อนาคตของการออกแบบทางสถาปัตยกรรม การผสมผสานระหว่างมนุษย์และเทคโนโลยีในสื่อภาพเคลื่อนไหว ประเภทนวนิยายวิทยาศาสตร์และเทคโนโลยี ระหว่างทศวรรษที่ 1990 ถึงทศวรรษที่ 2020

The Future of Architectural Design: the Integration Between Human Beings and Technologies in Technological Sci-Fi Moving Pictures from the 1990s to 2020s

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บทคัดย่อ

บทความนี้ได้ศึกษาวิวัฒนการของนิยามและแนวคิดของ “อนาคต” ที่ถูกพัฒนาตั้งแต่ทศวรรษที่ 1920 ถึง ทศวรรษ 2020 ผ่านสื่อภาพเคลื่อนไหว (ภาพยนตร์ ละครโทรทัศน์ สารคดี และ แอนิเมชั่น) ที่มีเนื้อหาประเภทนวนิยายวิทยาศาสตร์และเทคโนโลยี ซึ่งเป็นเครื่องมือในการเชื่อมโยงโลกแห่งจินตนาการและโลกทางกายภาพไปในทิศทางเดียวกัน ภาพที่ถูกสื่อสารออกมานั้นมักพูดถึงการเปลี่ยนแปลงของโลกผ่านภาษาทางสถาปัตยกรรม พฤติกรรมของมนุษย์ และนวัตกรรมทางเทคโนโลยี นอกจากนี้เนื้อหาและภาพที่ถูกถ่ายทอดผ่านสื่อภาพเคลื่อนไหวนั้นได้รับอิทธิพลทั้งด้านสภาพสังคม เทคโนโลยี และสถาปัตยกรรมที่เปลี่ยนแปลงไปตามกาลเวลา การศึกษาของบทความนี้ได้ถอดเหตุการณ์และลักษณะเด่นที่สำคัญของ “อนาคต” ในแต่ละยุคที่เปลี่ยนแปลงไปผ่านสภาพความเป็นอยู่ของมนุษย์โดยมีตัวแปรในการสังเกต ได้แก่ การขนส่ง ที่อยู่อาศัย การสื่อสาร การบริโภค ระบบอัตโนมัติ และ การระบุตัวตน เพื่อศึกษารูปแบบของอนาคตที่พัฒนาจากอดีตถึงปัจจุบัน

คำสำคัญ: การออกแบบทางสถาปัตยกรรม, นิยามของอนาคต, นวนิยายวิทยาศาสตร์, การพยากรณ์และ วิวัฒนาการ

Abstract

This paper investigates the evolution of the concept of the “future” from the 1920s to the 2020s. Moving picture media (films, television series, documentaries and animations) in the science fiction genre serves as a bridge that connects the imaginative and physical worlds. The visionary work depicts how the world changes over time via architectural languages, human behaviour, and technological advancement. Moving pictures also aim to establish the “future” with people's aspirations and innovations from the various points of the historical timeline. Furthermore, visual components and media content have regularly conveyed concerns about societal, technological, and architectural transformations. The research illustrates the connection between moving-picture media (the Sci-Fi genre), accompanying architectural designs, historical event influences, and technological developments. The evolution of habitation, transportation, communication, identification, automation, and consumption are the significant aspects to consider.

Keywords: Architectural Design, Future Concept, Science Fiction, Prediction, Evolution
Received: July 1, 2021; **Revised:** August 21, 2021; **Accepted:** August 27, 2021

1. Introduction

Humans have been utilising words, paintings, and other means of communication to convey their thoughts for thousands of years. These chronicles and evidence helps the younger generation study and comprehend the societal condition transformations throughout various eras. Moreover, it is frequently linked to economic, political, social, ecological and technological factors (Islam M Abouhela et al., 2007) and has influenced human evolution.

Moving pictures, moving images, and motion pictures are all definitions of entertainment medium consisting of a succession of images that produce continuous movement, as described by Merriam-Webster, SAA Archives Terminology, and Audio English. In this paper, films, television shows, documentaries, and animation are mediums for discussion. Moving pictures are a contemporary chronicle that has imprinted history with more perception’s sensories. Whilst literature may be understood individually based on an individual's experience, the mentioned media can have a visual impression on a large group of people at the same time. The evolution of media kinds describes innovative developments and portrays historical events. Furthermore, it depicts how people consume entertainment material at various times.

The science fiction genre depicts either positive or catastrophic societal developments in the extremist potential. It is often discovered that the storyline elaborates on the city's perception and how it shapes future civilisation. The audience is commonly attributed to the city's turmoil, fashion trends, historical facts, murder scenes, avant-garde architecture, and nightclub gossip (Neumann, 1999). This genre also frequently expresses worldwide anxieties (Sontag, 1965) about the future. The possibility of plots often includes invading from monsters and corrupted machines. It also involves the terrible living conditions on Earth, forcing people to seek out a new colony in space or simulated reality.

Architectural design is a form of language that announces the significance of places. It describes both the historical and context of architecture. Consequently, architecture and setting scenes are integral parts of visionary works that depict the story's setting, including time, place, and people. However, there are several restrictions to constructing an actual structure on Earth, including city regulations, financial limitations, climate, and conflicting ideas.

Hence, cinema was the first medium for architects and filmmakers to exhibit pure architecture to the public (Islam M Abouhela et al., 2007). Moreover, with the boundless imagination in cinema, architects could use this medium to express and raise concerns in our world for critics from past to future. Likewise, architects might utilise cinema's boundless creativity to communicate and elevate conscience concerns in our planet for criticism from the past and future (Boake).

2. Methodology

The primary research approach for this paper is a literature review and categorising analysis. The studies sample consist of three key sources; moving picture media, architectural design and historical events. This paper will review the broad changes from the 1920s to the 2020s by focusing on the studies parameters (2.3). Finally, the last part summarises and demonstrates the possible future trends.

3. Scope and Limitation

3.1 Studied periods: 6 Phases of two decades intervals from the 1920s to 2020s

3.2 Studied samples:

- 3.2.1 Moving pictures in the technological science fiction genre
- 3.2.2 Associated architectural designs from 3.2.1
- 3.2.3 Historical and technological influences on 3.2.1 and 3.2.2

3.3 Studied Parameters: 6 Parameters of living conditions; transportation, habitation, communication, consumption, automation, and identification

4. Research Questions

4.1 Does the appearance of the future generated by the interaction of time, technology, and architectural discourse?

4.2 What is the significant definition(s) of the future at different points in time?

4.3 How do the moving picture media, technological advancement, and architectural designs evolve in response to human’s living quality?

4.4 Is it possible to forecast trends and patterns of the future ahead of time?

4.5 What variable affects the formation of a future?

5. Evolution of Sci-Fi Moving Pictures and Relevant Architectural Design

5.1 The period between the 1920s and 1930s

5.1.1 Historical Review

The 1920s and 1930s are the decades between World Wars. It was during this period when the world reached the highest and lowest points of time. The "Jazz Age" and "The Roaring Twenties" were used to describe the glory days in the 1920s. After the First World War (in the early 1920s), the economy in the USA was booming until the stock market crashed towards the end of the decade, triggering the Great Depression (Editors, 2017; Silverstein, 2004). In Germany or the Weimar Republic (1919 - 1933), the country was troubled by financial and social unrest after the Wars. These situations were expressed through films; Metropolis (Lang, 1927) from Germany and Just Imagine (Butler, 1930) from the USA. The utopian and dystopian societal aspects acknowledged against the rising of capitalism, political philosophy, technology and economics. These concerns have been used to form the central storyline for most moving pictures in science fiction to the 2020s.

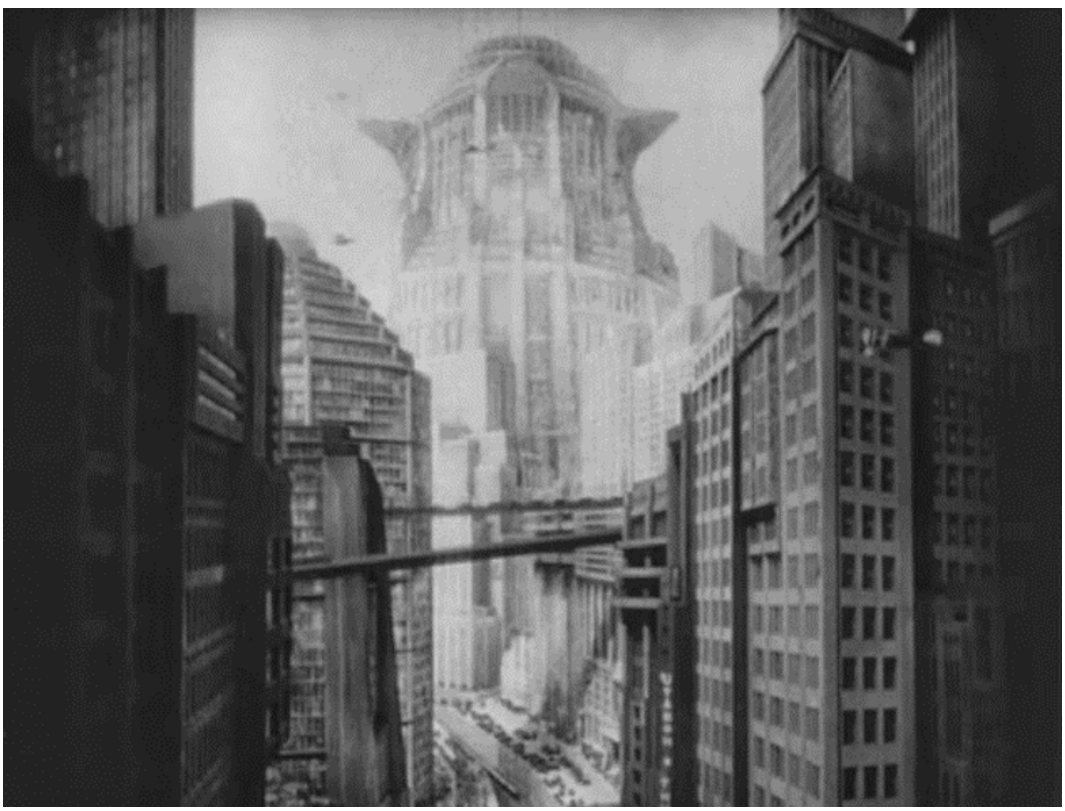

Figure 1 Metropolis (Lang, 1927)

Retrieved from http://www.filmwalrus.com/2014/03/film-atlas-germany-metropolis.html

Figure 2 Just Imagine (Butler, 1930)
Retrieved from http://pre-code.com/just-imagine-1930-review/

5.1.2 Technology in Moving Picture Media

Theatres or cinemas became a new typology in the 20th century. Televisions transmitted moving images wirelessly and created mass communication for entertainment and propaganda at the beginning of decades. It transformed the cities as well as interiors where televisions have becoming the new hearth. As film technology advanced faster than television, it was unable to overcome electromagnetic transmission and reception issues. Feature films appeal to the middle class by providing a similar format to an actual theatre by adapting novels and plays (Bauer, 2021; "Media, Technology, and Communication," 2012).

Due to the capabilities of recording devices, most films from these decades appear to have utilised set design instead of genuine building. As a result, the set design of cinema in the '20s and '30 was influenced by various art movements; Surrealism, Expressionism, Constructivism, Bauhaus, Art and Crafts, Art Nouveau and Art Deco. The dominant style that was popular in Europe, America and Western colonial cities was Art Deco. Throughout the years, Art Deco has found expression in graphic design, furniture, and the digital realm of video games. The movement of architectural phenomena created a succession of monuments to its rule that surround numerous skylines worldwide (Johnson, 2019).

Figure 3 Der Golem, wie er in die Welt kam (Wegener & Boese, 1920)
Retrieved from https://www.framerated.co.uk/der-golem-1920/

5.1.3 Architectural Relevances

Skyscrapers were a symbol of capitalism and a new meaning of cathedrals (Neumann, 1999) in the United States during this period. While Chicago's Tribune Tower (Howells & Hood, 1922) has been a focal point of the city's cultural heritage for almost a century (Shaw, 2017). New York has long been known as a commercial and industrial centre. Building's appearance in New York, such as the Chrysler Building in Manhattan (Alen, 1930) and Radio City Music Hall in New York City (Stone & Deskey, 1932), featured and influenced the urban city in cinema. Fritz Lang arrived in Manhattan, New York, in 1924, with the idea of creating an Art Deco metropolis with powerful, streamlined, and symmetrical buildings (DeGraff, 2017). They build the new skyscrapers city with the German definition with the collaboration of three-set designers, Erich Kettelhut, Otto Hunte, and Karl Vollbrecht, on the model of the dystopian sci-fi film, Metropolis in 1927 (Lang, 1927; Neumann, 1999). If the positive aspects of fast urban expansion were reflected in the States (example in Just Imagine (Butler, 1930)), the negative parts of capitalism were portrayed in Metropolis by uncertainty and worry. The new Babel Tower was used to describe the skyscrapers in this Weimar Republic's film. The buildings were built like vast continuous mountains rangers. The colossal constructions frequently mentioned in this context have enormous shapes that evoke memories of German imperialism (Editors, 2009; Neumann, 1999).

The city's transportation was spread in multi-layers: on the ground, in the tunnel of towers, and in the sky allocated the massive population in the urban texture. The dazzling nights that illuminate the city with light from windows and gleaming billboards illustrate just how far technology has brought civilisation to the world.

Figure 4 Chrysler Building (Alen, 1930)
Retrieved from https://www.historybyzim.com/

5.1.4 Issues and Theme Mentioned in Moving Pictures

5.1.4. a) Societal Problems

The wealthy of urbanisation and capitalism resides on the cloud floor, while the poor get impoverished and live below. The concept of the social gap has repeatedly been utilised for critique. Regardless of the scenario's backdrop, whether on or beyond the Earth or somewhere in the future. Following that, several science fiction moving-picture media, either dystopian or utopian, incorporate these elements in Metropolis. Before publicly using CGI (Computer Generated Imagery), moving media sets were created by handcrafted models, textiles, and other props similar to those used in theatrical set design.

Figure 5 Woman in the Moon (Lang, 1929)
Retrieved from https://offscreen.com/view/woman-in-the-moon-fritz-lang-1929

5.1.4. b) Spaceflight Theme

Alita Queen of Mars (Protazanov, 1924) was a 1924 film based on Alexi Tolstoy's novel. The show was meant to demonstrate Russia's or the Soviet Union's will and innovation to explore the stratosphere. Due to the limited knowledge, Mars in this film departs from the actual Mars based on the sources available at the time. It was when the culture of Weimar and the escalating spaceflight tension occurred from 1923–1933. The film creates imaginative visions for the Moon, the spacecraft and the station to land on the Moon. The new social status of a person may be determined by their residence.

5.1.4. c) Machine VS Human

In 1927, Fritz Lang brought the world to Metropolis. This dystopian silent cinema classic influenced several sci-fi films in the years afterwards. It was one of the first of its genre, detailing the narrative of a human-machine connection while noting how the robot or android became or lived in the human form. The story showcases how urbanisation and civilisation have implications for social classes, economic disparities, and technological development. The film also exhibited the German Expressionism design throughout the movie.

5.1.5 Summary of the period between the 1920s and 1930s

Film's prediction that highrises will fill the sky has been confirmed in many major cities. Similarly, Just Imagine (Butler, 1930) offers a similar picture of an amused future from the standpoint of the United States. Compared to Metropolis, the show was considerably more energetic with musical and had a more vivid ambience since it was designed to cheer up the people of the Great Depressing. In the latter days of the 1920s, cinema was not confined to portraying fiction or

entertaining purposes. The story displayed the city on roads and events on the street. The urban movement from dawn to dark reflects the living conditions in different building typologies (entertainment venues, industries, and stores) and modes of transportation (trains, trams, and cars). For example, the documentary Berlin - Die Sinfonie der Großstadt or Berlin – Symphony of A Great (Ruttmann, 1927).

Figure 6 Metropolis (Lang, 1927)
Retrieved from https://magazine.artland.com/

5.1 The period between the 1940s and 1950s

5.2.1 Historical Review

The period between these two decades was tumultuous, reshaping the world in several ways. It was the period between World War II and the early years of the Cold War. The majority of vintage Hollywood films are created to promote propaganda and stories about fighting wars. The social and cultural developments compel the architectural design to accommodate the new activities in the city, for instance, the theatre, festivals, airports, hotels, offices and art houses (Danks, 2017). It produced an enormous quantity of demand that served to regenerate the wartime industries to make people spend money on objects of mass production.

5.2.2 Moving Pictures and Architectural Relevances

In these decades, films are portrayed plots that participated in morality, crime and dramatic occurrences. Many architects and films makers made cinema together. Hence, plenty of

film samples are highly related to architectural qualities, such as The Fountainhead (Vidor, 1949), Carling House (Lautner, 1949), The Naked City (Dassin, 1948), On the Waterfront (Kazan, 1954), and Sweet Smell of Success (Mackendrick, 1957). Comparing to older buildings and modern architecture, ceiling heights, materials and windows sizing were significantly changed. It also demonstrates how the architectural style has moved from bulky, heavy, robust to lightweight and serene.

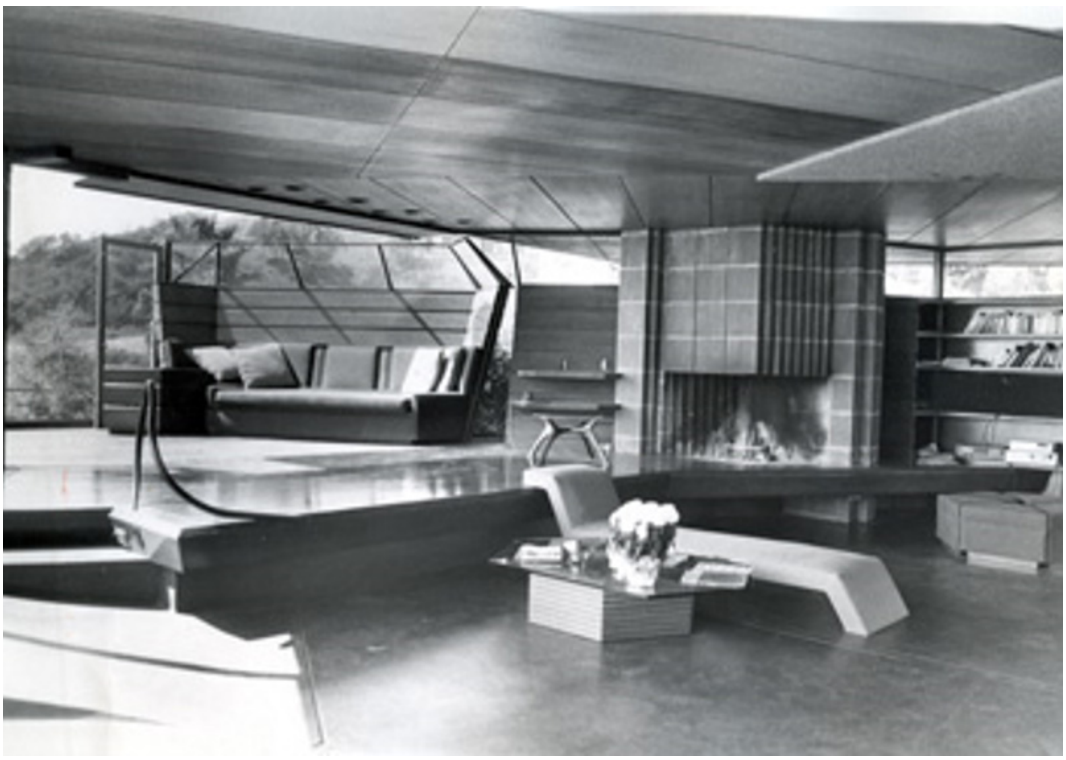

Figure 7 Carling House (Lautner, 1949) Photo by Frank Cooper
Retrieved from https://www.laconservancy.org

5.2.3 Summary of the period between the 1940s and 1950s

In short, the world's political, military and economic crises were addressed by the 1940s through the 1950s. There has to be a psychological design behind everything from everyday items to movies. According to the flourishing of domestic television broadcast as dominating channel of transmission, it supplanted radio. Promote propaganda and encourage people to consume as mass communication more efficiently. Films in this period are generally about daily life, making the connection with films easier. Disneyland becomes a landmark of hyper-reality where visitors may enjoy simulacra in the parks.

5.3 The period between the 1960s and 1970s

5.3.1 Historical Review

The invasion of the monsters, harsh climate and pollution, and machine malfunction are all threats to the world. These are the issues that were often discussed over the two decades from the 1960s to the 1970s. The apocalyptic films portray how society is rebuilt and governed in various ways to respond to transformations (Jackson & Staff, 2021). As a result, a broad segment of cinema regards science fiction films that gaze to the far future as warning stories about the recognisable world of the human present and past. The pattern seen in this movie is the laser blades, gigantic spacecraft, and extraterritorial species civilisation.

5.3.2 Spatial Quality and Architectural Relevance

Places are set in a more diversified manner throughout this phase. People may envisage and fantasied about their lives on Earth, space and virtual reality. Due to the potential of computer graphics, the stories of the altered universes have begun.

5.3.2. a) Earth

Architectural typologies in cinema, such as a secret laboratory, a secret agent's office, and a space station, depict the possibility of future societies, either utopian or dystopian visions (Benson, 2020; Jackson & Staff, 2021; Plim et al., 2021). The concerns about overpopulation at that time lead architects to think about the mix-use buildings to minimise the area of usage.

5.3.2. a.1) Large Scale Architecture

THX-1138 (Lucas, 1971) dropped the changing of futuristic perspective by merging the current structures, which refreshed the particular definition of technical Sci-Fi moving pictures. The large scale of civic architecture makes humans feel smaller in society. The actual places used in this movie, mainly in San Francisco, including the Bay Area Rapid Transit Subway (1957), The Lawrence Livermore National Laboratory (1952), the Marin County Civic Center (1967) in San Rafael by Frank Lloyd Wright, and The Lawrence Hall of Science (1968) in Berkeley and San Francisco Airport in 1927 (Pollock, 1999). The places mentioned above share the spatial quality of controlling the human mind with scales of architecture mentally and physically.

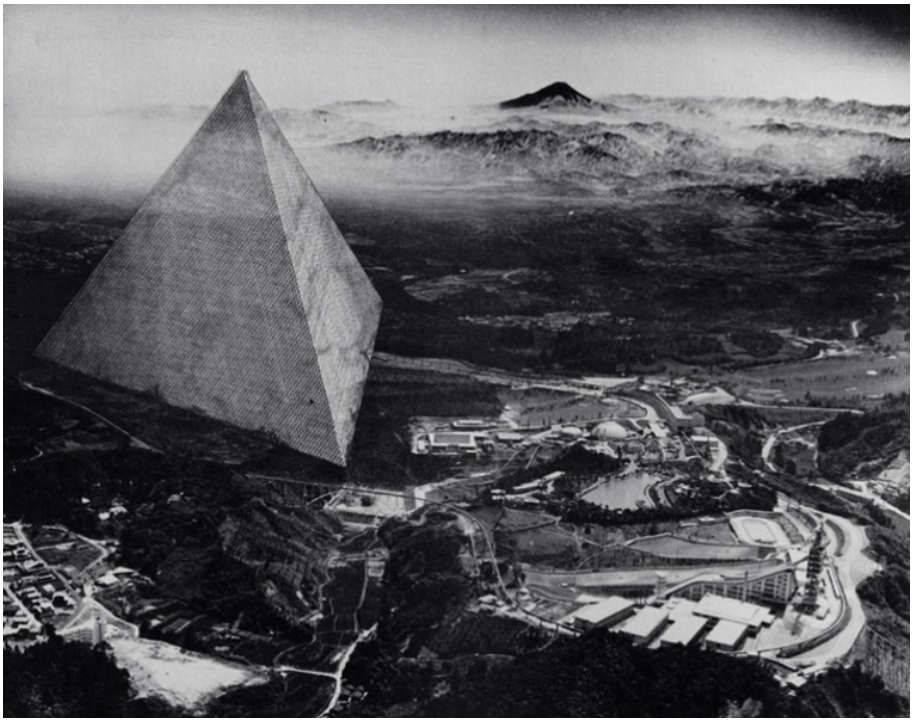

Figure 9 Tetrahedron City Project, Yomiuriland, Japan (Fuller & Sadao, 1968)
Retrieved from http://www.fontecedro.it/blog/category/buckminster%20fuller

5.3.2. b) Space

In 1969, NASA was successfully sent humans to the Moon. Consequently, there are plenty of space-age stories in these decades. Spacecrafts in Star Trek (Roddenberry, 1966) and Star Wars (Lucas, 1977) are used for many functions, including defence, warfare, living, transit and commercial trade. From the space travelling perspective, 2001: A Space Odyssey (Kubrick, 1968) also predicts how humans can travel in the spacecraft with the spinning motion to maintain health conditions. The physical environmental conditions, such as weightlessness, lack of sound, and delay of transmission from the spaceship to the Earth, have been verified as truths decades later (Saavedra, 2020). The multi-programs in the limited spaces also referring to the moving city concept as aforementioned above.

5.3.2. c) Virtual Reality and Prelude of Cyberspace

Virtual reality was the third alternative for filmmakers in the setting of backdrops in the Sci-Fi genre. Directors like Stanley Kubrick, Joseph Kosinski, Ridley Scott, Gerry and Sylvia Anderson (Benson, 2020) imagined a location. It is a space where imaginations construct a vision of an inevitable future in virtual space. In the technological and machine subgenre of the sci-fi genre between the 1960s and 1970s, the notion of robots in human forms, LED and RGB colours (red, blue, and green), and innovative future architecture designs featured repeatedly. It usually comes with the threatening anxiety of the possibility that the machine will win over humans. These are the introduction period of cyberspace before computers widely have used in the following decades.

Figure 10 Close Encounters of the Third Kind (Spielberg, 1977)

5.3.3 Summary of the period between the 1960s and 1970s

The unglamorous town began losing hope in the morality of humankind, as foretold by sci-fi films at this time. The architectural design is being altered to be more futuristic by integrating curves, lines, and deformation while paralleling modern cubic design in mainstream design such as the workplace. The future appeared currently loaded with technology advancements in automation, communication, and transportation, allowing people to live more conveniently but not pleasingly.

Figure 11 Playtime (Tati, 1967)

Retrieved from https://www.archdaily.com/395674/films-and-architecture-play-time/

5.4 The period between the 1980s and 1990s

5.4.1 Historical Review

The continuation from previous decades of the future idea is still discussed about the future associated with space-age, machine worries, and human apocalypses. It is also the age of depression, eruptions of people, environmental problems and energy crises. The rise of the Internet spawned an entirely new subgenre of science fiction, such as cyberspace, cyberpunk, and virtual reality. Scientists and technologists created a paradigm for the city that illustrates how technology changes transportation, communication, habitation, and security.

Figure 12 Ghost in the Shell (Oshii, 1995) Urbanscape in the Asian city in CyberPunk Genre

Figure 13 Late 80s/ Early 90s Night Hong Kong Street Scene (by thekinolibrary)
Retrieved from https://www.youtube.com/watch?v=ND5HBiWG31A

5.4.2 Computerised Influences

To increase the vision of science-fiction images in these decades, the further progress of the computerised visual approaches shows a more vital vision for the future possibilities. Metropolis (Lang, 1927) was referred for its city vision from many films such as Blade Runner (Scott, 1982), Ghost in the Shell (Oshii, 1995), and Akira (Otomo, 1988). These films depicted the cyberpunk scenario of a dystopian future in which nefarious organisations rule society. The film stresses the new relationship between human subjectivity and the environment. It develops character in Blade Runner in urban settings of Neo-Tokyo through holographic projections of buildings' facades. They also had the similarity of architectural design by a reimagining of the digitalised future.

Figure 14 Blade Runner (Scott, 1982)

Retrieved from https://planetdystopia.net/blog/history/tower-babylon-urban-dystopias/

5.4.3 Cyberspace and Cyberpunk

Cyberspace often occurs in the cyberpunk genre. It is a virtual place (Wallace, 2020) where people can enter by connecting their nervous system and brain to a computer. The process necessitates the use of devices and rooms. When people are linked to the system, their bodies can either move or cannot move. Films frequently depict people entering cyberspace as semi-sleeping. In TRON (Lisberger, 1982), the protagonist is transferred from the physical to the virtual world. This film's iconic design in the virtual world is neon colours and glowing lines. Colours such as red, green, blue, pink, purple, and yellow are used in the illustration. The design pattern is frequently seen with the repetition of polygon-like shapes and parametric design.

Figure 15 TRON (Lisberger, 1982)
Retrieved from https://www.nyfa.edu/student-resources/

5.4.4 Virtual Reality

Similarly, in the Lawnmower Man (Leonard, 1992), the films discussed the physical world and virtual reality by utilising V.R. google, gloves, and entire body tracking motion devices. Perceiving the 4D experience (sensorama experience) allows people to feel as if they are truly present in the simulated environment. According to the Franklin Institute's History of Virtual Reality, the concept of virtual reality began in the 1800s with the invention of the first stereoscope (1838). During the heady period in the field between the 1970s and 1980s, optical advancements and haptic devices, among other instruments, allowed people to move in virtual space. The Virtual Interface Environment Workstation (VIEW) system, developed at NASA Ames Research Center in the mid-1980s, combined a head-mounted device with gloves to enable haptic interaction.

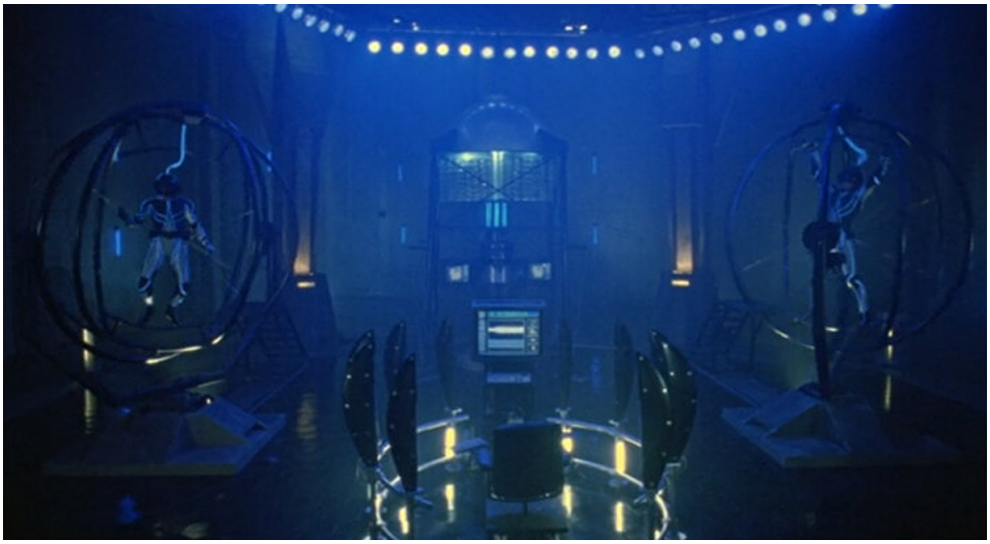

Figure 16 Lawnmower Man (Leonard, 1992)
Retrieved from https://clamshellcasefiles.com/episodes/2020/11/30/072-the-lawnmower-man-1992

5.4.5 Concepts of Another Identities and Mind Transferring

In 1999, The Matrix (Wachowskis, 1999) and The Thirteenth Floor (History of Virtual Reality; Rusnak, 1999) films discussed virtual reality and consciousness or brain uploading to the other simulated environments supercomputer server. They have also doubted the existence of truth, memory and individuality. Although people can control and move avatars simultaneously in virtual reality by wearing devices around twenty years later, the concept of brain uploading or transferring is still under investigation. However, In The Thirteenth Floor reveals a glimpse of 2024 architecture from a 1999 perspective. The structures are tall and feature large voids with a deformation fluid design.

5.4.6 Summary of the period between the 1980s and 1990s

Between the 1980s and 1990s, plenty of remarkable Sci-Fi films discussed the advancement of technology, especially in computers and the Internet. It raised concerns about humans and machines (devices, A.I. and robots) while inspiring architects to design a new language of futuristic architecture.

Figure 17 The Thirteenth Floor (History of Virtual Reality; Rusnak, 1999)

5.5 The period between the 2000s and 2010s

5.5.1 Historical Review

Many exceptional sci-fi and fantasy moving-picture media were introduced to the world between the 2000s and the 2010s. The compelling and stunning detail in Sci-Fi stories is not limited to the films or movies scale on theatre. Technology progress allows for lowering the budget for the high-quality image on drama series scale on streaming or television. From the perspective of comics, animations, films, and television shows, the science fiction genre embraces a lighter tone with a sense of comedy rather than a darker tone like film noir. As a result, the plots gained more favourable conditions and situations that turned everyday living into spectacular. According to the media, individuals feel like they can be a part of the narrative, which leads to consumption. For example, purchasing toys, visiting a theme park, and purchasing other items depicted on the screen.

Space-age, moving city, brain or conscience transferring, technology sanction, virtual reality, machine transplant (cyborg), artificial intelligence, and robot are still themes in science fiction. The difference is that some of the gadgets used in the movies are available for purchase and testing by ordering from eBay or Amazon. It convinced people that the predicted era of futuristic digital life had arrived.

5.5.2 Technology and Architecture

Technology and architectural design in Minority Report (Spielberg, 2002) projected the future in 2054. The story is about technologies like motion capture, holographic projection, personalised advertising, and surveillance security that have changed people's perceptions of urban life. Individual identification information is inevitable since biological security methods acquire names, age, residence, and location data. It is a centralised data gathering that huge organisations may utilise to either safeguard or destroy society. Some technologies described previously, such as hand gloves or devices to monitor motion for computer controlling, retina recognition, and tailored advertising, are already available in the late 2010s.

In addition, architecture in the city is getting taller and more prominent hence it is difficult to see the ground or the sky. Transportation is spread vertically and horizontally, with roadways already implanted on the façades of buildings and automobiles magnetised. The show also addresses the morality of utilising technology for security by using a metaphor disguised as a discussion of human rights.

5.5.3 Summary of the period between the 2000s and 2010s

The digital age was on the horizon. Designers and architects could perhaps learn about technological advancements and the possibility of changes in typologies. It allows designers to contribute architecture that responds to people's changing behaviours and lifestyles.

Figure 18 Zopherus Habitat (Zopherus, 2018)
Retrieved from https://www.dezeen.com/

Figure 19 Marsha (A.I.Spacefactory, 2018)
Retrieved from https://www.aispacefactory.com/marsha

5.6 The period between the 2020s to present

5.6.1 Historical Review

Some of the predictions, such as video conferencing, cars, flying gadgets (drones and hoverboards), headset for virtual reality and other Internet of things (IoT) devices, are becoming commonplace in people's lives. Most people, for example, own a smartphone, which allows them to get closer to virtual reality (V.R.) and augmented reality (A.R.) by using apps like Instagram or Snapchat filters. Furthermore, pollution and climate change are worsening and wreaking chaos on the planet than in the past. Environmental issues such as extreme climate change, pollution, trash, and microplastics are included. Consider the problem of air pollution (PM 2.5) in many large cities. It has harmed people's health (respiratory and skin allergies) and their consumption behaviour (people need to adapt with the equipment such as masks and air purifiers). These events increase the societal problem of the poverty divide. Those who can afford to relive devices continue to live in the same or better-living circumstances. In contrast, those who cannot afford it have to suffer from environmental changes.

5.6.2 Space Travel

Intergalactic travel is becoming more real than ever. People might purchase a ticket to visit space shortly with an organisation like SpaceX, even though several milestones must be achieved before this occurs. Furthermore, human ambitions to colonise other planets, such as Mars, are becoming more solid. Architects, engineers, technologists, and scientists define the appropriate space for the living situation while keeping health on the many challenges (Cavendish, 2020; Kotecki, 2019). Science fictions are creative design tools that boost standard research and design methods. It sharpens concepts and removes constraints for discovering the future and technologies the public can relate to. For example, Communication technology in Space Sweeper (Jo, 2021) is still based on radio waves, but there is no longer a language barrier because everyone owns an instantly translated device. The technology in screens also assists in questioning and investigating the ramifications of hypotheses with a large audience.

Figure 20 Space Sweeper (Jo, 2021) Polluted Earth

Figure 21 Space Sweeper (Jo, 2021) Cyberpunk Club

Figure 22 Space Sweeper (Jo, 2021) Interior Architecture on Spacecraft

5.6.3 A.I. and Information Age

Social Dilemma (Orlowski, 2020) is a semi-documentary that combines a play with interviews to explain how social media works and how it may threaten human civilisation. The discussion in this Netflix program explained how the technology's purpose is to enhance people's lives. These platforms, such as Facebook, Google, Instagram, or Snapchat, use people's behaviour to promote brands and contact other people on screens. However, when it comes to commercial commercialisation. The manipulative concept of algorithms asks for more interactions and longer screen time to allow more people to 'see' and 'click' to generate massive data for monetising. At the end of the documentary, they argue that humanity should be held accountable for societal changes that may harm the Earth and society. In the same way as humans should stop mining the environment for a better future and instead create a catastrophic end. Regulations and standards should be established for managing information and preventing society from collapsing due to manipulating information from computers on the human mind.

5.6.4 Summary of the period between the 2020s and present

Some forecasts have already been proven true, while some others have the potential to become a reality for people shortly. This time is an era of digital information where everything can be recorded as statistics and numbers.

6. Conclusion

From the 1920s to the 2020s, the study reveals how the science fiction genre predicts and foreshadows the future of human behaviour and anxieties, architectural changes, and technological adaptability. Issues include society's expectations about politics, economics, philosophy, and concerns about changes at that time. Humans have pushed the boundaries of imaginative visions to bring beliefs to reality shows with exaggerated storylines that have captivated audiences with the potential of the future, from novel to television series. It unknowingly evolves and transforms with similar patterns that affect transportation, communication, consumption, automation and identification.

Starting with films, television broadcasts, animation, and streaming, the moving picture media has developed itself to the people behaviours and technology developments. After the development of transmission and television, people could have access to the mass media. Hence, the condition of the world's and regional's society shapes the contents and platforms of media.

Living conditions are evolving and growing with technological advancements and human behaviours that respond to social cues. People's interactions, structures, plans, and section readings assist both the audience and the characters comprehend the occurring circumstances, even if they happen in different realms.

In a nutshell, the future definition has remained flexible depending on the invention at different moments. It reflects how individuals' concern and respond to society. Architecture and technology serve as catalysts for envisioning how the future should look at a specific moment in time. Thus, the outlook of architecture, technology, and human integration is reflected back and forth with anxieties, aspirations, and curiosity via the prism of science fiction.

7. Acknowledgement

This paper would not have been possible without the encouragement, support, and permission of these individuals who encouraged, supported, and allowed me to conduct research on this topic. I would like to express my heartfelt gratitude to Dr. Likit Kittisaknan, my incredible and generous adviser, for guiding me through my academic and life journey. I would like to thank Assistant Professor Tonkao Panin, Ph.D., course director of M.Arch Conceptual Design at Silpakorn University, who led and introduced me to many brilliant and supportive classmates; Miss Sunantha Thongliamnak and Miss Sakawrat SuvanPrateep. Finally, I would like to thank my amazing parents for always encouraging and supporting me in my educational endeavours.

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