THE SPRAWL OF CYBERSPACE: URBAN SPATIALITY, TEMPORALITY, AND INDIVIDUALITY IN *SNOW CRASH, ENDER'S GAME,* AND *SYNNERS*

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Abstract

The progression of cities, as Henri Lefebvre observed, can be studied as the slow spread of its heterotopic peripheries over its dominant space. This margin-to-center motion is usually accompanied by a change of the individual's mindset, notably affecting their concepts of space, time, and identity. Thus, this thesis will trace how the cybercity—the newest addition to the urban evolution and formerly a heterotopic periphery of human life—has expanded into the dominant space of the physical city, therefore imposing its understanding of spatiality, temporality, and individuality on the contemporary post-industrial city, rendering it a hybrid of the virtual and the physical city. To demonstrate this claim, this thesis will examine each aspect of the cybercity's influence in representative literary works of the cyberpunk genre, namely, Neal Stephenson's *Snow Crash*, Orson Scott Card's *Ender's Game*, and Pat Cadigan's *Synners*.

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Introduction

The progression of cities, as Henri Lefebvre observed, can be studied as the slow spread of its heterotopic peripheries over its dominant space (*Urban* 1). Given this approach, Lefebvre counted four major milestones that have predated the urban megalopolis of today: the agrarian revolution, the formation of city-states, the induction of markets into the medieval city, and the Industrial Revolution (*Urban* 17). At each stage, events and/or activities relegated to the margins of communities eventually dominated the central space, as they merge with what Lefebvre named the urban fabric, defined as an urbanization process or the spread of the city's influence over other spaces (*Urban* 3–4). Its birth and spread were slow to take effect: at the time of the agrarian revolution, around 10,000 BCE, the urban fabric had yet to form (Lefebvre, *Urban* 7). At this stage, Lefebvre remarked that the city was still secondary to the village, as the former's existence always accompanied or followed the latter (*Urban* 7–8). Such was the case of the city-state, which formed after permanent settlements had seen an expansion in population, the earliest of which were the Sumerian city-states that were established around 3,100 BCE. These city-states were characterized by the evolution of institutionalized power and political leadership, and what started as communities centered around agricultural production slowly shifted towards political rule, with each community becoming subject to a city-state.

Nonetheless, throughout the Middle Ages—loosely defined as the period between the 5th and the late 15th centuries—the city changed its structure once more due to an economic re-orientation, namely the induction of markets into city-squares and the increasing power of merchants'

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guilds (Lefebvre, *Urban* 9). At the beginning of this period, merchants were originally only allowed in specified districts of the medieval city, but by the 13th and 14th centuries, the merchants' guilds harnessed enough economic significance to erect halls in major market towns. During the second half of the 18th century, the Industrial Revolution provided rapid technological development, allowing for further expansion and prompting increased rural migration. Migration marked a shift in the city's favor, as capital replaced the countryside's lands as the source of an individual's wealth; the city was no longer viewed as the border of the countryside, but rather the target destination of society (Lefebvre, *Urban* 11–12). The urban fabric, then, followed the Industrial Revolution's expansion and gradually erased agrarian life (Lefebvre, *Urban* 3).

The post-industrial city, or the modern urban city, has allowed the urban fabric to broaden, surpassing the traditional countryside as attributes of the urban lifestyle, such as public transportation, supermarkets, intricate infrastructure, and the Internet began to be included in villages. The trajectory of urban expansion also changed in the post-industrial city as the urban fabric shifted its focus from a horizontal to a vertical expansion: with the domination of vertical space, such as the building of skyscrapers, new theories about the relation of the city to its inhabitants emerged. Michel de Certeau observed that the viewpoint from above gave the individual the illusion of knowledge, and he dubbed the individual looking down through a bird's eye view an "Icarus flying above [the] waters," able to "ignore the devices of Daedalus in mobile and endless labyrinths far below" (93). The conquering of vertical space marked a new achievement in modern urban life: it provided humankind with a novel and panoptic eye-view onto the city, akin to godhood (Certeau

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93), with the urban fabric, now stretched vertically, dominating most spatial coordinates until the creation of a new dimension, cyberspace.

Originally coined by William Gibson, "cyberspace" is a byproduct of the cyberpunk movement, a subgenre of science fiction that formed in the early 1980s, resurging in the 2010s. In the preface of Gibson's *Burning Chrome*, Bruce Sterling characterizes cyberpunk as "a combination of lowlife and high tech," (xii) thereby presenting anti-heroes and technologically advanced dystopian futures as the foundational characteristics of the genre, with cyberspace being presented as a byproduct of the two traits. As a dimension created by humans, cyberspace cements the feeling of godhood previously experienced by the urban fabric's vertical expansion; it is thus the major invention that prompts its own understanding of spatiality, temporality, and individuality.

As a newly founded virtual dimension, cyberspace has been depicted in Gibson's *Neuromancer*, where it was originally defined as a "consensual hallucination," a marginal space that the individual can "jack into" (51). This early depiction of the virtual dimension can be likened to Michel Foucault's heterotopias, places that are "outside of all places, even though it may be possible to indicate their location in reality" (4). Cyberspace was thus described as the heterotopia of the modern urban city, a placeless *topos* that is contrasted with reality. Therefore, while the urban fabric's previous expansion enveloped the physical dimension, the conception of cyberspace would later further its spread, as virtual reality, initially a heterotopia, undergoes the same margin-to-center movement. The portrayal of cyberspace as a heterotopia would characterize the start of the cyberpunk movement, with other works depicting this virtual dimension differently: Neal Stephenson's *Snow Crash*, for instance, describes a more elaborate version of cyberspace, with the

"Metaverse" representing a fully functioning network, a cybercity operating within the urban fabric.

Since the launch of the cyberpunk movement, multiple metaphors have been employed to describe the virtual dimension. Kristen Veel, for instance, argued that cyberspace resembles a labyrinth rather than a heterotopic margin, comparing it to Gilles Deleuze and Félix Guattari's rhizome and Umberto Eco's *Model Q* (154). Deleuze and Guattari's rhizome is a network that has no center, defined by lines that are inter-connected and heterogeneous; in this sense, it is a web that allows multiplicities (7–8). The rhizome also has "no unity to serve as a pivot in the object, or to divide in the subject" and thus, given that it has no center, it can withstand ruptures (Deleuze and Guattari 8–9). Eco bases his concept of the net, a type of labyrinth, on Deleuze and Guattari's rhizome (81), and also defines the Model Q as "a polydimensional network of properties, in which some properties are the interpretants of others" (113). Therefore, the Model Q can be seen as a net, a rhizome, the lines of which can only be referred to through their connections to others. In this sense, cyberspace is a network that is not distributed around a center, that cannot be easily destroyed, and that parallels the physical world.

Additionally, the virtual dimension has an impact on temporality; given its intangibility, temporality is traditionally defined as a linear function of meaning, that is experienced via remembering, synthesizing, and anticipating events (Hammer 1–2). By adding the virtual dimension to the physical city, temporality is enhanced in cyberspace by virtue of its precision and permanence. Unlike in the physical city, memory in cyberspace is a measurable unit, translated into binary language and later presented in the preferred language of the user via an assembler program. This

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encoding of memory is reminiscent of Mikhail Bakhtin's chronotopes, defined as "the intrinsic connectedness of temporal and spatial relationships that are artistically expressed in literature" (84). Bakhtin's interest in chronotopes in literature implies that they may be present in other linguistic contexts, such as in binary and other computer languages. Chronotopes, then, defined as time/space configurations encapsulated in memory information, are now stored in cyberspace, augmenting temporality by providing the option of hindsight through concise memory data. If time is raw data, then memory in its rudimentary form is an individual's subjective interpretation of temporal information; memory, therefore, can be defined as the subjective storage of data, transformed into information through a trigger and subsequent recollection, such as Marcel Proust's example of the madeleine. In *In Search of Lost Time; Swann's Way*, the narrator accepts his mother's offer for tea and madeleine cakes, the taste of which reminds him of his childhood at Combray (Proust 60–65).

The populated cyberspace consequently becomes a medium for outsourcing memories—the storage of memories outside of individual consciousness. Cyberspace is then established as a collectively experienced reality, enabling the formation of the "hive mind," another common trope in the cyberpunk movement. The hive mind is conceptualized as a narrative tool that shifts the collective unconscious to the forefront of consciousness, with cyberspace prioritizing collectivity over individuality; this collectivity defines a dimension of cyberspace reminiscent of collective physical space. Carl Jung's concept of the collective unconscious parallels the hive mind in that the former is "a second psychic system of a collective, universal, and impersonal nature which is

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identical in all individuals," a universal yet dormant reality characterized by archetypes (*Arche-types* 43). The shift in primary consciousness, ushered by the hive mind, thus presents a different perception of temporality, as individuals involved in the hive mind share collective memories—archetypes—in a uniform chronology.

Memory-as-information is an aspect of the posthuman and transhuman movements that accompanied cyberpunk, wherein individual identity and cyberspace are similarly fragmented. The virtual dimension questions the concept of identity as posthumanism and transhumanism challenge essentialist claims; the body can be portrayed as either altered mechanically, like in George Alec Effinger's *When Gravity Fails*, or altogether abandoned, as with the hackers in *Neuromancer* and *Snow Crash*. Posthumanism and transhumanism arose in the eighties and nineties; while they both share a focus on technology and a belief in the mutability of humans, their perspectives diverge when considering the relation between humanity and progress. Francesca Ferrando, for instance, conceptualizes transhumanism with an emphasis on human enhancement and rationality rooted in the Enlightenment (27). Ferrando also advances these priorities as being the controversial aspect to the movement, since they may lead to technological determinism, or the belief that technology centers social practices and values (28). In contrast, posthumanism considers several centers of interest, rendering it post-centralizing and disseminating the focus on technological advancement within its beliefs (Ferrando 30). Hence, posthumanism is seen as an inclusive and ongoing discourse that allows multiple currents to arise from it. Six coexistent currents in the posthuman movement have been established thus far, starting with its roots in critical posthumanism, the academic discourse feminist theorists engaged in during the nineties, and cultural posthumanism, the

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cultural focus of critical discourses (Ferrando 29). In parallel, philosophical posthumanism resulted from previous critical and cultural inquiries, which questioned historical humanistic approaches (Ferrando 29), while new materialism is a feminist-specific current that emphasizes the dialectical relation between language and matter, and the subsequent influence on biology and culture (Ferrando 31). Furthermore, antihumanism subscribes to the Foucauldian concept of the "Death of Man" to deconstruct the notion of the human, and metahumanism adopts the Deleuzian description of the body as a network of signification to analyze its relation with its environment (Ferrando 31).

While several definitions have been attributed to transhumanism and posthumanism, they will be defined in this context as movements challenging the limits of human nature through technology, prompting the birth of the cyborg, a concept that will be discussed at length in the third chapter of this thesis. Cyberpunk literature subscribes to transhumanist and posthumanist philosophy by featuring the hacker hero who is dissatisfied with the limitations of their senses and who seeks to be liberated from them through their fusion with cyberspace, therefore advancing postmodernist's concept of the disjointed Self. Pat Cadigan's *Synners*, for instance, furthers the concept of fragmented identity by exploring disembodiment as a norm in cyberspace, thereby linking the cyborg identity with that of the physical and virtual hybrid city.

Cyberspace has thus prompted new understandings of the concepts of spatiality, temporality, and individuality. While the virtual dimension has been treated as separate from physical reality, I believe that the cybercity, formerly a heterotopic periphery of human life, has expanded into the dominant space of the physical city, guided by a margin-to-center motion that has shaped the

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evolution of urban space. Cyberspace's understanding of spatiality, temporality, and individuality has permeated the contemporary post-industrial city, rendering it a hybrid of the virtual and the physical cities. To demonstrate this claim, I have chosen to examine each aspect of the cybercity's influence in representative literary works of the cyberpunk genre, namely, Neal Stephenson's *Snow Crash*, Orson Scott Card's *Ender's Game*, and Pat Cadigan's *Synners*.

Stephenson's Metaverse is portrayed as a fully-functioning virtual space, the social hub of a limitless number of users, and the parallel dimension of a physical urban city. It has addresses and streets, with both public and private property; when users enter the Metaverse through a personal terminal, they appear in a public space called the "Street," the virtual district that connects the expanses of the Metaverse together. Meanwhile, other users, like Hero and Ng, can also own a portion of the Metaverse. Like any city, the Metaverse embodies its own heterotopias, places such as the "Pyre," the eternal bonfire, where the "Graveyard Daemons" burn the body parts of dead avatars. Nevertheless, the cybercity in *Snow Crash* is not a world that is independent of others, as it coexists with the physical world, a union that is best depicted by the character of Ng, portrayed as an accomplished businessman, a cybernetics specialist, and the owner of Ng Security Industries. In the physical world, Ng is a disabled burn victim who has encapsulated himself in his technologically advanced van and is described as a van/man hybrid, with the van being an extension of his body (Stephenson 211). Ng, living equally in the Metaverse and in the tangible world, represents a node that connects the virtual with the physical. In this sense, the cybercity has intertwined itself with its physical counterpart, forming a fully conjoined web. The virtual city resembles Jorge Luis Borges' map in "On Exactitude in Science," the size of which exactly mirrors the

Empire's until the map was consumed by the city (325). Thus, the term *cybercity* no longer denotes only the virtual, but describes the totality of urban space that cannot be detached from the information network, enabling the addition of a fourth virtual dimension to spatiality, alongside length, width, and depth.

Card's *Ender's Game* explores the dimension of temporality in the context of the Internet's origins as a military tool, wherein children are drafted to fight in an ongoing war against the "buggers," an alien species. Ender, the protagonist, relies on video games to enhance his training, referring to the simulator as "the most perfect videogame he had ever played" (Card 260). The simulator alters its context according to Ender's decisions, with the scenarios becoming increasingly complex as Ender ascends the ranks of the Battle School. Temporality, encapsulated in the simulator's chronotopes, has quantified and preserved Ender's memory, and the preservation and accessibility of virtual chronotopes across the hybrid city also enable the formation of the hive mind. As the story develops, Ender is placed at the center of the hive mind, the human counterpart to the buggers' queen, and this placement is justified by Ender's propensity for in line with Sigmund Freud's *Civilization and its Discontents,* the instincts of sexuality and violence are found in different proportions behind Ender's motivations.

In Pat Cadigan's *Synners*, individuals seamlessly coexist in the virtual and physical dimensions of the urban city. Jones, for instance, suffers from clinical depression, and receives implants that allow him to experience the illusion of suicide by retaining his consciousness in a limited virtual space, thus obstructing his access to his body. Similarly, Sam, a gifted hacker, invents a

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device that connects her nervous system to a computer processor via an abdominal needle insertion, thereby allowing her to seamlessly switch between her virtual and physical avatars. With consciousness becoming a data unit that can be uploaded to cyberspace, the commute from the physical to the virtual city is essentially eliminated, thereby showcasing the pervasiveness of the cybercity in the characters' everyday life as well as the fragmentation of their individuality. This is corroborated by the end of the novel, as the characters are presented as the original *synners*, an urban invention that connects the physical city to the virtual. In this sense, the novel presents the possibility of immortality, as the death of Mark's physical body ushers his consciousness to cyberspace.

The parallelism between the digital and the analogue in *Snow Crash* has been well documented: Carl Boehm, for instance, defined the Metaverse as a platonic realm that is disrupted by the induction of the physical city's Snow Crash virus, thereby prompting Hiro to assume his role as the protagonist (397). Boehm's comment showcased the short-lived utopia of the Metaverse and its subsequent restoration (395). Likewise, Daniel Grassian observed the Metaverse' increasing influence on the physical city, namely through the latter's geometrical architecture, such as the burbclaves (256), and emphasized their similarities in that "the burbclaves are another Metaverse within reality, a space in which Americans escape the violent and anarchic reality that actually surrounds them" (257). In this context, the Metaverse is a reprieve that is later obstructed by a virus of physical origin, accentuating the progressive union of the virtual and physical cities and their inter-dimensional influence. However, despite reflections on the hybrid city and its development, there is yet to be a consensus on the extent of its impact once it is fully formed.

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The resurgence of the Snow Crash virus also changes the urban cities' culture; Kelly Wise-cup, for example, observed that "[a]s societies define disease within their particular contexts, they are themselves simultaneously defined by disease and their attitudes toward it" (862). Accordingly, the virus would not only alter the relation between the physical and virtual cities but their connection to the urban dwellers as well. Nonetheless, due to the virus' gene-altering characteristic, Wisecup noted that its effect also extends to the characters' sense of self: for instance, Juanita's choice to permanently host the virus "blurs the distinctions between [her] mind and [her] body," thereby presenting the disease as a uniting element (Wisecup 873). Likewise, Lisa Swanstrom observed the self's disintegration process in *Snow Crash*: "Stephenson pinpoints the moment of the execution of Enki's code as the dawning of human individuality and higher-order thinking. Only when each individual mind is compartmentalized can it fully come into consciousness" (72). Enki's code in the novel is the linguistic virus that fragments the human mind, enabling it to run multiple codes simultaneously. By pinpointing the moment of the code's execution in history as the "dawning of human individuality," Swanstrom concluded that in *Snow Crash*, the compartmentalization of the mind is the foundation of modern human life (72). Consequently, the coexistence of the Snow Crash virus with Enki's code in the urban setting is a testament to its fragmentation, paralleling the hybrid city.

Identity fragmentation and post-modern narratives are popular themes across cyberpunk novels. In their article on *Ender's Game*, Christine Doyle and Susan Louise Stewart traced Card's use of Bakhtin's double-voiced discourse to present the fragmented nature of human experience (193). Subsequently, the interconnection of these segments becomes a subject of interest; Steffen

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Hantke, for instance, noted that Card's portrayal of simulations unites previously distinct concepts: "What [the battleroom] accomplishes is a technological interface between the body and its environment" (504). Similar to *Snow Crash*'s fragmented city, the post-modern narrative of *Ender's Game* presents its environment as simultaneously uniting and fracturing human experiences via technology, thus the hybrid city and human nature mirroring one another.

Card's simulations have advanced both purposes of union and fragmentation by targeting the characters' memories in particular, showcasing that memory behaves differently in cyberspace as it is not stored in individual consciousness but rather in virtual space as data. Elizabeth Burow-Flak, for instance, commented on how the giant in Orson Scott Card's *Ender's Game* encapsulates the memory of the buggers' genocide (247), implying that the giant is itself a data unit that simultaneously embodies and exports the buggers' culture. Furthermore, as cyberspace becomes populated, it stops being an isolated space where the only information stored is the information added by the users themselves. Russell W. Belk remarked that individuals "increasingly outsource [their] memories for both facts and feelings. These memory cues are likely to be commented on or responded to by others in a much more active co-construction of collective sense of past" (490). The populated cyberspace then becomes a medium for conserving memories, and triggers are increasingly likely to come from the digitalization of others' stored information, thus simultaneously externalizing individual memories and forming a collective one. Additionally, the recreation of the simulated environment on the buggers' home planet in *Ender's Game* constitutes the import of triggers from cyberspace into the physical world, thereby showcasing the seamlessness of the virtual and physical cities as they begin to share memory triggers from both dimensions.

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Moreover, the simulated environment also represents the memory of the buggers' hive mind, given that it encapsulates the memory of their culture. Carl Jung explained that "the contents of the collective unconscious have never been in consciousness, and therefore have never been individually acquired, but owe their existence exclusively to heredity" (*Archetypes* 42). In similar fashion, the digitalization of the giant and its recreation as a physical corpse allows the preservation of this heredity; given that the buggers operate strictly through the hive mind, cyberspace would thus have enabled Ender's subsequent recreation of the culture, aided by his previous mirroring of the collective unconscious as a strategy and cyberspace's formation of collective memories.

The fragmentation of the urban space and memory in cyberpunk novels implies that its impact can also be extended to individuality; *Synners*, in particular, has been discussed in terms of its presentation of the cyborg's origin story. Laura Chernaik proposed the novel as an anti-foundationalist Edenic story that gives birth to the cyborg through the acceptance of humankind's disintegrated self (69). Similarly, Amanda Pavani observed how *Synners* rewrites the Frankenstein tale through the character of Mark, as the latter has "has no creator but himself" (63), and considered posthumanism as the main conflict in *Synners*, since "[i]nstead of rebelling against a creator, [Mark] rebels against his bodily limitations" (63), thereby highlighting the active disintegration of the self as a cognitive and physical process. Urban theorist Barbara Becker described the body in the modern urban city as "both active and passive because it is always simultaneously an instantiation of action and submission, simultaneously giving and perceiving meaning" (363). Subsequently, the body of the city dweller is as fragmented as their mind since it is continuously shifting

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between the individual's identities in order to navigate the space presented to them. This interpretation is observable in Cadigan's *Synners*, as the novel presents characters that live in the virtual and the physical interchangeably, noting how this interaction of the city's dimensions constitutes the norm from which the cyborg identity emerges. As the formation of the cyborg has been established, it provides a foundation upon which to expand the dialogue regarding its influence on both the hybrid city and the urban dwellers' identity.

The concepts of urban spatiality, temporality, and individuality are the primary components in the formulation of the virtual/physical hybrid-city culture, traceable through three representative novels. Due to their interconnectedness, to isolate each concept is difficult; as such, this thesis proposes discussing the first element, spatiality, in its first chapter, while purposefully keeping its relation to temporality and individuality in the background, only to progressively trace their overlap in the following chapters. In Chapter 1, I will investigate the role of spatiality and the mapping of the hybrid city as a metaphorical architectural structure through an analysis of its central urban culture, its margins, and its set(s) of heterotopias. I will then observe the hybrid city's impact on the characters' senses in *Snow Crash* and discern its influence on the characters' perception of their environment. Further, the mechanisms that allowed the Snow Crash virus to spread in the analogue and digital spheres will be highlighted against the characters' participation in their environment. In Chapter 2, I will discuss the role of temporality in the development of the simulations in *Ender's Game* and the disruption of linearity through the digital conservation of temporal elements through chronotopes. I will then examine the relationship between spatiality and temporality

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via chronotopes and their function as memory-builders. I will conclude this chapter with the digitalization of chronotopes' impact on the formation of the hive mind and its subsequent influence on the characters' experience of time and memories. Finally, in Chapter 3, I will showcase the coalescence of spatiality and temporality, as well as their influence over identity formation in *Synners*; thus, I will also survey the formation of the cyborg as a byproduct of the virtual and analogue network. Additionally, the last chapter will examine the dialectical relation between the hybrid city and its dwellers, its disintegrated nature, and its primary role in formulating views on mortality and death.

Chapter 1: Spatiality in *Snow Crash*

According to the Merriam-Webster dictionary, *virtual* originates from the latin *virtus*, meaning to contain strength or virtue, and from the middle latin *virtualis*, meaning efficacious or potential. The word grew popular in the 15th century, denoting a phenomenon that is "in such essence or effect though not formally recognized or admitted" (Merriam-Webster). Thus, the word has been used before its technological connotation; Christopher B. Gray, for instance, explains that St. Thomas Aquinas employs the adjective *virtualis* and the adverb *virtualiter* in the contexts of virtual space and reality to describe his theories on law (329–339, 334–335). Jacques Derrida advances the concept of virtuality with his theory on deconstruction and *différance;* if language can only pinpoint to a signifier that cannot be reached, then the system of sign itself becomes a virtual construct. Therefore, cyberspace, a medium formed through binary language, only adds to the virtual's complexity, as Neal Stephenson writes: "The Metaverse is a fictional structure made out of code. And code is just a form of speech—the form that computers understand" (197). In this chapter, I will trace the connection of the virtual to electronic and physical spaces, and will explore how the two separate dimensions conjoin to form *Snow Crash*'s city, the blurring of the previously distinct concepts of the virtual and the material, and the implication of such a process on the characters' perception of spatiality.

A. The Influence of the Rhizome on *Snow Crash*'s City

In addition to the historical discussions on virtuality, the word has seen recent usage in urban studies; for instance, Henri Lefebvre proposes urban society as a virtual object (*Urban* 3),

defining it as a "highly complex field of tensions, a virtuality" (*Urban* 40). Kristen Veel corroborates this statement, explaining that "[o]ur consciousness conceives of everything that goes on around us as spatial stories, which are comprehended in correlation with the experience of our own body" (153). Basing her opinion on the premise that spatiality is a subjective experience, Veel interprets "cyberspace as the metaphorical union of physical space and information" (153), thus posing virtuality as a characteristic of physical space. Lefebvre's analysis of urbanism as the cumulation of continuous margin-to-center motions can be tied to this conclusion; as the number of urban citizens frequenting cyberspace grows, it solidifies itself within the urban sphere. Therefore, the progressive union of the virtual city with its physical counterpart is seen as an expected sequence.

    1. The Progression of the Metaverse within the Urban Fabric

    In Stephenon's *Snow Crash*, the development of the Metaverse into an urban center can be glimpsed when Hiro, the novel's protagonist, explains: "At the time, [the Metaverse] was just a little patchwork of light amid a vast blackness. Back then, the Street was just a necklace of streetlights around a black ball in space" (24). This early description of the Metaverse mirrors William Gibson's cyberspace in *Neuromancer*, wherein the virtual space has been portrayed as the margins of the urban city. Later, Hiro observes that since the establishment of the Metaverse, "the neighborhood hasn't changed much, but the Street has," thus noting the milestones the virtual city went through since its creation, including its propensity to assimilate the physical city's appearance (Stephenson 24). The cybercity's mirroring function is an indication of its progression towards the

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urban center, reminiscent of Henri Lefebvre's concept of heterotopies, which will be further discussed later in this chapter. Nevertheless, due to the paralleling of both virtual and physical dimensions, the Metaverse's progression within the urban fabric can be glimpsed through its similarities with the physical city, such as its structure and culture.

For instance, Hiro reveals that the basis of the Metaverse's success is Juanita's detailed face software, which allows users to "condense fact from the vapor of nuance" (Stephenson 56), thus considering human contact as the core of the cybercity's popularity. Nevertheless, Hiro notes that the Metaverse extends, rather than changes, the physical city's social interactions, observing how individuals would not necessarily interact in the Metaverse if they did not previously do so in the real, physical city (Stephenson 33). Likewise, classism is equally apparent in the cybercity, reflected through the adoption of avatars: if one were resourceful enough, they would purchase additional software to edit their avatar, while others are more likely to procure ready-made sets such as the stock Brandys and Clints (Stephenson 33–34). Furthermore, Hiro explains that only affluent individuals are equipped to access the Metaverse: "Put in a sign or a building on the Street and the hundred million richest, hippest, best-connected people on earth will see it every day of their lives" (Stephenson 25). The cybercity extends its physical counterpart's capitalist reach, as predominant ideologies inherent in the physical city start to permeate the virtual dimension.

The Metaverse also extends the structure of the physical city, mirroring its density and development. For example, Hiro describes the cybercity's downtown as analogous to the physical city's due to the intensity of its advertisements: "Downtown is a dozen Manhattans, embroidered with neon and stacked on top of each other" (Stephenson 24). Moreover, following the progress

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of the physical city, the Metaverse has created simulacra of its own, thus adding another level of complexity to its virtuality: "Amusement parks in the Metaverse can be fantastic, offering a wide selection of interactive three-dimensional movies" (Stephenson 36). The amusement parks described can thus be likened to Jean Baudrillard's Disneyfication, wherein their primary role is to be presented as a "deterrence machine set up in order to rejuvenate the fiction of the real in the opposite camp" (13). The presence of the amusement parks serves to showcase the Metaverse's tangibility in contrast with its entertainment sites. Arguably, before the virtual city's development, the Metaverse itself presented a simulacrum of the physical city, serving as an imaginary site reasserting its physical counterpart as the real. The contrast between the two dimensions strengthened the characters' perception of the Metaverse as an imaginative representation, lacking the physical city's substantiality, and spurring a binary opposition between the virtual and the physical. Hiro demonstrates this belief when he dismisses the Metaverse's amusement parks as "nothing more than video games" (Stephenson 36). Likewise, when Raven first introduces the Snow Crash drug to Hiro, the latter comments that "you can't sell drugs in the Metaverse, because you can't get high by looking at something" (Stephenson 39). Hence, the Metaverse's users remain skeptical of its influence within the urban center, regarding it as the mirror of the physical city rather than its extension; in other words, at this point in the novel, the characters still consider the cybercity a heterotopic place, wherein their image is displayed rather than their actual presence (Foucault, *Of Other Spaces* 24). The Metaverse's creation of its own set of simulacra serves to decenter this opposition, reasserting the sites faithful to the physical city's rules as real and denouncing sites

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lacking their presence as unreal. Consequently, the Metaverse's portrayal in *Snow Crash* establishes it as a medium extending the physical city's reach, rather than a marginal space, despite the characters' ignorance of the cybercity's progress.

The novel's turning point is the introduction of the Snow Crash drug to the Metaverse, foreshadowed by Hiro's conversation with Raven. When Hiro asks whether the drug interferes with the brain or with the computer, Raven exclaims, "Both. Neither. What's the difference?" (Stephenson 41). By connecting the brain with the computer, Raven advances the beginning of the cyborg creation, a topic that will be discussed further in chapter 3. However, the implication of equating the brain with the computer does affect the concept of spatiality as well: as Raven presents the possibility of a user contracting harm from the cybercity, the utopic quality of the virtual space is disrupted. Foucault defines utopias as "sites with no real place," presenting "society itself in a perfect form" (*Of Other Spaces* 24). As a fundamentally unreal place, the Metaverse's description as a utopic place stems from the previously mentioned contrast between an imaginative virtual and a physical reality, a distinction that is blurred through the induction of the virus into the cybercity. The conjoining of both dimensions is reflected when Hiro, disconnected from the Internet, decides to write an antivirus software to Snow Crash, exclaiming that the "Metaverse has now become a place where you can get killed. Or at least have your brain reamed out to the point where you might as well be dead. This is a radical change in the nature of the place. Guns have come to Paradise" (Stephenson 328). By introducing the Snow Crash drug through Raven, L. Bob Rife has ushered a destructive phenomenon that goes against the Metaverse's previous ideology of creation and continuity, thus introducing the first point of tension in the virtual city.

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In this context, Lefebvre considers the coexistence of contradiction as the urban space's basis, explaining that the "study of [the urban space's] logic and formal properties leads to a dialectical analysis of its contradictions. The urban center fills to saturation; it decays or explodes" (*Urban* 39). Anna Cicognani corroborates Lefebvre when she concludes that cyberspace's evolvement will eventually turn the virtual dimension from a metaphor of space to a space for metaphors (19). Cicognani explains that cyberspace is a linguistic construction determined by the representation of the world that it writes; as such, the programmer, simultaneously the designer and the user of the virtual dimension, has the ability to change cyberspace's constitution, i.e., its metaphors (19). Stephenson's Metaverse allows this phenomenon to unfold, as the cybercity's users grow increasingly acquainted with the programming skills that necessitate its navigation. Subsequently, the cybercity becomes the culmination of its users' dynamic linguistic creations and the diverse representations it produces. In other words, the Metaverse becomes the hub of metaphor-creation, transforming itself from an inhabited place to a space constantly produced (Lefebvre, *Urban* 155). The Snow Crash virus is at the center of these spatial metaphors, establishing the virtual dimension as the physical city's extension by virtue of its first destructive metaphorical creation, thus revealing the formation of a hybrid city uniting both dimensions in the process. As such, the rest of this thesis will refer to the conjoined city as a *hybrid city*, with its virtual and physical dimensions being referred to as *cyber or virtual city* and the *physical city* respectively.

As the Metaverse fuses with the physical city, the nature of the urban space shifts to accommodate it, with the first distinction being the introduction of a space that is constantly produced

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and reproduced. For instance, when Hiro complains of his stifling apartment, he comments: "Hiro spends a lot of time in the Metaverse. It beats the shit out of the U-Stor-It" (Stephenson 22). The contrast between the physical and virtual spaces' size implies their relation; by spending time in the virtually endless space of the Metaverse, Hiro compensates for the smallness and meagerness of his apartment. The cybercity's endlessness, compared to its physical counterpart's limitations, is the aspect that attracted users to the virtual dimension and the origin behind its dynamic space-production. For instance, Hiro mentions buying his house when the Street was "a necklace of streetlights around a black ball in space" (Stephenson 24). The existence of a "black ball in space" is enough to usher the production of space, as Lefebvre writes: "The void (a place) attracts; it has this sense and this end. Virtually, anything can happen anywhere" (*Urban* 130). The creation of cyberspace is synonymous with the creation of a void, motivating users to produce space within it. Moreover, the Metaverse's additional layers of virtuality have provided the opportunity to multiply the creation of space; as a void that can be created and re-created, the cybercity has become the primal space for producing metaphors. The virtual dimension's progress from a passive to an active space, reflected in its development, can also be observed in the second change introduced to the urban space, the rhizomatic expansion.

2. *The Architecture of the Hybrid City*

While the metaphor of the heterotopia has been previously employed to describe cyberspace, theorists such as Veel insisted that the virtual dimension is better conceptualized as a labyrinth or a rhizome, due to the different spatial experience it offers (153–154). Unlike the maze, the

labyrinth lacks the constant decision-making required to navigate it, rendering the walker's symbolic spiritual experience the sole focus of the space, akin to cyberspace's effortless navigation (Veel 154). In *Semiotics and the Philosophy of Language,* Umber Eco writes of a labyrinth following the Model Q, using Gilles Deleuze and Félix Guattari's works on rhizomes as foundation (81). Eco defined the Model Q as an interconnected net (81) that "is a *myopic algorythm*; at every node of it no one can have the global vision of all its possibilities but only the local vision of the closest ones" (82) which indicates the impossibility of describing the rhizome's totality. In parallel, in *A Thousand Plateaus,* Deleuze and Guattari detailed the principles of the rhizome, which can be attributed to Stephenson's novel. In the first two principles, connection and heterogeneity, Deleuze and Guattari explain that "any point of a rhizome can be connected to anything other, and must be" (7). These principles' implications are twofold: first, that the rhizome is a unifying mass similar to Eco's concept of indescribable totality, and second, that the rhizome has the ability to connect contradictions. This is showcased in Stephenson's representation of Hiro logging into the Metaverse:

> In this way, a narrow beam of any color can be shot out of the innards of the computer, up through that fisheye lens, in any direction. Through the use of electronic mirrors inside the computer, this beam is made to sweep back and forth across the lenses of Hiro's goggles, in much the same way as the electron beam in a television paints the inner surface of the eponymous Tube. The resulting image hangs in space in front of Hiro's view of Reality. (22)

In this passage, two nodes of the hybrid city are displayed: the physical, wherein Hiro's apartment contains the hardware required to supplement the journey to the Metaverse, such as the lens and the goggles, and virtual software, which is the image superimposed on Hiro's view of his physical space. The contradiction of the virtual and the physical are thus unified through the use of the Metaverse's hardware and software, enabling the rhizomatic model as applied to the Metaverse-as-city to extend and fuse contradictions. Nevertheless, this close inspection of the nodes also hinders Hiro from viewing the rhizome's totality, as presented by the circumstances in which Hiro's friends—such as Vitaly and Y.T.—interrupt his virtual experience to redirect his attention to actions happening elsewhere in the rhizome (Stephenson 97, 111–112).

Another passage also represents this unification through semi-sentient cyborgs, posing the unified virtual and physical city as the catalyst to cyborg-creation. In the novel, the organic security system installed in Mr. Lee's Greater Hong Kong, known as the "Rat Thing," consists of upgraded dogs with elevated intelligence, as seen through the description of their modus operandi:

> When a neighbor doggie barks at a stranger, pictures and sounds and smells come into his mind along with the bark. He suddenly knows what that stranger looks like. What he smells like. How he sounds. Then, if that stranger should come anywhere near his yard, he will recognize him. He will help spread the bark along to other nice doggies so that the entire pack can all be prepared to fight the stranger. (Stephenson 83–84)

The choice of the augmented dogs' name, the Rat Thing, is worth noting, as Deleuze and Guattari assert that the functionality of rats is rhizomatic, as their pack form lacks hierarchy and relies on horizontal communication in its stead (6). In this passage, this characteristic is represented as the

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augmented dogs use their connection to the Metaverse, displayed physically in their cages (Stephenson 91) and within their build (Stephenson 89, 91), to connect with one another: the details of the stranger meant to be banished travel through the Metaverse so all of the dogs can recognize them. The Rat Thing becomes the symbol of cyborg-creation within the novel, as both the virtual and physical dimensions seamlessly conjoin through their augmented body, asserting the semi-sentient animals as hybrid city node, integral to the urban rhizome.

The third principle Deleuze and Guattari discuss is one of multiplicity that "has neither subject nor object, only determinations, magnitudes, and dimensions that cannot increase in number without the multiplicity changing in nature" (8). They also emphasize that a multiplicity cannot be overcoded and that "[a]ll multiplicities are flat, in the sense that they fill or occupy all of their dimensions" (9). Stephenson illustrates this principle when describing the increasing complexity of the physical city's roads: While two companies compete to lay out the most convenient passages and intersections, the roads become increasingly similar, their uniqueness pooling into a newfound identity. Hiro observes this transformation: "Finally, a big developer bought the entire intersection and turned it into a drive-through mall. Now the roads just feed into a parking system—not a lot, not a ramp, but a system—and lose their identity" (7). The loss of the roads' previous identity thus suggests the creation of a new one, a transformation reflected in the expansion of the Metaverse's Street, the expanse of space that connects the virtual buildings together, and whose representation is always under development (Stephenson 27). Consequently, the changes enacted on the physical and the virtual streets parallel each other, occupying all the dimensions across the rhizome. Furthermore, these changes did not overwhelm the existing rhizome by disintegrating its identity, but

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rather transformed its nature in both dimensions through the creation of a new one, expanding its reach in the process.

The fourth principle of rhizomes, "asignifying rupture," posits that while a rhizome can be broken, it will connect again by linking pre-existing nodes together or by creating new ones to maintain its stability across space (Deleuze and Guattari 9). In the novel, the Snow Crash virus is the trigger that breaks the pre-existing norm of the Metaverse; in order to reconnect to the virtual dimension, Hiro is forced to recuperate from the pirate attacks in "Flatland," the space in the virtual city that is not connected to the Street, to invent a cure, an antivirus software he calls "Snowscan" (Stephenson 329). Hiro has created new nodes, branches that lead to different outcomes, in order to reconvene in the virtual city with the other characters, a node that also reflects the contradictory possibility the rhizome offers. By accessing Flatland, Hiro provides the prospect of using the virtual software without connecting to the Metaverse's community, though Hiro still has access to his house, the data of which is stored on his portable computer. In this sense, the house becomes a neutral space, a new node added to the pre-existing rhizome that is simultaneously linked to and detached from both the virtual and physical cities. As a virtual space, the house is stored in the materiality of the physical city, though its conceptualization—the digital image that its code produces—is detached from it; similarly, as it is confined to Flatland, the house is detached from the cybercity as well.

The last two principles, "cartography" and "decalcomania," emphasize the nature of the rhizome as a map but not a tracing (Deleuze and Guattari 12), which echoes Deleuze and Guattari's

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previous statement on writing: "Writing has nothing to do with signifying. It has to do with sur-veying, mapping, even realms that are yet to come" (4–5). In this sense, mapping a rhizome be-comes synonymous with the act of writing it. Junita displays this affirmation by explaining how she modeled the Metaverse's face-recognition software after her grandmother: "Then I remem-bered my grandmother and realized, my God, the human mind can absorb and process an incredible amount of information—if it comes in the right format. The right interface. If you put the right face on it" (Stephenson 55–56). By simulating the virtual city's faces on the human mind, Juanita has united the computer with the brain through writing the facial recognition software, thus form-ing another node that connects the virtual and physical aspects of the hybrid city. In this regard, she has materialized the post-human, as Katherine Hayles wrote: "As you gaze at the flickering signifiers scrolling down the computer screens, no matter what identifications you assign to the embodied entities that you cannot see, you have already become posthuman" (xiv). Consequently, the unfolding of the hybrid city rhizome coexists with the evolution of the post-human individual, a statement that will be revisited in the third chapter of this thesis.

3. Heterotopias, Isotopies, and Liminal Spaces

The union of the virtual and physical city did not only make changes to their nature, but also allowed both dimensions to possess each other's heterotopias, isotopies, and liminal spaces. According to Foucault, a heterotopia is a place "outside of all places, even though it may be pos-sible to indicate their location in reality" (*Of Other Spaces* 24). Foucault describes heterotopias through six principles, the first of which is that they exist in all cultures, even if their function

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varies. The second and third principles are that the same heterotopia can have independent functions at a different point in time, and that a singular heterotopia can juxtapose several places simultaneously. The fourth principle explains that heterotopic spaces are linked to slices in time, which Foucault calls "heterochronies," divided into two categories: heterotopias of accumulating time, dedicated to the amassment of knowledge and its preservation, and temporal heterotopias, short-term and unconventional actions that unfold in designated spaces. In the fifth principle, Foucault describes heterotopias as simultaneously isolated and penetrable: the entrance to some heterotopic places, such as prisons and barracks, may be compulsory, while others may require a series of rites to be accessible. Lastly, Foucault emphasizes heterotopias' function in relation to remaining space, as these marginal places can have two roles: they either create a space of illusion, which reveals the nature of the space outside of them, or they can form an idyllic representation of the disorganized external space (*Of Other Spaces* 24–27).

Similarly, Foucault describes the relation of heterotopias to language as disruptive, explaining that:

> Heterotopias are disturbing, probably because they secretly undermine language, because they make it impossible to name this and that, because they shatter or tangle common names, because they destroy 'syntax' in advance, and not only the syntax with which we construct sentences but also that less apparent syntax which causes words and things (next to and also opposite one another) to 'hold together.' (*The Order of Things* xviii)

Heterotopias, defined as such, juxtapose the urban structure with the disruption of signification, thus offering a post-structural analysis to the study of the urban city. If heterotopic *topoi* "secretly

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undermine language," (*The Order of Things* xviii), then the tensions that arise from the relation of the margins to center—the ruptures and flows of the rhizome, the liminal spaces—become a defining aspect of urban spaces alongside the margins and centers themselves. Heterotopias can then be interpreted as a post-linguistic performativity, a perpetual urban becoming, in response to the center's fixed, if illusionary, order.

In parallel, Lefebvre describes heterotopias as spaces possessing "a difference that marks it by situating it (situating itself) with respect to the initial place," (*Urban* 38) thus contrasting them with isotopies, or places with similar identities (*Urban* 128). Originally, Lefebvre wrote *heterotopies* instead of heterotopias, though the latter will be used throughout this chapter to emphasize the similarity of both theorists' concepts, as they describe similar phenomena from different perspectives. While Foucault's concept details a wider definition of heterotopias, encompassing places such as cemeteries, libraries, and museums, Lefebvre concentrates on *topoi* that engage in activities that are originally deemed irregular but are later normalized; i.e., the margins that will eventually progress to the center. *Snow Crash*'s hybrid city exhibits both sets of virtual and physical heterotopias, isotopies, as well as liminal spaces, which are defined as spaces acting as "gate[s] or barrier[s] between two separate fields or spheres," and that also retain "the sense of indeterminacy and in-betweenness" (Gadoin and Ramel 5). Accordingly, due to their position as mediums between fields, liminal spaces are characterized by their ostracization from the external space surrounding them and their constant development (Gadoin and Ramel 5).

The virtual heterotopias in Stephenson's novel are constituted of Pyre, the eternal bonfire beneath the center of the Black Sun bar; the margins of the Metaverse; and the Library, all of which

follow Foucault's definition of heterotopias. Pyre's position in the Metaverse is of note, as it is the only simulation of death the users recognized before the induction of Snow Crash into the cyber-city. Its function is to dispose of dead avatars, thus enabling users to recover their personae and to log back into the Metaverse (Stephenson 96). The Oxford English Dictionary defines "pyre" as a "a hearth, a place where fire is kindled, the place of a funeral fire, a funeral pile." Hence, Pyre obtains two connotations: that of sustainability, as the fire that preserves the hearth's warmth, and that of death, as the fire that consumes the remains of the dead (Oxford English Dictionary). The representation of Pyre in the Metaverse extends both connotations: while Pyre is originally repre-sented as a place of death, it is also the medium through which individuals reclaim their virtual life, enabling the user to enter the virtual space once more. In this sense, Pyre, by embodying both connotations subscribed to it, attains a heterotopic aspect by inverting the relation it was meant to designate.

In parallel, the margins of the Metaverse contain Rifeland, the fiber optic networks repre-sented by geometrical shapes, which constitutes the fictional U.S. government and the structures upholding the cybercity (Stephenson 407, 408). It is thus the space that exposes the Metaverse as an illusion, as the generation of the virtual city is dependent on a singular piece of software that Rifeland operates, running through the fiber optic networks. The framework of the hybrid city is apparent through Rifeland, as software and hardware coalesce to sustain the union of the city's virtual and physical dimensions. As the host to the Metaverse's foundation, Rifeland is simultane-ously responsible for creating the illusion of the cybercity and for its disenchantment, a paradoxical function characterizing it as a heterotopia (Foucault, *Of Other Spaces* 27). Rifeland's illusionary

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function is reminiscent of Baudrillard's theory on simulacra; as mentioned earlier, the virtual dimension was equated to the simulacrum of its physical counterpart to reinforce the belief in the physical city's tangibility. The heterotopia contradicts this belief, as Rifeland exposes not only the Metaverse, but the entirety of the hybrid city as a simulacrum of itself, creating a form of hyperreality. The destruction of the heterotopic place, the virtual dimension, would lead to the demise of one of the hybrid city's founding aspects, the unity of its dimensions, and by extension, the hybrid city itself.

The Library, comprised of an electronic storage space and an accompanying virtual librarian, is primarily dedicated to helping Hiro gain access to information concerning Rife and the Snow Crash virus (Stephenson 99–100). In order to locate Rife's raft, the Library is also accompanied by a globe Hiro calls Earth, which showcases "not just continents and oceans. It looks exactly like the earth would look from a point in geosynchronous orbit directly above L.A., complete with weather systems" (Stephenson 99). The Earth software is reminiscent of urban planning video games such as Electronic Arts' *SimCity* series or Ubisoft's *Anno* series, in which the players develop their versions of a city and share them with the player base, modeling alternate versions of digital cities through the game. In Foucauldian terms, the Library belongs to "heterotopias of indefinitely accumulating time," wherein the desire to encompass time within an anachronistic space is reflected (*Of Other Spaces* 26). Heterotopias of accumulating time, as described by Foucault, are spaces dedicated to the preservation of knowledge; in this sense, these heterotopias conserve time in a space that is outside its influence, preserved and uninterrupted. The Library, by presenting a space outside of time, disrupts temporal linearity: as users access an accumulation of

data, immaculately preserved outside of its own time, the Library becomes a space devoid of time's influence, breaking the temporal timeline of the individuals inhabiting the Library, a concept I will be further exploring in Chapter 2.

Physical space contains heterotopias paralleling the virtual one's, reflecting the coalition of the hybrid city's dimensions. The first constitutes of the margins of the physical city, which Hiro visits on his journey to Rife's raft, previously exclaiming that "interesting things happen along borders—transitions—not in the middle where everything is the same" (Stephenson 113). The middle, which Hiro describes as homogenous, is constituted of isotopies; however, the borders and transitions are of note. This set up reflects the post-structuralist concept of decentering, made visible in Hiro's comment. In "Structure, Sign, and Play in the Discourse of the Human Sciences," Derrida details the decentering motion that the system of the sign undergoes, explaining that, as the center governs the totality of the structure, it separates itself from the structure—escapes struc-turality—and leaves the totality centerless (352). In this sense, the center is both inside and outside of its structure, and as the bearer of signification, the center simultaneously commands the totality and leaves it bare of any signification (Derrida 352). The system of sign, rooted in a center that perpetually substitutes itself, orients itself towards discourse instead (Derrida 353–354). Hence, it is not the urban center, but the relation—the discourse—between the hybrid city's margins and center, as well as between the margins themselves, that indicate the culture of the urban sphere. Likewise, the patterns found across the urban discourse, in the margins and the center, constitute a rhizomatic sprawl that parallels the hybrid city's nature; in this vein, this urban discourse is the medium through which the heterotopic, marginalized behaviors spread towards the center. For

instance, at the borders, Hiro is accosted by the citizens of the New South Africa Franchulate (NSAF) due to his race, a confrontation that would have been prevented if he was in the hybrid city's center (Stephenson 281–285). This encounter was preceded by Hiro's racially motivated-battle with the "Nipponese man," after the latter perceived Hiro's swords (Stephenson 79–83). The two fights, similar in motivation, have different outcomes: the citizens of the NSAF do not face any consequences, while the Nipponese man is defeated and temporarily banned from the Metaverse. The differing results stem from the spaces the two fights occur in, as Hiro confronts the NSAF citizens on the margins, and the Nipponese man in the Metaverse center, showcasing the varied attitudes the margin and the center adopt in relation to violence. Violence, occurring in the margins, is accepted, while it is disapproved of at the center; while the verdict regarding violence differs, the conflicts themselves indicate similar thought patterns occurring in the margins and the center. Furthermore, Raven and Hiro's confrontation, starting in the heterotopic margins and ending in the Metaverse urban center, also designate the direction of the thought patterns, from the margins to the center. Therefore, the similarity of the two racially-motivated fights, and the increasing acceptance of violence within the center, indicate a cultural pattern that spreads across the urban rhizome. The relations between margins and centers, formulating common patterns, reinforce the fusion of the rhizome's virtual and physical space and designate the flow of heterotopic behavior across the rhizomatic urban sphere.

The second heterotopia consists of the Raft, the nature of which is of note, as Foucault reflects that ships are "heterotopia[s] par excellence," and emphasizes that "[i]n civilizations without boats, dreams dry up, espionage takes the place of adventure, and the police take the place of

pirates" (*Of Other Spaces* 27). Boats as heterotopic places embody many of the principles of a heterotopia: their existence is traced back through modern history, they can hold differing functions, they juxtapose multiple seas and cities, are connected to differing heterochronies through their unique builds, and are both isolated, surrounded by water, yet overlooking the sea (*Of Other Spaces* 27). The function of the boat as a heterotopic space differs in its use, reflected in *Snow Crash* as Hiro describes the Raft as a network of ships, divided into a main body and smaller boats attached to it; consequently, its shape is constantly changing (Stephenson 250). The raft is also the place in which Hiro practices the most violent behavior displayed thus far: before embarking the vessel, he is confronted by a pirate ship and kills its residence with the help of three other characters (Stephenson 332–341), and once he is aboard the Raft, his violent tendencies intensify during his search for Y.T. (Stephenson 382–388, 390–392).

Deleuze and Guattari also observed the nature of the boat on sea, noting the complex union of smooth and striated spaces, as they are distinguished by an inverse relation between the point and the line (480). In smooth space, the line is subordinated to the point, thus rendering the line directional; in striated space, the point is subordinated to the line, rendering the nature of the line metric rather than directional (Deleuze and Guattari 480). Furthermore, the two spaces frequently coexist, and the nature of their communication—i.e., of their mixture—determines the dynamic at hand (Deleuze and Guattari 475). In this context, the sea is particular in its nature, as it is originally an exemplary smooth space that was later transcribed into a striated space: Deleuze and Guattari explain this progression through the creation of bearings and the map, which helped humankind navigate the open seas (479). The nature of the Raft in *Snow Crash* becomes of note then: as a

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space designed to navigate the sea, it is a smooth space that is superimposed by a striation. As such, the Raft hosts its own set of structure and regulations, explaining the violence allowed on its site, as well as the boat's perpetually changing shape, which adapts to the demands of the smooth and striated sea that surrounds it. For instance, if Hiro had enacted with the level of violence displayed in the Raft within the hybrid city's center, he would have been met with repercussions like other characters before him: Y.T. is imprisoned for violating burbclaves regulations (Stephenson 45–50), while Raven has the words "POOR IMPULSE CONTROL" tattooed on his forehead for previous violent transgressions (Stephenson 119). Therefore, the Raft's position as the space of pirates and violence and its citizens' acceptance of these aggressive attitudes reinforce its contrast as a heterotopic place in relation to the urban center, similar to William Gibson's portrayal of the Zionites in *Neuromancer* as a marginalized people, inhabiting a space outside of the main city's influence and therefore distinct in its culture.

The third heterotopia echoes Lefebvre's definition and is exhibited by the "Gargoyles," individuals who wear custom gear to coexist within the virtual and physical aspects of the hybrid city. The two gargoyles in the novel are Lagos at Vitaly's concert (Stephenson 116) and later Hiro himself, who adopts gargoyle gear to coexist in the virtual and physical dimensions simultaneously (Stephenson 248). Both characters' behavior is frowned upon, as "they embody the worst stereotype of the [Central Intelligence Corporation] stringer" with its payoff being a "self-imposed ostracism" that allows them to exist in the cybercity at all times, and the ability to continuously gather data (Stephenson 115). In this sense, the Gargoyle's desire to permanently materialize in both dimensions is considered out of the norm, a heterotopic behavior. Hiro's earlier disdain of Lagos

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and his later embodiment of that same stereotype marks another margin-to-center motion, in which the marginalized behavior grows in popularity until it is admitted in the hybrid city center. In addition, the status of the individual embodying the marginalized behavior temporally alternates; Hiro, inhabiting the center, voluntarily embraces the transition to the margins by becoming a Gargoyle, and would not regain approval of the city center's culture until the marginalized behavior fully progresses towards the urban core. This sentiment is reflected in Hiro's interest and voluntary travel to the margins (Stephenson 113) and Y.T.'s later disapproval of Hiro's Gargoyle gear and his ensuing embarrassment (Stephenson 224).

The urban center, in contrast, consists of "Franchise-Organized Quasi-National Entities," also known as "FOQNEs," that operate their own set of "burbclaves," i.e., city-states. Burbclaves owned by FOQNEs tend to be similarly constructed, to the extent that Hiro professes that he knows how to navigate most burbclaves as they have the same layout (Stephenson 12). In this sense, burbclaves are isotopies, as they share similar identities and tend to attract the same class of citizens (Stephenson 12, 281). Additionally, Daniel Grassian notes that *Snow Crash*'s city-states, described in the beginning of the novel, are geometrically constructed, which mirrors the Metaverse's architecture (256) and emphasizes the similar trends that form the virtual and physical dimensions. Furthermore, Grassian explains that "burbclaves are another Metaverse within reality, a space in which Americans escape the violent and anarchic reality that actually surrounds them," (257) which furthers the enmeshment of the virtual and the physical within one another. In this regard, isotopies and heterotopias are the defining nodes of the rhizome, while their connection is represented by intermediate spaces. The virtual/physical rhizome, describing the rise of a hybrid city

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and establishing the cybercity as fully conjoined with its physical counterpart, allowed then a change in the construction of space and its perception, as well as the shape of temporality and the construction of identity, as I will discuss in the following chapters.

Both the virtual and physical aspects of the hybrid city hold intermediate spaces, such as streets, which can be interpreted as either liminal or isotopic. The first interpretation describes the streets of the physical city, as well as the Street of the virtual dimension, as continuously changing spaces (Stephenson 7, 27), that characters such as Y.T., a "Kourier," regularly bridge. The in-between spaces are the mediums between the burbclaves and the margins; they are the neutral ground in which the rules are blurred, hence explaining Y.T.'s arrest by the MetaCops, one of the two local police forces, despite her fair passage across the Mews at Windsor Heights burbclave. The latter interpretation, as with Lefebvre, conceives of streets as isotopic spaces due to their mul-tifunctionality (*Urban* 128), contrasting with the heterotopias, wherein only behaviors outside of the norm are enabled. Lefebvre describes the streets as a meeting place allowing encounters be-tween strangers (*Urban* 18), but also considers them superficial, as they shift individuals' focus from each other to the consumption of merchandize (*Urban* 19–21). Likewise, Lefebvre empha-sizes the streets' role as a locus of disorder, as fixed elements are free to flow to the urban center, making the streets the primary space for revolutionary actions (*Urban* 18–19). Nevertheless, this function also renders the streets a target for authorities, as they restrict entrance to them whenever threatened (Lefebvre, *Urban* 20). Therefore, while individuals' movements are free-flowing, they are also obligatory and restricted, making streets isotopic rather than heterotopic places (Lefebvre, *Urban* 20). The relation between isotopies and heterotopias are of note, however, as Lefebvre

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writes that the "isotopy-heterotopy difference can only be understood dynamically" and is thus the foundation of urban change (*Urban* 129). This connection explains the novel's regression to urban city-states, as the disparity between the heterotopias and the burbclaves' policies on violence, spurred by the lack of governmental action, necessitates the establishment of different authoritative bodies.

B. The Influence of the Rhizome on *Snow Crash*'s Characters

By virtue of its abstractness, the Metaverse offers its users a wide range of customizing options, as Hiro explains: "Your avatar can look any way you want it to, up to the limitations of your equipment" (Stephenson 33). Consequently, the disconnect between the users' appearances in the two dimensions of the hybrid city adds to the Metaverse's illusory characteristics; due to this trait, Christine Boyer explains that "the spectator now penetrates into figural space" by accessing virtual representations that are constantly changing (49). Thus, "a new topology of the image is established," which alternates the users' mode of perception "between figurative thought and logiconumerical codes or languages" (Boyer 49). In this regard, the stability of users' perception of space is altered, as they learn to adapt to the induction of virtual labyrinths within the urban environment, developing new languages and patterns of thoughts in the process (Boyer 49–50). Therefore, as the characters of *Snow Crash* react to the hybrid city's progressive union, they form habits facilitating the navigation of their shifting environment, rendering them conduits to the hybrid city itself, as they facilitate the relations of the city's virtual and physical dimensions through their actions.

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1. Characters' Perception of Spatiality

The first character that showcases the ability to navigate the urban city is Y.T.; while she does not interact with the Metaverse as much as others—mainly Hiro and Ng—she does have a unique perception of spatiality. As a Kourier, Y.T. skates on the roads of the physical city, searching for the most efficient method to deliver her packages within a time limit. During one of her deliveries, Y.T., in the habit of referring to herself in the third pronoun, exclaims: "Y.T. is not fond of boxes. Y.T. establishes her space on the pavement by zagging mightily from lane to lane, establishing a precedent of scary randomness. Keeps people on their toes, makes them react to her, instead of the other way round" (Stephenson 49–50). Y.T.'s ability to switch between the urban network's nodes is the source of her proficiency at navigating the streets; Friedrich A. Kittler and Matthew Griffin note that "[c]ommand centers . . . aren't rooted in the forest of symbols planted by a power. Rather they spring up in the less obvious tangents that, like bridges, connect them with unflattenable graphs" (726). Kittler and Griffin point out that "command" is synonymous to "address" in informational spatiality; in this sense, command centers are the concentration of nodes that controls the influx of data within the urban sphere, found in connecting spaces such as bridges (726). Similar to bridges, streets are spaces dedicated to the linking of information, and by virtue of her profession, Y.T. is able to control command centers such as urban streets—whether they are liminal or isotopic spaces—thus giving her an authority over them, as her nonlinearity forces other characters to adapt to her system. Nevertheless, this authority is limited, as the restrictions of the physical streets oblige Y.T. to use her skateboard, which leads to multiple accidents throughout the novel. Her interactions with the virtual space, while infrequent, still showcase the smoothness

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of her navigation. Amongst these instances, Y.T. discovers the black cube that forms Rifeland, and surprises Hiro with her accurate measurements and bearings:

> I'm riding along looking at the stars, okay? Suddenly, I can't see them anymore on the right side of the train. I start counting local ports. I count sixteen of them. We get to Express Port 127, and Stumpy climbs off and goes toward the black thing. I count sixteen more local ports and then the stars come out. Then I take thirty-two kilometers and multiply it by point six and I get twenty miles—you asshole. (Stephenson 198)

The ports that Y.T. describes are booths allowing users to materialize in the virtual city, and by keepings tracks of the nodes adjoining the virtual and the physical, Y.T.'s authority over her space is reflected in her prowess at discerning locations and measuring her environment, or in this case, in her recognition and assessment of the Rifeland heterotopia.

In parallel, Hiro's perception of his environment is supplemented by his adaptability to the virtual and the physical spaces simultaneously. While Y.T. exerts her control by shifting between network nodes, Hiro does so by coexisting within two nodes at once, forming an augmented reality as the virtual and physical dimensions are superimposed: "Dimly superimposed on Reality, he can see the black-and-white figure of Y.T. sitting in front of him on the motorcycle" (Stephenson 386). With the Gargoyle gear, Hiro is able to see the two dimensions' overlay, as Stephenson describes it: "Hiro turns on the radar just for a moment and the walls seem to drop away and become invisible; he's seeing through them now, into the forest of steel outside" (285). Hiro's perception reflects the interconnectedness of the hybrid city networks; Kittler and Griffin, for instance, comment on the overloaded nodes' ability to "make a mockery of every conflation," thus showcasing

the complexity of urban cities and emphasizing Hiro's prowess at discerning network nodes (720). In this context, Debra Benita Shaw observes how the urban citizen "is organized according to codes which do not respond to fixed ontologies or to a hierarchy of signs but is attuned to virtuality" (238). Consequently, the characters' affinity towards the virtual is displayed through the centering of Y.T.'s awareness of her surroundings on network nodes and Hiro's existence across superimposing ones.

Stephenson's depiction of Ng represents the closest connection a character possesses with these double surroundings. In *Snow Crash*, Ng is presented as a war survivor, sustaining injuries that he compensates for by encapsulating himself in a technologically advanced van he describes as "much better than a tiny pathetic wheelchair. It is an extension of my body" (Stephenson 211). Ng's van combines Y.T.'s and Hiro's perceptional experience, as he is constantly navigating the vehicle through his coterminous existence in the Metaverse and the physical city (Stephenson 209). Boyer discussed "a kind of violence that 'the virtual' exercises on the user's sensibility" as "it saturates one's consciousness" (55). While the virtual's influence on the senses can be described as violent in its intensity, it is also a controlled process; Ng, for instance, voluntarily undergoes thorough transformation to achieve a totality in his envelopment in the hybrid city network. In other words, Ng's body augmentations imply the realization of rigorous prior transformations to regain his adaptability, thus corroborating Foucault's notions of the Technologies of the Self (*The Self* 18) as acts "which permit individuals to effect by their own means or with the help of others a certain number of operations . . . so as to transform themselves in order to attain a certain state

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of happiness, purity, wisdom, perfection, or immortality" (*The Self* 18). Accordingly, Boyer's spatial violence translates into processes which individuals must adopt to adjust to the hybrid city. Indeed, in his discussion of Seneca, Foucault explains that the subject enduring such transformations becomes "the intersection between acts which have to be regulated and rules for what ought to be done" (*The Self* 34). Ng's advanced entanglement in the virtual and physical networks is a point of pride for the character, whose representation achieves an unprecedented perception of spatiality. Ng's submersion within the hybrid city network is also the basis for the formation of an urban culture, as settings with a high concentration of hybrid city nodes, such as public spaces, gain prominence in characters' actions and their interactions with space.

2. Public Spaces and Hybrid City Culture

While the term hybrid city culture has sociological implications, this section of the thesis will focus on the characters' use of their virtual and physical spaces, emphasizing public places such as streets and public transportation. While the influence of the hybrid city's spatiality on characters' thought patterns has already been discussed in the previous section, this part will analyze the characters' treatment of public spaces as a medium between hybrid city nodes and its implications. For instance, Debra Benita Shaw, regarding the connotations of the physical city's streets, observes that they "invoke spaces where social interactions take place, the world of everyday life, as well as the space where social forces are mobilized" (231). The Street in the Metaverse extends this connotation, for it is the space where Hiro first encounters Raven, and where the latter tries to sell him the Snow Crash virus contained in a hypercard; therefore, the Street functions as a medium for social interactions. This early exchange initiates the ensuing events in the novel,

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extending its influence to the virtual and physical cities. In parallel, Raven and Hiro's last interaction also takes place in the Street, as they race each other towards the amphitheater hosting a large group of programmers. The spread of the Snow Crash virus that started on the Street also ended on its site, thus highlighting the Street's nature as the source of social change and reinforcing the unity of the hybrid city dimensions (Benita Shaw 231). Nevertheless, the Street elevates this concept further, due to the number of users existing in the Metaverse. For instance, when discovering Rife and Raven's plan to infect the Metaverse users with the Snow Crash virus, Hiro comments that Raven is "[h]eaded for the amphitheater. Where all the hackers are gathered in one place. Rife's going to infect all of them at once. He's going to burn their minds" (Stephenson 410). Raven, and by extension Rife, target the hackers in the cybercity specifically for the virtual dimension's ability to assemble users regardless of their position in physical space. Furthermore, the Metaverse's integration in the hybrid city would allow the hackers' consciousness to inhabit their virtual space, thereby rendering the Snow Crash drug as effective in the virtual city as it is in its physical counterpart.

Additionally, as the Metaverse's union with the physical city progresses, the realistic quality of the Metaverse becomes prominent, which includes its regulations regarding users' shifts between the physical and the virtual. For example, a user cannot "materialize anywhere in the Metaverse," for doing so would break its status as the physical city's mirror (Stephenson 34). Instead, "[m]aterializing out of nowhere (or vanishing back into Reality) is considered to be a private function best done in the confines of [one's] own House," or through the use of the Ports,

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nodes joining the physical and virtual spaces (Stephenson 34). The emergence of new social be-

haviors is not unexpected, however, as Joshua Meyrowitz notes that "[t]he introduction and wide-

spread use of a new medium of communication may restructure a broad range of situations and

require new sets of social performances" (39). The Metaverse, establishing itself as a medium of

social interaction, has thus originated new sets of social behavior that regulate the hybrid city's

space, ones that emphasize the need to keep the virtual simulation of the physical city stable.

The virtual city's monorail is made relevant by virtue of its connection to the hybrid city

margins, Rifeland (Stephenson 25, 198), and is defined as "a free piece of public utility software

that enables users to change their location on the Street rapidly and smoothly." While users like

Hiro can program their own transportation methods, others, such as Y.T., are dependent on the

monorail. The transportation method's significance is revealed when Y.T.'s use of it led to the

discovery of Rifeland's characteristic black cube (Stephenson 198), thus highlighting public

spaces' primary function as bridges between the hybrid city *topoi*. Moreover, the presence of pub-

lic transportation such as the Street, Ports, and the monorail breaks the encapsulating pattern ob-

served so far in the novel. Lisa Swanstrom, for instance, observes the tensions between encapsu-

lation and penetration behaviors in Stephenson's novel (55), noting how the coexistence of both

patterns of behavior are necessary for the characters' navigation through the environment as well

as their post-modern consciousness (73). Swanstrom uses the individuals infected by the Snow

Crash virus as one of her examples: by penetrating the consciousness of the infected person, Snow

Crash prioritizes the deep structures of the brain, rendering the individual vulnerable to outside

influence and connected to a hive mind, an idea that will be explored further in Chapter 2. Meanwhile, the solution Hiro devises is to re-encapsulate the fragmented mind within itself, mirroring the categorization of his urban environment, and earning him the ability to shift between the networks of the hybrid city (Swanstrom 77).

3. Surveillance in the Hybrid City

Given the Metaverse's union with the physical city, the discussion of surveillance in both dimensions also gains significance. In the physical city, surveillance is represented through the borders of the burbclaves, as each city-state requires its own passport-code in order to access it (Stephenson 16); the MetaCops and the Enforcers are the reigning police force in the physical city, the former imprisoning Y.T., the latter observing Raven at Vitaly's concert. Fedland, the burbclaves that consist of the U.S. government's federal headquarters, also participate in surveillance practices, such as daily tests and polygraphs. Stephenson's depiction of the physical city's urban center as a heavily guarded area is mirrored in the way Rife constructs his organization, both in the physical city and the Metaverse.

Indeed, as the primary host to the virtual city's structure, Rife's corporation adopts information as its main product, and early in the novel, Hiro discovers that Rife's programmers formed a union to file a suit against their boss, as he "had placed audio and video bugs in their homes, in fact placed all of them under twenty-four-hour surveillance, and harassed and threatened some programmers who were making what he called 'unacceptable lifestyle choices'" (Stephenson 107). Rife justifies his behavior by explaining that his programmers are privy to information he possesses (Stephenson 107–108); in retaliation, by constantly gathering data on his employees, Rife

has made them products of his organization. By informing his employees of the constant surveillance, Rife has also created a panopticon-inspired space in which employees remain conscious of their demeanor and the way it might be perceived; in this sense, Foucault's microphysics of power can be applied, as the power Rife exercises on the employees and their bodies constitute a strategy of domination through psychological maneuvering (*Discipline and Punish* 26).

Rife's surveillance in the physical city forms a starting point for its infiltration into the Metaverse through the Snow Crash drug, also known as the "Asherah" virus, for in parallel to his attempts at controlling his employees' bodies in the physical city, Rife uses the Asherah virus to permeate their mind. By accessing the information through Lagos, Rife uses Snow Crash in both virtual and physical dimensions of the hybrid city, the former with a hypercard, the latter as a drug. The permeation of Snow Crash in individuals' bodies forms an advanced form of surveillance: By bringing the deep structures of the brain to the forefront, Snow Crash renders the individual susceptible to all "nam-shubs," explained in the novel as "speech with magical force," or commands administered by the nam-shub's creator, Rife (Stephenson 197). The nam-shub, programming the user's brain, causes the destruction of the modern and structured mind and causes its regression to an anterior state. By gaining control over individuals' bodies and mind, the administration of the Snow Crash virus makes the relation between those afflicted and their disease a representation of power, administered through the virtual and physical space simultaneously (Foucault, *Discipline and Punish* 196–197). The conjoined virtual and physical spatiality has then augmented the level of surveillance as well as the magnitude of corporate power that individuals with wealth and programming knowledge can attain.

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C. Infected Spatiality

At the end of the novel, Mr. Lee, confused by Hiro's explanation of the Asherah virus' history, asks: "You are saying that civilization started out as an infection?" (Stephenson 371). The relation between cities and disease has been a point of interest amongst theorists; Kelly Wisecup, for instance, explains that the two concepts define one another (862). Wisecup observes that while the hybrid city tries to define the Asherah virus within its context, the disease's function as a neurological virus defines the hybrid city's culture, as its spread alters the identity of its survivors, as well as their view of the Metaverse's nature and their virtual lives (Wisecup 857). Deleuze and Guattari propose the rhizome as "an assemblage . . . in connection with other assemblages and in relation to other bodies without organs," (4) thus posing rhizomatic structures as living organisms, albeit with no organs. Likewise, Anna Cicognani remarks that "[i]f viruses are the main signs of the existence of organisms, then life on the Net is to be considered an actual possibility," thereby conceptualizing viruses as indications of organic life that define the virtual, and by extension the hybrid city, as a living organism (21). The hybrid city's nature as a rhizome would then metaphorically subject it to diseases introduced by its citizens; if the hybrid city is defined as an organic life form establishing its citizens as rhizomatic nodes, the spread of the Snow Crash virus through its dimensions becomes an inevitability, rendering the physical urban sphere viable to virtual infections.

These statements are corroborated by Ng's conversation with Enzo, as the mafia boss declares that "[n]o piece of software is ever bug free," and Ng replies: "I guess there's a little bit of Asherah in all of us" (Stephenson 381). The coexistence of Snow Crash in the virtual and the

physical dimensions is by itself noteworthy; while the virus advances in different methods within each space, its consequences are the same, thus furthering the union of the hybrid city's dimensions. Furthermore, the spread of the virus through the binary language of the Metaverse as well as individuals' DNA exposes a neurolinguistic aspect across the hybrid city rhizome, concretizing the unity of the virtual and physical dimensions further.

The creation of the hybrid city is the consequential phenomenon that altered the formation of space; by inserting virtual labyrinths within physical ones, spatiality has gained an informational grid as an added dimension, thereby shifting spatial representations and expanding the city across a rhizomatic structure. Therefore, the characters' perception of their unified space altered as they built habits to adapt to their changing environment. Likewise, characters established regulations to the use of the virtual and physical dimensions, making spatiality an essential aspect in the formation of a hybrid city culture. Accordingly, the trigger that finalizes the creation of the rhizomatic city, the Snow Crash drug, accomplishes another margin-to-center motion by developing within the margins of Rifeland and infiltrating the hybrid city's center. The virus' permeation of the virtual and the physical uncovered the city's nature as a living organism; the virus' consequences, such as the advancement of urban citizens' deep structures to the forefront and the formation of a hive mind amongst the afflicted, affects the linearity of temporality, a theme that will be the main focus of Chapter 2.

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Chapter 2: Temporality in *Ender's Game*

The origin of temporality as a concept can be linked to the ancient Greek words *chronos* and *kairos.* Not to be confused with the titan Kronos*, chronos* denotes the personification of time, specifically, "unageing time," in Attic philosophy (Hard 25), while *kairos* is defined as the "fullness of time" or the "propitious moment for the performance of an action or the coming into being of a new state" (Oxford English Dictionary). Both words are still in use in the twenty-first century, with *chronos* designating a time that is quantifiable and *kairos* referring to time's qualitative aspects in relation to an action or event (Smith 1). The distinction between the two words—quantitative vs. qualitative—summarizes the extensive and divisive discourse on time, with scholars debating time's nature as either absolute or relative. Hence, before delving into a temporal analysis of Orson Scott Card's *Ender's Game,* this chapter will begin with a preview of temporal theories in order to offer a basis for the ensuing study. As time and space are concepts intrinsically linked, the second section of this chapter will discuss their relation and virtual development as they apply to *Ender's Game*, thereby continuing the spatial analysis detailed in the previous chapter. Finally, the third section will examine the dynamics of virtual space/time in the urban setting, as it gives rise to a popular device in science fiction, namely, the hive mind.

A. Defining Temporality

Other than its extensive philosophical discourse, time has also been a matter of scientific inquiry. Isaac Newton, for instance, defined time as "Absolute, true, and mathematical time, of itself and from its own nature, flows equably without relation to anything external" (77). Newton gives the definition of linear time; as a quantitative, objective, and universal concept, time operates

on a plane that is distinct from other laws of nature. Time theorized as such divorced its existence from the human temporal experience, concretizing the notion of time as an external factor to human consciousness and rendering the study of time an objective, scientific process. In parallel, Albert Einstein disputed the notion of absolute time with his theory of relativity, as he observed that space and time are both moderated by the motion of the observer. In this sense, relative time implies the concept of a time continuum, breaking with the previously assumed temporal linearity and allowing a multidimensional approach. The notion of a temporal multiplicity involves the human consciousness in the formation of time, as it is the human variable that influences the outcome of the temporal study. It is important to note, however, that the non-linearity of time is not necessarily associated with fixed patterns, but merely presents a concept of time that is dependent on the circumstances of its observation (Yiassemides xvi). The notions of absolute and relative time became the basis for critical theorists' discussions on temporality, including the diverse methodologies of measuring time and the difference between time and temporality.

1. *Temporality and Critical Theory*

Immanuel Kant was one of the key figures to advance the temporal debate, noting that time is not empirical in nature and is, therefore, unobservable (162). He denounced time as a concept, arguing that it can only be experienced through its singularities, thereby lacking the generalizing quality attributed to concepts (Kant 162–164). Furthermore, David Couzens-Hoy explains that Kant regarded time as "a *form* of intuition because all experiences are temporal (determined as successive in time), even if only some experiences involve time directly" (4). In this regard, Kant

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proposed a linear, albeit unmeasurable, notion of time, which offered a perspective that linked the differences of the theories of absolute and relative time.

Henri Bergson also offered a similar philosophy: while he espoused the relativity of time, he was dissatisfied with Einstein's mathematical description of relative spacetime, observing that the study of time involves a subjectivity that Einstein refrained from discussing (Bergson, *Duration* 49). Thus, Bergson proposed the concept of the *durée*, or duration, a unity of time that is subjective and unmeasurable. The distinction between Einstein's relative spacetime and the *durée* stems from what Bergson dubbed homogenous and heterogenous multiplicities (Bergson, *Time* 120–123). The theory of relative time stressed the uniformity of temporal experiences regardless of circumstances, thus making of Einsteins' relative spacetime a homogenous multiplicity; meanwhile, as each *durée* is distinct from the other, it offered a heterogenous multiplicity of temporal experiences.

As Bergson's concept of the *durée* and the multiplicity it generated widened the debate to include subjectivity, theorists began to ponder the individual's experience of time's nonlinearity. Maurice Merleau-Ponty, for instance, observed that "[w]hatever is past or future for me is present in the world . . . the future is not yet, the past is no longer, and the present is strictly speaking merely a limit, the result being that time collapses" (434). For Merleau-Ponty, time was presented as the disintegration of its previous linearity; past and future blended into the present, leaving the individual in a psychic state that roamed all three temporal milestones. Therefore, time became the object of the human mind itself—of the consciousness that demanded a linear narrative—rather than a true reflection of the nature of time. Hence, the theories presented thus far differentiated

between time and temporality, with the former reflecting the true flow of events and actions and the latter describing the individual's experience of time via remembering, synthesizing, and anticipating events, i.e., the perception of the past, present, and future (Hammer 1–2). Certain theories of time, such as the theory of urban temporality, attempted to bridge the differences between time and temporality by combining the objective and subjective aspects of temporal experiences.

2. *Urban Temporality, Rhythmanalysis, and the Network of Time*

During the Industrial Revolution, urban time became defined as the multiple times and routines linked to factory work (Stein 115). The flow of urban time, theorists noted, presented different patterns than that of rural settings: while villages were rooted in the cyclical rhythms of seasons, the city saw a surge of multiple temporal patterns due to its population, its capitalist model, and the ubiquitous presence of the media. As the urban fabric enveloped rural settings, the city's temporal patterns dominated citizens' habits, enabling theories of urban temporality to emerge, including Henri Lefebvre's "rhythmanalysis." Rhythmanalysis, as Lefebvre described, is a theory that seeks to reconcile the simulacra of modern society with the temporal rhythms of the city. Baudrillard defined these simulacra as signs continuously deferring the real, generating a simulation of life perpetrated through the images and media prevalent in modern society (1–3). Lefebvre defined rhythmanalysis as a process that "take[s] images for what they are, simulacra, *copies conforming to a standard*, parodies of presence" (*Rhythmanalysis* 23). The rhythmanalysis act is thus the observation of the present, the *now*, and its dialectical relation to presence, which Lefebvre differentiates from the present: while the object being reproduced in images is present, it lacks the presence of the object itself (*Rhythmanalysis* 23). Simulacra, by definition, lack the

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presence of the real, and can thus only offer an imitation of presence; in return, presence compensate for its own absence by imposing a rhythm (*Rhythmanalysis* 23). Rhythmanalysis attempts to reverse this process by "transform[ing] *everything* into presences, including the *present*, grasped and perceived as such" (*Rhythmanalysis* 23). Moreover, Lefebvre noted that the process is simultaneously objective and subjective: "In order to *grasp* this fleeting object, which is not exactly an *object*, it is therefore necessary to situate oneself simultaneously inside and outside [the rhythms of urban society]" (*Rhythmanalysis* 27). To conduct their observation correctly, rhythmanalysts are required to experience the rhythm themselves in order to examine it; or, in other words, to observe time, one must be able to produce it (*Rhythmanalysis* 27). The rhythmanalyst observes the multitude of urban beats, including the short-term, everyday rituals and the long-term cycles; the personal and the collective, the private and the public, and so forth (Crang 189–190). Further, Lefebvre favored the moment, defined as "moments of crisis in the original sense of the term," over Bergson's *durée,* given that the former is dependent on the configuration of space and time—of rhythms—rather than subjectivity only (Elden x). In this sense, the city is represented as "a becoming, through circulation, combination and recombination of people and things," (Crang 190) presenting the city as a multitude of nonlinear experiences that coalesce into a temporal rhizome, combining all of time's aspects, objective and subjective.

The induction of the Internet into the urban fabric expanded the union of temporal experiences: Philip Pond, for instance, noted that the concept of "network time" was developed to examine the changes the digital age has brought into the temporal experience, specifically, the divide

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between the flow of data and its halt (2). Subsequently, time became defined as the "relative differentiation between specific interactive systems" (Pond 68) to account for the diversity of temporal experiences the individual is regularly presented with. Time's definition became synonymous with its multiplicity, a network of heterogenous temporal systems, and the study of urban temporality reconciled time with temporality: time was studied through the lens of temporality, of presence and the present, in order to observe its flow and rhythms.

As *Ender's Game* is set in outer-space, temporality and its influence on the characters as well as the city become key themes to understanding both the novel and urban cyberspace. For instance, the novel presents diverse temporal systems, as relativity plays in aging earth-bound characters and prolonging space travelers' lifespan, dividing their experience of time. In parallel, the battleroom, the place with zero gravity in which the students practice battle strategies, emphasizes the importance of temporality as the characters navigate space/time dynamics throughout their military exercises. Meanwhile, Free Play, the video game simulator and a prototype of the Internet, allows Ender to go through multiple lifetimes within a single gameplay. The buggers would later use Ender's memories of the simulator to construct their city, rendering Free Play the basis of their urban setting. The different iterations of temporality in *Ender's Game*, as well as their relation to spatiality, will now be analyzed in the context of the virtual hybrid city.

B. Space/Time Relations

Ender's Game presents its characters with three sets of spatial experience: Earth-bound gravity, the half-gravity of the planet Eros, and the null gravity of the battleroom, thereby requiring the characters to adapt to each space's requirements:

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What had been down was now up, and now sideways. In null-g, there was no reason to stay

oriented the way he had been in the corridor. It was impossible to tell, looking at the per-

fectly square doors, which way had been up. And it didn't matter. For now, Ender had

found the orientation that made sense. The enemy's gate was down. The object of the game

was to fall toward the enemy's home. (Card 91)

To accommodate to the unfamiliar environment, Ender had to redirect his understanding of this new space with its objective: winning the battle against the opposing squad. The space of the battleroom, then, gathers meaning through the game itself, imposing its own temporal system and eventually its own mindset on the characters: time, in this case, is relative to null-gravity, as it demands a different duration from the individual to perform a set of movements, which also influences the level of immediacy the consequences of these movements produce. Consequently, the reorientation of Ender's body during his Battle School years renders his stay on earth and Eros uncomfortable, as they lack the spatial and temporal system he is used to: given that the other planets have different properties, Ender has to adjust his coordination to their respective gravitational pulls, the added weight requiring more exertion and time from the same set of movements in comparison to the zero-gravity battleroom (Card 259). At first glance, spatiality appears as the main concern of the characters; however, as the plot of the novel unfolds, Ender learns that it is time, not space, that takes priority during his training, as each space he encounters requires a different temporal system. For instance, during the training sessions Ender orchestrated in Battle School, he notes that it is not the manner in which his soldiers navigate their space that mattered in the game, but how quickly they could carry his orders and disarm the enemy (Card 57).

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Ender's realization about temporality's value echoes the discussion previously mentioned: Wayne Martin, for instance, observed that the study of time is equally important as that of space, as time "permeates and, in a sense, governs everything that takes place" (1–2). While the intrinsic link between time and space has been well documented, the nature of their dynamic had been a subject of discussion. For instance, Foucault described time as a characteristic of space (*Of Other Spaces* 23), while Lefebvre's theory of rhythmanalysis provided an opposing point of view. Lefebvre observed that "[s]pace is nothing but the inscription of time in the world, spaces are the realizations, inscriptions in the simultaneity of the external world of a series of times, the rhythms of the city" (*Writings* 16), thus inverting the dynamic presented by Foucault. Regardless of the nature of time and space's relation, theorists agree on one notion: inhabiting urban *topoi* necessitates occupying as well as producing both space and time. As Merleau-Ponty explained: "I am not in space and in time, nor do I think space and time; rather, I am of space and of time; my body fits itself to them and embraces them" (141). Ender demonstrates this idea when he speaks of his body's early reaction to the battleroom: "For a sickening moment he tried to retain his old up-and-down orientation, his body attempting to right itself, searching for the gravity that wasn't there" (Card 57). At that moment, Ender discovers that navigating the unfamiliar space not only demands different bodily coordination, but also that his body relearns to inhabit the different space and the time it produces; when Ender launches himself in the battleroom, null-gravity exerts little to no force on it, propelling Ender faster and stronger than he is used to. Thus, in order to navigate null-gravity properly, Ender has to inhabit space and time that his body produces; if the body is pushed an x amount, it will propel itself with a 2x force, covering twice the space and decreasing the time

needed by half. Time and space, indivisible in the equation of force, form the basis of humankind's environment; consequently, understanding their development in the virtual/physical hybrid city necessitates a study of the two elements' union in cyberspace.

1. *Virtuality and Space/Time: Temporal Data, Chronotopes, and Heterochronies*

Virtuality was often associated with temporality before the introduction of cyberspace in the urban sphere: Crang, in his study of Bergson's *durée,* noted that "Bergson's idea of time . . . emphasizes 'the virtual', which appeals to the continued presence of the past," (203) thus alluding to the *durée*'s subjective nature. Gilles Deleuze corroborated this statement: "[T]he subjective, or duration, is the virtual. To be more precise, it is the virtual insofar as it is actualized, in the course of being actualized, it is inseparable from the movement of its actualization" (42–43). Deleuze highlighted the active aspect of time, as he equated the *durée* with the temporal movement: the *durée*, as the virtual embodiment of subjective time's realization, is only actualized when it is perceived by the individual. Temporality, as presented in the physical city, is the dialectical relationship between individuals and their perception of time, rendering virtuality an active process that is constantly being concretized.

As the temporal rhizome is indicated in all aspects of the urban system, the conjoining of temporality and cyberspace is a natural phenomenon; its implications, however, are diverse. For instance, temporal and spatial data, translated into binary language, can be preserved: "Vast digital data structures . . . can persist unchanged in storage, largely forgotten, waiting as if out of time for a moment of immediate retrieval" (Pond 13). In this sense, cyberspace becomes a medium for the preservation of chronotopes, which Mikhail Bakhtin defines as "the instrinsic connectedness of

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temporal and spatial relationships that are artistically expressed in literature" (84). While Bakhtin originally addressed the presence of chronotopes in literature, the concept has often been discussed in urban theory to express the inseparability of space and time. Crang, for example, has observed the time/space dynamic in his essay on "temporalised space," in which time and space are seen as a transformative event rather than a framework (200–201). Card's use of chronotopes parallels this notion, as the preserved temporal and spatial data becomes a medium demonstrating Ender's dialectical relationship with his surroundings. For instance, during one of Ender's "Free Play" sessions, a picture of his brother, previously unknown to the computer, appears during the "End of the World" sequence (Card 119). Colonel Graff and Anderson are baffled at the prospect, and the latter admits that Ender has reached a sequence that had been previously unattainable (Card 121–122). By playing with the Free Play simulator, Ender has been submitting chronotopes to the computer, which then adapted its virtual surroundings appropriately. The image of Peter and Valentine, Ender's siblings, would remain in the Free Play simulator until the end of the novel, highlighting the breaking point of Ender's struggle between his violent and empathetic tendencies. Similarly, the giant's corpse would remain preserved and replicated as the basis of the buggers' city, which Ender acknowledges as the buggers' way of communicating with him (Card 319). The preservation of data in cyberspace is a familiar trope in the cyberpunk movement, as William Gibson's *Neuromancer* ends on a similar note, with Case, the protagonist, Linda, his love interest, and the AI called Neuromancer, existing permanently in the virtual space (270–271).

Chronotopes, emphasizing the inseparability of time and space, hint to the virtual heterotopias adopted by the hybrid city. In *Of Other Spaces*, Foucault observed that "[t]he heterotopia

begins to function at full capacity when men arrive at a sort of absolute break with their traditional time" (26). He dubbed these atemporal spaces heterochronies, and divided them into two categories: the heterochrony of accumulating time, such as museum and libraries, and the transitory heterochrony, such as the festival (*Of Other Spaces* 26). Both types of virtual heterochronies merge in Free Play, one of the representations of cyberspace in *Ender's Game*, albeit in an unconventional manner. Unlike libraries and museums, Free Play preserves Ender's thoughts and memories before introducing them as game sequences; for instance, during one of these sequences, Ender finds an overgrown path leading to lycanthropic children, a phantasmic setting that simulates a park, rivers, and a well (Card 73). The park, a space dedicated to playtime, parallels the battleroom, wherein the children's fights are often referred to as "the game," while the lycanthropic children attacking Ender symbolize his classmates in the school. In the sequence, Ender defeats the children, follows the river's path, and descends into the well for the next sequence, foreshadowing Ender's fight with Bonzo in the shower, witnessed by their classmates. Free Play presents heterochronies as it not only preserves the past but also the future, emphasizing the collapse of temporal milestones and the nonlinearity of time; the sequences' limited accessibility also showcases the transitoriness of the heterochronies, paralleling Ender's journey. In this sense, Free Play accumulates data, yet appears to be simultaneously transitory, combining both types of heterochronies as defined by Foucault (*Of Other Spaces* 26).

Foucault noted the peculiarity of the mirror as a heterotopic place, as it is simultaneously a utopia, a placeless place, but also a heterotopia, as it is concrete (*Of Other Spaces* 24), and as Ender crosses the End of the World sequence, he finds a mirror: "And in the mirror he saw a face

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that he easily recognized. It was Peter, with blood dripping down his chin and a snake's tail protruding from a corner of his mouth" (Card 118). After killing the snake, Ender gazes in the mirror and is met with his brother's reflection, covered in blood and with a snake tail protruding from his mouth, as if relishing in the violent act Ender has committed himself; the mirror, in this sense, showcases Ender's fear of becoming as bloodthirsty as his brother, revealing his insecurities. The virtual mirror, however, expands this symbolism into a foreshadowing, as Ender embraces his aggression at the end of the novel and annihilates the buggers. This incident reflects the virtual mirror's nature as not only a heterotopia, but also a heterochrony, as it embodies Ender's memories as well as his future actions, highlighting the non-linearity of the *Ender's Game* temporal system.

   2. Memories in Cyberspace

   At the beginning of the novel, Ender is introduced to the readers as a third child, an exception to the two-children rule the government has previously decreed. In order to supervise Ender's development, the Battle School administrators inserted a device at the back of his neck, transmitting information back to the school through the Internet (Card 4). After the removal of his monitor, Ender started to experience a sense of loss and forgot names; this highlights cyberspace's role in the formation of memories (Card 4–5). This role is expanded once Free Play is introduced:

   Free Play. It was a shifting, crazy kind of game in which the school computer kept bringing

   up new things, building a maze that you could explore. You could go back to events that

   you liked, for a while; if you left them alone too long, they disappeared and something else

   took its place. Sometimes funny things. Sometimes exciting, and he had to be quick to stay

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alive. He had lots of deaths, but that was OK, games were like that, you died a lot until you

got the hang of it. (Card 63)

The mind game simulator is specifically designed to mirror an individuals' memories, as it constructs a labyrinth where users can visit older sequences before they disappear and new ones are introduced. Later in the novel, Major Imbu observes that the "mind game is a relationship between the child and the computer. Together they create stories. The stories are true, in the sense that they reflect the reality of the child's life" (Card 122). These stories, constructed to mirror each child's mind, remain private to them; for instance, when Colonel Graff asks Anderson to retrieve the stories' data from the simulator, Anderson answers that "the mind game program is designed so that it can't tell us. It may not know itself, actually. This is uncharted territory" (Card 123). The simulator's unretrievable data underlines the extent through which virtual space reflects Ender's consciousness: as his thoughts cannot be accessed, the data remains private to Ender himself. Free Play's unpredictable nature parallels that of the individual's consciousness, as Gianfranco Dalla Barba explained: "There is no 'general' consciousness which can be filled at will with this or that object, as a warehouse is filled with stock. There are no objects inside consciousness, consciousness and its object are born together" (110). In other words, the simulator's data cannot be accessed as they do not exist unless Ender's mind retrieves them and/or produces them; each sequence's data, encapsulating Ender's space and subjective time, is inaccessible to any code other than Ender's consciousness and memories.

Time, encapsulated in the chronotopes, adds a layer to this exclusive accessibility: Crang, in his explanation of Bergson's *durée*, defines memory as "[not] a field in which instances and

items (or images of the past) accumulate. It is not a representational field of images or instants to be configured—this is a spatial representation of temporal process" (Crang 202–203), and Deleuze observed that "[d]uration is essentially memory, consciousness and freedom" (51). If memories can be taken as the spatial representation of time, then multiple temporal and spatial systems are juxtaposed in the simulator: a system belonging to the Free Play settings, i.e., the virtual space and time of the simulator, and another system that Ender imposes via his memories through the chronotopes they embody. This spatial and temporal rhizome, imported from Free Play and concretized on the buggers' planet through the giant's corpse, becomes an essential part of the hybrid city, as individuals' consciousness divides itself in order to navigate it, breaking the linearity of time in the process, which will be discussed in the following section.

C. The Hive Mind and the Hybrid City

The chapter's discussion of *Ender's Game* thus far has posed the coexistence of diverse temporal systems in the hybrid city, fragmenting the characters' experience of time. In order to cope with these paralleling temporal systems, Pond proposed the concept of "hegemonic time," a temporal system "that achieves widespread social acculturation, becoming the time against which all the variable rhythms of personal, economic and political life are paced" (14). Pond explored the notion of a singular time dominating others to study the influence of capitalist time and its reorientation of the urban settings' temporal systems, though its impact extends to individual's consciousness as well. Christine Doyle and Susan Louise Stewart observe how Card uses Bakhtin's double-voiced discourse to showcase the characters' fragmented nature, hinting at a postmodern consciousness affecting the individuals' experiences, including their perception of space

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and time (193). To possess a consciousness is to be able to navigate the diverse temporal and spatial setting that fragment it; the novel, however, presents the hive mind as an alternative way to reconcile the characters' consciousness with their fractured environment. The hive mind, a popular science fiction trope, is a phenomenon that unites space and time in its members' consciousness, which can be interpreted as the equivalent of the concept of hegemonic time and a metaphor of time produced by the hybrid city.

As discussed in the previous chapter, the defining feature of the virtual dimension's movement towards the hybrid city center is cyberspace's ability to produce spatial metaphors. In parallel, the hive mind becomes the temporal metaphor the characters program to change the virtual city's constitution; the fact that the novel presents the human hive mind as a construction facilitated by the Internet also highlights the individual's ability to manufacture their own virtual metaphors. The coexistence of the hive mind, a unifying factor, and the fragmented nature of the urban environment is also of note, as it introduces multiple contradictions in the narrative, a feature of the hybrid city, as Lefebvre explained: "The study of [the urban space's] logic and formal properties leads to a dialectical analysis of its contradictions" (*Urban* 39). In other words, the study of the hybrid city necessitates not only an analysis of its connecting nodes, but of its points of tensions as well. Consequently, the next section will compare the hive mind to the human psyche's collective unconscious in order to analyze the contradictions created between the collectivity of the hive mind and the fragmented hybrid city that produced it.

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1. The Collective Unconscious, The Hive Mind, and the Hybrid City

Jung defined the collective unconscious as "a second psychic system of a collective, universal, and impersonal nature which is identical in all individuals [and] does not develop individually but is inherited. It consists of pre-existent forms, the archetypes, which can only become conscious secondarily and which give definite form to certain psychic contents" (*Archetypes* 43). In this sense, Jung introduced the idea of a collective genetic inheritance that can be paralleled to the hive mind: if memories, belonging to the collective unconscious, supersede the individuals' consciousness, one temporal and spatial system would establish itself in their minds, theoretically allowing them to read each others' thoughts. Interestingly, the collective unconscious was used by Jung as the basis for temporal and spatial telepathic phenomena (*Psychology and Alchemy* 160), strengthening my argument of the hive mind overtaking individual consciousness in the form of the collective unconscious.

In Card's novel, the hive mind is precluded by Ender's developing attunement to his instincts. In line with Sigmund Freud's *Civilization and its Discontents*, sexuality and aggression are primal instincts that humans have to repress in order to form civilizations, but Jung, in his discussion on archetypes, saw the latter as synonymous to instincts: "[A]rchetypes are the unconscious images of the instincts themselves, in other words, that they are patterns of instinctual behaviour" (*Archetypes* 43). The hive mind, bringing the collective unconscious to the forefront of consciousness, would then theoretically trigger the individuals' attunement towards their instincts, which *Ender's Game* showcases as it predominantly features the instincts of sexuality and violence.

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As the narrative of *Ender's Game* is set during the characters' childhood, sexuality has been primarily overlooked by the author; nevertheless, there are still instances in the novel that hint to it, one of which is the name of the buggers species. According to the Oxford English Dictionary, a "bugger" or a "buggerer," is as an individual committing "buggery," defined as an "[u]nnatural intercourse of a human being with a beast, or of men with one another, sodomy." The name of the species adds a homoerotic tension to the novel and introduces another: the name of the buggers implies that they are a lesser class of species due to their baser nature, yet the human government encourages their soldiers to embrace their instincts in order to imitate the buggers' hive mind as a military strategy. Additionally, James Campbell explained that, as the Battle School is largely constituted of males, Ender's environment is largely a homosocial one (490), manifested through Ender's interactions with Alai, his first friend at Battle School, and Bonzo, his nemesis. Early in the novel, Alai sends off Ender to his first assignment with a kiss and a whisper of "Salaam" (Card 70), which Campbell notes to be a sign of peace and affection that cannot be tolerated at school (495). Similarly, Ender comments on Bonzo's beauty when he first encounters him: "I would follow such beauty, said something inside Ender. I would see as [Bonzo's] eyes see" (Card 77), hinting at homoerotic attraction (Campbell 496). Likewise, the planet Eros is a former colony for the buggers, and is the site where Ender commits the genocide, then subsequently dedicates his life to its repopulation. Eros, the sex drive, is equated with Thanatos, the death drive, both of which are enacted through Ender. Correspondingly, Alai's innocent show of affection is stifled by the school atmosphere and Ender's early homoerotic attraction to Bonzo grows into mutual dislike and violence, culminating in Bonzo's death at Ender's hands.

The other instinct that is prominent in the novel is aggression, and its importance is highlighted by Colonel Graff: "Our genes won't let us decide any other way. Nature can't evolve a species that hasn't a will to survive" (Card 255). Colonel Graff's beliefs reference Richard Dawkins' *The Selfish Gene*, which pointed at humankind's tendency to seek survival amidst competition. Basing himself on Charles Darwin's theory of evolution, Dawkins expanded the view further by arguing that "the fundamental unit of selection, and therefore of self-interest, is not the species, nor the group, nor even, strictly, the individual. It is the gene, the unit of heredity" (11). Dawkins explained that while the self-sacrificing individual's altruistic tendency will be nullified upon their death, the selfish individual's will be inherited, thus generating a self-perpetuating selfish gene (7–8). In *Ender's Game,* the Battle School fosters this survival instinct, as showcased during the Giant's Drink sequence: during his Free Play sessions, Ender encounters a Giant that offers him the option of consuming one of two drinks, both of which will kill him. At first, Ender suffers multiple deaths, the last of which is gruesome: "He played again, and this time the liquid set, like concrete, and held his head down while the Giant cut him open along the spine, deboned him like a fish, and began to eat while his arms and legs quivered" (Card 65). After repeated deaths, Ender is frustrated to the point of retaliation: "He jumped at the Giant's face, clambered up his lip and nose, and began to dig in the Giant's eye. The stuff came away like cottage cheese, and as the Giant screamed, Ender's figure burrowed into the eye, climbed right in, burrowed in and in" (Card 65–66). The Giant's Drink sequence teaches Ender that aggression is the only assured option for his survival; Ender illustrates this instinctual behavior—the aggression—when he kills Stilson and later Bonzo in self-defense (Card 7–8, 213–214).

Ender's attunement to his sexuality and aggression, his baser instincts and the representation of human archetypes, indicates his connection to the collective unconscious, making him a candidate to lead the human hive mind. The environment that fosters this attunement, however, is distinguished by its tensions, which deny Ender's potential experiences with other characters and favor a singular violent narrative. These contradictions allude to the focal point from which they originate, namely the hybrid city center; as the locus of the human hive mind, Ender and the city center become interchangeable as his experience of his surroundings advances the hive mind's narrative. This statement is exemplified by Mazer Rackham, who explains to Ender that "[m]urder's no big deal to [the buggers]. Only queen-killing, really, is murder" (Card 272). The bugger queen's embodiment of her race is thus extended to Ender, as he becomes the center of the human hive mind. Ender and the bugger queen, embodying their respective race, a synecdoche of their species' space, time, and identity, become the center of the hybrid city itself. While characters embodying their city is a concept that will be explored further in Chapter 3, its importance in the current chapter is the singularity of its representation: instead of multiple characters adopting their urban settings as an identity, the hive mind appoints Ender and the bugger queen as the only known individuals to portray the phenomenon, thus restricting the urban sprawl by transforming the rhizomatic city into a maze with a center.

The atmosphere fostering this aggression introduces another point of tension, as Ender struggles with his violent tendencies throughout the novel, becoming a source of guilt: "I'm doing it again, thought Ender. I'm hurting people again, just to save myself. Why don't they leave me alone, so I don't have to hurt them?" (Card 116). Ender has been specifically asked by the Battle

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School to lead the human army against the buggers, as the administrators found him to be a balance between Valentine, his empathetic sister, and Peter, his cruel brother. At the beginning of the novel, Card paints Ender as a deeply empathetic child, as he is saddened by the death of the virtual lycanthropic children (118) as well as the Giant (66), and grieves when he causes other pain (116). Similarly, Ender is the only character at Battle School to have empathy for the buggers, which pains him, as he confesses to Valentine: "In the moment when I truly understand my enemy, understand him well enough to defeat him, then in that very moment I also love him" (Card 240). Nevertheless, he is simultaneously willing to use violence against his enemies (Card 1). This balance is the motivation behind the Battle School's decision to recruit Ender, as Colonel Graff explains:

> We had to have a commander with so much empathy that he would think like the buggers, understand them and anticipate them. So much compassion that he could win the love of his underlings and work with them like a perfect machine, as perfect as the buggers. But somebody with that much compassion could never be the killer we needed. Could never go into battle willing to win at all costs. If you knew, you couldn't do it. If you were the kind of person who would do it even if you knew, you could never have understood the buggers well enough. (Card 300)

On par with the destruction of Eros through Thanatos, Ender is specifically recruited to understand how the buggers operate, which adds another contradictory point to the narrative, for as soon as Ender understands the buggers enough to love them, he is pressured into killing them for the sake of humankind's survival.

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Furthermore, the parallelism between Ender and the buggers is foreshadowed early in the novel, such as when Peter coerces Ender to play the role of the Bugger for the former to kill (Card 11–12). At the end of that confrontation, Peter taunts Ender: "They meant you to be human, little Third, but you're really a bugger, and now it shows" (Card 12). Ender's understanding of the buggers becomes the basis of his recreation of the Bugger hive mind with the human fleet, as he seeks to recreate the buggers' culture with his subordinates. For instance, Ender notes that the buggers are highly disciplined, and would replicate this discipline with his squad leaders until "[t]he trust was complete, the working of the fleet quick and responsive," in order to rival the instantaneous connection the bugger fleet had (Card 190, 277). At the end of the novel, as Ender reviews the video tapes of his work with his fleet, he remarks that they "look like a bugger fleet" (Card 277). This active process of emulation equates Ender with the bugger queen not only in position, but in understanding as well; as the respective focal points of their species, Ender and the bugger queen become joined at the same urban center, sharing the same temporal and spatial systems.

The fusion of Ender and the bugger queen can be further analyzed when the former dreams of the other species vivisecting him and probing his memories (Card 280). The dream features the Free Play simulator, as Ender "drifted off to sleep each night, it was with thoughts of the simulator playing through his mind," (284) and featured the Giant's sequence:

Often he remembered the corpse of the Giant, decaying steadily; he did not remember it, though, in the pixels of the picture on his desk. Instead it was real, the faint odor of death still lingering near it. Things were changed in his dreams. The little village that had grown

up between the Giant's ribs was composed of buggers now, and they saluted him gravely,

like gladiators greeting Caesar before they died for his entertainment. (Card 284)

The village formed by the Giant's corpse is Ender's creation, a virtual section of the larger hybrid city. As Ender's understanding of the bugger queen deepens, his dreams, mirroring the collective unconscious itself (Yiassemides 36), conflates the human urban center with the buggers', as a multitude of temporal and spatial systems coalesce: that of the Free Play sequence, Ender's dreams, and the bugger queen's. As previously mentioned, the Free Play simulator encrypts Ender's virtual experiences to his specific cognitive functions, rendering them inaccessible to others. By dreaming of the Giant's corpse, Ender fuses the virtual chronotopes, already a part of his consciousness, with the buggers', concretizing the data in both the virtual and physical aspects of the hybrid city. The buggers' later recreation of the Giant's corpse as the basis of their urban setting furthers this argument and showcases that Ender's connection to the bugger queen is mutually accessible, merging the human and buggers' urban centers.

The dream, reflecting Ender's guilt, also foreshadows the death of the buggers as well as the recreation of the giant's corpse as a city on their home planet. Angeliki Yiassemides, analyzing Jung's explanation of dreams, observed that he "was proposing a non-linear temporal modality of radial nature that would replace the causal interpretation (i.e. events causing each other)," which would mirror the collective unconscious itself (36). The hive mind, as an allegory for the collective unconscious, adopts similar temporal systems as that of the unconscious: the psyche, Jung noted, perceives time as relative, considering the "archetypal world" as "'eternal,' i.e., outside time" (*Letters* 46). Yiassemides elaborated further on Jung's views of temporality: "We have a dual temporal

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nature. We are time-bound and function in time but also have an archetypically timeless dimension which allows us to participate in a realm that is beyond/outside time, and thus timeless" (18). Furthermore, Yiassemides comments on the archetypes' temporal nature, observing that archetypes "are the catalysts that transport our psyche from the past into the present, and move it into the future" (22). The merging of Ender and the bugger queen, symbolically representing the fusion of two urban centers, can be interpreted as the realization of another archetype across non-linear time:

> The alchemist saw the union of opposites under the symbol of the tree, and it is therefore not surprising that the unconscious of present-day man, who no longer feels at home in his world and can base his existence neither on the past that is no more nor on the future that is yet to be, should hark back to the symbol of the cosmic tree rooted in this world and growing up to heaven-the tree that is also man. (Jung, *Archetypes* 109–110)

Ender, alienated by his understanding of the buggers, projects his unease unto his dream of the Giant's sequence, where his urban setting is populated by the buggers he has yet to kill (Card 284). Furthermore, the tree, a symbol of union, also features in the Giant's Drink sequence, as Ender describes the Giant's death: "[W]hen Giant came to rest on the ground, there were intricate, lacy trees all around," foreshadowing the fusion of Ender and the bugger queen (Card 66). The union of opposites archetype, dreamt by Ender, is thus also shared by the bugger queen, as both species' temporal and spatial systems unite; in this sense, the human collective unconscious, featured in the Free Play simulator, becomes yet another chronotope encoded in computer data, accessible by Ender and the bugger queen, as their consciousness merge.

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As a timeless psyche, the collective unconscious is both temporal, as it relates to Ender's current existence, and atemporal, as it allows him to access eternal psychic data across time, mirroring the heterochronic data uploaded on the Internet and comparing the human psyche to the hybrid city's virtual dimension. The link between the human psyche with cyberspace—and subsequently, the city—is strengthened further by the fact that the virtual dimension is the one that facilitates the formation of the hive mind. This hybrid urban setting presents thus another contradiction: as the medium for spatial and temporal rhizomes, the city enables both the fragmentation and unification of the human consciousness.

2. *Criticism of the Hive Mind: The Expansion of the Urban Sprawl*

Years after the genocide of the buggers, Ender explores a planet in Eros' radius, only to find an abandoned city that is familiar to him:

> Now Ender knew why it had looked familiar. The Giant's corpse. He had played here too many times as a child not to know this place. But it was not possible. The computer in the Battle School could not possibly have seen this place. He looked through his binoculars in a direction he knew well, fearing and hoping that he would see what belonged in that place. Swings and slides. Monkey bars. Now overgrown, but the shapes still unmistakable. (Card 319)

As discussed in the previous section, the re-creation of the Giant's corpse as a city concretizes the union of both species' urban centers, as the bugger queen is able to access Ender's memories through the chronotopes and archetypes accumulated in the virtual dimension. However, it also presents an outcome that is antonymous to the hive mind's previous effect, the restriction of the

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urban sprawl: while the hive mind limited the connection between the hybrid city and its citizens to only two individuals, it also allowed two paralleling urban rhizomes to connect. The architecture of the resulting city, the Giant's recreated corpse, presents a larger urban network, solidifying Ender's memories—the chronotope data—and the collective unconscious into physical establishments, as well as conjoining the virtual and the spatial aspects of the hybrid city. As a result, this city becomes the representation of non-linear time itself, as Ender is able to communicate with the dead queen through this hybrid rhizome, and notably, by using a mirror.

The mirror found in the buggers' abandoned city is a replica of the one during the End of the World sequence, a game quest unique to Ender, as he is the only known individual that completes the available sequences before it. Free Play presents the virtual space as a dimly lit castle with the mirror as one of its few furniture. While Ender uses the mirror in the simulator to see reflections of his brother and sister, the one found in the abandoned city enables him to communicate with the dead bugger queen, as it triggers unfamiliar memories of the buggers through Ender's mind (Card 321–322). Ender describes the process:

> He walked to the mirror, lifted, pulled away. Nothing jumped from the space behind it. Instead, in a hollowed-out place, there was a white ball of silk with a few frayed strands sticking out here and there. An egg? No. The pupa of a queen bugger, already fertilized by the larval males, ready, out of her own body, to hatch a hundred thousand buggers, including a few queens and males. Ender could see the slug-like males clinging to the walls of a dark tunnel, and the large adults carrying the infant queen to the mating room . . . How do

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I know this, thought Ender. How can I see these things, like memories in my own mind.

(Card 321)

The mirror, a notably heterotopic place, allows Ender to access the non-linear time of the human/bugger hybrid city in order to recall the bugger queen's memories. Card presents thus this hybrid city as the basis of immortality: despite the genocide of the buggers, Ender is able to communicate with the dead queen through the city and his memories, as she instructs him to repopulate her species through planting the next queen's egg on fertile grounds (Card 322–323). The new queen's egg, a new urban node, allows the hybrid city to expand, as it would repopulate the abandoned hybrid city and allow it to prosper, reiterating the hive mind's paradoxical functions of restricting and developing the urban sprawl.

In parallel, the human formation of the hive mind with Ender at its center is portrayed in a negative light, as it culminates in the genocide of the buggers. The defragmentation of the consciousness—rendering the individuals unable to navigate the hybrid city—establishes the citizens as vulnerable to exploitation, as Ender was. A similar thread is presented in Neal Stephenson's *Snow Crash*, as Hiro and his friends attempt to stop L. Bob Rife from creating a hive mind of susceptible individuals through the virus. The difference between the two representations of the hive mind is the matter of consent: while the buggers operate through a hive mind by default, and humankind emulates this strategy through their soldiers in *Ender's Game*, Rife uses the Snow Crash virus to overhaul the victims' consciousness. It is noteworthy, however, that the *Snow Crash* victims present insect-like features, similar to the buggers: "They have a new species [on the Raft]

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too: people with antennas coming out of their heads" (Stephenson 304). Most of the infected individuals presented in *Snow Crash* talk through babble, earning them the name of the "Falabalas," the representation of the hive mind in that narrative. The hive mind in *Snow Crash* presents itself through spoken language rather than telepathy; in *Ender's Game*, however, the hive mind operates via internal language, thus associating it with the persons' unconscious if they are a member, and the conscious if they are the center, i.e., the soldiers versus Ender.

Furthermore, Card presents the buggers' unified mind as the reason for their downfall: at the end of the novel, the queen reveals that the buggers first attacked humankind as they perceived them to be nonsentient creatures, given that they did not communicate similarly. As a singular mind, unable to understand humankind's fragmented consciousness, the buggers sought to conquer Earth, initiating the Human-Buggers first and second wars, to which humankind retaliates in the third, leading to the genocide of the bugger species. The process is also highlighted by humankind's lack of understanding of the buggers until the formation of their own hive mind, which enables Ender to merge his consciousness with the bugger queen's, and subsequently her species. The hybrid city's paradoxical function of fusing and fragmenting consciousness, then, becomes an advantage, offering its citizens the option of adopting multiple points of view.

The hive mind, created through the hybrid city, represents humankind's effort to resist the continuous fragmentation of the urban environment, leading to exploitation, oppression, and war crimes. The temporal and spatial systems, inherent in the virtual/physical city, are simultaneously the basis of this hive mind and the key to its disintegration, as Ender dedicates the rest of his life atoning for his crimes and helping the bugger species repopulate the hybrid city. The implications

that the hybrid city offer to both Ender and the bugger species—the possibility of immortality—

will be discussed in the following chapter.

Chapter 3: Individuality in *Synners*

A recurring motif in Pat Cadigan's *Synners* is the characters' desire to "change for the machines" (105), which is featured twenty-five times in the novel. The reoccurrence of the term emphasizes the evolution of humankind through its acceptance of technology into the fabric of experience, enabling the creation of the cyborg. The term "cyborg" was first proposed by Manfred Clynes and Nathan Kline to define a system that self-regulates when faced with new environments (27). Donna Haraway added to this definition by describing the cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (117) that transcends boundaries, thus emphasizing the cyborg's adaptability. As the development of the individual's social reality and its relation to its environment have been explored in the previous chapters via the study of time and space, this third and final chapter will expand the analysis by tracing the creation of the cyborg as an identity through the urban rhizome. Consequently, this chapter will present a condensed review of the evolution of identity as a concept before drawing a comparison between *Snow Crash* and *Synners*' hybrid cities, and then detail the formation of the post-human through *Synners'* urban network.

A. Space, Time, and Identity

The discussion of identity as a concept is extensive, encompassing multiple variants such as economic class, race, ethnicity, gender, sexual orientation, genetic inheritance, collective background, and so on. The following section will focus on key theories that shaped the discourse of identity formation, as well as those influencing the concept of post-human identity.

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1. *The Concept of Identity*

In *The Early Modern Subject*, Udo Thiel defined the Scholastic perspective of human identity as an individual with "substance of a rational nature," thus associating humanity with its cognitive functions (35–36). Similarly, René Descartes defined the Cartesian approach when he coined the dictum *cogito ergo sum* in *Discourse on Method* (73), though he deviated from the Scholastic perspective in regards to the relationship between the body and the soul (Thiel 37). Descartes advanced that the soul, i.e., human consciousness, is "entirely distinct from the body and is even easier to know than the body; and would not stop being everything it is, even if the body were not to exist" (29). Descartes thus proposed consciousness as a uniform and immaterial function that can be objectively analyzed, which John Locke would then refute, observing that the individual is confined by their circumstances, i.e., by the preexisting space and time (Thiel 104). By linking the formation of identity to space and time, Locke widened the discourse to include the individual's social background, thus establishing a relationship between identity and its environment. Likewise, Auguste Comte introduced the scientific analysis of society with the Positivistic school of thought: Comte, regarding mathematics as one of the few studies that presents proofs, suggested the discipline as the basis for sociologists to cultivate rational arguments (258). By using the laws of mathematics to define both biology and social theory, the discourse of identity attained an objective foundation to study the variables involved in identity formation.

Psychoanalytic theory deviated from previous schools of thought by suggesting the existence of an "unconscious" influencing the individual's thoughts and actions; nevertheless, it did not advance a fixed definition of the concept of identity, due to the integral societal influence on

the individual, especially during early childhood (Akhtar and Samuel 256). Instead, psychoanalysis offered a framework to analyze the individual's consciousness, as Sigmund Freud posed the existence of a triad forming the individual's psyche: the "Id," the primitive and instinctual part of the brain, the "Super-ego," the individual's conscience, and the "Ego," the mediator between the two (*Ego and Id* 24). Moreover, psychoanalytic theory pinpointed the origin of the individual's identity prior to a child's birth, as two factors structured the foundation of their psychic development: the child's genetic code and their parent's expectations of them (Akhtar and Samuel 256). While the former indicates the child's temperament, the latter constitutes their relation to their guardian's affection (Akhtar and Samuel 256). Heinz Lichtenstein developed this idea by noting that parents, especially the mother, imprints an "identity theme" unto their child, from which they can rarely deviate—i.e., they can rarely achieve a "metamorphosis" of identity (213). While Lichtenstein posited the child's identity and the process of metamorphosis as incompatible, he admitted their coexistence within the individual's psyche as part of the identity formation process (213).

In addition to the intra-psychic influence on the individual's identity, researchers have studied the impact of society on the person as well as the formation of a collective identity. Erik Erikson, for instance, observed that the relationship between the individual and the collective is bidirectional in nature (211), with Alberto Melucci expanding the idea by suggesting a definition of collective identity based on "a network of active relationships, between the actors, who interact, communicate, influence each other, negotiate and make decision" (45). Xabier Barandiaran et al. corroborated this statement, advancing the key traits of collective identities as "recurrent, cohesive, and coordinated communicative interaction networks" (1). The digital era, however, emphasized

the individual's agency over their environment, a process Manuel Castells dubbed "mass self-communication" (55). As the Internet expanded the individual's reach globally, the sharing of data is "self-generated, the definition of potential receiver(s) is self-directed, and the retrieval of specific messages or content from the World Wide Web and electronic communication networks is self-selected" (Castells 55). Consequently, cyberspace increased the individuals' control over the environment that forms their identity. Moreover, as citizens of the hybrid city, the individuals' network became directly influenced by the digital sphere, rendering the creation of the cyborg an expected progression within the urban sprawl.

The posthuman concept of the cyborg echoes the individuals' instinctive tendency to gravitate toward networks. For instance, Haraway observed that "[b]y the late 20th century, our time, a mythic time, we are all chimeras, theorized, and fabricated hybrids of machine and organism; in short, we are cyborgs" (118). The cyborg, as advanced by Haraway, is a figure transcending borders, whether it is between the organism and the machine, the public or the private, imagination and reality, or even genesis and eschatology (Haraway 118). As a nongendered construction, the cyborg does not relate to a creator, and thus does not seek unity with an origin; likewise, as a self-generated construction, the cyborg negates the existence of an end to creation (Haraway 118). Defying teleological definitions, the cyborg is characterized by its need for connections (Haraway 118), be it with its surroundings or with other cyborgs. The cyborg is thus presented as a concept that is intrinsically linked to the network that generates it, and to study the formation of the posthuman requires the analysis of its environment, the hybrid city, as well.

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2. Spatiality and Cyborg Identity

In the early chapters of Cadigan's *Synners,* Gabe visits Consuela and discovers that the latter has simulated the entirety of her apartment, including herself, as she speaks through holograms. When Gabe questions her decision, she exclaims that the headmount, a device used to generate simulations, is "[n]ot big enough. The world's not big enough. If it were, we wouldn't need to make worlds like this" (Cadigan 136). Consuela's answer echoes Lefebvre's, who outlines humankind's fascination with digital space by explaining that "[t]he void (a place) attracts; it has this sense and this end. Virtually, anything can happen anywhere" (*Urban* 130). *Synners* presents its characters as not only perpetually developing cyberspace, but also as intent on uniting both the digital and the physical within one dimension.

When discussing the digital urbanization process of modern cities, Matthew Gandy observed that "the figure of the cyborg is at root a spatial metaphor" (28). Gandy's statement corroborated Anna Cicognani's conclusion, previously discussed in Chapter 1, which observed cyberspace's progression from a metaphor of space to a space for metaphors (19). Gandy elaborated: "In the neo-organicist city we encounter a shift of emphasis away from an anatomical conception of space as an assemblage of individual organs towards a neurological reading of space as a diffuse and interconnected realm of human interaction" (29). In other words, the hybrid city, or the "neo-organicist city," becomes a *topoi* producing humanoid as well as spatial metaphors (Gandy 29). Similarly, William Mitchell described the control the individual has over the urban environment: "I seek to control these networked flows. So the crossing points are sites where I can survey what's coming and going, make access decisions, filter out what I don't want to admit or release, express

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desire, exercise power, and define otherness" (9). Mitchell applied the self-communication process, previously restricted to cyberspace, to the physical dimension of the hybrid city: in this sense, the connection of the citizens to their urban environment became an active process of exerting their control over it (9). Therefore, as human interaction is admitted to the urban sphere, the creation of the cyborg, a metaphor produced by the hybrid city, necessitates a new understanding of the citizens' network as well as the time and space it presents.

3. *Temporality and Cyborg Identity*

Towards the climax of the novel, *Synners* defines temporality through the dissolution of its linearity: "Surveillance is down. Can't get anything but some kinda weird snow,' said the guard, holding up a walkie-talkie. 'Forward into the past'" (Cadigan 363). Interestingly, the snow that the guard discusses is a program failure the displays generate—in other words, a "Snow Crash." The phrase "forward into the past" implies that while Neal Stephenson's novel is prior to Cadigan's in terms of cyborg creation, *Synners* subverts that chronological linearity: the latter does evolve into the former, creating an outbreak of a digital virus with similar symptoms.

The collapse of the past, present, and future compels *Synners'* characters to depend on their consciousness to construct their reality. After undergoing surgery to receive her sockets—cerebral implants connecting the individual directly to cyberspace—Gina strolls the streets of the city, observing: "Hadn't taken long for everything to change for the machines. Pretty soon it would all be happening at the speed of thought, before it could actually happen, so that nothing would ever have to happen again. You'd only think things had happened, and if anything ever did happen, you wouldn't know the difference" (Cadigan 247). Cadigan references the possibility of a hive mind formation, as everything "happening at the speed of thought" implies an instantaneous connection

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between individuals (247). Body modification has been a popular trope in the cyberpunk movement; Gibson's *Neuromancer* features Molly, a female protagonist whose metabolism and sensory input have been augmented through implants via medical procedures; Effinger's *When Gravity Fails* presents cybernetic modification as one of its main themes, with the protagonist, Audran, struggling with his initial decision to avoid body alteration procedures. The implants in Cadigan's *Synners,* however, showcase a direct link between individual and environment, consequently accelerating the speed of events at the individual's disposal. As such, the predominant, hegemonic time is synonymous to network time, which facilitates the collapse of temporal linearity. If hegemonic time is dictated by that of the network, then the chronotopic data, stored in the hybrid city's dimensions and recovered with speeds previously unattained, encodes the past, present, or future, and the retrieval of past or future data is divorced from the individual's present. Consequently, the citizens of *Synners*' hybrid city have to adapt to the network as their referential temporal system to measure the passage of time.

The predominance of network time results in a new phenomenon available to the citizens of *Synners*' hybrid city, the temporal nature of death: Jones, a character diagnosed with clinical depression, repeatedly commits suicide, only to be revived a few days later (Cadigan 52). This phenomenon is enabled through another type of cerebral implant Jones has acquired, which revives him by ushering his system into immediate coma before re-installing his consciousness' data, previously stored in the implants (Cadighnan 52–53). This procedure becomes common enough that other characters treat it as a nuisance rather than a serious affliction requiring medical care (Ca-

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digan 52–53). The theme of possible immortality recalls Card's *Ender's Game*, where Ender dedicates his life to repopulating the extinct bugger species. Both instances showcase the predominance of network time in the urban sphere and the dissolution of temporal reality; death in the cyberpunk movement is remedied by the recovery of past data, stored via chronotopes in the digital dimension, an act that modifies the present and constructs a feedback loop. Cadigan and Card's hybrid cities present the possibility of lengthening human lifespan through the postponement of death, as Jones would only achieve permanent death by destroying his implants, while the bugger species achieve revival through their connection to Ender.

Time and space, essential in the construction of the individual's environment, play a vital role in the identity formation process. Mark expresses this sentiment when he exclaims:

His s*elf*. And his *self* was getting greater all the time, both ways, greater as in more wonderful and greater as in bigger. The sense of having so much space to spread out in – a baby emerging from the womb after nine months must have felt the same thing, he thought. Stone-home true enough for himself. After the initial trauma, hey, it's party-time! All those years in meat hell, he marveled. All those years of getting toxed . . . never understanding that what he'd really been trying to do all along was drill a few holes in his head and get out of meat-jail. And into… what? His own context. It went little by little with him, a little more every time he took the wire. That was what he called it, taking the wire. (Cadigan 251–252)

Mark defines his identity through his use of the sockets; as his self—his context—is dependent on the digital and physical space he encompasses as well as the time associated with the data his

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consciousness encodes. Therefore, Mark's identity, encoded within the hybrid city, becomes intrinsically linked to the digital and physical environments structuring it—consequently, the study of *Synners*' cyborg creation also entails an analysis of the urban sphere that enables it.

B. The Hybrid City's Development

Neal Stephenson's *Snow Crash* documents the Metaverse's movement from margins to center and the subsequent formation of the hybrid city. In comparison, Cadigan's *Synners* advances the timeline to illustrate the hybrid city fully realized within the urban center. Correspondingly, each novel showcases varying interactions between the characters and their environment, thereby indicating the degree of evolution the hybrid city has achieved. Before delving into the hybrid city's role in the creation of the cyborg, this section will offer a comparative study of both novels, tracing the characteristics of both *Snow Crash* and *Synners*' cities.

The first difference between both novels is the importance attributed to advanced technological knowledge: for instance, Stephenson's Metaverse presents a world in which the technological elite dominate, i.e., those who advance the plot have progressive knowledge of the digital pace they frequent. In parallel, Cadigan's *Synners* illustrates a deep relationship between the digital and physical dimensions, thereby negating the need to differentiate between the two. The central characters in *Synners*, i.e., the active agents behind the sockets' application, are doctors (Joslin), advertising designers (Gabe), and even musicians (Mark and Gina). It is also interesting to note that the name of the novel, *Synners,* is an abbreviation of the word *synthesizers,* referring to an avant-garde method of producing rock videos. In contrast, programmers such as Sam, Keely, and Fez do not hold central knowledge, nor are they the primary agents in the novel's storyline. Though their

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perspectives are at the forefront, the reader observes that the programmers do not move the plot forward, and it is through the perspectives of unassuming characters that the reader deciphers the plot. The distinction between the background of the central characters—the technological elite versus the regular public—recalls the difference between transhumanism and posthumanism. While transhumanism places technology at the center of social practices and values (Ferrando 28), posthumanism presents a decentralizing approach to the evolution of humankind, where techno-logical advancement is presented as one network node amongst others (Ferrando 30).

The second difference between the two novels is the degree of enmeshment between the virtual and the physical as seen in the characters' treatment of information. In Stephenson's *Snow Crash*, data is available to a select few, namely, Hiro, Juanita, and L. Bob Rife, with the three characters' access to data restricted to the figure of the Librarian AI; those who do not obtain the Librarian's software remain ignorant of Rife's schemes. In parallel, the citizens in *Synners* have equal access to data, as Art, the AI that evolved from the Internet, is pseudo-omniscient: "Art is everywhere, though his *attention* is not" (Cadigan 189). The characters are then tasked with deci-phering the data and transforming it into information, as Sam explains: "If it don't mean a thing, it ain't information" (Cadigan 30). Despite receiving the encrypted file sealed in rock music from Keely, Sam is unable to grant the data any value without context, and she is only able to understand the information after combining it with other data, the first of which is obtainable from open sources on the Internet. Consequently, the characters in *Synners* are equally equipped with an in-tertextual network of data capable of providing the necessary information about the ongoings in the city.

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The third difference between Stephenson and Cadigan's cities presents the conjoining of the virtual and physical through their characters. *Snow Crash*'s closest connection between the two dimensions is represented by the gargoyle gear that allows Largos and Hiro to superimpose a vision of cyberspace on their physical environment. *Synners*' version includes the advanced implants/sockets designed by Dr. Joslin, which Art describes as "a direct interface for input-output with manufactured neural nets," in other words, computers inserted into the patient's brain (Cadigan 185). Gandy observed the conjoining of the individual and their surroundings in the process of digital urbanization, noting how "the distinction between mind and body and between the material and the virtual becomes extensively blurred" in digital megalopolises (34). The insertion of sockets into the patient's brain, the organ (or the place) most closely associated with consciousness, is the most intimate form of union between the material, both virtual and physical, and the individual, blurring the lines between the hybrid city and the person. Consequently, the implants comprise a human cerebral node acquired by the urban rhizome, cementing the role of the individual in the construction of the virtual and physical dimensions of their city.

Thus, the three characteristics that rendered *Synners*' city a host for the creation of the cyborg are the induction of technology into the average citizen's life, the abundance of digital data, and the degree of enmeshment of the individual with the urban network. Observing the development of the hybrid city, William Mitchell notes that "a fundamentally new urban condition is emerging . . . a city marinated in narrative, and inescapably bound up with narrative's capacity both for reflection and for duplicity" (112). Equipped with the skills, data, and connection to their hybrid city, the characters in *Synners* are able to control their narratives by threading the network

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nodes of the virtual and physical dimensions. In other words, individuals constitute a network node themselves, producing, analyzing, and encoding their own time and space data into the urban fabric, and thus effectively embodying the city as identity.

C. Post-humanism and the Hybrid City as Identity

While at a party organized by Canadaytime, a rock band, Gina reflects on the ongoing celebrations: "Here's the real secret, folks, she thought, as a kid with a cam to her face stalked her like a machine of prey: none of us will ever get to a party like this, none of us will ever have lives like this; this isn't what happened; nothing happened except the dataline" (Cadigan 151). With this declaration, Gina observed how the experience of the party-goers is linked to the rush of being streamed live on camera. While half the individuals are present at the party physically, the other half is watching virtually. Similar to Hiro, who balances the meagerness of his apartment with his larger abode in the Metaverse, the individuals virtually attend the party to compensate for their physical absence; in return, the individuals physically present elevate their experience by streaming their actions online. The virtual dimension is thus presented as the direct expansion of the physical, highlighting the level union of the hybrid city's dimensions. This fusion becomes the main attribute that elevates the experience of the celebrations and expands its size to a city-wide event. In this vein, the upload and download of the party on the dataline alongside the physical celebrations becomes the objective of the attendees, rather than the enjoyment of the party itself, thus linking citizen's satisfaction with its reach across the urban sphere, transcending physical and virtual limits.

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The music-themed party recalls Lefebvre's concept of rhythmanalysis, the process through which the characters "transform[s] *everything* into presences, including the *present*, grasped and perceived as such" (*Rhythmanalysis* 23). Streaming the party online is synonymous to maintaining the physical and virtual dimensions' connection, in that the characters perform their environment's hybridity by receiving and uploading data. A similar process was observed in my previous chapter, where Ender applies Lefebvre's rhythmanalysis by manufacturing the buggers' instantaneous movements, speed of thought, and control over their environment. By copying the buggers, Ender and his soldiers assimilate their rhythm, i.e., the hive mind, and the rhythmanalysis performed therein enables them to concretize the hybrid city's *presence*. Consequently, this performance forms a network node, as it culminates in the union of the humans' and buggers' urban centers—Ender and the queen respectively—thereby expanding the urban rhizome.

Haraway's representation of the cyborg as a figure transcending spatial and temporal boundaries and in need of connections has often been explored in urban theory. Mitchell, for instance, wrote: "Consider, if you will, Me++. I consist of a biological core surrounded by extended, constructed systems of boundaries and networks. These boundary and network structures are topological and functional duals of each other. The boundaries define a space of containers and places (the traditional domain of architecture), while the networks establish a space of links and flows" (7). Gandy corroborated Mitchell's description of the cyborg and its relation to the city, adding that "the distinction between 'city' and 'non-city' becomes extensively blurred under cyborg urbanization to produce a tendential landscape exhibiting different forms of integration between the body, technology and social practices" (41). As a construct of organisms and machines, the cyborg

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does not only represent a node belonging to the urban rhizome, but is also able to travel and commandeer the network; as a flexible node, the cyborg can control physical spaces—containers and places—as well as network flows—digital data.

Debra Benita Shaw commented on the cyborg's ability to control the urban network, explaining that the cyborg "performs contingent relationality [and is] organized according to codes which do not respond to fixed ontologies or to a hierarchy of signs but is attuned to virtuality" (238). Shaw adopted the notion of virtuality from Henri Bergson, described in Chapter 2: according to Bergson, virtuality is defined by the subjective conditions that design the individual's experience of temporality, or in Shaw's analysis, the city network itself (Shaw 238). In this sense, the cyborg actively produces the space and time data that structures the network nodes; consequently, the identity of citizens is formed through this bidirectional connection to their city. Katheryn Hayles explored this radical shift, observing that "the redrawing of boundaries changes the locus of selfhood. Shift the seat of identity from brain to cell, or from neocortex to brainstem, and the nature of the subject radically changes" (279). As the locus of the cyborg's identity is no longer contained within its own self, but also through its relationship with the environment, studying the cyborg identity entails the analysis of the intertextual connections it forms; in other words, one needs to study how the hybrid city forms the cyborg.

1. The Hybrid City Context: The Fragmentation of the Self and the Union of Organisms

Chapter 1 analyzed the characters' adaptability to their fragmented space by mirroring the categorization of their environment in *Snow Crash*: while the virus attempted to unify consciousness across a hive mind, the characters sought to cure the victims by restoring the post-human

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consciousness they lost and re-establishing their connection to the urban network. Similarly, Chapter 2 catalogued the disadvantages of temporal unification via the hive mind in *Ender's Game*, whose protagonists are vulnerable to exploitation when forced to restrict the connection of the individual and the urban network to one member, Ender. Across time and space, the post-human consciousness' fragmented nature is presented as the expected occurrence when confronted by the hybrid city's physical and digital dimensions; resisting the categorization resulted in vulnerability. *Synners'* characters also showcase the same post-human narrative as those of the two aforementioned novels, though its uniqueness stems from the lack of obstructions that the characters face: the plot of *Synners* encourages a systematic fragmentation, most obviously portrayed by the character of Gabe.

In the novel, Gabe is presented as an advertisement designer whose muses are embodied in two artificial programs he includes in his gaming sessions, Marly and Caritha (Cadigan 45). In order to preserve his stable and risk-free lifestyle, Gabe has projected his adventurous tendencies onto the AIs, fracturing his identity. For instance, when Gabe ponders his impending divorce and his business lunch with his boss, he derides himself, only to note: "He'd have to remember to feed that line to . . . Marly; it was a good line, and it sounded far more like her than it did him" (Cadigan 88). Nevertheless, as the novel progress, Gabe grapples with differentiating the two AIs from his own thoughts. For example, when worrying about undergoing surgery to install the cerebral sockets, Gabe redirects his nervousness into editing the AIs' programs, projecting his fear unto Caritha, who says in his mind: "No, you don't want to tinker with us as we are now, hotwire . . . because we're your best friends, and you're really going to want us after those sockets go in" (Cadigan

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244). After this thought occurs to him, Gabe reprimands himself: "Still putting fancy dress on his own thoughts and calling it company" (Cadigan 244). Gabe fractures his consciousness by externalizing his thoughts through Marly and Caritha; this provides him with a sense of security he has failed to achieve in his previous career as an artist.

The installation of the sockets forces Gabe to internalize his fractured mind, a challenge he has previously avoided and another fear that he projects onto the AIs. Caritha warns Gabe against altering the AIs' programs, given that "after the sockets go in, telling the difference between [Marly, Caritha, and Gabe himself will] be harder. A lot harder" (Cadigan 244). Gabe's growth and the internalization of his fractured thoughts become the strength he relies on when confronting the virus Mark's death unleashes at the end of the novel. When opposed by the nonsentient virus, Gabe stabilizes his consciousness by "turn[ing] his attention inward, and there, deep in his mind, [he finds] a little bit of a glow, the same glow that he saw in Marly's eyes, in Caritha's" (Cadigan 432–433). Gabe depends on his fragmented consciousness to challenge the stroke virus, emanating from the conflict intact, a solution similar to *Snow Crash*'s, as the return to the post-human state of mind—the fragmentation of their consciousness—helps characters maintain their individuality. In this sense, Gabe's consciousness can only preserve itself by mirroring the hybrid city; the stroke virus, then, cannot defeat Gabe, as his identity has been stored in multiple digital and physical space and time chronotopes.

Gabe paradoxically accepts his fractured identity and unites it in his mind by internalizing Marly and Caritha, an evolution that mirrors Hiro's and Ender's: in Chapter 1 of this thesis, I presented Hiro rooting his identity in his connection to the Metaverse at the beginning of *Snow*

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Crash, thus limiting his knowledge to the virtual dimension. This restriction results in Hiro's ignorance of the physical space's events, i.e., Rife's attempt at hive mind formation. Hiro's identity growth is observed through his gradual acceptance of both the hybrid city's physical and virtual spaces, culminating in his usage of the Gargoyle gear, which enables him to coexist in both dimensions. Similarly, in my Chapter 2, I showed how, despite Ender's human nature, he is often referred to as a bugger by other characters, an identity that is emphasized in his conversation with the bugger queen: by recalling the latter's memories via his own consciousness, Ender cemented himself as a member of the foreign species. Ender's acceptance of his dual identification is then showcased in his decision to rectify his war crime and repopulate the bugger species; his development thus consists of accepting both identities, enacted via temporal unification. Both Hiro's and Ender's character arcs mirror that of the urban environment that features them: by adapting to both digital and physical spaces or by assimilating humankind and the buggers' temporal systems, the themes of union and fragmentation present a parallel to the hybrid city, which simultaneously fragments itself into multiple network nodes and unites them in a single rhizome. In this sense, the term *hybrid city* denotes the union and fragmentation processes as well as the fusion of the physical and the digital.

The fragmentation and the union of characters' identities is also echoed in the other characters in *Synners*. Laura Chernaik regarded these developments, encapsulated by each character but also interconnected, as the core phenomenon of Cadigan's novel, as "the 'truths' of each character, each polyglossic voice, are not introduced into the dialogic field of vision of the others characters" (71). In this sense, the novel does not present a protagonist holding central knowledge, but

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divides the information between characters possessing fragmented perspectives. The voice of each character, however, is combined by the reader, who identifies with the entire cast rather than with a central protagonist (Chernaik 72). This assemblage mirrors the pattern of data collection *Synners'* characters go through: as there is no central knowledge, the reader depends on each character's narrative to derive the plot and derive its context, creating a meta-intertextual connection, and linking the reader to the hybrid city text. The relation between the reader and the text becomes an experiment in post-human thought processing: as the characters advance a fragmented perspective, the reader relies on separate narratives to deduce the plot, mirroring the process of data gathering the characters go through.

In *Synners,* the phenomenon of encapsulation and connection can be observed further through the discussion between Gina and Valjean. Valjean, infected by the stroke virus, becomes delirious in his search for the context:

> That's the context. And see, if you're in the video, you're not the video, you're just in it. The woman winced as Valjean sat himself farther back on the rail. The shadows on the cape were pulsing more quickly and unevenly, the rhythm stumbling now and then. The shapes looked like stones moving as quickly as clouds in a storm. 'See, Gina,' he said suddenly, 'you got a bottle, say, and the bottle's got something in it. You're either the bottle, or you're something in it, but you're not both. Right?' (Cadigan 314)

Valjean struggles with the realization of being a node in a larger urban network, as he cannot fathom being inside the video or the bottle's liquid, a singular node, without perceiving the video

or the bottle itself, the totality of the rhizomatic city. The realization of embodying a node, triggered by the contamination of the stroke virus, demands a closer analysis of the role the strain symbolically plays in the overarching plot.

2. *Urban Virology and the Awareness of the Body*

Stephenson's novel presents the Snow Crash virus as the creation of post-human consciousness; to combat Asherah, the creator of the virus, the god Enki gifts humankind the power of "nam-shubs," defined as "speech with magical force" (Stephenson 197), which liberated the human consciousness from the unification of Asherah's hive mind. The reproduction of Asherah's virus in digital and physical format, as a program virus and a drug respectively, has not altered the fabric of the urban network but merely dispelled the illusion of the Metaverse as paradise and revealed the interconnectedness of the physical and digital dimensions. In comparison, although *Synners*' virus functions similarly, as it serves to enlighten the characters' perspectives of the environment and reveal the interdependency of the hybrid city, it also advances the post-human account via the creation of the cyborg. As the characters' knowledge of the urban environment is triggered by virus contamination, a comparative analysis of the two strains offers a further understanding of the individuals' relationship with the city. Consequently, this section will analyze the timeline of *Synners*' virus, highlighting the attitude of the characters and the state of the hybrid city prior and during the virus' propagation, while the repercussions of its contamination will be discussed in the following section.

The key differences between the two representations of the trope stem from the two virus strains' etiology, symptoms, and cure. Before the formation of *Synners*' stroke virus—dubbed the "Big One" in the novel—the citizens of the hybrid city had limited knowledge of digital virology.

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Early in the novel, Gina is introduced to the reader when she is arrested at an illegal party while searching for Mark, and is thus obliged to attend court to justify her crime. Throughout the court proceedings, the prosecutor advances the case of an individual committing "unlawful congress with a machine," piquing the attendees' interest and generating laughter, though the evidence is contaminated with a virus, which vulgarized the content (Cadigan 11). The jury declares, sarcastically: "I get it, I get it. Viruses form all on their own, input themselves without a human agent, and nobody's ever responsible" (Cadigan 11). This early scene in the novel reveals the twofold attitude of the hybrid city's citizens towards the digital world: one, they absolve digital viruses of any human interference; two, the fusion of human and machine of any kind is regarded as taboo and illegal.

Kilgore Christopher compared the medical field to software programming, observing that, despite their difference in medium, medicine also relies on network analysis, as "relationships among DNA, RNA, and proteins constitute an intricate network, where modifications to key elements have profound results" (173). Due to their similarities, science fiction narratives expectedly conflate biological and digital viruses (Christopher 173), and Christopher contrasted regular computer viruses to the one in *Snow Crash,* observing that the key difference is the latter's nature as a "medium-independent info-virus" (170), able to infect both hybrid city dimensions regardless of its medium. This characteristic, then, highlights the enmeshment of the hybrid city's dimensions, showcasing their interdependency with the characters. In this sense, *Synners* and *Snow Crash*'s strains present the same property, though their similarity only extends to their medium-transcending characteristic.

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The first difference between Snow Crash and the stroke virus involves their origins; Stephenson presents Snow Crash as dormant within the human genome, acquired during the Sumerian civilization and triggered when Rife adapts it to software and narcotic formats. In contrast, *Synners'* stroke virus is a unique incident triggered by Mark's physical death while being connected to cyberspace via sockets, thereby unleashing the stroke into the hybrid city network. Consequently, while the expansion of Asherah's virus is a revival, indicating a genetic antecedent, *Synners'* stroke virus is presented as a new strain generated through the characters' advanced unification with their urban network. It is also worth noting that the acquisition of the sockets was not the cause of Mark's stroke, as his cerebral mapping reveals that he is predisposed to attacks prior to the surgery (Cadigan 184–185). The different origins of two virus strains indicate the hybrid city's degree of development during their propagation: as a relatively newly-formed hybrid city, *Snow Crash*'s network still relies on its technological elite to not only produce its narratives but also to ensure its continuation by stopping the Asherah virus' spread. In contrast, *Synners'* urban dimensions are all-encompassing, cemented in the everyday lives of its citizens, and the individuals' desire to develop this relationship with their environment becomes the motivation behind the accidental release of the stroke virus. Interestingly, the propagation of the stroke virus is compared to an infestation of rats (Cadigan 359), reminiscent of Gilles Deleuze and Felix Guattari's likening of the rhizome to a rat pack. As rats infest physical cities, the virus copies the rhizomatic nature of the hybrid city to achieve maximum effect, affecting individuals connected digitally and physically. Symbolically, the Asherah virus represents a milestone in the hybrid city's development, its arrival to the urban center, while the stroke virus constitutes its ascension as the norm.

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Due to its distinctive circumstances, the stroke virus evolved to a strain previously unobtainable and acquired uncommon attributes, one of which is its near-sentience. For instance, Mark describes the virus as a "Juggernaut, wanting to devour and to infiltrate, rape, merge. There was a blip of consciousness or near consciousness to it, a shadow of conscious consciousness all destructive in its makeup, and yet no more deliberately evil than cobra venom. It knew nothing else, and in a way it knew nothing at all, except that it would do what it would do" (Cadigan 325). Mark attributes a near-consciousness to the virus, observing that "this one knew where it was, and what it was, and that it was. This one was alive" (Cadigan 359–360.). As the unwilling creator of the strain, Mark's relationship to the virus is unique even amongst other characters, as the viral program seeks to merge with him and follows the same digital paths Mark has undertaken (Cadigan 331). The virus' desire for unification is also worth noting in this instance, as it emphasizes the overarching theme of the novel, the fusion of humankind and machine; a similar trope is observed in Gibson's *Neuromancer*, where Wintermute, the AI, yearns to be united with the characters in the novel.

The symptoms associated with the stroke virus can be summarized in two categories: the influence on the hybrid city and the appropriation of the urban network as a body. In Cadigan's novel, the propagation of the stroke into the hybrid city network happens on two levels, the first of which is Mark's physical death while connected to cyberspace, and the second through the encryption of the virus' code through video. For instance, Mark concludes with horror that the virus "was anywhere the video was. And the video had been in general release for . . . a week? Longer?" (Cadigan 332). The release of the video influenced not only citizens who were connected

via sockets but also the foundations of the city, as errors, crashes, and system failures emerge across the network, infecting the urban ecology: "Ecological disaster had been inevitable, even before the stroke had been released into the system; there was no way around it. It would be universal. Computer apocalypse, a total system crash" (Cadigan 353). Unable to provide a suitable immediate solution, the government of the city attempted to mitigate the problem by declaring a city-wide emergency as communication networks—such as phone networks and TV channels—and transportation systems stop functioning (Cadigan 348, 349–350). The hybrid city's system failures imply the level of integration between its foundation and its citizens, as the virus targeted the network itself, thus affecting all of its nodes, humanoid ones included.

The second symptom the virus stroke presents is at the humanoid level; as system crashes happen, the snow produced on the screen hypnotizes onlookers (Cadigan 337–338), who then become delirious in their search for the context and then die of the stroke. Moreover, the contaminated victims are at risk of possession by Mark, whose consciousness retreats to the digital sphere. Gina, Gabe, and Keely observe this phenomenon when confronted by Mark materialized in the body of Gabe's supervisor, Manny (Cadigan 373), and his coworker, Clooney (Cadigan 376). Mark's ability to possess both infected dead bodies and inanimate objects, such as Gina's radio, indicates an advanced union with the hybrid city, as he is able to retrieve and possess any space and time data archived in the urban network. At the moment of possession, Mark is no longer a node in the larger rhizome, but acquires the urban rhizome itself as a body, and was thus able to materialize himself in any node belonging to the network, including its humanoid ones. Simultaneously, the hybrid city itself acquired humanity through the presence of Mark's consciousness,

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fully realizing a union between the two, which is symbolized by the merger of Mark and Art analyzed in the last section. The adoption of the city as a body can be compared to Gilles Deleuze and Félix Guattari's concept the body without organs, as they explain: "The body without organs is not a dead body but a living body all the more alive and teeming once it has blown apart the organism and its organization" (30). Mark's consciousness, adopting the rhizomatic city as body, becomes then a perpetual becoming, a performance of downloads and uploads, and thus avoiding the fixture of a defined structure.

The process of characters embodying the city can also be observed in Card's *Ender Game*: by engaging with the Free Play simulator, Ender encodes the video game with his psychic data, as the game can only be accessed via his consciousness. Consequently, the buggers' replication of the Giant's Drink sequence as a city presents a unique relationship between Ender and the abandoned hybrid network, as his psychic data forms the basis of the urban environment's foundation. This connection is the core of the temporal collapse Ender witnesses, as he is able to retrieve data encoded in the hybrid rhizome—the memories of the bugger queen—via the mirror. In this sense, the abandoned city becomes the physical embodiment of Ender's consciousness, which can access the temporal data of the past, present, and future.

The process of separating the consciousness from the human body via cyberspace is a trope often discussed in the cyberpunk genre. William Gibson, for instance, described the representation of bodies in cyberspace as "data made flesh" in *Neuromancer* (16). In this sense, theorists of cyberpunk perceive the body as data that can be replicated, a "passive archive to be processed, en-

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tertained, and stockpiled" (Kroker & Weinstein 6). The discussion of the body, however, also features in urban theory, as Jean Baudrillard conceives the body in the post-capitalist era as "deserted and condemned . . . simply superfluous, basically useless in its extension, in the multiplicity and complexity of its organs, its tissues and functions' (129). Correspondingly, the early depiction of the body—the "meat"—as a nuisance was questioned, as Barbara Becker, for instance, remarked that the lack of emphasis on the body increased the sensitivity of the subject to touch. Becker regards touch as "an act of responsivity, a resonance, because we are always answering to the atmosphere and the affordances given by the objects or persons with which we are in touch" (364). Becker's interpretation is reflected in *Synners*' narrative, as Mark, despite the complete digitization of his consciousness, resorts to the possession of dead bodies to relay his urgency to Gina, Gabe, and Keely, accentuating the importance of the body in the social context.

As the body gained traction as a subject in the digital humanities, it began to be interpreted as perpetually simulating information given and received from the hybrid network, or, in other words, simulating a "posthuman performativity" (Benita Shaw 238). Benita Shaw, for instance, considered the body in the digitalized city "as undergoing a continual process of individuation," emphasizing that cyborg ontology "confounds the distinction between labyrinth viewer and labyrinth walker in that simulation at a microscale performs a production of both bodies and space" (238). Consequently, *Synners*' narrative mitigates between the two perspectives: while Mark's possession of infected bodies implies that the post-human narrative has yet to disregard the body entirely, the availability of the possession—the download and upload of both Mark and the de-

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ceased's space/time data—presents the body as the material juxtaposition of a hybrid conscious-ness. Mark's fragmented consciousness, inhabiting both digital and physical dimensions, becomes the mirror of the hybrid city itself, as the body presents the touchpoint terminal through which it can manifest itself. Subsequently, the stroke virus' symptoms have highlighted the nature of post-human consciousness as synonymous to the hybrid city network, adopting the body as its inter-changeable—but not discardable—materialization.

3. A City for Cyborgs

After undergoing surgery, Gina is invited by the band Canadaytime to make music, ob-serving: "We made a video the new way. The real way. What's the fucking point of sockets if you don't do it the real way?" (Cadigan 251). Compared with the beginning of the novel, where AIs such as Marly and Caritha are discarded as imaginary, Gina pronounces the use of sockets—the embodiment of a digital and physical hybrid node—to be the only *real* way of making music. The underlying theme of Gina's statement is not the production of music, but the choice available to her in the method of production. Chernaik notes that *Synners*' central theme is agency, the "choice between, on the one hand, norms and prohibitions, and on the other hand, cyborgs, street-smart kids, alternative families, anon-familial households, and queers" (68). For Chernaik, the charac-ter's motivation behind the crossing of boundaries is as influential as the act of transcendence itself. Similarly, Andrew Pickering studied the pattern of action and reactions, dubbed the "dance of agency," (78) that forms the bidirectional relationship of the individual and their environment, concluding that agency emerges from both human and nonhuman performativity. In this sense, the analysis of agency would entail studying the activities ushered by the hybrid city citizens' and its digital/physical foundations simultaneously; in other words, *Synners*' hybrid city evolves through

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its citizens, who dictate the narrative of the real through its context, oscillating between labyrinth-walking and labyrinth-viewing. The study of the hybrid city's evolution, then, necessitates the analysis of its cyborgs and their interaction with the urban context, and this section will detail the evolution of characters as cyborgs as a result of the stroke virus, as well as the state of the hybrid city after the defeat of the viral program.

Cadigan's novel showcases three instances of cyborg transformation, that of Gabe, Gina, and "Markt," the union of Mark and Art (Cadigan 425). Amanda Pavani regarded Gabe's storyline as paralleling Victor Frankenstein's, as Gabe "creates not only virtual creatures (Marly and Caritha), but he also creates entire scenarios in which he is admired and respected by those creations. In entering the simulation, Gabe seeks that same validation through manipulation of beings, environment and himself" (80). However, as previously discussed, Gabe internalizes his AI companions during the climax of the novel; in this sense, Gabe embodies both the roles of creator and creation, forgoing the need for an origin. In contrast, Gina's worries are relieved after the encounter with the virus: unable to decide whether to materialize her consciousness digitally or physically, Gina creates an e-clone of herself, an AI program that copies her consciousness and lives independently in cyberspace. Gina describes her e-clone as a "complete copy" (Cadigan 471), which obtained sentience upon her merger with Markt, and thus constituting a complete mirror to the character. In this vein, Gina is posed as Gabe's foil; while Gabe unifies his fragmented consciousness post-virus contamination, Gina splits her consciousness digitally and physically, corresponding to the fragmentation and unification movement that characterizes the hybrid city.

The last case of cyborg transformation is showcased through Markt, the individual formed through the fusion of Art and Mark. Early in the novel, Art is presented as the sentient artificial program that evolved from the hybrid city's digital space. Fez, Sam's mentor, credits Art's creation to humankind's exponential upload of data to cyberspace, triggering a crash that led to the digital sphere launching a self-recovery sequence, from which Art was created (Cadigan 188–189). Upon meeting Art, Sam inquires whether he has passed the Turing Test, to which Fez notes that it is the AI's humanity that is debatable rather than his assured sentience (Cadigan 190). Art's sentience deconstructs the binary of the human and the robot: as a cyborg formed from humankind's chronotopic data, Art is the embodiment of the hybrid city's digital sphere, a point supported by his omnipresence in cyberspace. Art explains to Sam: "But I suppose I shouldn't expect you to understand, for you the nets are an object. You have self and nonself, and those are both constants. For me it's something else. 'The LA system wasn't a where; it was a configuration of me.' He paused. 'Not an arm and a leg, that's wrong. More like a hemispherectomy" (Cadigan 390). Similar to Mark, who adopts the entirety of the network as his body, Art's early depiction presents cyberspace as his virtual body; as a construction born from and embodying the digital sphere, Art is self-generated, a cyborg that does not relate to a creator. Nevertheless, as the embodiment of cyberspace, Art's existence was threatened by the release of the stroke virus; as such, to ensure his survival, Art merged with Mark's digital consciousness, forming the individual called Markt. Fez observes the birth of the new cyborgs, declaring that the city is now host to three types of humans: synthesizing ones, such as Gabe, Gina, and Mark, synthesized ones, such as Art, and the mix of

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both, such as Markt (Cadigan 421). The creation of Markt is thus unique even amongst other cyborgs, as it highlights yet another union of the physical and digital: Markt is the fusion of the synthesizing cyborg, Mark, who adopted the physical network as body, as well as the synthesized cyborg, Art, cyberspace's embodiment.

Mitchell observed the city's paradoxical narratives of fragmentation and unification: "[L]ike all narratives, [the city's] are of ambiguous reliability—constructed from facts, fictions, and falsehoods in whatever sorts of mixes and combinations their authors care to contrive" (107). By offering the possibilities of both identity fragmentation and digital duplication, the hybrid city has afforded its citizens mastery over their narratives: as cyborgs, the characters are a flexible city node that influences and is influenced by its environment. In this sense, while Gabe unites his fragmented identity, Gina creates a narrative where she simultaneously exists in both hybrid city dimensions. Similarly, the creation of Markt follows the union and fragmentation pattern presented by the urban city; with the adoption of both virtual and physical dimensions as terminal for his consciousness, Markt showcases the closest manifestation of urban hybridity. Gandy noted the relationship of the cyborg and its environment: "[T]he cyborg can be read as an alternative way of conceptualizing the growth and development of cities that serves to destabilize the pervasive narratives of dematerialization, spatial malleability and virtualization" (28). In this sense, *Synners'* cyborgs deconstruct the binary of the virtual and the real; by embodying both digital and physical network nodes, the cyborgs showcase the interdependency of the hybrid city's dimensions through their existence. Consequently, the creation of the cyborgs is yet another milestone in the hybrid city's development: by producing individuals that are simultaneously fragmented across spaces

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yet united within a single mind, the cyborg continuously performs the hybridity of their environment as well as the hybrid city's presence.

The creation of the sockets thus ushered a new milestone in the development of the hybrid city; the cyborg, intrinsically connected to the urban network, transforms humankind's way of life, akin to its religious Fall from Paradise. The creation of the sockets ushers a new milestone in the development of the hybrid city; the cyborg, intrinsically connected to the urban network, transforms humankind's way of life, akin to its religious Fall from Paradise.

4. *Edenic Mythos and the Original Sin*

Along with the allusion to *sinners* that the title presents, Cadigan's stroke virus can be interpreted as the original sin, providing a new perspective on the relationship between mind and body. Allison Muri noted the similarities between *Synners* and origin myths, remarking that the corruption of morals "by technology's presence is a version of the Edenic myth wherein the 'natural' state of God's paradise, represented by the still untainted 'Savage', is threatened by eating the fruit of knowledge (bound up with connotations of sexual knowing)" (81). Just as the fruit of Eden is associated with sexual knowledge, *Synners*' repeated catchphrase, "change for the machines," also carries similar connotation, as the characters realized the possibility of digital reproduction. This sexual connotation is hinted at the beginning of the novel when the prosecutor presented the charge of "unlawful congress with a machine," illustrating the act of technological procreation as taboo (Cadigan 11). Cadigan's novel, however, inverts the origin myth via cyborg creation, circumventing the imposed limits associated with Edenic narratives. Chernaik remarks that *Synners* "enables us to move away from origin stories, and to escape the logical trap created by these circular, recuperative notions of prohibition and transgression. In bringing about this general

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refiguration, Cadigan's deconstruction of the Garden is not so much anti-religious as anti-normative" (79). In other words, Cadigan's characters do not materialize as cyborgs through the use of technology as much as by transgressing the boundary between creator and creation.

The cyborg's Fall from Paradise, i.e., its detachment from Edenic mythos, is linked to the development of the hybrid city, as the urban network is presented as the catalyst to cyborg creation. Gandy wrote: "If we understand the cyborg to be a cybernetic creation, a hybrid of machine and organism, then urban infrastructures can be conceptualized as a series of interconnecting life-support systems" (28). By defining the hybrid city as the extension of cyborg consciousness, the urban network acquires humanity, becoming a living space rather than a space lived in. Just as the computer achieves self-awareness in Gibson and Sterling's *The Difference Engine,* the hybrid city attains sentience by inducting the cyborgs as its principal nodes, completing the union of the individual with its urban environment; in this sense, the hybrid city becomes an additional character in *Synners,* able to simultaneously influence and be influenced by its citizens.

In the novel's epilogue, Gabe, nervous about his status as a cyborg, retreats to an idyllic village, limiting his use of technology. At this stage, *Synners* is reminiscent of Alfred Bester's *The Stars My Destination*, whose protagonist, Gully Foyle, withdraws to a nature-oriented civilization after his mastery of "jaunting," the act of teleporting through time and space. However, unlike Bester's novel, Gabe's attempts are foiled by the arrival of Sam and Gina, with the latter reproaching him for his naivety: "Every technology has its original sin . . . Makes us original synners. And we still got to live with what we made" (Cadigan 475). Cadigan illustrates then a symbolic point

of no return: once the hybrid city has achieved a post-human transformation, the cyborg becomes the norm and the singular lifestyle humans must embrace.

Cyberspace, adopted by the urban sphere as an additional dimension, has prompted new understandings of the concepts of spatiality, temporality, and individuality. By offering the digital dimension as the extension of physical spaces, citizens had to adapt to network time to define their temporal systems. Likewise, the coalescing of spatiality and temporality resulted in the manifestation of the post-human identity, the cyborg. The hybrid city, the newest transformation of the urban environment, has thus progressed to the dominant space, guided by a margin-to-center motion that has shaped the evolution of urban *topoi*.

Conclusion

Henri Lefebvre read the progression of cities as the slow spread of heterotopic peripheries toward a dominant space; the margin-to-center motion defined diverse stages in the urbanization process, also called the urban fabric, as it spread a unique urban culture—distinctive perceptions of urban space, time, and identity. While Lefebvre observed the urban fabric's global reach as its final stages, other theorists remarked its continuous spread: once humankind had cemented its influence over horizontal space, Michel de Certeau noted its vertical ascension with the erection of skyscrapers, showcasing the totality of human influence until the creation of cyberspace. Guided by the margin-to-center movement, the digital sphere rose in popularity, until its induction into urban citizens' everyday lives; consequently, cyberspace warranted its own set of study, and was conceptualized as a rhizome, a labyrinth lacking a center rather than a heterotopia.

As I have shown in this thesis, the three novels chosen conceptualize the appropriation of cyberspace by the urban city center: spatiality in Neal Stephenson's *Snow Crash*, temporality in Orson Scott Card's *Ender's Game*, and individuality in Pat Cadigan's *Synners*. In Chapter 1, I studied the development of spatiality as it adapted to the addition of the digital sphere, specifically noting the similarities between the Metaverse and the physical city. As the characters remain ignorant of cyberspace's integration into the urban fabric, the Metaverse's influence is originally dismissed; nevertheless, central spaces mirroring the physical city are juxtaposed onto the heterotopic virtual amusement parks, reasserting the center *topoi* as real. The chapter also catalogued the rhizomatic principles, detailed by Gilles Deleuze and Felix Guattari, that were adopted by the virtual and physical dimensions of the urban network, showcasing their union. Subsequently, Chapter

1 posed the existence of a hybrid city, an overarching rhizome conjoining the two dimensions, and the chapter also observed the extension of the physical city's surveillance into cyberspace and analyzed its transformative aspects. Lastly, the Snow Crash virus showcases the enmeshment of cyberspace with the physical city by discarding the Metaverse from its idyllic quality; as the virtual dimensions prove to be hazardous to the characters due to the virus, cyberspace extends its physical counterpart's destructive aspects. In this sense, the digital sphere evolves from a metaphorical space to a space for metaphors, with the virus being its chief mythos of destruction.

Chapter 2 began with a representative overview of the study of time; it introduced the main divisive discourse on temporality's nature as qualitative or quantitative, the former describing time as a law of nature divorced from human influence, with the latter defining time as relative to the motion of the observer. The chapter then discussed the matter of urban time, with urban theorists such as Lefebvre describing processes that allow the individual to observe the real as a rhythm: one needs to produce time in order to observe it. Chapter 2 then detailed the connection between space and time, and illustrated the different temporal and spatial systems adopted in *Ender's Game* hybrid city. The chapter then focused on the changes physical time and space systems underwent after the induction of the digital sphere to the city center, such as the preservation of chronotopes, the adoption of heterochronies and their physical counterparts, and the function of memory in a hybrid system. Chapter 2 subsequently paralleled the individual's consciousness to cyberspace, posing the formation of the hive mind as the dominance of the collective unconscious over the individual's conscious. Finally, the chapter presented the criticism of the hive mind as presented by Card, and analyzed the hive mind's connection to the hybrid city, in that the urban network,

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under the influence of the collective unconscious, became the representation of non-linear time itself as well as the basis of immortality.

Chapter 3 joined the concepts of spatiality, temporality, and identity; following the previous chapters' patterns, it began with an overview of the concept of identity, detailing the relation of spatiality and temporality to identity and the concept of the cyborg. Chapter 3 then showed the differences between *Snow Crash* and *Synners*' hybrid cities in order to highlight the evolution of the city from the margins to the center, respectively, and in order to offer a further understanding of the relation between individuals and their urban environment. Subsequently, the chapter examined the formation of the cyborgs through the urban network. I also analyzed the etiology, symptoms, and cures of the virus, a staple of the cyberpunk genre, and the metaphor for the characters' progressive knowledge of their environment. The chapter then catalogued the result of virus contamination, mainly the adoption of the urban environment as body and as identity. Lastly, Chapter 3 detailed the Biblical allusions employed in Cadigan's novel, as it presents the creation of the cyborg as the second Fall from Paradise.

I believe that this thesis has added to previous studies of the digital city, which I claim to be set at the center of the current urban representation in science fiction. Spatiality, temporality, and individuality are crucial elements in this equation, validating theorists' claims surrounding the post-modern condition and the emergence of the "New Technologies" that changed the urban, semiotic, and identity landscapes starting in the late half of the twentieth century and culminating now in the increasingly controversial discourse around the role and limitations of real-world AIs.

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It is my hope that this contribution will pave the way to further research, as the urban fabric, already enveloping the digital space, is constantly generating new features and new margins that are worthy of investigation as perspectives on temporality and identity are informed by advances in technology and our readings of it.

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