



SPACES IN SCIENCE FICTION: THE ARCHITECTURAL VISIONS OF ELYSIUM, OBLIVION, ALTERED CARBON

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ABSTRACT

Science fiction provides a speculative framework for envisioning the spatial organization of the future, offering a critical perspective on the potential directions of architectural and urban development. The built environments designed in science fiction films are not merely aesthetic constructs but a significant tool for examining social transformations and the spatial implications of technological advancements.

Contemporary architectural practice rapidly evolves with innovations such as intelligent systems, portable structures, and sustainable solutions. However, the accelerating pace of technological advancements complicates the prediction of future spatial configurations, shifting the discipline of architecture from utopian imagination toward experimental practice. In this context, speculative design and conceptual experimentation transcend traditional frameworks, enabling the exploration of new spatial possibilities. This study analyzes the spaces constructed in Elysium (Blomkamp, 2013), Oblivion (Kosinski, 2013), and Altered Carbon 1 (Kalogridis, 2018) to evaluate the critical contributions of science fiction cinema to architectural and urban development. The research discusses the impact of future-oriented spatial speculations on architectural thought by relating the spatial representations in these works to contemporary architectural and urban discourses. The selected films were chosen for their distinct yet complementary representations of speculative urban futures. The study adopts a qualitative film-based content analysis, systematically examining spatial representations in selected scenes and interpreting them through architectural theories and contemporary urban discourse.

Keywords: *Speculative architecture, science fiction spaces, Elysium, Oblivion, Altered Carbon.*

BİLİM KURGUDA MEKANLAR: ELYSIUM, OBLIVION, ALTERED CARBON'UN MİMARİ TEMSİLLERİ

ÖZET

Bilim kurgu, geleceğin mekânsal organizasyonunu hayal etmek için spekülasyon bir çerçeve sunar ve mimari ile kentsel gelişimin potansiyel yönlerine dair eleştirel bir bakış açısı sağlar. Bilim kurgu filmlerinde tasarlanan yapılar yalnızca estetik kurgular değil, aynı zamanda toplumsal dönüşümleri ve teknolojik ilerlemelerin mekânsal yansımalarını incelemek için önemli bir araçtır. Günümüz mimarlık pratiği; akıllı sistemler, taşınabilir yapılar ve sürdürülebilir çözümler gibi yeniliklerle hızla gelişmektedir. Ancak teknolojik ilerlemelerin artan hızı, gelecekteki mekânsal kurguların öngörülmesini zorlaştırmakta ve mimarlık disiplini ütopik hayalden deneysel bir pratiğe doğru kaydırmaktadır. Bu bağlamda spekülasyon tasarım ve kavramsal deneyler, geleneksel çerçeveleri aşarak yeni mekânsal olasılıkların araştırılmasını mümkün kılmaktadır.

Bu çalışma, bilim kurgu sinemasının mimari ve kentsel gelişime yönelik eleştirel katkılarını değerlendirmek amacıyla Elysium (Blomkamp, 2013), Oblivion (Kosinski, 2013) ve Altered Carbon 1 (Kalogridis, 2018) yapımlarında inşa edilen mekânları analiz etmektedir. Araştırma, bu yapımlardaki mekânsal temsilleri çağdaş mimarlık ve kent söylemleriyle ilişkilendirerek, geleceğe yönelik mekânsal spekülasyonların mimari düşünce üzerindeki etkilerini tartışmaktadır. Seçilen filmler, spekülasyon kentsel gelecekleri farklı ama birbirini tamamlayıcı biçimlerde temsil ettikleri için tercih edilmiştir. Bu çalışma, seçilen sahnelerdeki mekânsal temsilleri sistematik biçimde inceleyen ve bunları mimari teorilerle ilişkilendirerek çağdaş kentsel söylemler ışığında yorumlayan nitel film temelli bir içerik analizine dayanmaktadır.

Anahtar Kelimeler: *Spekülasyon mimarlık, bilim kurgu mekânları, Elysium, Oblivion, Altered Carbon.*

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1. INTRODUCTION

Science fiction films do more than imagine future technologies; they also offer speculative scenarios about how architecture and urban design might evolve. The spatial representations in these films help us understand the impact of social and technological transformations while critically questioning the sustainability and inclusivity of future environments. Architecture rapidly evolves with smart systems, sustainable design, and extraterrestrial habitats. However, the accelerating pace of technological advancements complicates architectural foresight, shifting the discipline toward speculative design and conceptual experimentation. In this context, science fiction provides a valuable framework for analyzing how architecture envisions and responds to future challenges.

Interdisciplinary scholarship bridging architecture, urban theory, and science fiction studies informs the conceptual framework of this study. Speculative design, as proposed by Dunne and Raby (2013), frames architecture not merely as a problem-solving discipline but as a critical tool to question technological futures and social implications. Their notion of "critical design" emphasizes alternative scenarios that challenge dominant narratives of progress, making science fiction cinema a fertile ground for investigating architectural possibilities and societal consequences of spatial innovation.

Urban imaginaries of the future have long been discussed in cultural theory, where scholars such as Soja (1996) and Jameson (2007) highlight how visions of future cities reflect ideological tensions around capitalism, modernity, and social stratification. These speculative urban forms—vertical mega-structures, orbital habitats, or post-apocalyptic wastelands—are not isolated fantasies but extrapolations of contemporary urban trajectories, revealing anxieties about density, technological dependence, and ecological collapse.

In cinematic studies, spatial representation has been analyzed as an active narrative and sensory element shaping audience perception (Bruno, 2002; Sobchack, 1992). Science fiction films, in particular, construct atmospheric and affective environments that allow viewers to experience imagined architectures viscerally. These contributions from design theory, urban studies, and film scholarship provide the theoretical basis for this research, enabling a multidimensional reading of *Elysium*, *Oblivion*, and *Altered Carbon 1* as speculative architectural visions rooted in, yet critical of, real-world urban discourses.

These three films were selected for their distinct thematic focuses and complementary architectural visions: *Elysium* explores class-based spatial segregation and planetary inequality. *Oblivion* portrays planetary abandonment, verticality, and technological detachment. *Altered Carbon* illustrates posthuman urbanism and AI-driven spatial systems.

Collectively, these films illustrate a spectrum of speculative urban futures—from off-world elitism to digital posthumanity—thereby enabling a comparative investigation into the architectural imagination of cinematic space.

The research problem focuses on how these films portray future spatial arrangements and their implications for architecture and urban planning. The study aims to uncover how speculative architecture in science fiction films reflects, critiques, and anticipates real-world architectural trends.

This article is structured into four main sections. The first introduces the study's objectives, significance, and scope. The second outlines the theoretical framework and methodology, explaining the qualitative film analysis approach. The third presents spatial analyses of *Elysium* (Blomkamp, 2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon 1* (Kalogridis, 2018), evaluating their architectural narratives and urban implications. Finally, the fourth section discusses the findings, addressing how science fiction serves as both a visionary tool and a critique of architectural and technological trajectories. Through this analysis, the study aims to contribute to a discussion on how speculative design can shape future architectural thought and practice. To explore these questions, this study uses a film-based qualitative analysis, drawing connections between fictional architectures and contemporary urban theories.

2. MATERIAL AND METHOD

This study adopts a qualitative and interpretative approach (Creswell & Poth, 2016; Geertz, 1973), combining film-based spatial analysis and close visual reading to examine how science fiction cinema

envisions future urban and architectural scenarios. The selected films—*Elysium* (Blomkamp, 2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon* (Kalogridis, 2018)—were chosen for their complementary representations of spatial segregation, aerial post-apocalyptic design, and AI-driven urban density.

The analysis focused on identifying spatially significant scenes based on architectural relevance, considering aspects such as scale, form, materiality, and the relationship between technology and the built environment. These selected scenes were examined through close visual reading, emphasizing how cinematic space conveys architectural ideas and critiques urban conditions.

To interpret the visual material, the study draws on architectural theories such as Rem Koolhaas's (1994) concept of Bigness, as well as discourses on speculative design (Dunne & Raby, 2013), smart urbanism (Batty, 2013), and planetary-scale urbanism (Townsend, 2013). This theoretical framework establishes a bridge between speculative cinematic worlds and contemporary architectural thinking.

While science fiction films are not architectural blueprints, they function as cultural artifacts that reflect and reimagine socio-spatial issues. To minimize the stylization and subjectivity inherent in cinematic portrayals, the analysis was supported by academic literature in architecture, urban studies, environmental psychology, and film theory, providing both conceptual grounding and critical depth.

3. SCIENCE FICTION FILMS

Science fiction cinema presents technological projections of the future and constructs alternative spatial narratives that critically question architectural and urban practices. These films reshape contemporary social, political, and environmental concerns within speculative environments, offering viewers a reflective lens to reconsider present realities. Architecture is not merely functional in these cinematic worlds—it carries ideological and symbolic meanings. Space becomes a reflection of power relations, class divisions, and technological developments. In this context, the selected case studies—*Elysium* (2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon 1* (Kalogridis, 2018)—explore how architecture is imagined, represented, and intertwined with social structures in diverse future scenarios.

3.1. *Elysium* (2013): A Spatial Analysis

Released in 2013, *Elysium* (Blomkamp, 2013) offers a compelling vision of a dystopian future shaped by extreme social and spatial segregation. The film presents a speculative narrative combining science fiction with architectural imagination, exploring how built environments reflect and reinforce inequality, access, and control issues (Figure 1).



Figure 1. *Elysium* Film posters (Columbia Pictures, 2013, IMDb)

Elysium (Blomkamp, 2013) is a science fiction film directed and written by Neill Blomkamp. Set in 2154, it presents a starkly divided society of two distinct social classes: the extremely wealthy elite and the impoverished majority. The elite reside in *Elysium*, a massive artificial space station designed as a utopian paradise, while the rest of humanity remains on an overpopulated, polluted, and deteriorating Earth.

Elysium is a Stanford Torus, a space habitat conceptualized by NASA, equipped with advanced infrastructure and luxurious living conditions exclusively for the elite. In contrast, Earth is illustrated as

an urban wasteland, marked by decaying infrastructure, overpopulation, and poor living standards. The film's narrative revolves around Max, a working-class inhabitant of Earth, who embarks on a mission to infiltrate Elysium and dismantle its exclusionary system to provide equal access to its advanced medical technologies for all.

The film features distinct spatial settings, including Earth's slums, Los Angeles's futuristic yet oppressive urban landscape, and Elysium's meticulously designed environment. Various technological elements, such as robotic enforcement units and medical pods, reflect speculative advancements and the extension of existing technologies. Through its architectural and spatial representations, *Elysium* (Blomkamp, 2013) critiques issues of social inequality, migration policies, and the role of technology in reinforcing class divisions (Figure 2).



Figure 2. Elysium Film, environment (01.41.54) (Columbia Pictures, 2013, IMDb)

Elysium is an artificial space habitat in the stratosphere, sustained by advanced artificial gravity technology. Designed as a self-sufficient utopia, this orbital settlement provides its wealthy inhabitants with an ideal living environment—free from disease, poverty, and war. Technology is utilized exclusively for the benefit of the elite, reinforcing the stark divide between Elysium and Earth.

Architecturally, Elysium is structured as a Stanford Torus, a circular space station concept developed by NASA for sustainable off-world living. It ensures artificial gravity through centrifugal force, creating Earth-like conditions for its residents. In contrast to Earth's deteriorating state, the station's pristine environment is a visual metaphor for social stratification and economic disparity (Figure 3a, b).

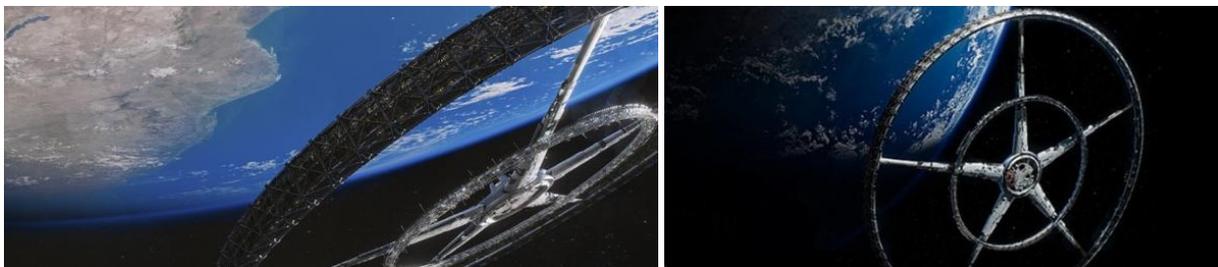


Figure 3. (a (left), b (right)) Elysium Film, environment (01.39.17-00.01.38) (Columbia Pictures, 2013, IMDb)

Upon entering this circular habitat, inhabitants transition into a meticulously engineered environment that blends artificial and natural elements. Advanced aerial transportation systems, including flying vehicles, facilitate access to Elysium. Although entirely human-made, this orbital settlement integrates essential natural resources from Earth.

Elysium's design emphasizes green spaces and water features such as lakes, pools, and rivers, alongside modern architectural structures that foster an idyllic and sustainable living environment. Incorporating natural landscapes within this high-tech setting enhances the illusion of an Earth-like ecosystem while maintaining control over environmental conditions to serve the privileged elite (Figure 4a, b).



Figure 4. (a (left), b (right)) Elysium Film, environment (01.14.57-01.18.36) (Columbia Pictures, 2013, IMDb)

In Elysium, Earth is portrayed as an overcrowded, deteriorating, chaotic urban landscape characterized by abandoned buildings, neglected infrastructure, and densely populated slums. The city features half-destroyed structures, spatial disarray, and a lack of coherent urban planning, resulting in an undefined and fragmented environment. These visual elements reinforce the film's dystopian vision of unchecked urban decay.

The chaotic cityscape in *Elysium* resonates with Rem Koolhaas's (1994) concept of *Bigness*, where large-scale architecture detaches from the traditional urban fabric and dominates the built environment. Koolhaas (1994) states:

"Bigness no longer needs the city: it competes with the city; it represents the city; it preempts the city; or better still, it *is* the city. If urbanism generates potential and architecture exploits it, Bigness enlists urbanism's generosity against architecture's meanness. Bigness = urbanism vs. architecture." (Koolhaas, 1994, p.502)

In this context, the film raises a critical question: Has "Bigness" ultimately prevailed in shaping the urban environment, and if so, has it led to a better outcome? The dystopian vision presented in *Elysium* suggests that an overemphasis on large-scale architecture—without regard for urban cohesion or social integration—leads to fragmented, dysfunctional cities. The cityscape in the film serves as a cautionary representation of what urban environments might become if architectural scale continues to grow without consideration for human-scale urbanism and contextual design (Figure 5).



Figure 5. Elysium Film, city (00.01.10) (Columbia Pictures, 2013, IMDb)

Environmental psychology literature highlights that spatial configurations can strongly influence human cognition and emotions (Böhme, 1993; Stokols, 1972; Ulrich, 1983). According to Böhme (1993), architectural environments create an "atmosphere" that shapes perception through light, scale, sound, and material qualities, extending their impact beyond purely functional aspects. Studies in cognitive-emotional responses to spatial forms show that excessive density and visual complexity often trigger stress and feelings of confinement (Xylakis et al., 2021). In contrast, exposure to greenery, open vistas, and balanced spatial proportions has restorative psychological effects (Kaplan & Kaplan, 1989).

Within this framework, the spatial contrast between Earth and Elysium in Blomkamp's film acquires not only a social but also a perceptual dimension. The overcrowded and fragmented urban fabric of Earth evokes sensory overload and discomfort, aligning with Stokols' (1972) concept of spatial crowding and psychological strain. In contrast, the clean, orderly, and nature-integrated orbital habitat of Elysium elicits a feeling of safety, relief, and utopian calm, consistent with Ulrich's (1983) findings on the positive emotional impact of natural environments. In this way, the film engages viewers on a deeper psychological level, making the architectural divide between the two worlds both visually and emotionally tangible.

The film features several key structures, including a factory building and an illegal immigration processing center, symbolizing Earth's deteriorating socio-economic conditions. These spaces are portrayed as outdated, neglected, and technologically stagnant, emphasizing the contrast between Earth's decline and Elysium's advanced infrastructure.

When analyzed as spatial elements within the film, the factory and the immigrant detention center appear to be constructed using contemporary architectural and industrial design principles. Their aesthetic is harsh, utilitarian, and dystopian, reflecting the remnants of a once-functional but now obsolete industrial society. The presence of these structures underscores the theme of social inequality, as they symbolize the exploitation of the working class and the rigid barriers preventing upward mobility. Through these industrial and dystopian architectural features, *Elysium* (Blomkamp, 2013) critiques the persistence of economic disparity and the dehumanizing aspects of modern labor environments (Figure 6).



Figure 6. Elysium Film, spaces (01.13.46) (Columbia Pictures, 2013, IMDb)

In contemporary architectural discourse, sustainable cities, smart cities, and ecological urbanism are at the forefront of design approaches. As represented in the film, *Elysium* (Blomkamp, 2013) embodies a fusion of these ideals: a self-sustaining, technologically advanced, and environmentally controlled settlement. It offers artificially constructed natural environments, clean energy, and a high standard of living, presenting an optimized version of urban life. This suggests that sustainable, intelligent, and ecological design principles can be effectively implemented through the correct technological praxis.

However, the fundamental issue lies in this utopia's exclusive and artificial nature. *Elysium* is human-made yet limited to a privileged few, raising critical questions: Could human-made, idealized worlds

become viable alternatives in the future? Could designers expand their focus from buildings and cities to create new habitable worlds? The concept of *Elysium*—a self-sufficient, orbiting world sustained by artificial gravity—does not seem implausible given the rapid advancements in space colonization technologies.

As the film suggests, Earth may become an experimental wasteland if technology is applied without a broader contextual, ethical, or ecological framework. Instead of improving existing buildings, cities, or the planet, the focus might shift toward designing entirely new worlds. This raises a profound dilemma: should the future of architecture prioritize restoring and sustaining Earth, or should it move toward creating alternative human-made environments beyond our planet?

3.2. Oblivion (2013): Rethinking Urban and Vertical Spaces

Oblivion (Kosinski, 2013) explores themes of memory, identity, and environmental decay through visually striking architectural and spatial settings in a post-apocalyptic future. The film envisions a world where remnants of human civilization coexist with futuristic technologies suspended above a devastated Earth (Figure 7).

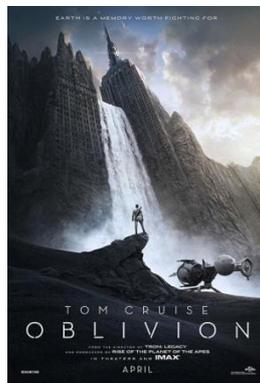


Figure 7. Oblivion Film Poster (Universal Pictures, 2013, IMDb)

Oblivion (Kosinski, 2013), directed by Joseph Kosinski and released in 2013, presents a post-apocalyptic vision of Earth in 2077. Following a devastating war with an alien species known as the Scavs, Earth's natural resources have been depleted, leading humanity to relocate to Titan, one of Saturn's moons. The protagonist, Jack Harper, is a technician assigned to Earth alongside his supervisor, Vika, to oversee the maintenance of autonomous drones designed to detect and eliminate remaining Scavs. They aim to extract Earth's last remaining resources before permanently relocating to Titan. However, Jack's discoveries on Earth lead him to question the nature of their mission and the fate of humanity.

The film's primary spatial settings include a ruined New York City with decaying skyscrapers, a remote bungalow in a lush natural environment, and a futuristic tower residence inhabited by Jack and Vika. While the cityscape reflects the remnants of a lost civilization, the tower house embodies advanced, high-tech living and a temporary refuge above Earth's desolation (Figure 8a, b).



Figure 8. (a (left), b (right)) Oblivion Film, environment (00.04.21-00.40.10) (Universal Pictures, 2013, IMDb)

Jack and Vika's elevated dwelling is suspended above the clouds, anchored to a supporting structure extending from the Earth's surface. Positioned between Earth and Titan, the house symbolizes a liminal space—neither fully terrestrial nor entirely extraterrestrial. Its modern and futuristic design incorporates innovative technologies, automated systems, and an open-plan layout, creating an idealized yet isolated living environment. The residence includes a landing platform for their flying drone and an infinity pool, reinforcing the concept of a self-contained, luxurious, and technologically advanced habitat (Figure 9).



Figure 9. Oblivion Film, space, and transportation (00.04.55) (Universal Pictures, 2013, IMDb)

This architectural setting prompts a critical question: Could the sky be an alternative domain for human habitation if Earth's surface becomes uninhabitable? Contemporary advancements in high-rise construction and aerial architecture suggest that elevated living environments may be viable. The evolution of vertical urbanism and airborne architecture could fundamentally transform conventional architectural paradigms, challenging traditional notions of ground-based settlements and redefining the spatial contexts of human habitation.

The dominance of white in the house's interior and exterior design reinforces its futuristic and sterile aesthetic, evoking a sense of technological advancement and minimalism. The structure features transparent façades, seamlessly integrating interior and exterior spaces while emphasizing openness and lightness. Using a spiral staircase and sleek, modern furnishings further enhances the residence's high-tech, sophisticated atmosphere. These design choices reflect a vision of the future that prioritizes functionality, efficiency, and an almost clinical perfection, contrasting sharply with the chaotic, deteriorating landscapes of Earth below (Figure 10).

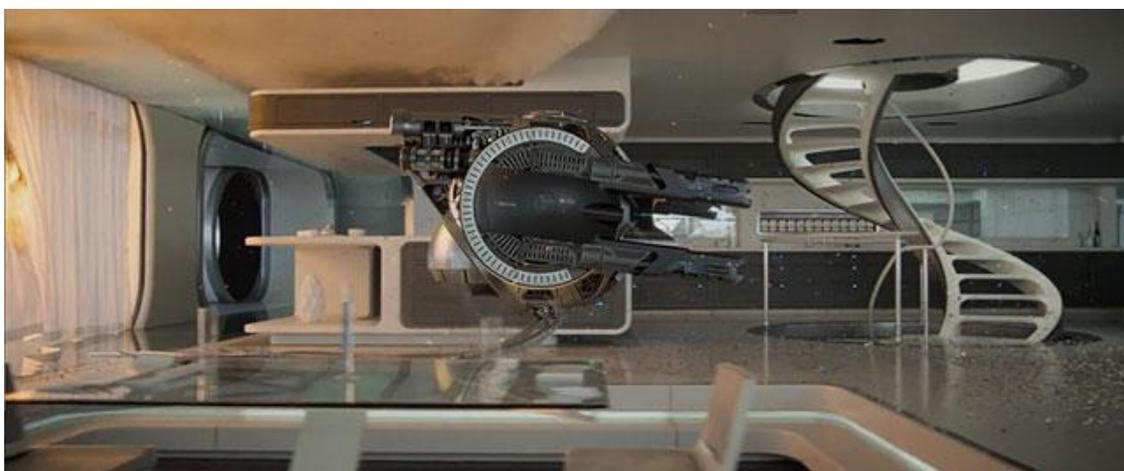


Figure 10. Oblivion Film, indoor spaces (01.10.47) (Universal Pictures, 2013, IMDb)

The house features a high-tech workstation with advanced data analysis and monitoring systems, allowing Jack and Vika to oversee their operations remotely. This centralized control hub enables them to analyze real-time data, manage autonomous drones, and coordinate resource extraction processes, highlighting the seamless integration of automation and human oversight in their mission (Figure 11).



Figure 11. Oblivion Film, operation space (00.05.10) (Universal Pictures, 2013, IMDb)

Jack and Vika's tower house is an interface between the remnants of the old world and the promise of a new one. Positioned above the clouds, it remains entirely isolated from Earth, emphasizing the artificial and controlled nature of life within it. Despite this detachment, the house provides high living standards through its advanced technological systems and self-sustaining infrastructure.

One striking aspect of the house is its pristine, almost sterile appearance, which raises questions about the materials used in its construction. Advances in nanomaterials and innovative surfaces, capable of self-cleaning and adaptive maintenance, suggest that similar technologies could soon be integrated into real-world architecture. The possibility of self-sustaining, low-maintenance building materials aligns with ongoing research in innovative materials and ecological architecture, indicating a potential shift toward a more resilient and adaptive built environment in the near future.

In addition to futuristic structures, *Oblivion* (Kosinski, 2013) presents natural landscapes and cosmic vistas, emphasizing that despite technological advancements, humanity remains intrinsically connected to nature. The presence of untouched natural spaces in the film suggests that the longing for nature persists, even in speculative futures dominated by artificial environments. This aligns with contemporary architectural and urban theories that advocate for sustainable and ecological design approaches, ensuring that nature remains an integral part of the built environment rather than a separate entity (Figure 12a, b).

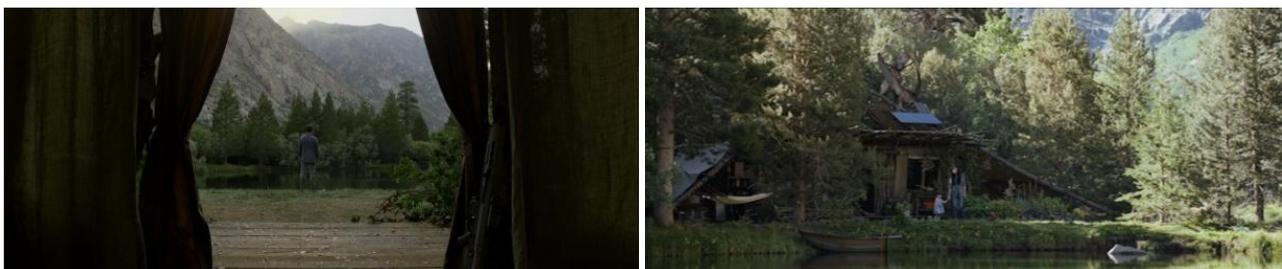


Figure 12. (a (left), b (right)) Oblivion Film, environment (01.26.39-01.57.24) (Universal Pictures, 2013, IMDb)

The film illustrates a post-war New York City, showcasing its ruined infrastructure, collapsed skyscrapers, and abandoned urban spaces as remnants of a once-thriving metropolis. The city's destruction visually represents societal collapse, highlighting the consequences of war and resource depletion. *Oblivion's* (Kosinski, 2013) portrayal of a desolate, decaying urban landscape reflects human civilization's fragility and the impermanence of the built environment in the face of large-scale devastation (Figure 13a, b).



Figure 13 (a (left), b (right)) *Oblivion* Film, environment (00.00.39-01.03.32) (Universal Pictures, 2013, IMDb)

Oblivion (Kosinski, 2013) presents the spatial dynamics of two distinct worlds—the ruined Earth and the futuristic, human-made environments. Although the film hints at the existence of a third world, representing an idealized future society, it remains unseen, existing only as a conceptual utopia. This absent world symbolizes humanity's aspiration for a better life beyond Earth, emphasizing that technological advancements may enable the creation of alternative habitats when Earth becomes uninhabitable.

While *Oblivion* (Kosinski, 2013) offers limited visual representations of future architecture, it reinforces the idea that technological progress may facilitate human settlement beyond Earth. The film raises a critical question: Is designing entirely new worlds, cities, and buildings inherently easier than renovating and restoring existing ones? If so, what are such an approach's ethical, technological, and spatial limitations? This debate challenges the architectural discipline to reconsider the balance between preservation and innovation, questioning whether pursuing new frontiers should come at the cost of abandoning the existing world.

Environmental psychology research suggests that architectural environments not only organize physical space but also shape perception, emotion, and cognitive responses in profound ways (Böhme, 1993; Pallasmaa, 2012). According to Böhme (1993), spatial settings create atmospheres that influence feelings of safety, openness, or confinement. Similarly, studies on spatial morphology show that verticality and exposure to wide aerial expanses evoke sensations of awe, freedom, and detachment from grounded human scale (Xylakis et al., 2021), while excessive structural isolation can induce psychological tension and loneliness (Stokols, 1972). In *Oblivion* (Kosinski, 2013), this duality is evident in the hovering tower residence: its elevated, transparent design and panoramic views create a perceptual experience of serenity and lightness, resonating with Kaplan and Kaplan's (1989) findings on restorative environments. Yet the stark separation from the ruined, desolate Earth below introduces an underlying feeling of alienation and emotional displacement, suggesting that futuristic vertical living may come with complex psychological costs for its inhabitants.

Oblivion not only represents vertical living spaces and advanced technologies from an architectural perspective, but also brings forth the emotional isolation and ethical questions that such environments entail.

3.3. Altered Carbon 1 (Kalogridis, 2018): The Intersection of AI, Urbanism, and Digital Immortality

In a distant future shaped by advanced technology, *Altered Carbon 1* (Kalogridis, 2018) explores a visually intricate world where artificial intelligence, digital consciousness, and extreme urbanization converge (Figure 14a, b, c).



Figure 14. (a (left), b (middle), c (right)): Altered Carbon Film Posters (Netflix, 2018, *Altered Carbon 1*)

Altered Carbon 1 (Kalogridis, 2018), adapted from Richard Morgan's cyberpunk novel, envisions a future where **human consciousness is digitized and stored in "stacks," small discs implanted at the base of the neck.** This advancement transforms the human body into a mere "sleeve," allowing individuals to transfer their minds between physical forms. In this reality, traditional death becomes obsolete, effectively granting a form of **digital immortality.** The story follows **Takeshi Kovacs**, a former mercenary resurrected 300 years after his previous body was destroyed. Reincarnated into a new "sleeve," he is offered a choice: either spend eternity in prison or solve the **murder of Earth's wealthiest man.**

The concept of **digital consciousness and bodily interchangeability** in *Altered Carbon 1* (Kalogridis, 2018) raises profound questions about **sustainability, population growth, and the evolution of urban life.** How might cities, housing, and societal structures adapt if human existence is no longer constrained by biological mortality? The show presents a dystopian yet technologically advanced future where extreme wealth disparity shapes the built environment. While scientific advancements are already extending human lifespans, the rapid progress toward biotechnological immortality forces us to reconsider traditional notions of urban planning, architecture, and resource allocation.

The world of *Altered Carbon* reflects both continuity and transformation. The architectural and urban design of the wealthiest elites residing in aerial cities above the polluted Earth is marked by a fusion of Gothic and modernist styles, intelligent systems, and high-tech automation. The elite living spaces integrate flying vehicles and advanced infrastructure while maintaining a connection to natural elements, suggesting that future urban environments will continue to blend technological sophistication with biophilic design principles. This depiction reinforces the idea that, despite radical advancements, the human desire to coexist with nature within innovative, highly automated systems remains a constant in architectural evolution (Figure 15a, b).



Figure 15. (a (left), b (right)) Altered Carbon Series-1 – Bancroft's House and Environment (Season 1, Episode 1: 00.22.01-00.23.55) (Netflix, 2018, *Altered Carbon 1*)

The Bancroft residence is in an exclusive, elevated environment, symbolizing the elite's separation from the deteriorating world below. The house is positioned in the sky above the Earth's polluted surface, representing wealth, power, and technological superiority. However, despite its luxurious and futuristic

setting, the interior design exhibits an eclectic blend of gothic, modernist, and high-tech aesthetics, creating an opulent and oppressive space (Figure 16a, b).



Figure 16. (a (left), b (right)) Altered Carbon Series-1 – Bancroft's house, interior (Season 1, Episode 1: 00.24.01- Season 1, Episode 4: 00.38.15) (Netflix, 2018, *Altered Carbon 1*)

When observed from the exterior, the Bancroft residence reflects the contemporary architectural pursuit of verticality and parametric design principles. The structure embodies a fusion of organic forms and computational aesthetics, aligning with the complexity and fluidity of modern architecture. The interplay between interior and exterior spaces also reinforces an integrated spatial experience, blurring the boundaries between the built environment and its surrounding context (Figure 17a, b).



Figure 17. (a (left), b (right)) Altered Carbon Series-1 – indoor/outdoor spaces (Season 1, Episode 10: 00.37.54- Season 1, Episode 1: 00.20.56) (Netflix, 2018, *Altered Carbon 1*)

Earth's urban landscapes remain bleak and dystopian, dominated by highly advanced yet oppressive environments. While futuristic spaces and cutting-edge technologies are integrated into the cities, these developments have paradoxically made urban life more rigid, controlled, and inhospitable. The dense layering of automated systems, surveillance networks, and hyper-structured architecture contributes to an atmosphere that feels both technologically advanced and socially restrictive (Figure 18a, b).



Figure 18. (a (left), b (right)) Altered Carbon Series-1 - The Earth buildings (Season 1, Episode 2: 00.06.15-00.12.46) (Netflix, 2018, *Altered Carbon 1*)

The laboratory environments represented in the film closely resemble contemporary research facilities. However, they introduce advanced neurotechnology capable of directly interfacing with the human mind, enabling individuals to experience parallel realities through mind-controlled systems. These technological advancements suggest a shift where the boundaries between physical and virtual spaces become increasingly blurred, allowing sensory experiences such as pain, healing, and emotional stimuli to be simulated in alternate realities. The concept of mind-controlled and mind-generated spaces in

parallel universes challenges traditional understandings of architectural space, prompting critical questions about the future of built environments. If individuals can inhabit digital or mentally constructed spaces that feel as real as physical environments, how might this redefine how we perceive habitation, presence, and reality? Such possibilities push the limits of architecture beyond its material constraints, suggesting that future spaces may be designed not only in the physical world but also within the neurological and virtual dimensions of human consciousness (Figure 19).



Figure 19. Altered Carbon Series-1 - The Lab (Season 1, Episode 4: 00.01.42) (Netflix, 2018, *Altered Carbon 1*)

In the film, artificial intelligence is a technological and spatial construct. A striking example is Poe, the AI-operated hotel, where artificial intelligence is not merely a system managing the space but is the space itself. An AI avatar oversees the hotel's reception. However, Poe's intelligence extends beyond traditional automation—it possesses consciousness, decision-making abilities, and even a distinct personality, making the entire building an embodiment of AI.

The AI Hotel Poe embodies an advanced artificial intelligence capable of autonomous thought, decision-making, and even supernatural abilities. However, despite its complexity, the system functions within predefined limitations. As the story unfolds, the next generation of artificial intelligence takes a more ominous turn, hinting at a future where AI surpasses its current utilitarian role and potentially challenges human autonomy.

The film presents a mutually dependent relationship between artificial intelligence and human existence, blurring the lines between AI-driven environments and human-inhabited spaces. *Altered Carbon 1* (Kalogridis, 2018) explores the possibility of intelligent environments that serve, interact with, and adapt to their users by integrating AI into architectural and spatial constructs. This raises critical questions about the future of AI-driven architecture, where built environments may no longer be passive spaces but sentient, responsive entities capable of unprecedentedly shaping human experiences (Figure 20a, b).



Figure 20 (a (left), b (right)) Altered Carbon Series-1 – The AI Hotel- Poe (Season 1, Episode 1: 00.43.20 - 00.48.26) (Netflix, 2018, *Altered Carbon 1*)

The AI-operated Hotel Poe can interface with human consciousness through neural implants, allowing it to experience real events in parallel dimensions. This capability blurs the boundaries between artificial and organic intelligence, making Poe an advanced system and an entity capable of engaging in human-like experiences.

The design of the hotel, both architecturally and narratively, exists at the intersection of the real and the hyper-real, reinforcing the film's exploration of perception, identity, and digital existence. *Altered Carbon 1* (Kalogridis, 2018) presents a layered spatial framework that includes the real world, parallel universes, and an idealized utopian environment, each representing different facets of existence in a technologically advanced future. These overlapping realities contribute to a complex sense of perception, challenging the audience to question the nature of reality and the implications of existing simultaneously in multiple dimensions (Figure 21).



Figure 21. *Altered Carbon* Series-1 - The accurate real simulation by Poe (Season 1, Episode 3: 00.17.19) (Netflix, 2018, *Altered Carbon* 1)

In *Altered Carbon 1* (Kalogridis, 2018), the urban landscape of Earth is portrayed as chaotic, dehumanized, and detached from the human scale. The city is overwhelmed by figures, noise, and environmental pollution from technology's unregulated and haphazard use. Within this dense urban environment, the real, the virtual, simulations, holograms, and high-tech systems coexist in a disorienting blend, making it difficult to distinguish between past and present, reality and illusion. The overwhelming scale and verticality of the buildings further reinforce a sense of alienation. At the same time, parametric design elements appear on façades, integrated with high-tech intelligent systems that extend beyond exteriors into the core of the structures themselves (Figure 22).



Figure 22. *Altered Carbon* Series-1 - The City (Season 1, Episode 3: 00.07.08) (Netflix, 2018, *Altered Carbon* 1)

This lack of spatial coherence leads to architectural disorder, where individual buildings exist without contextual integration, creating a sense of placelessness. The cityscape, dominated by skyscrapers, fragmented infrastructures, and uncontrolled technological implementations, presents a pessimistic scenario for future architecture. Could rapid construction, detached from the urban context, and the arbitrary application of technology result in cities resembling this dystopian vision? The film raises a critical question about whether high-speed urbanization and technology-driven architecture, when applied without foresight, could transform real-world cities into chaotic and unsustainable environments.

Moreover, *Altered Carbon 1* (Kalogridis, 2018) envisions a future where humans coexist with robots and artificial intelligence. The city has advanced AI assistants, flying vehicles, and intelligent systems—emerging technologies in today's urban planning. This duality in technological application is central to the film's message: when applied with careful planning, technology has the potential to create utopian environments, but when used indiscriminately, it can lead to dystopian realities. In this context, architectural methodologies must be continually reassessed. The rapid acceleration of construction and technology implementation often leaves little room for critical reflection and urban planning, emphasizing the need for a more deliberate approach to integrating advanced systems into architectural design.

Ultimately, science fiction films such as *Altered Carbon 1* (Kalogridis, 2018) offer a speculative perspective on the future of architectural scales and urban environments. As design boundaries extend beyond traditional ground-based structures, the question remains: what will be the ethical, social, and spatial consequences of these changes?

As highlighted in environmental psychology and cinematic space studies, dense, highly vertical, and technologically saturated urban settings significantly alter human sensory and emotional experience (Bruno, 2007; Sobchack, 1992). Overloaded spatial stimuli, such as intense lighting, towering skyscrapers, and fragmented visual layers, are associated with cognitive stress, disorientation, and feelings of alienation (Stokols, 1972; Xylakis et al., 2021). In contrast, access to balanced spatial proportions, visual coherence, and natural elements supports perceptual comfort and emotional well-being (Ulrich, 1983; Kaplan & Kaplan, 1989). In *Altered Carbon* (Kalogridis, 2018), the sprawling, chaotic metropolis—saturated with holograms, AI-driven systems, and relentless vertical expansion—immerses viewers in a sensory environment that feels overwhelming and oppressive, mirroring psychological theories of spatial crowding and urban overstimulation. At the same time, the elite's elevated residences, combining high-tech luxury with curated natural elements, evoke emotional distance from the lower city, reinforcing feelings of power imbalance and social detachment. Through these contrasting spaces, the series invites audiences not only to visualize but also to feel the consequences of unregulated, technology-driven urbanization.

4. FINDINGS

The analysis of *Elysium* (Blomkamp, 2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon 1* (Kalogridis, 2018) reveals distinct architectural and urban paradigms shaped by technological advancements and social hierarchies. As outlined in **Table 1**, each film presents a speculative vision of the future, emphasizing key themes such as **urban segregation, vertical urbanism, AI integration, and ecological sustainability** (Table 1).

The comparative analysis of *Elysium*, *Oblivion*, and *Altered Carbon* illustrates how futuristic architectural and urban paradigms respond to issues of inequality, technological advancement, and environmental collapse. Each work portrays a distinct speculative trajectory: *Elysium* contrasts a decaying Earth with an elite orbital utopia; *Oblivion* explores post-apocalyptic isolation through elevated, sterile habitats; and *Altered Carbon* envisions a hyper-dense city dominated by AI and digital immortality. Despite differences, all three emphasize spatial segregation, vertical urbanism, and the psychological and ethical impact of built environments. These representations critique the overreliance on technology as a solution to social crises and raise critical questions about whether the future of architecture lies in improving Earth or building entirely new worlds.

Table 1. Comparative Analysis of Architectural and Urban Paradigms in *Elysium* (Blomkamp, 2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon 1* (Kalogridis, 2018)

Theme	Elysium (Blomkamp, 2013)	Oblivion (Kosinski, 2013)	Altered Carbon - 1 (Kalogridis, 2018)
Urban Segregation and Social Stratification	Earth: Overpopulated, decaying slums / Elysium: A luxurious space station for the elite	Earth: Abandoned, post-war ruins / Isolated sky towers for the privileged	Sky-high luxury towers for the wealthy, overcrowded and chaotic urban sprawl for the lower class
Vertical Urbanism and City Planning	Earth is disordered and chaotic, whereas Elysium is a meticulously planned orbital habitat	Sky-high dwellings contrast with the abandoned Earth's surface	Extreme vertical urbanism with high-tech skyscrapers and parametric architecture
Technology and AI Integration	Robotic enforcers, automated medical units	Autonomous drones, centralized surveillance	AI-managed smart buildings, AI avatars (e.g., Poe Hotel), immersive virtual environments
Extraterrestrial Habitats and Colonization	Elysium is a fully self-sustaining space habitat independent of Earth	Humanity prepares to abandon Earth for Titan	No direct off-world habitat, but digital consciousness transfer challenges traditional spatial dependency
Natural Environment and Ecological Sustainability	Earth is polluted and overcrowded; Elysium is an artificial green utopia	Earth's surface is largely destroyed, but small eco-friendly retreats remain	Elite areas integrate nature with technology, while lower-class districts are over-urbanized
Architectural Form and Style	Elysium: Modernist, symmetrical, sterile / Earth: Chaotic, industrial, decayed	Minimalist high-tech and futuristic modular structures	Fusion of Gothic, modernist, and parametric designs in dense urban spaces
Dystopian vs. Utopian Contrast	Elysium is utopian but only for the elite; Earth is entirely dystopian	The unseen new world for humanity may be utopian, but Earth is a post-apocalyptic dystopia	Extreme technological integration results in a high-tech dystopia, sacrificing human-scale livability

5. DISCUSSION AND CONCLUSION

Architecture and science fiction both emerge from speculative thinking and have the potential to shape the future. Science fiction cinema often glimpses into worlds beyond present-day technological and spatial possibilities. By reconstructing hypothetical advancements in science and technology, science fiction serves as both a catalyst for innovation and a critical tool for examining the consequences of progress. While science fiction influences technological and societal development, it also significantly shapes architectural discourse and artistic vision.

The rapid advancement of technology, accessibility, and feasibility has significantly impacted architecture. This acceleration has led to utopian visions, critical reflections, and the rapid transformation of architectural products, often at the expense of contextual depth. The increasing speed of technological change challenges the traditional design process, where buildings and urban environments are critically evaluated after their implementation rather than before. While smart cities and intelligent buildings continue to be tested experimentally, many fail to address more profound conceptual and urban challenges. Evaluations of "smart cities" worldwide reveal that these urban environments prioritize technological integration over spatial and social considerations, often resulting in highly automated yet contextually disconnected spaces.

This phenomenon is also evident in science fiction films. In recent years, many science fiction productions have not introduced radically new spatial designs but have instead focused on extrapolating contemporary urban conditions. *Elysium* (Blomkamp, 2013), *Oblivion* (Kosinski, 2013), and *Altered Carbon 1* (Kalogridis, 2018) illustrate alternative worlds beyond Earth, reinforcing the idea that the future of urban life may extend beyond our planet. However, these films also present a dystopian vision for Earth, where the planet is abandoned or uninhabitable due to war, pollution, or overpopulation.

In *Elysium* (Blomkamp, 2013), Earth is portrayed as an underdeveloped, polluted, and impoverished world inhabited only by the lower class. Technology does not enhance life but merely sustains a factory-like existence for the working class. In contrast, *Elysium* (Blomkamp, 2013) represents an idealized, technology-driven utopia where the elite enjoy high living standards and a carefully designed environment.

In *Oblivion* (Kosinski, 2013), Earth is entirely uninhabited and abandoned due to the aftermath of war, forcing humanity to relocate to Titan.

In *Altered Carbon 1* (Kalogridis, 2018), Earth remains highly populated and technologically advanced, yet this excessive integration of AI, automation, and high-rise urban density results in an overwhelming and chaotic environment. The idealized world exists elsewhere, where technology is used exclusively for the benefit of human society rather than for uncontrolled expansion.

These representations highlight a fundamental shift in architectural scale. Today, design is no longer confined to buildings, cities, or continents—the new scale is planetary. Science fiction challenges us to consider the consequences of technological progress and the spatial possibilities of future civilizations. As architecture increasingly incorporates technology at an unprecedented pace, critical contextual awareness and design coherence become essential. These films serve as a warning and an invitation to rethink design approaches, urging architects to question whether rapid technological integration leads toward a utopian or dystopian future.

The architectural paradigms portrayed in science fiction encourage a more reflective and holistic approach to future design. As technological solutions become increasingly dominant, there is a growing need for balance between automation and human-scale urbanism, efficiency and empathy, and progress and preservation. Rather than designing isolated smart systems or speculative off-world colonies, architects and planners must ask: how can we design for inclusivity, sustainability, and emotional well-being—whether on Earth or beyond?

Future research could investigate how immersive virtual environments and metaverse-inspired design philosophies are shaping architectural education and urban imaginaries. Furthermore, interdisciplinary studies involving environmental psychology, film theory, and parametric design might provide deeper

insights into how spatial experiences are constructed and emotionally perceived—especially in highly technological urban futures.

Ultimately, science fiction does not merely imagine the future—it interrogates the present. If architectural innovation increasingly turns away from Earth, who gets left behind—and who decides what future we build?

EXTENDED ABSTRACT

Research Problem & Purpose

The convergence of architecture and science fiction offers a speculative platform to question the trajectory of urban futures critically. Through visually immersive worlds, science fiction cinema reflects contemporary anxieties and explores potential urban and architectural responses to technological, environmental, and social crises. This study investigates how three key science fiction productions—Elysium (Blomkamp, 2013), Oblivion (Kosinski, 2013), and Altered Carbon Season 1 (Kalogridis, 2018)—envision architectural futures, focusing on themes such as urban segregation, vertical urbanism, AI integration, and ecological sustainability.

The central research question asks: How do speculative urban and architectural representations in science fiction reflect, critique, or anticipate real-world architectural trends and challenges? The study aims to explore how these fictional portrayals influence contemporary architectural discourse and provoke ethical reflections on the future of the built environment.

Methodology

This research employs a qualitative film-based analysis, integrating comparative visual reading and content analysis to interpret spatial representations in the selected films. Scenes were analyzed for their architectural composition, spatial narratives, symbolic elements, and perceptual atmosphere. The analysis is supported by academic literature in architecture, urban studies, and science fiction theory to ground interpretations and avoid subjective biases.

Theoretical grounding is primarily based on Rem Koolhaas's Bigness theory, addressing the implications of scale, autonomy, and contextual detachment in futuristic architecture. This framework is supported by additional concepts drawn from environmental psychology (Böhme, 1993; Kaplan & Kaplan, 1989; Pallasmaa, 2012). The methodology also acknowledges limitations—such as focusing on visual-textual interpretations without direct empirical audience data—and clearly distinguishes between fictional speculation and architectural realism.

Findings

The analysis reveals distinct speculative urban paradigms shaped by technological development, social hierarchy, and aesthetic ideologies: Elysium portrays an extreme spatial dichotomy: Earth is overcrowded and decayed, while the elite inhabit a utopian orbital space station, reflecting spatial injustice and class-based segregation. Oblivion introduces airborne architecture where high-tech sky dwellings replace Earth's ruined cities, symbolizing technological escape and vertical isolation. The architectural aesthetics emphasize sterility, transparency, and automation, while also generating perceptual tensions between serenity and alienation. Altered Carbon represents extreme vertical urbanism and digital consciousness, raising complex issues of identity, memory, and the commodification of life and space. Architecture merges AI-managed environments with parametric and Gothic design, creating a hyper-dense dystopia detached from human scale.

In all cases, architecture functions ideologically as a mediator of power, access, and ethical decisions. These representations expose ethical dilemmas: Who is excluded in technological utopias? What emotional and psychological effects emerge in hyper-isolated or digitally manipulated spaces? The study finds that verticality, detachment, and over-automation often correlate with alienation, loss of identity, and social fragmentation.

Conclusions and Recommendations

The spatial futures represented in these films caution against a purely techno-centric approach to urban development. While innovation in vertical architecture, smart environments, and off-world colonization offers imaginative solutions, it also risks deepening social inequities and undermining ecological and psychological sustainability.

Key recommendations for architectural discourse include Prioritizing social inclusivity, resisting exclusionary spatial models, and balancing technological progress with ethical and contextual considerations, including perceptual and emotional impacts on inhabitants and integrating nature within urban systems to avoid the detachment seen in fictional representations, reevaluating vertical expansion and automation not only for feasibility, but for their moral and psychological implications.

These cinematic visions serve as critical provocations for architects and urban planners. Rather than passive projections, they encourage active design responsibility—where speculative imagination informs equitable, adaptive, and ethically conscious architectural futures.

Author Contribution Declaration

A. Idea and editing **B.** Literature Review **C.** Writing
D. Data Collection **E.** Analysis **F.** Critical Review

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