

Verticalization and Diversification: Future Cityscapes in Sci-Fi Films

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Abstract: With the process of modern and large-scale urbanization, the characteristics of lifestyles related to urban development have become increasingly distinctive. Countries around the world are actively exploring the development laws and development models of future cities, and “future cities” are gradually becoming the focus of urban research. In the contemporary era, science fiction films based on cutting-edge technology have stimulated people’s thinking about future urban design and urban development in a larger scope and in a broader dimension. This article mainly investigates the future cities in science fiction films, analyzes from the perspective of urban architectural styles and the collision of urban diversified cultures, so as to learn from and influence each other with modern urban practices. The body of this project opens up ideas and directions for future urban design and development. This article embeds science fiction in the body of urban theory and urban development, and opens up ideas and directions for future urban design and development.

Keywords: verticalization; diversification; science fiction film; future city

1. Introduction

The city is the product of human civilization. It shows all the achievements and failures of mankind. We have created cities, and cities have shaped us. [1] During the process of modern urban development, technological change has become an accelerator. The new wave of technological revolutions such as big data, artificial intelligence, block chain, and 5G tends to eliminate the boundaries between the physical world, the digital world and the biological world. In turn, revolutions have profoundly changed social production and lifestyles, continuously promoted the improvement of urban basic service capabilities, and improved urban public service supply models, which have a profound and complex impact on urban development. Countries around the world are actively exploring the development laws and development models of future cities, and “future cities” are gradually becoming the focus of urban research.

The depiction of future cities in science fiction films boldly surpasses people’s imagination of technology, and is more novel and colorful. Many cutting-edge concepts in urban research have long become classic narrative fragments in sci-fi works. Gorgeous airships and

towering statues emerge in the clouds. The huge screen makes the crowd extremely small, and the endless flow of traffic is like an ant colony. Flying cars of various shapes circulate in the air with incredible mobility. Iconic buildings thrust into the sky. Endless streets surround like a maze. Brilliant light and beautiful back light keeps shining. The city of the future is illusory like a mirage.

In the contemporary era, science fiction films based on cutting-edge technology have stimulated people’s thinking about future urban design and urban development in a larger scope and in a broader dimension. Is the city the only place where life depends? What factors determine the future of the city? This article will mainly examine the future cities in science fiction films, and analyze it from the perspective of urban architectural styles and the collision of urban diversified cultures, so as to learn from and influence each other with modern urban practice, and embed science fiction in the body of urban theory and urban development to open up ideas and directions for future urban design and development.

2. Verticalization: Reshaping the Architectural Space of Future Cities

The greatest achievement of mankind has traditionally been the city she created. The city represents our imaginative and magnificent masterpiece as a species, confirming our ability to reshape nature in the most profound and lasting way. [2] When urban space is defined as a term, it is kept separate from the village area and gradually distanced from nature. [3] David Harvey proposed: “The city itself is an architectural form, but also a spatial form.” [4]

In contemporary times, urban problems caused by spatial boundaries, cultural differences, resource shortages, and environmental pollution have been the entry point for the competitive strength between countries. Countries all over the world are making efforts to shape the ideal future city. With increasingly in-depth thinking and practical actions, scientists and architects have conceived blueprints for many future cities, such as volcanic cities, satellite cities, New Babylon cities, adjustable combination cities, X-shaped cities, inverted cone-shaped cities, total cities, sky cities, geometric cities (dome-shaped, flower crown, pyramid-shaped, tetrahedral vertical structure city), bridge cities, underground cities, sun cities, etc. [5]

Urban architecture is an indispensable part of the fantasy world established by science fiction films, and it is also an important carrier of film plot development. In sci-fi film work, the future urban architecture is full of wild imagination, and its bizarre visual effects constantly impact the limits of popular vision. Especially in recent years, the vigorous development of digital technology has enabled film images to further travel between virtual and reality, and science fiction films have become experimental sites for exploring urban architecture.

2.1. Verticalization: Skyscraper City

Skyscrapers have always been a symbol of modernity and urban significance. From September 16th to 19th, 2014, the World Society of High-rise Buildings and Urban Habitat, with the theme of "Future City: Towards Sustainable Vertical Urbanism", focused on the global population growth and urbanization faced by the rapid development of human cities today. The conference emphasized that the survival and progress of human beings depend on the revolutionary reshaping of cities. In the face of urban problems, only focusing on buildings that minimize energy consumption is not enough to alleviate the major problems that need to be solved. People need to think and plan as a whole. Each building in the city should be able to connect with other buildings in the urban space and be in harmony with each other, so as to maximize the use of infrastructure and share resources to explore the ways of resource utilization and improve the efficiency of space use.

The image of skyscrapers in science fiction films has long been portrayed as the most common type of building in future urban scenes. The image of the entire system of the future city is a high-density, densely woven urban form, forming a continuous structure that accommodates everything. [6] For example, the depiction of urban scenes in the film "Metropolis" (1927) can be regarded as a classic template for future cities. Skyscrapers are dizzying. Three-dimensional traffic is complicated and orderly, and a few elites live on gorgeous high-rise buildings. Ridley Scott's science fiction film "Blade Runner" (1982) takes the future city of Los Angeles as the main body. The entire city is intended to be composed of multiple giant buildings. These skyscrapers can repeatedly change its appearance. This architectural style is further continued in "Blade Runner 2049" (2017) directed by Canadian director Denis Villeneuve. The story of the film "The Fifth Element" (1997) directed by Luc Besson takes place in the future of New York in 2259. Rows of skyscrapers presented in the film, and the three-dimensional transportation system that easily shuttles through them like fish, perfectly interprets a crowded, busy but orderly future city. The story of science fiction films cannot be separated from the background of urban architecture. As the most prominent scene element, architectural space is used in film narration and expression. It uses its unique visual presentation to interpret the spatial form of urban architecture to reflect the new urban design concept.

2.2. Space Reshaping: Contributors to Public Space

Cutting-edge technologies such as big data, cloud computing, artificial intelligence, and biometrics will bring profound changes to contemporary urban development. The advancement of science and technology has caused the explosive growth of urban population, which requires the city to greatly improve the efficiency of resource utilization. The city is no longer just a collection of different landmark buildings, but is moving towards an interconnected and sustainable system.

Urban buildings will install more and more sensors and combine them with existing systems to collect all kinds of relevant information, and realize the communication and transmission of these data through wired or wireless networks. With the continuous advancement of artificial intelligence data and the technologies and methods it brings, it will increasingly be transformed into big data-driven computing, sensor-driven computing, and multimedia-driven computing. Through processing and analyzing these data, it is clear that what is happening in order to optimize operational behavior and predict possible future problems.

At the same time, the horizontal interface of each level of the skyscraper has the characteristics of responding to the city and the external environment. These characteristics change with different height. Sunlight, rain, wind, and temperature are altered whether in the horizontal area of the building or the vertical height. Architecture needs to recognize and respond to these factors. In vertical architectural design, every building should become a contributor to public space. With the continuous expansion of population, when urban buildings are getting higher and higher, we need to have communication in the air, and also have space for rest.

The "Star Wars" film series directed by American director George Lucas, through stunning visual design, show self-sufficient cities suspended in space. These urban buildings have a complete self-operation system, a strong and continuous power system, and can perform efficient analysis to make real-time and optimized intelligent decisions, ensuring that people can maintain the reproduction and normal operation of daily life in deep space. Therefore, whether it is the design of urban scenes in film or the planning of future cities in practice, it is necessary to design the overall structure of urban architectural space from a global perspective. The overall system's resource integration, shared interconnection, and data intercommunication issues are considered as a whole.

3. Diversification: Cultural Collision of Future Migrating Cities

Cities are static. Many cities will disappear and become part of history, but the place of their death is often the place of their birth. London is located on Langtignyam, built by the Romans two thousand years ago. Byzantium became Constantinople and then Istanbul. Xi'an, the first of the six ancient capitals in ancient, has a history of more than 5,000 years of civilizations and more than 3,100 years of city constructions. Together with Rome in Italy, Athens in Greece, and Cairo in Egypt, they are known as the world's four largest ancient capitals. It

was called Fenghao in the Western Zhou Dynasty, Chang'an in the Western Han Dynasty, Daxing City in the Sui Dynasty, Fengyuan City in the Yuan Dynasty, and Xi'an in the Ming Dynasty.

Moving cities are surprising and even shocking subversive hypothesis. Walking is the world, and walking is life. In 1964, British architect Ron Herron published a painting of the walking city, a huge independent mini city. The city in the painting looks like a combination of heavy construction cranes, robots and praying mantises. The stretchable huge legs, like monsters, can walk through New York or London with their heads high, and imagining that when the natural environment is severely damaged, multiple walking cities can be temporarily combined into a metropolis. Citizens don't have to leave their apartments. The whole city is like a huge event wagon. [7]

Unlike architects, social scientists, and historians, the imagination of science fiction films is even more wild, with all kinds of cities that can fly, walk, float, and move. Some move slowly, unhurriedly, some gallop like lightning. Why must cities move? When a city moves, what does it gain? What does it lose?

3.1. Crisis of Survival: Migrating Cities

Cities are perhaps one of the most complex work of mankind. They have not previously been completed, nor have a precise form, just like a journey without an end. The evolution of cities may rise to greatness, or it may be divided into decline. They are the past, the present, and the future.

Air is the basic element for human survival. Due to the use of fossil fuels such as coal, oil and natural gas, the carbon dioxide emitted by energy consumption will continue to grow global temperature. Global warming will continue until 2052, and climate change will be more clearly visible. The increase in temperature will release a large amount of methane gas stored in the frozen soil layer, which will intensify global warming until the frozen soil layer is totally melted. It is predicted that by 2052, the global average temperature will rise by more than 2. As a result, the inland areas will greatly change the pattern of urbanization. [8]

The "2010 Global Burden of Disease Assessment" issued by the World Health Organization emphasizes that outdoor air PM2.5 pollution in 2010 ranked 9th among the world's 20 leading mortality risk factors. Earth scientist Jason West published a paper in *Environmental Research Letters* in 2013, pointing out that 2.1 million people die each year due to outdoor air pollutants PM2.5.

The survival crisis caused by air pollution and lack of resources is described as apocalyptic in science fiction films. In the film "Total Recall" (1990), airless Mars is a mining colony controlled by a company led by another creepy person, Velos Kolhagen. This person squeezes workers by asking them for the air they breathe. When Douglas Quaid arrived on the planet, the employees were being forced to resist because of rising air prices: "More freedom! More air!".

The science fiction film "Mortal Engines" (2019) directed by Christian Rivers depicts the virtual future of mankind after the quantum war. It is almost a ruin. The earth is no longer covered by plants, and there is bare surface soil everywhere. The highly developed human civilization that existed no longer exists. Collapsed skyscrapers, broken bridges, and abandoned schools can be seen everywhere. People surviving in the wilderness can only drink muddy water and eat food that has expired for thousands of years.

And the film "Snowpiercer" depicts that after an ecological disaster freezes the earth, a small part of the surviving humans found refuge on a train that kept travelling through the earth. This train has armed policemen. From the back to the front, the people are obliged to arrange seats in the carriages according to class status. A group of unemployed proletarians who live on relief crowded in the rear carriages, small officials occupy the middle carriages, and indulgent upper class people live in the comfortable compartment of the front part of the train. Faced with various existential threats, the city is no longer static, but in motion. In this way, the city can continuously acquire new resources to maintain the basic need of people's survival and the normal operation of the city system itself.

3.2. Diversification: Collision of Heterogeneous Cultures in Cities

The development of cities and the urbanization of the world are one of the most striking facts in the modern era. Urbanization no longer only means the process by which people are attracted to a place called a city and incorporated into the urban life system. Urbanization also refers to the distinctive characteristics of lifestyles related to urban development, and the process of continuous enhancement. It refers to the significant changes that occur among people affected by urban lifestyles. No matter where they live, they are affected by urban institutions and Human power influences them through communication and transportation. The urban population not only replicates itself, but must absorb immigrants from other cities and other countries. Cities in history are melting pots of different races, ethnicities, and cultures, and are conducive to foster new social ecology and cultural mixtures. [9]

The city is a place of amazing activity and diversity, and a trading center full of opportunities and challenges. There are a lot of opportunities in cities to promote the exchange of commodities and the exchange of ideas, to provide physical space and cultural tools for interpersonal communication, so that everyone can obtain a variety of experiences and build a colorful lifestyle. Such a prosperous place is chaotic, diversified, and full of vitality. The densely woven streets, convenient stores within reach, crowded restaurants, convenient public transportation systems, and colorful flashing neon lights make the city full of charm and fantasy.

Big cities are always in flux. The sheer size of the city has caused a large number of individuals with unique backgrounds or interests to gather in the city. Sociologist

Claude Fischer once pointed out that the subculture theory in the study of urban life shows that it is actually many classic urban theorists who are deeply concerned and criticized that it undermines social harmony. Because while strengthening the particularity of each city, it also unites those people who have shared interests in the entire city. [10] Cultural mixing means vitality and creativity, which means that differences will merge into a new and more powerful force. This kind of mixing makes the thoughts converge and agitate here. Foucault elaborated on the heterogeneous space in "About the Heterogeneous Space", which is defined as: "Maybe in every culture and civilization, there is another kind of real space. They do exist and form the real foundation of society."

In the film "Valerian and the City of a Thousand Planets" (2017) directed by Luc Besson, the Alpha Space Station has a population of 30 million, which gathers 3,236 different species from all over the universe, speaks more than 5,000 languages, and can share their knowledge and culture. The sci-fi film "Star Wars" series produced by American director George Lucas shows this individual difference more vividly. In Lucas's imagination, the universe is so full of life. Not only have many planets developed life, but on any planet, many different lives have evolved, just like on Earth. Even in uninhabitable environments such as Tatooine, Hoth, or asteroids, life has been able to survive. Although many aliens in "Star Wars" have the universal form of humans, they have two working hands, two walking legs, and face with sensory organs, such as Master Yoda, Jawa, and Sandman., Wampa Ice Beast, Greedo, Admiral Akbar, Ugnaut from Cloud City, Bosque, the lizard bounty hunter, Bib Futuna with long tentacles on his head, Snouter, singer S, Chubacca, Ewoks, bar bands, and various other aliens in the film. However, "Star Wars" also shows us many aliens without human characteristics, and provides a wider range of alien types than other science fiction films, such as Bansa, Tangtang, Sand Snake, Sharak, and Hutt, Wetback Lizard, Mynock, Space Slug, etc. So "Star Wars" is very unique and dynamic.

4. Conclusion

What will the city of the future look like? In the Istanbul Declaration issued by UN-Habitat in 1996, our city must be a place where human beings can live a dignified, healthy, safe, happy and hopeful life. Cities are important habitats for mankind, the main stage of human activities, the source of human technological advancement and social economic development, an important symbol of the development of social civilization, and an important source of human ecological

problems and environmental crises. The latest UN report points out that by 2100, the total world population will rise from 7.3 billion in 2019 to 11.2 billion. At the same time, it is estimated that there will be 9.7 billion people living in cities on the earth by 2050. It is necessary to prepare for the population explosion and make corresponding plans according to expectations for the future period.

According to Vivian Sobchack, "The depiction of the future city seems to be a departure from history and surreal reality, but it is actually the imagination of our daily experience." [11] Sci-fi films examine the future cities under assumptions related to technological progress and social development, in order to stimulate the audience to think about the prospects and paths of future urban development, and use future urban problems to torture human nature, human feelings, and the basic principles of dealing with people. Extreme phenomena that are not easy to encounter in daily life will become obvious because of future scenarios. Science fiction films use forward-looking assumptions, integrate technological development and civilization evolution, and then create visual art, and finally form films that stimulate people's thinking about the development of future cities. This is why future cities are the object of investigation.

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