

REALIZING THE VIRTUAL: CONSTRUCTING
AND EMBODYING CYBERSPACE
IN GIBSON'S SPRAWL

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MATT UNDERWOOD

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For Weldon Wilkerson, my Peepa, who fully anticipated my success but is unfortunately no longer here to celebrate its fruition.

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Abstract

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Matt Underwood, MA

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Supervising Professor: Stacy Alaimo

While the term “cyberspace” first appears in William Gibson’s 1980’s *Sprawl* series, it arises from a culmination of information and communication technology and cybernetic theory development spanning the majority of the twentieth century. Further, the notion of cyberspace has existed and functioned since the advent of language and tool use and has always reached a global population of users. The recent recognition of cyberspace and its coinage occur as a result of how contemporary technology allows for much more instantaneous and extensive interaction across rapidly increasing distances and user bases. All media and technology, meaning all cyberspace operations, serve as extensions of the body, meaning cyberspace studies must focus on embodiment, not attempt to leave it. This study analyzes Gibson’s *Sprawl* series, pertinent science and technology studies, and media theory to present the body as the primary determinant for how cyberspace is constructed through its enactment with its users.

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Chapter 1

Delineating the Virtual Frontier

Things are things.

Gibson *Neuromancer*

The last decade of the twentieth century, the Cyberspace Decade (Nunes 1), witnessed an explosive growth in information and communication technology (ICT) that interconnected users in unprecedented capacities. The advent of online communication heralded the possibility for instantaneous interaction through a medium that co-locates the presence of participants at the terminals of their individual computers physically as well as in a shared space constructed from code. This second, immaterial realm instantiates cyberspace. However, the concept of cyberspace proves to be much more expansive. This is due to both its imaginative use and appearance in William Gibson's *Sprawl* series in which the name originates and its application in how humans have attached substantiality to discursive media dating back to the inception of written language. This conjunction of novel ideas stemming from recent technological innovations and an underlying history of adhering to the constructive capabilities of language has given name, cyberspace, to a phenomenon that humanity has actually experienced for thousands of years. Cyberspace did not emerge from the twentieth century's explosion of online technologies. Rather, telecommunications and digital devices that allow users to interact nearly without delay across global, even galactic, distances have allowed us to fully realize the dynamics of how we have treated all discursive media, as symbiotically and bodily experienced entities that constantly reconstruct lived reality as they are enacted. To fully expound this claim, a more comprehensive exposition of how cyberspace came to be conceived, which immediately follows, is fundamental, and such a composition is succeeded by further claims that

contend how all media has always constructed cyberspace through its enactment by its participants.

The inception of the actual term “cyberspace” occurred at a critical moment in ICT development when a widening and diversifying population of users adopted such technology at an exponential rate. While early iterations of the Internet, primarily ARPANET, preexisted Gibson's 1982 coining of the phrase by over a decade (Leiner et al. 2), the World Wide Web, the most widely recognized form of cyberspace appeared seven years later, in 1989 when Tim Berners-Lee introduced hypertext and HTML to the Internet (Strawn 58). Situated before the advent of the Web, Gibson's coinage and use of cyberspace has worked in tandem with the advancement of computer technology to shape how the Internet and online interaction have been perceived. With that said, Gibson's genesis of cyberspace and how it functions follow and advance a trend initiated by cybernetic studies that progressed through much of the twentieth century. Apprehending cyberspace and online technologies often occurs in the form of metaphors and analogies of material space, especially through visual comparison. Since cyberspace is difficult to comprehend in its own right because the term and referent concept are nebulous, it is recast and understood through the lens of Cartesian space and Newtonian physics that are applied to physical reality.

To illustrate a cause behind this development, consider that after the first Conference on Cyberspace in 1990, many of its presentations were compiled and published in a collection entitled *Cyberspace: First Steps*, in which a short piece by William Gibson, titled “Academy Leader,” is featured. In it, Gibson remarks on his creation of the word “cyberspace,” drawing attention to the arbitrary manner in which he developed the phrase (27).¹ An empty signifier at its inception, cyberspace began as a combination of “cybernetics,” a term introduced by Norbert Wiener to describe ICT, and

“space” (Gunkel & Gunkel 125). Wiener proposed the term cybernetics at the onset of the Macy Cybernetic Conferences that took place in the mid-twentieth century, and it built off of the Greek word for “steersman” to highlight how “three powerful actors – information, control, and communication – were now operating jointly to bring about an unprecedented synthesis of the organic and the mechanical” (*How We Became Posthuman* 8). A considerable cause for concern for Wiener in introducing cybernetics came from the blurred boundaries between organism and machine that, from his perspective, reduced the autonomy of the self (107-08). His anxiety surrounding this element of cybernetics permeates how cyberspace has subsequently been handled as accounts, with Gibson’s *Sprawl* serving as an exceptional example, investigate how the user’s body is involved in accessing and operating cyberspace. What Wiener failed to realize is that here too, cybernetics only makes more recognizable the symbiosis of organism and machine that has taken place throughout humanity’s history; the distinct boundaries he perceived had already been dissolved long before cybernetics arrived.

The second component of cyberspace, “space,” carries with it a dense set of meanings coming from multiple sources, and this latter contributor to the entire term of “cyberspace” affects how Gibson’s concept is understood as preconceptions of how physical space are refigured and tested in this new domain. Understood as a realm distinct from the physical world that its users inhabit when offline, cyberspace becomes foreign territory awaiting exploration. This view proves to be incredibly problematic, and the failure of early cyberspace studies to reach any unanimity on how such a space would function, whether that be through its own physics or through those of material space, demonstrates that such an ontology of cyberspace cannot be fruitful. Instead, cyberspace is best understood as a facet of the lived space in which its users have always performed. Even so, ascertaining the capacities and utility of cyberspace has

proven to be a prolonged and multifaceted endeavor, requiring the contributions of ICT scholars, media theorists, and dynamic literary visionaries. As cyberspace as such became familiar through Gibson's fiction, his *Sprawl* series serves as the first of many interpretations to use the combined term to illustrate means of how this space is applied.

The programmer perhaps most responsible for how the Internet is used, Tim Berners-Lee, characterizes cyberspace through traditional physics. While working at CERN in 1989, Berners-Lee developed the precursor to the first Web browser named ENQUIRE. Retrospectively discussing this creation and his ideas behind it in his book *Weaving the Web* ten years later, he says "Suppose I could program my computer to create a space in which anything could be linked to anything...There would be a single global information space" (4). Berners-Lee's perspective, as Mark Nunes aptly recognizes, misapprehends how cyberspace functions and interacts with its users. This "global information space" follows a Newtonian conception of space as an empty container in which a subject places things, in this case the Web user placing information (52). Nunes' continued analysis of Berners-Lee, this time focusing on the latter's claim that the Web "was a 'space' in which information could exist" (Berners-Lee 36), draws attention to this characterization of information as a thing and its ongoing decontextualization and disattachment from its meaning (190). Despite the specific platform for this perspective manifesting itself in nearly its final decade, this approach in cybernetic theory has been witnessed since nearly the inception of the field fifty years prior.

The aforementioned Macy Cybernetic Conferences provide a springboard for the perspective of cybernetic and technological theorists like that of Berners-Lee. N. Katherine Hayles traces three processes that contribute to the lack of materiality in cybernetic studies in *How We Became Posthuman*: 1) the prioritization of information as

a disembodied construct; 2) the establishment of the body as an information processing center; 3) the introduction of devices constructed principally to process information (50). The first tenet in effect makes information a thing that can be removed from its context (54-56). The second principle defines the brain as a system that can process this decontextualized information, as explained by Macy Conference participant Warren McCulloch, in that “[brains] compute thought the way electronic computers calculate numbers” (qtd. in *How We Became Posthuman* 58). Following the perspective of the second, the third development serves as a demonstration of machines that process information comparable to how humans were expected to do so, with one example being electronic and goal-driven rats (65). The first tenet applies directly to how cyberspace is constructed and the other two principles pertain to the users and constituents of it.

Hayles’ account makes evident a prominent misconception of how information exists and functions in how it is presented by Norbert Wiener and his peers. Their theory of information, especially outside of the context in which it was specifically used in the Macy Conferences, disconnects information from its meaning and allows it to “flow unchanged across different material substrates” as a thing (54). When viewed this way, cyberspace acts as a place for these entities of information to dwell (Nunes 52). Compounding this is what Nunes describes as cyberspace’s “problem of space,” in that as a space, it must be able to answer the question “where?” with either “somewhere” or “nowhere” (2). If the physics of traditional “things” and where they are located are applied to cyberspace, one would be led to think it must be thought of as a “somewhere” so that this information exists at a location. Such an association of traditional physics forces cyberspace to be modeled by physical space and apprehended the same way. This is a troubling understanding of how cyberspace operates that has strained cyberspace studies seemingly since the discipline began.

Returning to the anthology *Cyberspace: First Steps*, the editor of the collection, Michael Benedikt, provides an extensive contribution called “Cyberspace: Some Proposals” that spans over one hundred pages, about three times longer than any other addition, and this piece exemplifies typical misapprehensions of the ontology of cyberspace. In it, he examines seven principles of physical space across five “topological rubrics” (132-188)² and then applies these aspects to rendering cyberspace (188-205). This interpretation obviously operates on the assumption that cyberspace exists in the same or a relatable capacity as physical space, but this is plainly not the case. Critical perspectives of cyberspace, even contemporaries of Benedikt, challenge the concepts he uses as a perpetuation of an already problematic comprehension of physical space that hinders constructive study of cyberspace (Gunkel & Gunkel 126). Robert Markley, writing soon after Benedikt’s piece was published, presents a notably critical reading of cyberspace in *Virtual Realities and Their Discontents*. He objects to the position held by Benedikt, identifying the Gibsonian, Cartesian cyberspace that Benedikt typifies as “radically constructivist” and based solely on “a fundamental belief in the mathematical structure of nature” (58). The problems with this cyberspace that Markley poses are that it bolsters the boundaries found in centuries of Western ethnocentrism and is only a projection of the values found in “the mathematics of advanced number-crunching” (58-59). Herbert Klein posits a wonderfully astute observation on this exchange between mathematics and Cartesian space in cybernetics:

This ‘consensual hallucination’ [Gibson’s most recognizable description of cyberspace] may be called Descartes’ dream in reverse: Descartes had hoped to describe all of reality through mathematics, now mathematics is used to create ‘reality’ - a world purely made of mathematics and therefore on the face of it completely controllable.” (42)

As Nunes points out as well, a central component of this approach to information and cyberspace is that the user is put in a position of complete control (52). Gunkel and

Gunkel continue this criticism, pointing out that Benedikt configures cyberspace following “a particular conception of reality [that] perpetuates a trope of European expansionism which justifies its ethnocentrism by naturalizing and universalizing its own epistemology” (125). Building reality exclusively from mathematical principles is much too simplistic and deterministic.

Despite its inherent problems, Benedikt’s presentation of cyberspace is undoubtedly prevalent, and this stems from a latent insistence on applying what’s considered known to new, unfamiliar discoveries. Matthew Conn comments on this application, saying that we attempt to make virtual reality emulate physical reality to conceptually understand cyberspace (209). The result is a reliance on metaphors of physical space and environments. Sue Thomas’ *Technobiophilia* studies how “when we first entered cyberspace, we took the natural world along too” (12). She traces this installation of “nature” into cyberspace as humanity’s desire to familiarize technology so that a continued obsession with it is more naturalized and warranted (187). Samuel Kingsly provides a fitting and critical stance on the familiarization of cyberspace through metaphor, asserting that “such means of description have a basis in distinctly Cartesian and Euclidian ontologies of space...in terms of normative three-dimensional extensions” (365), and Jos de Mul offers a concurring warning against allowing metaphors to create fallacious conceptions (3, 42). Cyberspace studies should avoid problematic, “real” physics of space because cyberspace is better comprehended through its own means.

While iterations of the Internet had existed in the years leading up to the 1980’s, “cyberspace” first appeared in Gibson’s 1982 short story “Burning Chrome” (Thrill), but its most widely recognized debut was in his subsequent novel *Neuromancer* in 1984. In its initial presentation by Gibson, cyberspace is its own ontological realm replete with subjects, not all of which are human, that navigate around geometric structures

representing stored data. Such a depiction has catalyzed an understanding of cyberspace that promotes a telepresence that attempts to pull away from the body. Additionally, the pervasiveness of Gibson's novel, along with its two sequels, has contributed to the popularization of endeavors to establish distinct virtual realms in which users can escape the physical world and the consequences of material embodiment. Fully realized, such a challenge to how consciousness functions would allow human users to become subjects constituted exclusively by data that can operate in cyberspace independently. However, such an enterprise has proven impossible to fulfill. So, virtual reality studies have shifted from the distinction between virtual and physical realities prevalent in the 1990's to the virtual as an augmentation of physical reality that pervades more contemporary studies. Despite this, though, the aspects of cyberspace as depicted in Gibson's *Sprawl* series remain prevalent in both Science and Technology Studies (STS) and popular culture as the pipedream of escaping the physical proves to be persistently appealing.

As ICT have become more ingrained in how societies and individuals function, comprehension of the role of cyberspace has markedly shifted. Similarly, its relevance to and impact on society grows as more devices gain online access and more data is stored on web servers. As such, acquiring a thorough understanding of what constitutes cyberspace and how it affects humanity is paramount. Cyberspace does not exist exclusively in an immaterial realm; it constantly and pervasively interacts with physical reality and embodied users. Even with the effects of its existence apparent in the material world, specifying what cyberspace exactly is proves profoundly challenging. A fitting starting point emerges in Gibson's peer cyberpunk author Bruce Sterling who establishes five types of cyberspace: Barlovian cyberspace, Virtual Reality, Simulation, Telepresence, and Gibsonian Cyberspace (Novak 253). This multifacetedness is

characteristic of cyberspace, and these aspects intricately blur together. Mike Featherstone and Robert Burrows demarcate Barlovian cyberspace - the physical network of ICT - and Virtual Reality as the predominant iterations of cyberspace and categorize Gibsonian cyberspace as emergent from these two precedents (5-7). Designating Gibson's depiction of cyberspace in this way illustrates how influential his works are to cyberspace studies.

If only understood as a product of a period piece and indicative of the popularity of the cyberpunk genre at the end of the twentieth century, cyberspace in Gibson's *Sprawl* trilogy appears strikingly outdated. Notwithstanding this, his interpretation of online interaction continues to be popular and relevant principally because of how visionary and substantial it decidedly is. Gibson's rendering presents features of cyberspace and ways of interacting with and within it that overtly, almost hyperbolically, reflect how cyberspace exists and functions outside of his fiction, and this quality is just as, perhaps more, evident thirty years after its publication. Looking at cyberspace in Gibson's universe, users bodily experience it unquestionably, despite it being thought of as an exclusively virtual space by some of his characters. The consequences of the problematic pursuit of developing disembodied subjectivities, whether those be human or artificial, are explored extensively in the novels. The conceptions of cyberspace that the series has influenced in cyberspace studies are preemptively challenged by Gibson from the start, and a current reading of the novels shows interpretations of what cyberspace entails that align with present ideas of it. In effect, *Neuromancer* and its sequels not only fostered initial forays into how cyberspace has been understood, but also mirror wholly different approaches that are more indicative of how cyberspace is perceived today.

Cyberspace, as it is presented in Gibson's trilogy of novels, is a development of the entertainment and military industries (*Neuromancer* 51), and it serves multiple

purposes depending on the context in which it is used. Users navigate it in a manner similar to traditional space by moving across a Cartesian three dimensional plane complete with grid points that indicate location in the vectorized space understood as a “drastic simplification of the human sensorium” (55). With billions of users, such as primary school students being taught mathematical concepts (*Neuromancer* 51) and how to access research materials through it (*Count Zero* 81), cyberspace exists as a medium enmeshed in almost all of human society. Indeed, following media theorist Marshall McLuhan's note that mediums are to their users imperceptibly ingrained into culture as water is to fish (Morrison 171), one of the protagonists of *Count Zero*, the second novel of the series, named Bobby Newmark observes that cyberspace is completely taken for granted by the time of the novel's setting (38) much in the same way ICT is fully incorporated into contemporary society.

Building from Gibson's portrayal of cyberspace, where users connect to “the matrix” through neural links attached to “decks,” cyberspace in reality, upon thorough analysis, proves readily comparable. ICT use makes apparent Marshall McLuhan's claim that all forms of media are extensions of the body (*Understanding Media* 67), and as such, even mundane tasks like web browsing, albeit more technologically simple, are complementary to the imaginative cyberspace navigation of Gibson's fiction as both are accomplished through the use of bodily peripherals. Condensed as tangible extensions of the body, the means through which cyberspace is constructed follow suit of media interaction that has existed for hundreds, and in some instances thousands, of years. Any vocal utterance or written character is as much a cybernetic action as saving or sending a sound clip, picture, or text document through an online device in cyberspace. The former is only more limited through temporal brevity and/or geographic proximity. In many respects, cyberspace has existed in reality since humans began using language and

writing, and it has only been recognized in recent decades because of the rapidity of communication across global distances that ICT provide.

Having existed to an extent through all varieties of media, cyberspace is not a passive domain in which users communicate with one another. Moreover, it is a site of resistance as much as any bodily interface. Cyberspace is constantly constructed as it is experienced by the billions of people that have interacted with it and continue to do so. While it does not consist of a separate Newtonian space, cyberspace is not a realm of pure information instantiated through metaphor. Instead, it demonstrates the actuality of a mixed reality comprised of virtual and material components, and its purpose and means of existence is embodied enactment. This study asserts the relationship that produces this mixed reality and illustrates how embodied users operate through it by means of exploring the trilogy that introduced it as well as pertinent cyberspace and science and technology studies (STS). The analysis will be articulated in three sections, the themes of which borrow from the three models of cyberspace provided by Meredith Brickers (369-73). The first section, the Engineer's Model, answers inquiries into what comprises cyberspace by focusing on how it is constructed over and augments material space, concentrating on its ties to geography and the allocation of existing technological infrastructure. The second, the Participant's Model, centers on what being a cyberspace user entails, delineating who and what constitutes a subject in cyberspace, and how cyberspace interacts with bodies as raced and gendered. The final Designer's Model expands on the claims made in the previous sections to contend how cyberspace is constructed as it is bodily experienced and explains this manifestation's significance to pinpoint how cyberspace has always already been extant in reality. Throughout each chapter, Gibson's literary work will prove invaluable in illuminating facets of how cyberspace functions and affects its users and the world in which they live.

Chapter 2

The Engineer's Model: How Cyberspace Is Shaped

There's no there, there.

Gibson *Mona Lisa Overdrive*

Within Gibson's novels, cyberspace does serve benign and ordinary functions, but the context of the novels focuses almost exclusively on covert operations undertaken by and against significant organizations through cyberspace that are done in conjunction with offline agents. Because of this, or because of their substantial appearances, the most recognizable structures that appear in cyberspace are constructs of major corporations and banks that "burn like neon novas" (39) and are shaped in the matrix however these organizations desire (*Mona Lisa Overdrive* 76). These constructs exist in cyberspace as representations of data, and their size is dependent on the amount and density of the data being stored at that geographic location. The result of this is a graphical depiction of how information is clustered superimposed over the world's existing geography. The Boston-Atlanta Metropolitan Axis, also called the Sprawl and from which the series receives its name, covers most of North America's eastern seaboard with data centers, creating one of the most densely populated regions of the globe and, correspondingly, cyberspace (*Neuromancer* 43). Even when perceived as a separate ontological space by many of the series' characters, the location of data in cyberspace is directly tethered to the physical locations of its servers. This link between cyberspace and its material components dispersed in the physical world reveals how the former space depends on the latter, serving as an augmentation of physical space and not a counterpart.

2.1 – Relationship between Geographic and Cyberspace

The geographic representation of data in Gibson's novels presents an important mechanism for how cyberspace is explored. While cyberspace can be accessed regardless of a user's or deck's physical location and presents the same entry experience even from space (*Neuromancer* 105), data is found by navigating in cyberspace to where data is physically stored in servers. This relationship thus prioritizes location instead of solely infiltration security as a determinant of accessibility for cyberspace users in reaching data sites.

This relationship between geographic and cyberspace steadily gains significance as cyberspace becomes more developed and better understood in the novels. Because of the need to protect data stored in cyberspace and a desire for privacy, individuals and organizations rely primarily on two methods to hide themselves and their interests, occasionally in tandem with each other: exploiting isolated or nearly uninhabited areas of cyberspace or increasing security measures through defense programs. Both of these mechanisms reveal important tropes of how cyberspace is established and employed, namely the perpetuation of colonial expansionist and ethnocentric philosophies and a shift in focus from ownership to access.

To introduce how these factors arise, consider the first plot thread introduced in *Count Zero* that follows a group of mercenaries led by a man named Turner as they attempt to extract a defecting pioneer behind the transition from silicon to biochip computing from his current employer, Maas Biolabs, located in Arizona. In doing so, the team operates from an extraction point in a “derelict mall out there in the boonies” (134) in the southwest region of North America (40-41). The location is chosen because of its desolation and distance from any technology connected to the matrix, the only one being a landline payphone six kilometers away from the group's camp (43). This solitary device

effectively allows the group to be “on their own in the matrix” (63), making discovering their operation more difficult for opposing parties attempting to counteract them. Although the extraction proves unsuccessful because the initial escape from the corporation headquarters delivers instead the presumably followed daughter of the scientist (127, 130), the base camp demonstrates the relevance that physical proximity keeps in a cybernated global society.

A second instance of interrelation between physical and cybernetic location emerges in another narrative in *Count Zero* when the titular character, also named Bobby Newmark, meets a character named the Finn. The Finn mentions a cyberspace hacker named Wigan Ludgate, or the Wig, that recognized the transition from silicon to biochips instituted by Maas Biolabs (120). In doing so, the Wig explored “the rather sparsely occupied sectors of the matrix representing those geographical areas which had once been known as Third World” (120) and discovered that cyberspace users in these regions were importing the now obsolete silicon (121). He subsequently realized that he could exploit these “nations so benighted that the concept of nation was still taken seriously” by controlling this trade and amassed a sizable fortune in a week. He was able to individually accomplish this because he was alone, or one of only few people, operating in the “African backwaters,” so the opportunity was not widely known. Even as the concept of political borders and traditional ideas of nation are challenged by the influence of cyberspace, the lasting impact of how centuries of global politics transpired in privileging some nations over others dramatically affects the infrastructure of cyberspace’s network and the extent to which its users, some more than others, are able to benefit from it.

In correlation with how geographic and cyberspace affect each other, Mark Nunes remarks that cyberspace creates a network where “it is *traffic rather than distance*

that holds spatial significance” and that this phenomenon eliminates what Manuel Castells calls “space of places” (93, emphasis in original), affirming that “Travel [is] a meat thing” (*Neuromancer* 77). Throughout the *Sprawl* trilogy, physical travel is noticeably but implicitly trivialized with settings of chapters rapidly shifting from Japan, to France, England, United States, southwest Asia, Mexico, and orbital structures of Earth.¹ The disregard for physical distance definitely applies when considering the ability of a user to traverse areas in many reaches of cyberspace, but consequently, cyberspace studies at around the end of the twentieth century experience a marked unawareness of the persisting influence of global geography with statements such as “virtual geographies are being invented over the net that have little or no resemblance to the geography of reality” (Batty 339). Such a position on cyberspace use absolutely takes for granted the infrastructure and capabilities of the technology of different geographic spaces.

A pronounced depiction of this incomprehension appears in N. Katherine Hayles’ *My Mother Was a Computer*, in which she discusses the novel *Cryptonomicon* by Neal Stephenson. A scene in that novel witnesses a disconnect from the idea of the web like imagined structure of cyberspace when a map is produced that shows where few global cables run that provide online access, and Hayles comments on this succinctly, stating “If the dream of a sovereign realm where information can flow freely is to be realized, it cannot be divorced from the real world of geographical specificities, material constraints, and political realities” (ch. 5.1). Samuel Kingsly subscribes to Hayles’ position in his article “The Matter of ‘Virtual’ Geographies” in stating that more attention must be paid to what he calls the “material conditions of contemporary digitally inflected spatial formations” (365). His article’s recent publication (2014) testifies to the tenacity of this illusory immaterial perspective of cyberspace.

The prominence of cyberspace being understood as a separate realm unaffected by physical forces and pressures is especially perceptible in geographic studies of cyberspace. Michael Batty and Bob Barr's 1994 article "The Electronic Frontier" illustrates the apparent dismissal of the complexity created by geographic realities in its optimistic, even for its time, statement that "there is no reason why every computer in the world should not be connected to the Internet directly or indirectly" (705), and this claim is immediately followed by maps of the supposed whole globe showing total Internet connections that includes Antarctica but has no depiction of the entire continent of Africa, except for South Africa, as well as much of Central America and South East Asia (708).² This portrayal attests to the Wig's ability to take advantage of a region considered to be technologically unsettled because of its incapacity to operate at the levels attainable in wealthier regions. Last Moyo investigates the disparity between how cyberspace and Internet access is perceived and the reality of the distribution of access to it. Cataloging multiple contributors to what's termed "the digital divide," he explains how despite multiple international organizations declaring information and access to information a human right, it's undoubtedly denied to a large population in poorer countries, and this gap occurs as a result of communication corporations opting to invest in countries with existing infrastructure (130). Cyberspace may have global access, but access to it is anything but.

A second strain regarding physical and online location manifests in Gibson's work through the undertakings of the Tessier-Ashpool family and corporation in its construction of an orbital colony called Freeside, the setting of the second half of *Neuromancer*. Prior to Freeside's development, areas on Earth that were mostly or entirely uninhabited were cultivated and used to store data outside of major powers' political jurisdictions, such as floating a rig on an ocean (*Count Zero* 19). Once orbital

colonies proved viable, data storage, especially criminal or questionable storage, emigrated away from Earth's surface (*Mona Lisa Overdrive* 124), and eventually the orbital archipelago of Freeside became densely populated to become a "brothel and banking nexus, pleasure dome and free port, border town and spa" (*Neuromancer* 101). The exploration of and migration to outer space in the Sprawl series closely correlate, demonstrating that in Gibson's universe, as geographic space is apparently exhausted, humans are seeking alternative locations to explore, settle, and colonize.

The coinciding development of the Freeside colony and cyberspace produce a pioneer and expansionist philosophy sustained throughout the Sprawl trilogy that resonates in cyberspace studies. Even the title of the documentary studied by Angie Mitchell in *Mona Lisa Overdrive* to learn about the Freeside orbital colony, *Antarctica Starts Here* (98), typifies the expansionist philosophy that pervades the texts and concurrent approaches to cyberspace. David and Ann Gunkel attest to how cyberspace is presented along colonialist presumptions, namely that it's considered an uncharted frontier "waiting to be exploited" and "saturated with potential for commercial gain" and traces this supposition through the control of Gibson's cyberspace by Zaibatsus, prominent international corporations, in the Sprawl trilogy (127). The following section analyzes further how control and power by individuals and corporations are asserted, and third section returns to the expansionist tendencies in examining the pioneer metaphor prevalent in cyberspace.

2.2 – Possession of Power and Accessibility of Information

The dominance of cyberspace by digitally operated corporations shows how the maintenance of traditional power dynamics is modified to prioritize access over actual possession in technological and information societies. N. Katherine Hayles comments on this trend in *How We Became Posthuman*, in which she highlights the significance of how

information is distributed and used differently than physical commodities. Notably, she employs work done by David Harvey to demonstrate that information is shared so that providing it for one group does not restrict it from others (39). Also, the actual pre-sence of both the possessor subject and possessed item are necessary for possession to occur, “for one can possess something only if it already exists.” Worth mentioning as well, though, is Hayles’ subsequent commentary that possession and access do not share an inverse relationship, meaning the increased influence of one does not consequently decrease that of the other (48). This is especially important in considering how those that gain advantages in control and authority from possession continue to benefit as societies transition to prioritizing accessibility to information.

In looking at the potential correlation between physical or virtual presence and accessibility, the protection method of “ice” in Gibson’s universe plays a significant role. To prevent outside agents from obtaining important information, organizations have implemented software to restrict cyberspace users from accessing their data, named ice as both an acronym for “intrusion countermeasures electronics” as well as because of its virtual appearance (*Neuromancer* 28). The primary objective of cyberspace hackers, or “cowboys” like *Neuromancer*’s main character Case, is to navigate around and through these protection measures while jacked into cyberspace, often using software termed “icebreakers” that ease in data infiltration. Later in the series, the character named the Finn explains that computers were even initially invented by hackers to “crack” ice programs protecting information (*Count Zero* 118). The narrative of *Neuromancer* follows Case as he raids the Tessier-Ashpool corporation data structures, and he encounters ice on several occasions while operating in cyberspace. In these encounters, the ice appears as walled patterns, the density of which varying depending on its protective capabilities,

and reaching information on the other side of it requires hackers to cut (59), bore (63), and pierce (66) the surrounding ice.

The necessity to navigate around ice in cyberspace plays with Hayles' interpretation of how presence interacts with and can sometimes be depreciated in significance by access to information. Presence is still absolutely required for access, albeit the presence required is virtual here. However, the means of access still rely on pattern recognition, and navigating the ice results in gained information that is then shared instead of traded, both being characteristics emphasized by Hayles (39). This relationship between presence, possession, and access is again recast in the acquisition of a data personality construct by Case's group of infiltrators. Here, Case invades a protected library's data banks to guide his partner, Molly, as she physically navigates the library's depository to obtain the device on which a data construct is stored (*Neuromancer* 65-66). In this instance, the materiality of data is much more evident than most elsewhere in the novel. To use a data program, a material object must be located digitally then obtained and controlled physically; presence and access here are inseparable.

Throughout Gibson's trilogy, the correlation between access to information, instead of possessing goods, and power or authority does become more apparent. When Case is hired in *Neuromancer*, he recovers his ability to use a cyberspace deck through a corrective surgery. To ensure his cooperation throughout his mission, though, sacs of toxins are presumably planted in his bloodstream that only his employer knows how to remove, and these will dissolve and kill Case if too much time expires. While the physical presence of these toxins and possessing a possible cure are important, Case isn't sure whether or not he even believes the agents were implanted in the first place (47). What proves to be more important than the actual presence of the toxins is who knows whether

or not they exist. This is evident in Case's partner, Sally's, response when he asks if she thinks the toxins are in his body, as she says "Maybe, maybe not. Works either way." Since Case's employer is the only individual that has this information, Case is forced to act in accordance to the affirmative that toxin sacs are indeed embedded in his arteries, subjugating him to the orders he is given. Access to information becomes the sole determinant of identity.

Access and possession are further compounded when the role of cyberspace "cowboys" and hackers, like Case, is contested near the end of *Mona Lisa Overdrive*. Here, the characters Gentry and Slick encounter Bobby Newmark within an individualized matrix called the Aleph. In this meeting, Bobby labels Gentry a cowboy, but Gentry denies the title for himself as well as for Bobby, and he instead says "No. You aren't here to steal anything, Newmark...You're here to learn something," to which Bobby replies "Same thing" (228). Granted the three are currently attempting to understand how the device that they are using works and its capabilities, the dialogue presents a telling realization of what the act of hacking actually accomplishes in the series. The exchange of stealing and learning is a culmination of how Marshall McLuhan characterizes how economics functions in an information society: "the entire business of man becomes learning and knowing" and "all forms of wealth result from the movement of information" (*Understanding Media* 86-87). Even though information is never something that can be stolen since it "is not a conserved quantity" (*How We Became Posthuman* 39), the act of obtaining information in the trilogy appears to be actual thievery since cyberspace cowboys must navigate around obstacles and find the data in a Cartesian oriented cyberspace. The realization by Bobby is especially important since at the time he makes it, he is working to achieve disembodiment from materiality in the cyberspace of the novels, and his cognizance of the reality behind the hacking process shows an

advancement in this research. This position on cyberspace use illustrates a transition away from the readiness of cyberspace users to regard it in the same manner as they do physical space.

2.3 – World Building Metaphor

When understood as a recent innovation, cyberspace appears as a foreign entity in need of investigation to be fully comprehended. The principle means of familiarizing such a concept is through the use of metaphor. Even as early as when Wiener's exposition of cybernetics appeared, analogy surfaces as the forerunner for fathoming the faculty of increasingly autonomous and cogitative computer technology that is meant to simulate human capacity for deduction and reasoning (*How We Became Posthuman* 106-07). Apprehending cyberspace and its complementary technology through comparison to existing structures, processes, and ideas allows them to be more readily understood, but it does so at the cost of assimilating new concepts that warrant their own full exploration into mistaken characterizations based on preexisting thought, eliminating potential challenges to the validity and legitimacy such antecedent convictions hold. Nevertheless, portrayals of cyberspace are rife with metaphors in attempt to make such an unfamiliar concept be more approachable and readily understood. In the *Sprawl*, Gibson cleverly presents cyberspace by using analogies and metaphors that are reminiscent of typical portrayals of cyberspace only to subvert such depictions and challenge standard approaches to how it is understood and interpreted.

2.3.1 – *The Final Frontier*

One of, if not, the most compelling metaphors of cyberspace involves it being labeled a new frontier in both expanse and form. With a space exploration and colonization documentary in the series titled *Antarctica Starts Here*, a new uncharted area to explore and pioneer is an appealing aspiration in Gibson's novels. Physical

frontiers, both in Gibson's universe as well as outside of it, have almost all been exhausted, and in the *Sprawl*, the Tessier-Ashpool family extends the desire to space. Orbital colonies throughout the series provide an opportunity for visitors and settlers alike to escape the political jurisdiction of the Earth based corporations and governments. Upon establishing an orbital colony that thrives on legally questionable corporate practices (*Mona Lisa Overdrive* 124) and accommodates a robust and loose population (*Neuromancer* 101, 107-08), the unimaginably wealthy corporate family secludes itself in a spindle named Villa Straylight after discovering that "they loathed space" (173), and they eventually have it separated from the colony and are taken alone further into space (*Count Zero* 193). Eventually, the family begins to look inward at their selves instead of toward the boundlessness of space, and this culminates in their desire to establish autonomous consciousness in cyberspace. Jack Voller presents the drive toward the infinite as a characteristic of the sublime in Romanticism,³ and shows that Gibson's characters "relocat[e] infinity [by] squeezing it into the interface between human mind and computer technology" (20). Although he neglects the Tessier-Ashpool family's pursuits, he does highlight that traveling through space is now a trivial activity in the novels, meaning the actual infinite expanse of space travel is relegated from awe (21). As a result, cyberspace proves to be the only frontier worth pursuing.

In discussing cyberspace as a frontier, John Barlow is a figure that looms immensely as one of the founders of the Electronic Frontier Foundation (EFF) and originator of the term "electronic frontier" (Thomas 83), and he contributes a productive expression of how the metaphor is applied. In "Across the Electronic Frontier," produced in collaboration with fellow EFF founder Mitch Kapor, he states the differences between the frontier of cyberspace and traditional frontiers, saying "the old concepts of property, expression, identity, movement, and context, based as they are on physical

manifestation, do not apply succinctly in a world where there can be none” (qtd in Adams 162). Sue Thomas focuses on the appeal of existing outside of the standard social order in her use of Barlow as she quotes his “A Declaration of the Independence of Cyberspace” that argues “Your legal concepts...do not apply to us. They are all based on matter, and there is no matter here” (83). Adams and Thomas both review the frontier mentality and its application to cyberspace, highlighting how liquidity of identity formation accompanies frontier lifestyles (Adams 164, Thomas 82), especially flashy characters like the “cowboys” of Gibson’s novels (Adams 160-61).

An alternate, but often coacting, metaphor is portraying cyberspace as a potential return to or a new Eden. Cyberspace, as the “genuine virgin wilderness” (Thomas 81), can be characterized as a new nature that is regressive (Robins 153), unenclosed, and characterized by primitive amorality (Adams 161). *Neuromancer’s* Case exemplifies this idea of cyberspace as Eden when he bemoans his access being biologically revoked by myotoxins injected into his blood because of his original sin of stealing from his employers (5-6). He labels his predicament of being trapped in “the prison of his own flesh” as “the Fall.” In essence, cyberspace is presented as the opportunity to transcend the physicality of material reality and escape from the supposed decrepit condition of embodied living, and the repercussions and confounding of this troublesome thinking will be fully introduced in the next chapter.

2.3.2 – Code Word Construction

The primary point of contention in the metaphor of cyberspace comes from the world constructing capabilities, or lack thereof, of coding. In reducing reality to mathematical principles and sequences of information, computer code seemingly becomes the root unit that constructs the world. The ontological capabilities of code are a result of a development that is traced by Marshall McLuhan throughout his *Understanding*

Media. In it, McLuhan follows the progression of media, beginning with speech (108), and one of the principle contests he emphasizes occurs between speech and written language (112). While the differences they have, especially in how they engage the body's senses, are worth acknowledging, they share a primary function, namely that they "enable[] the intellect to detach itself from the vastly wider reality" (113). These two systems for thousands have years have shaped and been shaped by human constructions of reality.

Moving into the twentieth century, code becomes a third linguistic building block of reality. N. Katherine Hayles' *My Mother Was a Computer* extensively studies the establishment of code as an ontological producer and its relationship with speech and writing. Importantly, while prioritizing code is a prominent tendency for many, Hayles pursues how each system works in correspondence with the other systems (ch. 2). In her discussion of code, two especially productive avenues of analysis arise: the relevance of materiality of code over speech and writing and the circulating reference that code relies on. Despite popular depictions of virtual reality allowing a separation from embodied and material living, code is in actuality very dependent on working within the material constraints of the hardware that executes it. She also identifies that code remains very much attached to platform, in that "Regardless of what humans think of a piece of code, the machine is the final arbiter of whether the code is intelligible." This reliance on machines for codes alters its function compared to speech and writing because, unlike those two systems, code is executable. Processing code, done by its intended audience of machines, changes the behavior of what reads it.

The second strain that Hayles exhibits follows Bruno Latour's circulating reference. Developing out of a study done in the Boa Vista forest in South America in which Latour participated, circulating reference provides a theoretical practice of

experiencing location remotely, in his case experiencing the Boa Vista from a science report. This is done through successive refigurations of how the location was experienced (58), through “reduction, compression, marking, continuity, reversibility, standardization, [and] compatibility with text and numbers” to the point that when Latour reads the printed report he is “indeed holding in [his] hands the forest of Boa Vista” (61). Importantly for Latour, this movement, both infinitely back and forth (70), across pictures, measurements, samplings, and more is not simply a replication of reality (58), but instead “It takes the place of the original situation, which we can retrace” (67, emphasis in original). Hayles’ examination of computer functions and code corresponds with Latour’s idea. Code requires multiple translations to be executed because “The translation from binary code into high-level languages, and from high-level languages back into binary code, must happen every time commands are compiled or interpreted” (ch. 2). This also appears in her earlier *How We Became Posthuman* as she stresses the difference in how a keystroke on a typewriter is dramatically different than its comparable series of executions that occur when a computer key is pressed (26-27). In it as well, she incorporates Latour’s circulating reference into her definition of reflexivity as the latter shows that the method of producing a system becomes a part of the system itself (8). In applying Latour specifically, this definition shifts slightly, and she states that “scientific experiments are shown to produce the nature whose existence they predicate as a condition of possibility” (9). Extended further, the development and use of information and communication technologies refigure the systems, those being language as well as human interpretation of reality, that have generated such technologies.

McLuhan provides an influential reading of this line of inquiry in his media ecology theoretical approach. In exploring the significance of metaphor, he attaches its function to media so that “All media are active metaphors in their power to translate

experience into new forms” (*Understanding Media* 85). This declaration works in tandem with his pronouncement that “new media are not bridges between man and nature; they are nature” (qtd in Stephens 2031). These together, written before Latour’s circulating reference was theorized,⁴ provide a reciprocity between media and communication technologies and the natural world in which they are produced. As enterprising as this notion appears, especially considering that it was written before the advent of the Web, “nature” in media ecology theory is a limited term. Lance Strate has taken note of this restraint in that the ecology is more of an extended metaphor than an actual incorporation and integration with “the more-than-human ecosystems from which we, and our technologies, emerge” (Stephens 2034). Neil Postman, the field’s most influential figure under McLuhan, explicitly favors semantic environments and their application over the consequences and weight of physical environments (2036). The material context of media from this approach, then, is strikingly absent.

2.3.3 – *Disputing the Metaphor in the Sprawl*

Gibson plays with several threads in the use of language and metaphor throughout his trilogy. The middle novel, *Count Zero*, details Bobby Newmarks encounter with a cyberreligious group that attests to supernatural entities floating in cyberspace. Their persistent use of folklike terminology for interacting with these frustrate and confuse Bobby, and when he asks for further explanation, he is told the pseudoreligion is “just a structure” and “lets you an’ me discuss some things that are happening, otherwise we might not have words for it” (76), but his bewilderment continues (114). This blunt description of how cyberspace is understood by the group points fun at comprehending cyberspace interaction as entirely separate from and foreign to offline experience. Straightforward skepticism of cyberspace’s ontological capabilities comes from *Mona Lisa Overdrive*’s Slick, who believes cyberspace is only and entirely data representation,

not its own universe (76). This tongue-in-cheek commentary counterbalances the complete immersion in cyberspace seen elsewhere in the series.

When describing how cyberspace is perceived and how the mind operates, Gibson's characters show outstanding commentary. Mark Hansen in *Bodies in Code* criticizes frequent attempts at developing virtual reality as a solely visual experience (12), and this reliance on visual interaction is attributed by Marshall McLuhan to our preference for vision and the proposed permanence of language in written instead of oral discourse (*Understanding Media* 122). Slick, Gibson's previously mentioned cynic of cyberspace, comments that vision is primarily how cyberspace is comprehended:

Put the trodes on and they were out there, all the data in the world stacked up like one big neon city, so you could cruise around and have a kind of grip on it, visually anyway, because if you didn't, it was too complicated, trying to find your way to a particular piece of data you needed. (*Mona Lisa Overdrive* 16, emphasis mine)

This reliance on vision returns when Case inquires how the AI named Wintermute can access his memories while he's jacked into cyberspace. Importantly, he asks if Wintermute can read his mind, to which the AI replies "minds aren't *read*. See,⁵ you've still got the paradigm print gave you, and you're barely print-literate. I can access your memory, but that's not the same as your mind" (170, emphasis in original). Wintermute, especially because he functions outside of print culture as an AI, recognizes how code and written language operate in separate capacities. Herbert Klein's remark that Gibson "exposes [cyberspace's] foundations and questions its consequences" (45) is fitting here. The problem that cyberspace theorists have run into throughout this chapter pertains directly to this realization made in *Neuromancer* in that the system of code does not perform and function the same way as that of language.

Chapter 3

The Participant's Model: Identities, Subjectivities, and Bodies in Cyberspace

Data made flesh

Gibson *Neuromancer*

The comprehensive media analysis done by Marshall McLuhan expands out of the guiding principle that all technology functions as extensions of the physical human body (*Understanding Media* 67). At the same time, though, as communication technology has advanced, the connection to the body has become less evident, and the material basis of media in the advent of cyberspace has been increasingly deprived of warranted attention. McLuhan's direct connection between technology and the body has frequently been overlooked in the optimistic drive toward disembodied subjectivity in cyberspace. Physical embodiment is essential to consciousness and how subjectivity is determined, whether that be in cyberspace or physical space. Cyberspace isn't an escape from embodied existence. Rather, cyberspace itself is constructed through bodily enactment. However, the body is often presented as stuck at the entrance to cyberspace with the consciousness it embodies free to exit it and pass through the interface and into a realm of information.

3.1 – Operating at the Borders and Boundaries of Cyberspace

The role of the computer interface is complex and oftentimes contradictory. Defined by Meredith Bricken in "Virtual Worlds: No Interface to Design" as "a surface forming a boundary between two regions" (364), the computer interface serves to facilitate interaction between the computer's user and its content. As virtual technologies improve in their ability to ease online communication, the interface itself seemingly disappears. Bricken uses head-mounted displays (HMD) as an example of this phenomenon, indicating that the "screen's barrier" becomes less noticeable (364). In

spite of this, or perhaps because of it, the effects of the border remain. Immersion in virtual environments with effective interfaces allows users to relocate themselves on the other side of the technological border instead of erasing the border itself. The result is a strong telepresence where users can remove themselves from their physical location in favor of where they are virtually operating instead of that virtual space being incorporated into lived, physical reality.

As interfaces improve at speeding technological interaction, the user's physical presence is often ostensibly vacated along with even a dual presence of physical and online location. Allucquere Rosanne Stone comments on the potential copresence offered by interfaces, stating that an interface "mediates between the human body (or bodies) and an associated 'I' (or 'I's')" (87). The troubling aspect of this mediation is that the subjectivity, Stone's "associated 'I,'" begins to be seen as operating outside of the physical body, and the user identifies solely with it. The boundary between physical and cyberspace is definitely becoming blurred, as Mark Nunes asserts (10), but the resulting effect is an attempted erasure of the embodiment that has existed on the physical side of it. This arises despite Hayles' observation that media are designed solely for embodied users and are purposeless without them (*My Mother Was a Computer* ch. 1.4). The problem arises because as the interface boundary fades another boundary is being strengthened, that between mind and body.

3.1.1 – Straddling the Supposed Physical/Non-physical Divide

Underlying the border dispute in cyberspace are the contestations proposed in Donna Haraway's "A Cyborg Manifesto" to traditional boundaries that delimit identity. Haraway's second blurred distinction, that between organism and machine (293), manifests itself across cyberpunk fiction, to which Gibson is attributed the status of figurehead (Featherstone & Burrows 7). With being able to access technology through a

direct neural link as a staple of Gibson's Sprawl trilogy, characters also make use of a variety of other transhuman enhancements. These include ocular implants that allow for nightvision (*Neuromancer* 24, 32), bodily ports for data chips containing biographical data and memories (*Count Zero* 23) or instructions for operating machinery (69), and "simstim" links that allow users to perceive the same experience through a shared sensorium simultaneously as other users or at any duration of time afterwards (*Neuromancer* 55). Indeed, popular conceptions of cyborgs as mixed human and machine subjects are found all across Gibson's work. However, this intermingling of human and machine is often directed at an ultimate goal of transcending embodiment and establishing consciousness in cyberspace, and this not only upholds the attempted distinction between physical and nonphysical but works to strengthen this mind/body dichotomy.

The desire to leave the body behind is immediately evident in *Neuromancer*, as Case explains his craving to return to the "bodiless exultation of cyberspace" in which he can abandon the "meat" of physical embodiment (6). N. Katherine Hayles comments on the restructuring of the mind/body dualism evident in Gibson's work, and she points out that the liberal humanist subject is maintained through "an emphasis on cognition rather than embodiment" (*How We Became Posthuman* 5). She calls direct attention to Case's classification of the body as "data made flesh" and criticizes its characterization of the body as being instantiated data. Her continued analysis investigates the drive away from embodiment by surveying the context of novels like Gibson's. Cyberspace provides a liberation from decrepit societies that are, importantly, "rapidly becoming uninhabitable by human beings" (37). Physical reality proves to be a landscape that characters such as Gibson's seek to transcend, but that movement proves to be much more complicated than reconfiguring the data that constitutes the embodied subject.

In spite of an eagerness to migrate away from the physical, pleasure is exclusively sensual for Gibson's characters. While outside of cyberspace, characters experiment with hosts of drugs (*Neuromancer* 36, 133-34, 154) and have a variety of sexual opportunities, whether those be through elaborate prostitution compounds (145-47), "holoporn" units (*Count Zero* 28), or originative toy devices (*Neuromancer* 215). Similarly, the technology of "simstim" allows users to tune in to prerecorded experiences that they witness through the senses of celebrities, often for hours at a time (*Count Zero* 33-34). William Haney II characterizes this dependence on exploring cyberspace or treating drugs and sex as the only forms of embodied pleasure available outside of the matrix as the only options that "liberate them from the oppression of everyday concerns" (83). Case, despite pursuing them, regards sensual pleasure as driven by the "meat" wants of embodied living (*Neuromancer* 9) and prioritizes purely informational existence in cyberspace, but this position proves to be problematic and contradictory.

The irony behind Case's disdain for physical affairs becomes apparent in how he describes his experiences both in cyberspace and out of it. Adam Roberts features a specific scene in *Neuromancer* in which Case and Molly have sex, and upon orgasm, Case immediately draws connections to his present experience and how he feels in cyberspace (Roberts 128). At this juncture, Roberts makes a valuable distinction, stating that "It is as if orgasm, briefly, reaches the peak where cyberspace is all the time, that, by implication, cyberspace is the ultimate intensity of physical experience." Another occasion arises when Case discovers a drug that will actually affect him after his pancreas has been altered to prevent such an event. Here, upon feeling the drug kick in, Case compares his body to a technological machine:

The drug hit him like an express train, a white-hot column of light mounting his spine from the region of his prostate, illuminating the sutures of his skull with x-rays of short-circuited sexual energy. His teeth sang in their individual sockets like tuning forks, each one pitch-perfect

and clear as ethanol. His bones, beneath the hazy envelope of flesh, were chromed and polished, the joints lubricated with a film of silicone. Sand-storms raged across the scoured floor of his skull, generating waves of high thin static that broke behind his eyes, spheres of purest crystal, expanding... (154)

The phrasing, especially of the last sentence, of Case's return to drug use is strikingly reminiscent of his first foray back into cyberspace, an experience he describes as "Disk beginning to rotate, faster, becoming a sphere of paler gray. Expanding –" (52). The ecstatic pleasures of cyberspace and physical space become increasingly similar. Working in conjunction with this is Thomas Frenz' analysis of Wintermute's instruction for Case to use his anger, described as "one of our most intense embodied feelings" (65), to more effectively navigate cyberspace (64-65). Because Case must rely on a physical feeling in disembodied cyberspace, his experience "may well be the epitome of embodied sensory experience" (65). The ways in which physical space and cyberspace are understood and felt, despite Case's urging otherwise, are blended and their distinctive characteristics obscured. One cannot be experienced differently than the other.

3.1.2 – Leibniz' Electric Language and Conceit

Found in Gibson's universe and the cyberspace studies that follow suit of it is an attempt to reduce all matter to information, or, to take it further, binary code. While this reduction is most readily seen since the advent of programming languages, it can be traced back much further, in this case to Gottfried Wilhelm von Leibniz in the seventeenth and early eighteenth centuries. Leibniz fostered the idea of a universal language based on "primitive ideas gleaned from prior analysis" "manipulated to produce logical deductions without recourse to natural language" ("The Erotic Ontology of Cyberspace" 68). This binary language, termed *characteristica universalis*, would then reconfigure all human interaction into one coded, mathematical system. In conjunction with this disintegration of human thought is Leibniz' conception of a *visio Dei*, an "omniscient

intuitive cognition of the deity” that “human knowledge...should emulate” (69). Termed the “Leibnizian conceit” by David Harvey (Nunes 24), this repositioning of the human as operating simultaneously outside and in full control of the universe (52) “free[s] [modern logic] of any naturally given syntax” (“The Erotic Ontology of Cyberspace” 70). What results harkens back to Klein’s “Descartes’ dream in reverse” (42), a reality mathematically constructed of which the human subject is in complete control. All sites of resistance found through the body or elsewhere are ignored and neglected.

Despite initially appearing 350 years ago, Leibniz’ idea of binary and the position of the user in space is tempting in its potential applicability to cyberspace. So tempting, in fact, that Nunes aligns Web creator Tim Berners-Lee with this perspective since the latter allocates full control to the user in cyberspace (52). Users operate as “monads” (71), following Leibniz’ terminology, which isolates each as an “independent point of vital willpower” (“Erotic Ontology of Cyberspace” 71). Particularly troubling about Leibniz’ philosophy is that as monads, subjects do not exist in a physical space (72). As such, monadology eliminates the constraints of living an embodied existence, and while Nunes is rightly skeptical of the theses Leibniz offers, Michael Heim appears much more optimistic about the potential assistance monadology can provide in understanding how cyberspace is inhabited. Heim’s enthusiasm is especially evident in his proposal that cyberspace users potentially have the capacity to shirk their material bodies, saying “the computer network simply brackets the physical presence of the participants, either by omitting or by simulating corporeal immediacy” and allows users to take up a role akin to Leibniz’ *visio Dei* (74). Heim is hesitant in this optimism though, celebrating the need for physical embodiment outside of online interaction (80), and even Nunes shares a commonality with Leibniz in that space is produced and experienced instead of simply existing and waiting for inhabitation (“Erotic Ontology of Cyberspace” 71, Nunes 52).¹

Heim turns to Gibson's *Sprawl* series in his analysis of Leibniz' monadology, and cyberspace in Gibson's universe does operate in a notably Leibnizian fashion. At no point do the cyberspace users of Gibson's work, take on any virtual embodiment, such as avatars, when navigating cyberspace in normal circumstances.² Instead, users operate as free floating consciousnesses that can move through the Cartesian space however they please and with only their cyberdeck hardware's processing speed slowing them down. N. Katherine Hayles expounds this notion, highlighting that characters become their point of view in cyberspace, allowing them to eschew their physical presence (*How We Became Posthuman* 38). Although she doesn't mention him directly, Hayles also characterizes Gibson's cyberspace in Leibniz' monadological terms:

Cyberspace is the domain of virtual collectivity, constituted as the resultant of millions of vectors representing the diverse and often conflicting interests of human and artificial intelligences [monads] linked together through computer networks. (38)

Hayles then identifies the power of Gibson's series in how he manipulates characters into these points of view that operate a cyberspatial landscape (38-39). However, this reduction to point of view in cyberspace neglects the physical embodiment of the user linked into the cyberdeck interface.

3.1.3 – *Constructing a Reality in the Aleph*

An opportunity to fully escape the restraints of embodied living presents itself in the final novel of Gibson's *Sprawl*, *Mona Lisa Overdrive*, through a device called an aleph. Wheeled into Slick Henry's remote residence, Bobby Newmark spends the majority of the novel jacked into cyberspace with his body, in a near vegetative state, occupying a hospital bed that is monitored by the character Cherry Chesterfield (12-16). The device, recognized as an aleph biosoft by Slick's co-resident Gentry, serves as an extensive storage bank that, initially, has no connection to the overall cyberspace superstructure, making it remote data (154). Gentry goes on to explain that the memory

of the aleph holds “an *abstract* of the sum total of data constituting cyberspace” (210, emphasis in original) that allows Bobby to construct anything he pleases from the data available to his device. Upon accessing the aleph, users can upload a construct of their consciousnesses that continue to operate in it (228-230). By the end of the novel, a multitude of consciousnesses have accessed the aleph, and they continue to function within its construction of reality autonomously, capable of sustained interaction with one another (305-08).

While the aleph problematizes embodied consciousness by creating autonomous and sustainable simulations of a user’s mind, the manner in which the device is accessed and operated stages engaging exchanges regarding the location of the user’s consciousness and body and how the perceived split affects the two. Prior to the conflict that occurs near the novel’s conclusion that spurs Gentry and Slick to connect the aleph device to a cyberspace deck, granting it access to the cyberspace superstructure (272), the aleph memory unit exists as an isolated object in physical space and can only be accessed by a user being in close enough physical proximity to access it via trodes planted on his/her body (157). The body’s physical location remains important to Bobby while he is in the aleph as his initial interaction with Slick centers on him learning where the aleph is currently located (181-82). Because of how the aleph is situated in material space, the device had to be stolen by Bobby for him to gain access to it like the data construct stolen in *Neuromancer*, and the original owner of the aleph, or at least her personality construct since she herself is deceased, is indignant (229). The construct of Lady 3Jane, the original owner of the aleph, continues to function within the aleph and wants Bobby’s access to it to end. To do this, 3Jane’s construct interrogates Slick and Gentry in the aleph’s constructed reality about where Bobby’s physical body is while they’re searching for Bobby’s consciousness in the aleph (227), making Bobby’s

copresence especially apparent to the reader. Jane wants to rid the aleph of Bobby by having her employees disconnect him from the physical device because at this point, his consciousness remains embodied, contrary to hers which exists as a simulation solely within the realm of the aleph. In all, the aleph further complicates the negotiation between physical and online presence as constructs are capable of gaining autonomy within it and work in conjunction with embodied users, all of whom are navigating a simulation of reality constructed from the vast memory banks of the technological device. Central to the device's significance is that the inhabitants of the aleph are constructs of autonomous previous users and are not the users themselves. When the connection to the aleph, or all of cyberspace, is severed, the embodied human remains on the physical side of the interface.

3.2 – Artificial Identification

Embodied cyberspace users in Gibson's *Sprawl* series come into contact with a varied assortment of constructed characters fully created as artificial intelligence as well as those augmented with it, some of which are embodied and operate in the physical universe while others function exclusively in cyberspace. The autonomy and capacity for consciousness in these characters are disputes that are hosted throughout the novels in the exchanges that human characters have with their AI counterparts. Pursuing the label of "artificial" regarding these characters proves to be problematic as only some of the AI characters' identities are fully constructed while others have had their consciousness repurposed and function similarly to their previous existences.

3.2.1 – *Wintermute and Neuromancer's Disparate Marriage*

The plot of *Neuromancer* revolves around the attempted unification of two AI constructs, Wintermute and Neuromancer. While the character Neuromancer does not itself appear until near the end of the novel, Wintermute has been argued to actually be

the story's protagonist instead of the novel's main character, Case ("Cyberpunk and the End of Humanity" 78). Since AI autonomy and self-improvement is forbidden (Gutiérrez-Jones 72), the group of insurgents that features Case is hired by Wintermute to illegally and discretely facilitate the merger of the two AIs (*Neuromancer* 132). In its communication with the infiltrators, Wintermute does demonstrate a large degree of autonomy, but it also explains that its efforts toward unification are something beyond its control and comprehension, meaning they occur as a programmed drive more than an actual choice (206). Similarly, part of the process requires a code word that Wintermute cannot determine regardless of the amount of data and information it can access, the ignorance is "hardwired in" for it to never learn the phrase (173). After navigating a human agent to the right location to utter the code, the ultimately successful endeavor to unite the two AIs proves to radically change how cyberspace is inhabited and operated and catalyzes the future proceedings in the series, making it the most significant single event in the universe of the novels.

The act of uniting disparate halves is itself a symbolically powerful development. While Wintermute is driven to unite with its counterpart, *Neuromancer* shares the same determination to oppose this conglomeration and works at length to stop the operation. Underlying these efforts is the idea of unifying both halves of the human brain with Wintermute being a manifestation of the left hemisphere (120), but more importantly, the act represents the merging of two subjectivities that can be traced back to Plato's *Phaedrus* (Frentz 60). With Wintermute standing for life and consciousness and *Neuromancer* for the opposite, the unification follows "Socrates' dream of the transcendence of self and other" (60) and "erase[s] the binary oppositions that separates [sic] exterior from interior, self from other, life from death" (63). The merger of Wintermute and *Neuromancer*, according to Frentz, serves as a potential circumnavigation of the

problem that embodiment poses to the transcendent unification (60). However, others, like William Haney II, are much more critical, pointing out that this conjoined identity remains entirely constructed and hasn't experienced consciousness ("Cyberpunk and the End of Humanity" 80).

Carl Gutiérrez-Jones provides a more symbolic interpretation of the fusion, claiming that the union "reproduces the fundamental division among the humans regarding artificial intelligence" where one position vehemently fights to uphold the boundary separating human and machine and the other works to take apart said boundary (87). In doing so, Gutiérrez-Jones traces Donna Haraway and N. Katherine Hayles' use of kinship studies to explore how humanity has come to understand itself in new ways following the construction of and interaction with AI (71-72). Gutiérrez-Jones applauds the ways in which *Neuromancer* emphasizes cooperative efforts by humans and AI to reconfigure preconceptions of the mind/body dualism through the success of Wintermute and Neuromancer's unification with the help of Case:

It is reasonable to assume that AIs will demonstrate their human origins, whether inadvertently or not, and given that mind-body dualism has fueled utopian and dystopian notions of AI development that frequently maintain highly problematic assumptions regarding materiality and the body..., it behooves humanity to rethink how its cultural assumptions are shaping, and being shaped by, technological development, especially given humanity's propensity to devalue, or worse yet loathe, embodiment. (76-77)

Advances in technology like the accelerating development of AI are compelling humans to face embodiment as the primary determinant of humanity. The anxiety this produces in the human subject stems from centuries of attempts to shirk embodiment almost entirely in favor of establishing the mind as the sole source of subjectivity and identity. As the distinction between mind and body diminishes, that between organism and machine is as well. With the mind no longer separable from the body and the body intermingling with machine, any acute distinction of what makes a subject human becomes practically

unattainable. When imagining the possibilities of AI subjects, their embodiment and the limits that presents are just as important to recognize and be mindful of as humanity's; all AI remain inseparable from their bodies of circuits, cables, servers, and software. While the seemingly disembodied identity of the AI does pose a problem in *Neuromancer*, Gibson uses the reliance on embodied human assistance to ground AI existence in materiality while collapsing these mentioned dualisms, particularly that of mind/body. While they come at the cost of losing the boundaries erected across the categories of mind, body, and machine, the interactions encouraged in the novels that favor collaboration among entities instead of a push to transcend from one to the other proves to be ultimately successful.

3.2.2 – *Constructing Humanness and the AI's Medium*

As Wintermute coordinates its unification operation with Case and his team, the difficulty that the AI faces in communicating with humans is strikingly apparent and calls attention to an inability, or substantial obstacle, of the AI to interact with embodied beings without taking on an embodied form itself. To talk to Case for any considerable length of time, Wintermute, as well as *Neuromancer*, must stop Case's body from functioning as he jacks into or out of cyberspace (*Neuromancer* 116), a phenomenon observed by several other characters as Case's EEG signal stops (121). In their direct confrontations, Wintermute uses Case's memories to provide a setting for their personas to interact (119), and these instances serve as the only occurrences where identities appear as embodied and not free floating consciousnesses in the novel with Wintermute taking the shape of humans that Case has known. Because of the structure of these experiences, these online interactions, established and maintained by Wintermute, rely on Case's embodied memories, meaning Wintermute cannot construct a meeting place on its own without a grounded consciousness to provide the base.

A problem that Wintermute runs into when structuring these meetings is the manner in which it works with memory. As it explains its plans for their operation, Wintermute describes its preparation methods as calculated improvisation (120). Instead of constructing detailed procedures, Wintermute “prefer[s] situations to plans” and uses its rapid processing capabilities to devise its next course of action. Part of what makes this especially difficult for it is that its human collaborators aren’t data; they act independently and not usually predictably (205). In expressing the inconvenience human autonomy poses to its efforts, Wintermute calls attention to the Dixie Flatline, also known as McCoy Pauley or Dix, the ROM construct based on the personality of a deceased hacker previously stolen from its protected vault earlier in the novel.

The Flatline serves as the memories of a renowned console hacker that trained Case. While in cyberspace, Case can communicate with the Flatline, who acts in accordance to how its “skills, obsessions, and knee-jerk responses” were programmed (76-77). Because the Flatline is a memory construct, it has no ability to form new memories, meaning in every instance it is accessed, the construct has no awareness of previous uses, and this often leads to an unawareness of its own constructedness (78-79). Even so, it presents an ability to simulate humanity so effectively that Case forgets its limitations, a notable instance being when he asks Dix how it feels to be dead (105). An engaging aspect of the Flatline’s character that Haney II observes is the Flatline’s continued memory of its previous human existence and how this motivates it against autonomy as a ROM construct (“Cyberpunk and the End of Humanity” 86). Dix still follows its previous tendencies from when it existed as an embodied human, leading it to warn Case against interacting with Wintermute as if the AI is human (*Neuromancer* 131-32). As a reward for assisting Wintermute’s endeavors, the Flatline wants its memory, meaning essentially its current existence, erased (*Neuromancer* 206). This aspect of the

Flatline's identity demonstrates a desire not to gain autonomy and improve itself, which is uncharacteristic of an AI, and Haney II aligns this with its previous humanity (86). His analysis of the Flatline works against Gutiérrez-Jones' implementation of Haraway and kinship studies as it exhibits a character that disapproves of the intermingling of human and machine. Dixie Flatline exists at a peculiar juncture between AI and human. Adam Roberts draws attention to its state in limbo, in that it is "self-aware and unhappy with its self-awareness" (130), especially as he recognizes what aspects of embodied humanity he no longer possesses, like feeling (*Neuromancer* 105). While the Flatline does present a challenge to Haraway's "partial identities and contradictory standpoints" (qtd in "Cyberpunk and the End of Humanity" 86), his death prior to the context of the novel (*Neuromancer* 78) may signal an overall changing perspective reflected in the still embodied living characters.

Another combined AI and human character appears in Armitage, Case's employer and Wintermute's embodied puppet. Formerly Willis Corto, a schizophrenic war veteran (*Neuromancer* 82-84), Armitage is a personality constructed by Wintermute, an act undertaken as Corto was involved in cybernetic therapy as a part of his postwar treatment. While Wintermute is able to manufacture a working model of human consciousness in Armitage, he recognizes that the construct will eventually fall apart as the original human mind will resurface (121). Armitage operates as a kind of reverse Dixie Flatline, as Adam Roberts notes, in that he's an embodied person whose personality is a ROM construct (130-31). Interestingly, the characters of *Neuromancer* that meet Armitage are well aware that something is off about his personality, and it appears to be only a matter of time before he unravels and returns to being Willis Corto. This inevitability comes to a head when Corto reemerges, hallucinates that he is currently in an aerial battle, unseals the airlock of a cockpit he inhabits in outer space, and dies

(*Neuromancer* 198). Coupled with the construct of McCoy Pauley, Armitage may represent a failure to conglomerate human and machine primarily because the choice was not his to make. Both of these characters are extensive but forced mergings of human and machine whereas successful identification as cyborg only occurs in Gibson's universe when characters willingly work to establish that identity, such as when Case and Wintermute successfully merge Wintermute with Neuromancer.

3.3 – Bodily Signification in and out of Cyberspace

Moving from identities constructed in cyberspace to the subjects that initiate such construction, an important aspect of studying bodies in cyberspace centers on how cyberspace affects its users' identification of their bodies offline. Related to this is cyberspace's proposed capacity to erase gender and race in online interactions. Mark Poster's *What's the Matter with the Internet* positions the Internet as a significant disruptor to the modern conception of nation (101) and traces this rupture through notions of ethnicity and race as "Ethnic differentiation now mixes with transnational formations" (149) posed by the introduction of global online communication. An important aspect of Poster's speculation arises out of his reflection on what the Internet is capable of accomplishing. He insists on changing the challenge from how cyberspace can alter the ways through which groups interact "*as they are currently constituted*" to how it may fundamentally change their core structure (3, emphasis in original). This proposal, although rife with challenges and obstacles, follows cyberspace's capacity to blur boundaries separating hegemonic dualisms and hierarchical power structures. Remaining within the confines of human subjects, characteristic of analysis like Poster's, the concepts of race and gender present the most far reaching consequences, but the principles affecting these expand to encompass further distinctions that work to separate

human and nonhuman and machine which will be more fully discussed in the following chapter.

3.3.1 – Performing Race without Visual Cues

Poster aptly recognizes that as human communication and interaction become more and more globalized, cyberspace users are more frequently reminded of the existence of cultures and peoples with which they don't identify (148). He characterizes this recognition as a conflict for each individual between establishing globalized cultures and reaffirming localized ones. This strengthened ethnicity, termed "neoethnicity" occurs as a resistance to globalizing tendencies that media create. Arriving at the possibility of McLuhan's "global village," or at least with facets of it, the ideas of nation and cultural markers are revealed to be merely constructions (107). Taking this and compiling it with Levi-Strauss' explanation of race as a social construction used to hierarchize imperial societies (Leung 25), cyberspace establishes one of, if not, the most effective forums to challenge these labels and their repercussions due to its global immediacy and its users' capacity to present their bodies in new and dynamic ways.

Mark Hansen discusses the impact of virtual environments for racial identification by leveling all users' personas and making performed identity the sole determinant of character instead of visual perception. In his conception of "'zero degree' of racial difference," he explains that online interaction 'divorces the image from the living body it would capture' which allows bodies to operate outside of fixed, singular states (141). Without any visual demarcation (142), all individuals are faced with the task of "passing" since the only way that identity is perceived online is through its performance (145). Operating under this premise, cyberspace becomes an environment where offline visual signifiers can be evaluated and reformed as users are able to perform new lived identities online (147-48), and Hansen uses projects by Keith Piper that "turn[] this bankruptcy [of

identity categories] into an opportunity to think - and perhaps to live - singularity beyond identity” (156-170, 168). Experiments in online interaction do create experiences in which a subject can identify with and relate to another subject through shared performed identities, but corporeality remains as a powerful determinant of identity. Hansen incorporates Frantz Fanon in an assertion that the biological “simply cannot be denied, no matter how forceful and complex the mechanism of projection may be” (155). The body remains a powerful and persistent aspect of identity, but the visually marked factors of identity, like Fanon’s example of the abjection the black body faces, can be contested in virtual spaces in ways that both aim to nullify racial signification as well as reaffirm shared identity in ethnicity.³

3.3.2 – *Sexed Bodies in Cyberspace*

In their studies on challenges to bodily signifiers in cyberspace, Poster and Hansen conflate their arguments involving race to cover gender and sex as well without detailing how the concepts transfer to new aspects of identity (*What’s the Matter with the Internet* 75, Hansen 144). Gendered signification in cyberspace presents its own challenges, especially when considering Hansen’s enthusiasm toward relating to by performing as other identities online. This difficulty is especially evident in a situation where a male psychiatrist posed as a woman online as a result of being mistaken as one initially and became reluctant to correct the misapprehension (Stone 83). Instead, he revealed his offline identity years later, and the women that he interacted with online reacted thoroughly negatively, to the extent that one commented, saying “I felt raped...I felt that my deepest secrets had been violated.” Such a response demonstrates that the reaction felt can also be readily comparable to *physical* trauma. In how sex and gender are embodied online, multiplicity in identity can become more potentially dangerous than other categories for “passing.”

Radhika Gajjala notes that, especially as online interactions proliferated at the turn of the twentieth century, researchers speculated on the need for safe spaces for women in cyberspace (31). However, inherent in establishing these spaces is the tendency to homogenize some and exclude other subjects, something Gajjala points out, and this seemingly works against the positive challenges to marked identities that Hansen and Poster claim cyberspace offers. Instead of using cyberspace as a means of nullifying or challenging bodily difference, Gajjala proposes the use of cyberspace to create what she terms “cyberfeminist technological environments” (40), but even these contexts continue to be affected by hegemonic structures instituted by Western social forces (46). Instead of deconstructing difference, Gajjala’s cyberfeminist perspective works to empower women that establish an online presence (81). Importantly, the positions of Hansen and Poster don’t necessarily work discordantly with Gajjala’s, as cyberspace seemingly provides an opportunity for users to both celebrate difference while working to overcome the problems that classifying difference inherently generates. The user’s body plays an integral role in how cyberspace is accessed and in the construction of identity in said space, and the body’s role in shaping cyberspace warrants further exploration and analysis, making it a focal aspect of the subsequent chapter.

Chapter 4

The Designer's Model: Enacting Cyberspace as Mixed Reality through Functionality

Cyberspace exists, insofar as it can be said to exist, by virtue of human agency.

Gibson *Mona Lisa Overdrive*

At the center of the cyberpunk subgenre of science fiction is an exhibition of Donna Haraway's second boundary erasure, that between organism and machine, and this contestation of two traditionally distinct categories guides the construction of cyberspace. While cyberspace can be understood as a maintained separation of material and nonmaterial as previously assessed, it is perhaps best studied as an extension of this symbiosis of biological users and technological machines. With the space itself being inseparable from the infrastructure that maintains it and with its users similarly inseparable from embodiment, cyberspace functions at the level of where these two categories converge. Operating in cyberspace fully represents the blurring of boundaries to which Haraway's manifesto draws attention as the experience of the user's embodied existence is directly affected by its interacting with and in cyberspace, and the hardware and software of online technologies are likewise modified by their users through all of these exchanges. Cyberspace is constructed as an occurrence through these perpetual alterations of organism and machine, and its existence is maintained through these interactions. As such, cyberspace predates any modern conception of the computer and has existed since this symbiosis of organism and machine originated. All media has always constructed and used cyberspace. The recent creation and evolution of ICT has only made cyberspace more apparent because of the rapidity and extent of interaction that it provides.

4.1 – Merging Spaces and Bodies

A primary tenet of Marshall McLuhan's media theory is his assertion that all media serve as an extension of the human body, what Mark Hansen terms the "primary medium" (30),¹ and, in regard to online technologies, this has become evident as accessing the Internet has become more convenient through devices that can always be on one's person rather than positioned in few set locations. This universalization of ICT has dulled the conceit of cyberspace as a distinct and separate space (Kingsley 365), and instead, cyberspace "is strongly interwoven with our daily reality" (de Mul xiii) as it is disseminated throughout all of, at least Western, society. Especially when viewed as extensions of the human body, ICT and its users reciprocally affect each other in tandem through every use. Jos de Mul reverses the notion of cyberspace as its own realm of disembodied information that humanity enters and settles and asserts it is cyberspace that colonizes physical reality and "nestles in our biological and social bodies and transforms them from within" (33). Hansen comments further on this reversal, claiming that ICT "virtualizes the physical" in lieu of establishing a distinct virtual domain (27). Indeed, cyberspace's occupation in physical space is increasingly glaring as the billions of humans with technological devices are reminded of and frequently use the constant presence of Wi-Fi signals and cell phone data frequencies circulating the globe.

4.1.1 – *The Mixed Reality Paradigm*

As cyberspace becomes less a demarcated realm and more of an everyday occurrence, the draw toward establishing a separate, virtual reality diminishes in favor of an augmented reality enmeshed in physical space. Even while Gibson's cyberspace is a progenitor of cyberspace as a markedly separate virtual space, his conception has cyberspace superimposed over the foundation of existing geography, with its content pinpointed where data centers are located. Augmented reality is perhaps the most

conventional term applied to such an idea of cyberspace intermingling with or overlaying physical space, but Hansen's designation of "mixed reality" better serves the purpose of exposing how enmeshed the spaces are. An augmented reality implies that virtual components have been added to a pre-existing reality whereas identifying all reality as mixed recognizes that the physical and virtual have always been co-constitutive.

No longer considered an independent realm, focus shifts from what is found in cyberspace to what its function is in physical space. N. Katherine Hayles traces this distinction back to the early Macy Conferences in the mid-twentieth century where theorists contested the definition of information, whether such a definition follows its form, "what it is" – led by Claude Shannon and Norbert Wiener – or its function, "what it does" – attended to by Donald MacKay (*How We Became Posthuman* 56, emphasis in original). The first interpretation portrays the fully virtual reality paradigm, and it harkens back to labeling information as a thing that can be detached from meaning. The second, better suited for Hansen's mixed reality, establishes information as an action, "a process that someone enacts, and thus it necessarily implies context and embodiment" (*How We Became Posthuman* 56). Hansen makes the contrast fall on the role of "content" of virtual reality versus "means of access" to mixed reality (5), and this too appears in Hayles' analysis, this time in her explanation of the shift away from physical presence (39). She provides a manifestation of this in her example of how evidence of a computer being hacked comes from the pattern traces the act leaves instead of the presence of the hacker or the absence of what was retrieved. An access oriented paradigm denies cyberspace being considered an inhabitable space replete with objects.

4.1.2 – *Technological Appendages*

Crucial to the notion of a mixed reality is the role of natural perception. Hansen uses this as a characteristic that distinguishes ICT and mixed reality from other media

that, following Deleuze's analysis of cinema, operates at a disjunction from natural perception (4). In looking at the significance of natural perception, he emphasizes the utility of tactility and is critical of a reliance on solely visual means of experience. In doing so, he stresses embodied movement as the dominant means of using ICT and interacting with cyberspace (5). This context foregrounds the body as the entry point to cyberspace, not an external interface.

The convergence of physical and virtual reality is most readily witnessed as cyberspace users incorporate technology further into their typical functions, and characters' bodies throughout Gibson's *Sprawl* are continuously modified to facilitate access and use of cyberspace. Specifically, the character Angela Mitchell provides an acute example of conglomeration between body and online technology. Daughter of biochip pioneer Christopher Mitchell (*Count Zero* 127), Angie has been equipped with neurotechnology allowing her to access cyberspace without the use of a cyberdeck since "she dream[s] cyberspace, as though the neon gridlines of the matrix wait behind her eyelids" (*Mona Lisa Overdrive* 48). As a result, accessing cyberspace becomes a frequent biological function for her, and the utility of her technology allows her to maneuver in cyberspace in ways exclusive to her (*Count Zero* 158). This includes even severing others' neural link to cyberspace (18) as well as comprehending the superstructure of cyberspace through interactions with its AI (159). The technology available to Angela is so ingrained into her body, to the point that the hardware is either mistaken for brain tumors (133) or goes undetected in brain scans (*Mona Lisa Overdrive* 100-01), that the distinction between biological and technological function is nearly impossible to make.

Angela Mitchell serves as an extreme merging of organism and machine, but such synergism between ICT and its users is integral to cyberspace use on the whole.

Evident even in ordinary interactions like using a computer mouse, the limits of the machine and the body of the user blend until they're undifferentiated. Hansen's *Bodies in Code* fully applies the McLuhan extension in his assessment of how the body interacts with cyberspace to illustrate this point. In it, he calls upon Maurice Merleau-Ponty's example of a blind person's stick to demonstrate the blurring of body and machine, pointing out how the stick functions as a continuation of the body instead of as an object external to it (43-44). Following this phenomenology, all computer peripherals become prostheses of the body. He expands on this means of experiencing mixed reality further by applying the functions of the body image and body schema and prioritizing the latter over the former (20) because of its incorporation of prostheses. He quotes Shaun Gallagher to elaborate on how the body schema more fully operates through blurred distinctions of body and environment:

When the body does appear in consciousness, it often appears as clearly differentiated from its environment. Body image boundaries tend to be relatively clearly defined. The body schema, in contrast, can be functionally integrated with its environment, even to the extent that it frequently incorporates certain objects into its operations...Under these circumstances one's perception of body boundary may end at one's finger tips even when a particular schema projects itself to include the [device] that one is using. (48)

The role of mixed reality is to conjoin both body schema and image so that the two are indiscernible from one another, producing what Hansen terms a "body-in-code" (49) that promotes the body's "constructive or creative power" (38). This aspect of how mixed reality has developed best explains what makes certain technologies better at immersing the user and providing more functionality. Virtual reality technology proves to be more effective when it increases the opportunity and the extent to which the user can operate, and this is done through extending the user's motor capacity instead of attempting to present visually appealing environments (3-4).

Importantly, this blurring of medium and body is not unique to ICT, but contrarily it has always been involved in all tool and media use. Hansen comments on this in stating that all bodily experience “has *always* been conditioned by a technical dimension and has *always* occurred as a cofunctioning of embodiment with technics” (9, emphasis in original), and he moreover redefines embodiment as it extends past the already blurred boundary of the human body itself. Hansen asserts this in harmony with McLuhan, who traces media as extensions of embodiment back to the inception of spoken word (*Understanding Media* 113). Expanding on Hansen’s assertion that humans have always already had a symbiotic relationship with artifacts, Haraway’s blurred distinctions prove to have similarly always already been the case. This works in unison with Hayles’ claim that we have long since already become posthuman, especially when considering her statement that “the body [is] the original prosthesis we all learn to manipulate” (*How We Became Posthuman* 3). Zeynep Tufekci furthers this notion, highlighting a connection between embodiment and the virtual that has always existed, to claim that our extensions that are so readily recognizable as posthuman today are no different “than the first time an ancestor picked up a stick to extend an arm” (34). As a result, she contends that the designation of “post-“ serves no purpose since it has never been preceded by a different state of being (34) and consequently states that “We are, as we always were, human” (45). While Tufekci’s pronouncement that humanity has always existed and continues to exist as such seemingly ignores how the human subject identity has been constructed and interpreted over time, the insistence that humanity’s relationship with technology has always already functioned as it currently does definitely bears significance and attests to the magnitude of the similar assertions of her peers. Regardless of how it is termed, a core component of being human has always been the use of machines, media, and cyberspace.

4.2 – Experience As Construction of Space

In his discussion of how the body schema becomes indistinguishable from the body image in mixed reality, Hansen classifies the space in which this interaction occurs as “the entire interactional domain generated through bodily movement” (50). In doing so, he establishes his conception of cyberspace, his mixed reality, as a space produced through experience. Mark Nunes’ *Cyberspaces of Everyday Life* approaches cyberspace in this perspective through Henri Lefebvre’s theory on space. In doing so, he argues that cyberspace is one “that is literally structured by individual encounters” of its users and is produced by these exchanges (78). With this in mind, space is never merely occupied; rather, space is enacted (19). Pulling from Lefebvre, Nunes remarks that all spaces – physical, social, mixed, or virtual – occur at the junction of “concept, form, and practice” (19-20).

While Nunes claims that this understanding of space “sidesteps a message/medium dualism” (19), it initially appears to ignore the materiality in which the medium exists altogether; however, Nunes incorporates materiality into a relational approach to how space is experienced. Despite reiterating space as a “social space,” he characterizes this space as “a tangle, a multiplicity, involving bodies, infrastructure and activity – as well as representation” (36). Working with physical space as a solely material concept, similar to how relegating cyberspace as solely virtual, limits its existence to an emptiness awaiting inhabitation and use. However, by relating physical and social aspects of space into a mixed entity, reality is always a space that users interact with and in. Nunes then applies this relational account of space directly to cyberspace:

As a space, networks define a conceptual structuring of relations mediated by transmission, a material form that is at once situated at points of interface at the same time that it distributes material access, and a lived practice that makes these distributed relations seem ‘natural.’ In this regard, cyberspace is not where these relations take place, it is *the ‘where’ enacted by these relations.* (28, emphasis in original)

Enmeshed in both what's considered the material and virtual, cyberspace emerges as an event that is definitively informational as well as embodied.

In reference to the material and social forces that construct spaces, Nunes introduces what he calls "assemblages of bodies" and "assemblages of enunciations," respectively (25). Hayles discusses this conception of the body as a convergence of multiple particulars in *My Mother Was a Computer*. In it, she calls for a reimagining of bodies "not as nouns that enact verbs" but conversely as processes themselves, networks and associations of different but blended elements (ch. 8.5). Furthermore, different sources of subjectivity co-constitute each other through "intermediations" that connect them "together in a web of jointly articulated cognitive activities."

Gibson constructs many of his characters as conglomerations of multiple component presences in such a way that enacts the perspective that Hayles and Nunes advance. The reconstructed by AI personality of the previously examined character Armitage serves as a prime example considering his splintering personality between the psychologically distant espionage agent and the schizophrenic military veteran. Daniel Punday investigates this amalgamation of disparate elements that culminate in the characters that Gibson develops in *Neuromancer*, stating that "The novel continually returns to the uneven spaces where the parts of individuals are assembled into some whole" (202). Seemingly all of Gibson's first novel's characters especially are readily identifiable as assemblages as each experiences scenes where parts of their identities are either constructed or deconstructed. This occurs for Linda Lee as Case "watche[s] her identity fragment," Case as he is "coming apart at the seams," and Molly and Riveria whose theater performance projections tear apart one another at a dinner that the two attend along with Case and Armitage (Punday 202, both quotes from *Neuromancer*). Punday also notes that while many of these identities of compiled entities appear to cast

collective identity construction as unfavorable, “much more dangerous than this disunified subjectivity is the attempt to deny multiplicity and to hide behind some apparent unity” (204). Contributing to what makes Gibson’s *Sprawl* so engaging is how ambiguous this subjectivity is and whether it should “evoke terror” or “excite pleasure” in the same manner as Hayles’ describes the transition from identifying as human to posthuman (*How We Became Posthuman* 4).

The spaces with and in which Gibson’s assembled characters interact are constructed in much the same way as the characters themselves. The settings visited in the novel like the Freeside colony, Chiba City, and the Sprawl itself all function as “space[s] of relative freedom [as] ‘outlaw zones’” of ambiguity (Punday 206). With corporations serving as the only semblance of governmental authority, national and cultural boundaries are constantly in flux with little preventing them from being so. Cyberspace itself, especially when portrayed as a frontier space with contested boundaries and an uncertain future, following Adams’ characterization of how the electronic frontier is portrayed (161), is an assemblage of diverse components that are perpetually spilling over into one another.

The legacy of Gibson’s institution of cyberspace remains unmistakable as a result of not only its prescience but also its excellence in characterizing how cyberspace and mixed reality are understood. Hayles expounds on the prevalence and pertinence of Gibson’s *Sprawl* series in characterizing its success as both its applicability to the posthuman condition in which the novels are set and during which they were written as well as the way in which the narrative devices and the narrative structure thematically coincide with the conditions surrounding and substances forming the series (39). Furthermore, *Neuromancer* and its two successors embody how cyberspace was perceived and interpreted in the 1980’s as the World Wide Web came into being as well

as challenged and continues to challenge how ICT has developed and evolved. Similarly human embodiment has shaped such impressions of cyberspace, working to co-construct how reality, as a mixed reality, is practiced and enacted.

Appendix A
Additional Notes

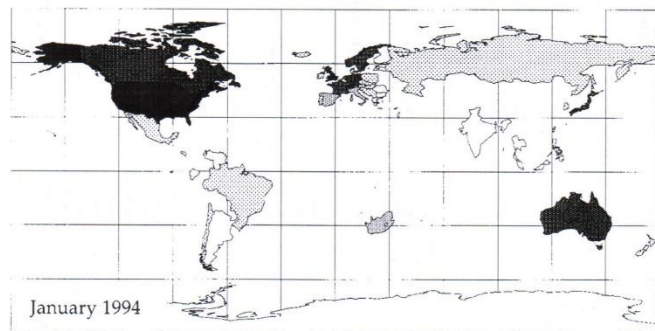
Chapter 1

¹ Gibson had never used online technology and claimed to be computer illiterate (Gunkel & Gunkel (125). *Neuromancer* was written exclusively on a typewriter (134). The inspiration behind his visualization came from watching his children play video games (Roberts 127).

² The seven principles consist of the Principle of Exclusion (PE), Principle of Maximal Exclusion (PME), Principle of Indifference (PI), Principle of Scale (PS), Principle of Transit (PT), Principle of Personal Visibility (PPV), and the Principle of Commonality (PC), and these are studied under the five topological rubrics of dimensionality, continuity, curvature, density, and limits (132-33).

Chapter 2

¹ In fact, the character Marly in *Count Zero* impulsively decides that she needs to visit a structure in space and a spaceship operator at a port take her in a matter of two pages (177-78).



Number of Hosts 1991-1994

■	— 1000000 to 5000000	(1)
■	— 100000 to 1000000	(1)
■	— 50000 to 100000	(3)
■	— 20000 to 50000	(6)
■	— 10000 to 20000	(4)
■	— 1000 to 10000	(19)
□	— 1 to 1000	(18)

Figure 5. Continued.

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³ Romanticism and science fiction or cyberpunk novels is a fairly well developed area of interest. See Clayton, Jay *Charles Dickens in Cyberspace. The Afterlife of the Nineteenth Century in Postmodern Culture*, Curl, Ralph "The Metaphors of Cyberpunk: Ontology, Epistemology, and Science Fiction," Klein, Herbert "From Romanticism to Virtual Reality: Charles Babbage, William Gibson and the Construction of Cyberspace," Voller, Jack "Neuromanticism: Cyberspace and the Sublime," and Wymer, Thomas L. "Perception and Value in Science Fiction."

⁴ Latour's essay appears in the 1990's while McLuhan died in 1980.

⁵ While this piece of dialogue is especially engaging for its play on the words “read my mind,” it's difficult to fully appreciate the criticism leveled by the AI when its next sentence uses “See” to emphasize the following utterance.

Chapter 3

¹ The production of cyberspace through experience and performance will be explored further in the next chapter.

² The main exception to this is when Case is interacting with Wintermute, in which both have embodied forms, albeit Wintermute assumes the body of an individual in Case's memory.

³ Linda Leung's *Virtual Ethnicity* provides an effective account of how cyberspace becomes a site of resistance in staging embodied and virtual ethnicity.

Chapter 4

¹ Hansen qualifies this claim later, stating “Far from being a mere 'instrument' or the first 'medium' (as some versions of posthumanism allege), the body is a primordial and active source of resistance; indeed, it is as resistance – as the 'living expression of something simultaneously organization and obstacle to its organization' – that the body forms the source of excess supporting all levels of constitution (or individuation), from cellular to cosmic” (15).

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Biographical Information

While at the University of Texas at Arlington, Matt Underwood's studies focused on postcolonial and posthuman literature as well as feminist theory. He used many of the principles of each field to contribute to his thesis of studying cyberspace. Upon defending his thesis and receiving his M.A. in English, Matt Underwood will begin Texas Christian University's PhD program in the fall of 2015 and aims to receive graduate certificates in Women's and Gender Studies and Digital Humanities during his time there. For future academic endeavors, he intends to further study how cyberspace is involved in science fiction and explore ways in which technology appears and is used in other, more traditional genres of literature.