalışmanın amacı uzay temalı filmlerde mekân ve mobilya tasarımlarındaki fütüristik tasarım anlayışını ortaya koymaktır. Filmdeki kurgusal mekânlar sosyal ve bireysel mekânlar olarak iki farklı kategoride ele alınmıştır. Bu mekânlar film görselleri üzerinden tasarım-işlev yönünden incelenmiş ve filmin gelecek senaryosuyla beraber değerlendirilmiştir. Kurgusal mekânlar ve mobilyalar ergonomik açıdan incelenerek filmin evreninde mekân ve mobilya tasarımının yeri vurgulanmıştır.

Examining Spacecraft Spaces: The Case of the “Passengers” Movie

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ABSTRACT

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When the space is considered visually, it is most associated with the cinema. The fictional space is an integral part of cinema and offers designers a great experience. Space-themed movies, which are impressive and popular today, are one of the most effective tools in portraying future scenarios. In space-themed movies with scenarios about the future, designers make researches in terms of interior and furniture use and reveal products with future predictions. In these fictional spaces, furniture often comes to the fore to emphasize and support time-space. Therefore, it is observed that space and furniture designs in space-themed movies about the future are in a different dimension from today in terms of comfort, ergonomics and design understanding. In this study, “Passengers”, one of the newest space-themed movie, was chosen as the subject of study. The aim of the study is to reveal the futuristic design approach in space and furniture designs in space-themed movies. The fictional spaces in the film are handled in two different categories as social and individual spaces. These spaces were examined in terms of design-function through the movie visuals and evaluated together with the future scenario of the movie. Fictional spaces and furniture are examined from an ergonomic point of view, and the place of space and furniture design in the universe of the movie is emphasized.

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INTRODUCTION

The concept of ergonomics was first used by designers for weapon design during the Second World War, and later it was used for tools and equipment (Ertürk, 1988). The name ergonomics comes from the Greek words "ergon" meaning work and fiction, and also "nomos" meaning rule and science (Bridger, 2008). The Oxford dictionary defines ergonomics as “the study of working conditions, particularly equipment and furniture design, to help people work more efficiently” (URL-2). The concept of ergonomics was later discussed by various disciplines (Onat Öz, 1992). Ergonomics is a branch of science that examines the relationship between humans and the environment and tries to apply the psychological, anatomical and physiological data to the problems arising from this relationship (Ünügür, 1988). In short, ergonomics is to construct the relationship of man with the built environment according to the characteristics, expectations and behaviors of the human being.

Space, on the other hand, is “the void that separates people from the environment to a certain extent and is suitable for continuing their activities in it; It is the determining environment that emerges with the limitation of the space and is open to the visual impression and perception of its contents” (Hasol, 2016). Man and the physical environment cannot be considered separately because together they form the cogs of a constantly working wheel (Altman and Chemers: 1984). These concepts are in constant interaction, so they complement each other. Man's relationship with his environment naturally leads to his relationship with ergonomics. The harmony of the equipment is as important as the harmony of the space with the people. Ergonomics is of great importance especially for equipment elements that are directly related to human activities. Space design passes through many stages and reaches a conclusion as a chain. In this organizational chain, the purpose of use of the space, its relationship with the environment, its capacity, the actions to be carried out, the needs and the equipment serving them play a major role. When these stages in space design are compared with the definition of ergonomics, it is seen that they serve the same purpose and function.

Architecture and cinema have a strong relationship. Recently, a lot of research has been done on this relationship. Architecture and cinema are similar in terms of conceptualization, design, production and presentation techniques (Kanlı & Bilgiç, 2016). Allmer (2010), suggested that in moives spaces are actors as well as characters. As in the discipline of architecture, which is main purpose is to shape the space, spaces are also fictionalized in movies. In these fictions, spaces and equipment serve the scenario. The locations in the movies can be realistic or imaginary. Spaces in space-themed movies are good examples of imaginary spaces.

Cinema is an organic visual expression that deals with human life in all its dimensions, and the type of cinema that is most intertwined with the discipline of architecture is science fiction (Bektaş, 2017). One of the most important issues in which science fiction movies intersect with the field of space design is the fictionalization of non-existent spaces. Innovative movies help people envision the future with their way of seeing, living and being (Bektaş, 2017).

In this study, "Passengers", one of the newest space-themed movies, is selected. The spaces in the movie will be evaluated ergonomically under the headings of individual and social spaces.


METHOD

Furniture is one of the spatial requirements in interior architecture, and therefore, furniture appears as the most important tool and purpose used when constructing the space, regardless of time. Future-themed science fiction movies offer a wide range of work on interior design and it is clear that interior architects can use it as a predictive method on the future.

In the movie a technical problem occurs on the spaceship with a group of people on their way

to migrate to a new world. A passenger on the ship wakes up and has to live here for the rest of his life. After being lonely for a while and on the verge of going crazy, he wakes up one of the passengers with a difficult decision and condemns her to the same fate. While the deterioration of the sleeping capsules on the ship seems to be the only problem, they are actually faced with the collapse of the ship in the middle of space. It is a movie about getting rid of this situation and the love they have. The movie poster and the information about the movie has shown in table 1 (URL-1).

Table 1. General information about the movie

Director	Morten Tyldum	
Writer	Jon Spaihts	
Country	America	
Type	Drama, Romance, Sci-Fi	
Language	English	
Year	2016	
IMDb Rating	7,0 (403K)	
Producers	Stephen Hamel – Michael Maher – Neal H. Moritz – Ori Marmur	
Film Editing	Maryann Brandon	
Cast	Jennifer Lawrence – Chris Pratt – Michael Sheen – Laurence Fishburne – Andy Garcia	

In this study, the selected movie was watched and the visuals obtained from the movie were examined. The spaces in these images are divided into two categories as individual and social spaces. These visuals were examined in terms of design-function and evaluated together with the future scenario of the movie. Fictional spaces and furniture were examined from an ergonomic point of view and the place of spatial setup and furniture design in the universe of the film was questioned.

SPACECRAFT SPACES AND ERGONOMICS

With the influence of technology and information age, the concepts of architecture and space are going through a period of striking change and the concept of space is transforming. While the space has undergone many physical changes throughout history, it has begun to transform from a physical entity to a virtual formation with the dominance of technology and digital effects. This situation has created changes in definitions and perception of reality for architecture as well as in many different disciplines (Ünver, 2020).

Cinema has benefited from architecture from past to present to add reality to its visual power. It generally creates a different reality by using known objects and thus enables the perception of physical or abstract elements (Ürtekin, 2018). Cinema pulls the audience away from the moment they are in and puts them into an imaginary space. Especially science-fiction movies are among the movies that present to the audience by blending real and imaginary spaces in today's cinema. Since these movies usually tell about the future, the spaces and equipment used provide predictions about how the space and equipment designs will be in the future.

Science fiction is the fictionalization of scenarios related to the near or far future by combining science and technology elements that are not possible in today's conditions. For future-themed science-fiction movies, designers conduct research in terms of future interior and furniture uses and produce

products with their future predictions. Most of the time, furniture is brought to the forefront in order to support the concept of time and space while filming. These products are sometimes designed on the basis of current or past furniture styles, and sometimes the way of reflecting the future is preferred by emphasizing the future emphasis, technological and futuristic facts (Tavşan et. all. 2018).

Most space-themed movies are about people searching for life on different planets and imagining what kind of spaces they would live in. In these movies, the places that are shown are usually in spacecrafts. Spacecrafts are designed to meet all needs like a machine in which people live. Space is the leading actor in these movies (Erbay et al. 2017). It can be predicted that the level of comfort and aesthetics will increase in the field of design, where the human factor becomes more and more important. In other words, it can be thought that the concept of ergonomics has more place in the design concept in movies about the future.

Within the scope of this study, the "Passengers" movie will be examined in terms of its spaces and reinforcement elements, and these will be evaluated ergonomically with frames from the movie.

Overview of the Movie’s Space Design

Its main theme is the space colonization of mankind, which is a topic of serious debate today (Özdoğlar and Kavut, 2022). The plot is based on the perception of space-time. Many of the qualities that can be expected from luxury transportation vehicle designs are fictionalized on the Spacecraft, the only venue where the movie takes place. Interiors unique to different functions and aesthetics were designed on this ship.

The movie “Passengers” is one of the space-themed movies of recent years, in which imaginary spaces are designed based on a general concept, set inside a huge spacecraft. The spacecraft (Figure 1), which has a circular design philosophy in the general framework, has continued this philosophy from the most general to the most specific.

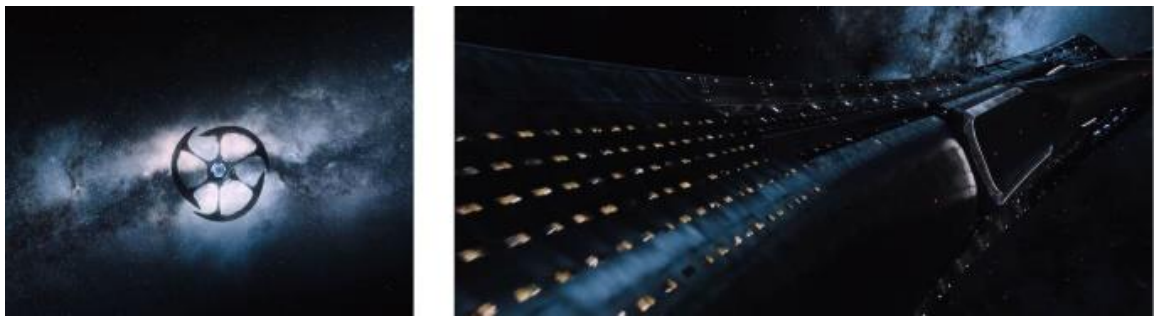


Figure 1. *Outer view of the spacecraft (Passengers, 2016).*

There are very large spaces used for various purposes in the spacecraft (Figure 2). The places where people, animals, bees units and rooms are shown from time to time in the movie. These spaces are designed to serve their purpose and organised in an open-plan. The concept of circularity is also present in these spaces.

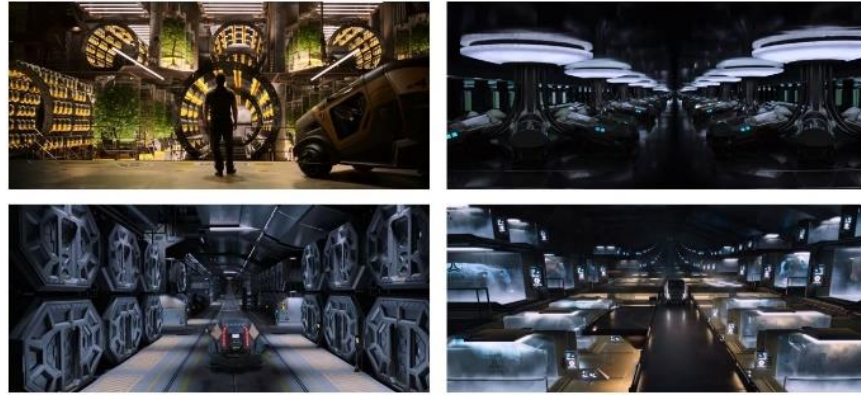


Figure 2. Large spaces designed for various functions (*Passengers*, 2016).

Individual Spaces

In the movie, individual spaces are actually handled in two different ways. This distinction is shaped according to different social economic classes. Compared to this class difference, the spaces belonging to people traveling with low budgets are much smaller, while the individual spaces used by high-budget passengers are designed in a larger area. The dimensions of the usage area, furniture qualities, aesthetic concern are increases in first class passengers suite (Figure 3). When examined from an ergonomic point of view, it is seen that the comfort rate increases gradually as the social class status rises.

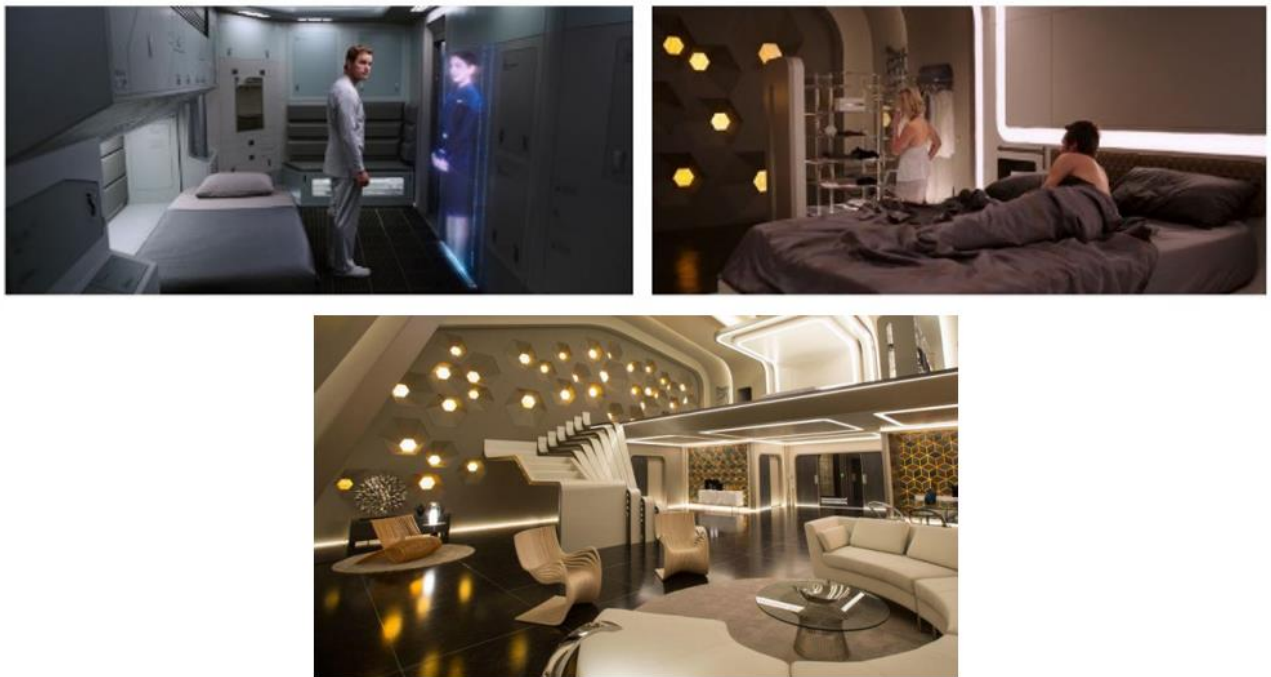


Figure 3. Individual living spaces.

Circular forms continue in the design. By using the inside of the walls as storage units, a lot of space is gained. It has been observed that more suitable solutions can be provided from the ergonomic point of view of the design.

Considering that every space is valuable in a spacecraft when it is considered from an ergonomic point of view, design of the luxurious rooms can be considered as a design mistake. (Figure 4). However, it can be argued that such a way was used to emphasize the difference between social economic classes.

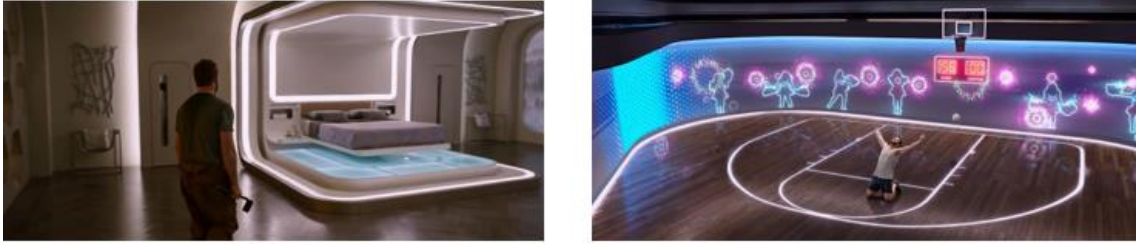


Figure 4. Luxurious rooms and common use areas.

The spaces designed for the lower income group in the movie are more functional and need-oriented. The design in these spaces have a minimalist approach focused on the needs of a passenger. The active usage area can be expanded with a foldable bed. The design had considered holistically and the remaining empty sections were used as storage areas (Figure 5).

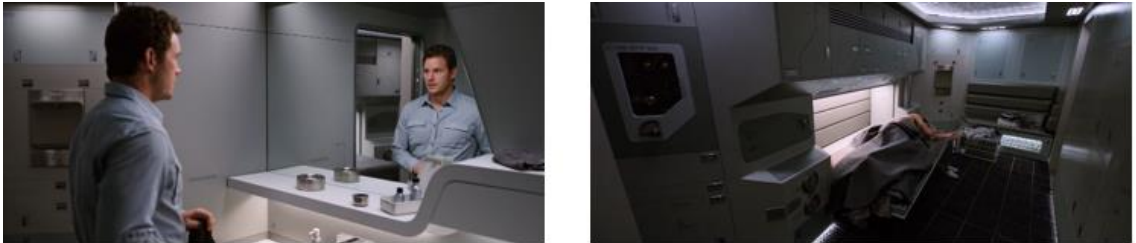


Figure 5. Lower income group rooms and usage areas.

It has been observed that the angle of use of the screen and the way of using the desk are ergonomically efficient in the design of the individual work areas in the movie (Figure 6). The screens are designed to be at eye level of the user and the touch table is ergonomically designed with an angle for an easy use.



Figure 6. Individual workspace.

Social Spaces

The concept of circularity continues in the design of social spaces and common areas in the movie. Since this circular form continues from the form of the shuttle, it is observed that the dead spaces are minimized. But there are undefined empty spaces in the design, as well. Corridors and walking areas are designed in a circular form. The circular design created in the corridors makes the space perceived as a larger space than it is (Figure 7).



Figure 7. *Common areas and corridors.*

The amphitheatre in the movie completely reflects the design concept. The dining area is designed with a spacious open plan concept. Looking at the story in the movie, there is a perception that it may have been designed with the thought that people will need such areas psychologically during their long shuttle voyages. Ergonomically speaking, the usage heights of the food service areas, the seating plans, the food selection points (polygonal elements attached to the ceiling) are designed with reference to the average human dimensions (Figure 8).



Figure 8. *Amphitheatre and dinin area.*

The treatment area was used inefficiently from an ergonomic point of view. Even though, lighting and design consist of circular forms, the height of the device remains high compared to human scale, which creates difficulties in terms of use. Also, the area outside the treatment machine is an undefined blank area (Figure 9). In a spacecraft, such areas should be designed voluminously.



Figure 9. *Treatment area.*

DISCUSSION AND CONCLUSION

Architecture and cinema meet on many common denominators in terms of psychological and sociological factors. Especially design is a fundamental tool not only for architecture but also for cinema. Both disciplines reach large masses through their common denominators such as technical, semantic and physical features. While science fiction movies give designers the opportunity to foresee the future, they also offer the opportunity to experience it. Therefore, the designs used in science fiction movies are a kind of prescreen of the future.

In this study, spacecraft spaces, which is a current issue in today’s developed world, were examined through the movie “Passengers”. Starting a life on Mars has been a current news, thus the concept of space has attracted more attention these days. This situation is also reflected in the movies, and many space-themed movies have been shot recently. In this study, the "Passengers" movie was selected from these movies and evaluated according to the movie frames. The spaces in the movie were examined in terms of design-function and the furniture was examined from an ergonomic point of view, emphasizing the importance of space and furniture design in the universe of the movie. When the movie was examined, it is perceived that there should be no idle areas.

In the movie, the benefits of creating ergonomic designs of spaces were seen. Because of their advantages such as functionality should be at the forefront and ease of use, such space shuttles, stations created or colonies to be created should also be built with a similar design approach. For future space travels, it is recommended to expand the research of the subject and examine it from an ergonomic point of view.

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