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ARTIFICIAL INTELLIGENCE AND THE TECHNOLOGICAL SUBLIME: HOW VIRTUAL CHARACTERS INFLUENCE THE LANDSCAPE OF MODERN SUBLIMITY

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ARTIFICIAL INTELLIGENCE AND THE TECHNOLOGICAL SUBLIME: HOW VIRTUAL CHARACTERS INFLUENCE THE LANDSCAPE OF MODERN SUBLIMITY

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Arts in the
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By

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Lexington, Kentucky

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ABSTRACT OF THESIS

ARTIFICIAL INTELLIGENCE AND THE TECHNOLOGICAL SUBLIME: HOW
VIRTUAL CHARACTERS INFLUENCE THE LANDSCAPE OF MODERN
SUBLIMITY

The principle objective of this thesis is to expand the term "technological sublime" to include technologies of artificial intelligence. In defining new realms of the technological sublime, we must not only consider the ecological integration of technology within natural surroundings, but also appreciate modern technological objects that instigate sublime experiences. This work examines science fictional portrayals of interactions with sentient artificial intelligence in *I, Robot*, *2001: A Space Odyssey* and other major works of science fiction. In each of these works, characters who encounter technologies possessing artificial intelligence share sublime experiences. This thesis considers various levels of embodiment associated with the objects of artificial intelligence and discusses the sublime qualities of both cybernetic and android beings. Finally, this work examines how our perceptions of environment are altered by the introduction of virtual reality and virtual landscapes, which consequently affects our mindscapes and contribute to the technological sublime.

KEYWORDS: Sublime, Artificial Intelligence, Sentience, Embodiment, Technological Landscape

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This thesis is dedicated to Molly Craft-Jenkins, my wife.

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Section One

The Technological Sublime of Unseen Locales

I HAVE before observed, that whatever is qualified to cause terror is a foundation capable of the sublime.

<div align="right">Edmund Burke</div>

I stood like one bewitched. I drank it in, in a speechless rapture. The world was new to me, and I had never seen anything like this at home. But as I have said, a day came when I began to cease from noting the glories and the charms which the moon and the sun and the twilight wrought upon the river's face; another day came when I ceased altogether to note them.

<div align="right">Mark Twain</div>

In his essay "Two Ways of Seeing a River," Mark Twain articulates that he can no longer be mesmerized by the river. He knows every aspect of the water and its embankments, and, therefore, no longer finds it sublime. It is his very ability to communicate how he feels when he views the river later in life that makes his experience no longer sublime. This effect was once sublime, strongly linked to the impression one may have when regarding magnificent vistas or ethereal experiences. Now, however, to his great disappointment, Twain finds the river commonplace and unimpressive. Twain's experience as described in his essay fits perfectly with the classical notion of the term "sublime," associating the term with the sensation one feels when observing the natural world. Many scholars, however, are studying the properties of these sublime experiences in regard to other, non-natural vistas and technologies.

There is currently much work being done to expand the definition for one of many derivatives of the term sublime, called the *technological sublime*, which is still rather incomplete. The term is most commonly associated with behemoth structural feats of engineering. However, this work will seek to create an expanded definition of the technological sublime, one that includes all aspects of the sublime as defined by Edmund

<div align="center">1</div>

Burke. Specifically, this work will investigate how strong artificial intelligence may be a technology that creates a sublime experience. While immeasurable in physical scale, interaction with artificial intelligence results in a sublime ethereal experience despite its lack of tangible aesthetics.

I will examine several key works of science fiction that feature characters and themes related to the various representations of artificial intelligence. These works, and their treatment of artificial intelligence, represent differing attitudes toward artificially-intelligent characters. Yet all of these works contribute ideas of how the representations of artificial intelligence may be agents of the technological sublime. Though science fiction existed long before artificial intelligence became a science fiction trope, this particular referent is applicable to modern as well as future technology. In many of the works of science fiction that I will reference there exists a common anxiety held by both the narrator and human characters toward artificial beings. Asking questions about the aesthetic, authority, and validity of artificial intelligence in science fiction reveals much about our own conceptualizations of it. I contend that the causes for this anxiety make artificial intelligence a viable object for the technological sublime.

From the first introduction of the word "robot" in Capek's 1920's play *R.U.R.,* robots have been depicted as rebellious, exciting audiences with a sense of fear. They were often, even in their earliest incarnations, painted as either sympathetic characters or intentional monsters. Fascination and confusion surrounding robots has continued to grow relevant as artificial intelligence forces us to account for new ways to adapt to created and engineered beings, as "the notion of robot rights is as old as the word 'robot'" (Chu 215).

This examination of the sublime will attempt to faithfully articulate the current notion of the technological sublime and then examine how the technological and cybernetic frontiers resemble and differ from the pastoral scenes from which they evolved. Furthermore, I will explain how artificial intelligence, by means of possible sentience and unknown computational capacity, adds to the notion that created technology can possess sublime attributes. I will demonstrate how characters in several key works of science fiction express their anxiety to interact with artificial beings and how this interaction, allowing for the formation of human relationships with technology, raises questions regarding the nature of human intelligence. I argue that the immortal and seemingly-boundless computational potential of artificial intelligence comprises the sublime characteristics of virtual characters.

Additionally, this work will consider what altering of the definition of the term "sublime" (from the environmental to the technological, and then later to virtual intelligence) will mean in terms of classifying the mental processes of *any* subject as sublime. By considering the thought processes of created beings as sources of socially shared awe and wonder, this work will conclude with an investigation of how such sublime characteristics also exist in our own "natural" intelligence.

First coined by Perry Miller in his 1965 work *The Life of the Mind in America* and broadened in definition by Leo Marx in *The Machine in the Garden*, "technological sublime" is a term introduced to retroactively describe the sublimity of products that resulted from the Industrial Revolution. David Nye, in his 1994 book *American Technological Sublime,* furthered Miller's work by describing technology as having sublime characteristics. Nye's work focuses on the experiences shared by observers of

technological creations who were unacquainted with the process by which they were created. Much like in the example of Twain experiencing the natural sublime, one must be somewhat inexperienced with an object, landscape, or engagement in order to achieve a sublime experience. As shown in Twain's essay, the moment in which we find a referent sublime is temporal. It could be a product of youth, naivety, or simply a first encounter, but the result is always the same: experience and familiarity reduce the vehemence of its sublime qualities. Nye confesses that "familiarity with an object threatens to undermine its potential sublimity" (15).

To begin discussion on the expansion of the technological sublime, we must first consider the properties of historical perspectives of the sublime and examine how, if at all, those same premises can operate within manufactured landscapes and, in terms of the virtual, mindscapes. Beginning with Burke, many scholars have studied the properties of the sublime by considering Romanticism as an era in which the separation of beauty from the sublime generally occurred. Modern scholarship concerning the relationship between the natural and technological sublime is generally conducted by viewing technological advances as sublime opportunities from historical perspectives. Likewise, David Nye's work devotes much time to explaining how Americans have had the rare opportunity to see the sublime qualities of an industrial era spring forth at a rapid rate across an unruly wilderness. Nye's telling of the history of the technological sublime, along with the artifacts to which he attributes the sublime, makes several assumptions based off of previous works by Kant and Burke that are not developed in his own book. Yet Burke welcomes expansions of his definitions, claiming that "he found that he was far from having any thing like an exact theory of our passions, or knowledge of their genuine

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sources; he found that he could not reduce his notions to any fixed or consistent principles" (Burke 8). It is not "wholly unreasonable" to expand this definition to experiences of technological encounters that Burke himself never had the opportunity to observe (8). Likewise, it is not wholly unreasonable to expand the definition of the technological sublime, considering many more modern technologies than simply the intimidating structures discussed by David Nye.

Considering the technological sublime from a historical perspective forces the observer to consider the social position of the individual and society experiencing the sublime. Such a practice leaves us unable to identify with the sublime in the current moment. I will define the sublime using Burke's terms and principles of the natural sublime and examine modern science fiction texts in order to demonstrate how the reactions of characters that interact with technology may be classified as sublime experiences. I will rely heavily on Burke's *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* to show exactly how the term "technological sublime," as well as my contributions to what that term encompasses, works within Burke's conception of the sublime. David Nye continues with Burke's original ideas, suggesting that sublime experiences occur during interactions with creations such as the Golden Gate Bridge as a cornerstone example of what he considers the American technological sublime (xiii). For example, Nye claims that the overwhelming sense of awe and wonder one experiences while studying the Golden Gate Bridge is comparable to, and therefore possesses the same sublime characteristics as a natural artifact such as Mt. St. Helens.

> The history of the sublime from the antiquity shows, if nothing else, that, although it refers to an immutable capacity of human psychology for astonishment, both

the objects that arouse this feeling and their interpretations are socially constructed. The objects and their interpretations vary not only from one epoch to another and from one culture to another but also from one discipline to another, and a large volume would be necessary to provide the history of the sublime from antiquity to the nineteenth century. (Nye 3)

Nye's work focuses on the justification of historical technological objects as agents of the sublime. While such objects depend on their size status as sublime objects, this justification leaves the reader wondering how one may be able to identify *modern* objects that are also capable of creating the sublime. Current cultures are left at a loss as to how to categorize sublime agents that fall under the realm of the technological sublime. In my attempt to add modern and even future referents to the term technological sublime, I will base my definition not only on Nye's theories, but also those of Burke and Kant, proving that the sublime in any form is something that captures the same "moment of intensity" as any natural form of the sublime. The first time Twain drifted along the Mississippi, I argue, resulted in an experience akin to mankind's first contact with sentient robots. The sublime moment is of equal caliber in both instances, but the literature devoted to the natural sublime is exhaustive compared to the minimal work that has been done in expanding notions of the technological sublime.

From Burke to Kant to later thinkers, the natural world plays a smaller and smaller role in definitions of the sublime, and the observer becomes central in defining the emotion as the mind produces its interior state onto the world. Burke insisted on the centrality of the natural scene in evoking the sublime. Kant emphasized that the mind was central in apprehending the sublime. (Nye 8)

I propose, however, that technology, by means of programming, has reached a new level of sublimity. This sublimity is not only generated by the aesthetics of grandiose

structures, but rather from the increasingly-mysterious processes that occur within the intangible, virtual space. Surprisingly little has been written on the sublime qualities of these technologies that inspire collective awe and amazement from those who experience regardless of the technology's lack of visual referents. Less still is written on the sublimity of technology that, while more commonplace in science fiction than in reality, exhibit sublime qualities. The word "object," used by Nye and others, limits the application of the sublime to experiences only correlated with aesthetic visuals. Just as Burke wrote *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* in an attempt to separate the sublime from the beautiful, I urge readers to consider the separation of the sublime from visual referents altogether. Separating the sublime experience from the visual properties of objects that instigate the experience is necessary for the term to be applied to new technologies that feature unseen electrical processes.

Others who have attempted to expand the term of the sublime, though never applying their sentiments to the technological sublime in particular, have been forced to reiterate the sublime's connection to the visual. According to David Wong, who wrote about the sublime process of learning that occurs in the classroom:

> Burke's exhaustive treatment of the subject was inspired, in part, by a desire to expand the realm of aesthetic experiences beyond 'classic' or 'museum' art. Burke's theory of the sublime, especially as it is distinguished from the beautiful, was based on an analysis of the physiological qualities of aesthetic experience. (Wong 70)

Wong argues that psychological sublime can occur when a subject learns new information, realizing, simultaneously, the depth and possibility of information of which the subject is previously unfamiliar, unimpressed, and unaware.

My expansion of the definition of the technological sublime differs from the definition that both Miller and Nye proposed, in much the same way as Wong's, in that it separates the sublime from the physical constraints of the aesthetic experience. It also considers the sublime as a state of mind that can be reached by experiences for which the subject has no previous reference by which to judge the potential of the new technology. In doing so, the sublime must transcend the laws of our categories. I propose that sentient artificial intelligence, especially when represented in science fiction, is unlike other technological achievements due to its ability to act beyond the functions for which it was programmed. Artificial intelligence, therefore, stimulates a sublime experience by resisting expectations and categorizations by those who interact with it. There is no physical height or depth by which one can stand in awe of this technology, but the technology creates a perception of vastness that results in a sublime experience.

I will also consider the technological sublime from historical *as well as future* perspectives. Many science fiction texts seek to recreate history prior to their setting, allowing the reader to attain a better understanding of the social and cultural moment of the narrative's plot to sympathize with characters of a future setting. Arthur C. Clarke's novel *2001: A Space Odyssey* recreates such a history. The novel begins by following the character Moon Watcher, a pre-human ape-man who leads a small group of primates. Upon the arrival of a mysterious obelisk, later referred to simply as a monolith, the primates receive strange mental signals from the alien rock that teaches them to use tools. From this arrival, and throughout the rest of human history, tools allow humans to progress beyond the pastoral beginnings of man. As a result of this encounter, in this

novel, the intelligence of man is represented as an artificial intelligence because it was not derived from himself, but rather from an alien source.

Additionally, a foundational distinction necessary for this thesis must be made between robot and machine and their relationship to artificial intelligence. Artificial intelligence will be defined as something that may be found in artificial entities or networks containing either organic or electrical components, expressing any semblance of thought or computational ability. Machines, however, void of any organic or electrical components, express no virtual or psychological realms in which appearances of thought may be perceived. These distinctions can easily be made between most technologies, as researchers such as Nye have already considered the awe-inspiring grandiose structures that humans can build with physical ingenuity, yet they have failed to consider technologies of intellectual ingenuity, such as artificial intelligence, which cannot be physically conceptualized, but none the less results in a sublime experience for the observer.

Treatment of Fear in Unseen Unknowns

In order to consider the treatment of the technological sublime as an ethereal *experience* that may be caused by virtual spaces or science fictional referents of artificial intelligence, we must first establish that these unseen spaces and referents possess a quality undisputedly essential to the sublime: fear. Burke claims that "whatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime" (Burke 20). Burke continues to state that terror and danger are independent qualities, and that "terror must not have any association with

danger for it to work within the confines of the sublime" (Burke 73). I argue that there is no real danger to our natural reality posed by the notion of virtual spaces. Frank Haronian claims that many times we associate change, or newness, with fear.

The newness of the technological sublime, or at least the ways which can be potentially expanded, lies almost entirely within technological ecology. As will be discussed later in relation to the cybernetic world of William Gibson's *Neuromancer*, there is a strong *sense of awe* created by the vastness of such spaces, but there is as of yet no *direct physical danger* posed by the vastness of such spaces. Furthermore, future advents in fictional, prescriptive narratives pose no immediate danger to our current reality, yet serve to create fearful futuristic visions.

In defining new realms of the technological sublime, we must turn our attention not only to the ecological integration of massive technological feats of engineering within natural surroundings, but also appreciate unrealized technologies and their effect on us. For example, the mechanical processes of technology, which are known, can possibly give way to processes that are (or cause fear of the) unknown and possess sublime qualities. In all of the examples examined in this work (*I, Robot, 2001: A Space Odyssey, Do Androids Dream of Electric Sheep?,* and *Neuromancer*), engineers and other characters are deeply knowledgeable about the processes by which technology (usually computer systems, robots, or androids) is manufactured, yet still experience the sublime when interacting with artificial intelligence. These experiences occur when the technology appears to act outside of predicted norms, showing evidence of intelligence that, to the observer, is both undefined and possibly sentient. By combining existing properties of Nye's technological sublime along with the fearful qualities of future

technological narrative, we can establish that all science fictional references to artificial

intelligence possess some inherent sublimity.

Section Two

Science Fiction Referents of Artificial Intelligence and their Inherent Sublimity

But if the sublime is built on terror, or some passion like it, which has pain for its object, it is previously proper to inquire how any species of delight can be derived from a cause so apparently contrary to it.

Edmund Burke

Insomuch as I have previously discussed the nature of the technological sublime and found legitimacy for broadening its definition, we must also examine why artificial intelligence can be considered a source of a sublime experience due to the subject's initial inability categorize the technology. In this section I will demonstrate how we can form definitions of the sublime based on historical precedent, but also identify the sublime in unseen or unrealized referents, specifically those of artificial intelligence in science fiction.

In her book *Do Metaphors Dream of Literal Sleep?: A Science-Fictional Theory of Representation*, Seo-Young Chu proposes that all referents in literature are, to some degree, referents of science fiction. Her argument contends that all referents in literature are either high-intensity science fiction or low-intensity science fiction, regardless the degree of realism featured in the narrative. For example, referents such as ballpoint pens, which are common and therefore easily conceptualized, are low-intensity science fiction. Sentient artificial intelligence, as we have yet to successfully determine and define its existence in our current technological landscape, would serve as high-intensity science fiction. What we consider traditional works of the science fiction genre, then, are works of literature that heavily utilize high-intensity science fiction as a way of disorienting the reader with unfamiliar referents.

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However, many traditional science fiction referents, especially those of artificial intelligence, are becoming increasingly low-intensity as the referents are beginning to appear as readily-accessible references for the public consciousness. For example, in Clarke's *2001: A Space Odyssey*, "Floyd sometimes wondered if the Newspad, and the fantastic technology behind it, was the last word in man's quest for perfect communications" (Clarke 54). The Newspad that he refers to, one of the many predictions of the technological future that Clarke correctly predicts in the *2001*, is no more than a modern tablet computer. The object that once created a sense of awe is, by modern terms, a commonplace technology.

Chu argues that the framework created by science fiction "yields a strikingly viable paradigm for reconceptionalizing mimesis, science fiction, and the relationship between them," seeking to "conceptualize science fiction as a mimetic discourse whose objects of representation are nonimaginary yet cognitively estranging" (3). However, representations of artificial intelligence of science fiction have also included the more life-like cyborg and android. These representations and their degree of mystery change as digital technologies today become referents of increasingly low intensity, while at the same time yielding artificial beings that are more life-like.

> If the difference between science fiction and realism corresponds to the difference in levels of intensity needed to render their referents available for representation, then the differences among various types of science fiction correspond to the various types of cognitively estranging referents that require high-intensity representation. (Chu 9)

> Burke himself comments on this idea of classifying all referents, stating that:

> Words may be divided into three sorts; the first are such as represent many simple ideas united by nature to form some determinate composition, as man, horse, tree…I call these aggregate words. The second, are that they stand for some one simple idea of such compositions and no more, as red, blue, round…these I call

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simple abstract words. The third…are formed by an union, an arbitrary union of both the others, and of…greater or lesser degrees of complexity, as virtue, honour, persuasion, magistrate, and the like; these I call abstract words. (Burke 94)

These categories are ways to categorize references of artificial intelligence, which show much congruency with the same categorizations based on abstraction mentioned in Chu's theories.

Despite the consistent lowering of its science fictional intensity, sentient artificial intelligence is constantly evasive. Chu claims that "science fiction is portrayed as a genre that operates beyond (or even counter to) mimesis" (2). To behave counter to mimesis, the Newspad alluded to in *2001*, if written about today, would not be noted as a "fantastic technology" due to the modern reader's familiarity with the technology in the form of tablet computers. Therefore, the Newspad, if mentioned at all, would be classified as low-intensity science fiction and mentioned merely in passing by a genre that seeks to "elude representation" altogether (2). This is due to the impression given by the object, which when familiar, is not fantastic at all. The experience of newly-introduced technology is often cognitively estranging. Such technology may include currently-unrealized science fiction referents such as sentient artificial intelligence. While simulated intelligence becomes more commonplace in modern technologies, truly sentient artificial intelligence, which has not been developed, remains high-intensity science fiction, even to modern readers.

Sublime Fears of Artificial Intelligence

There are several ways in which fears are generated by the mysterious referent of artificial intelligence, many of which correlate to what Burkean theory would classify as sublime. In his book *Technophobia!: Science Fiction Visions of Posthuman Technology*,

Daniel Dinello discusses the stark differences between the promises and threats in science fiction. In reference to the promises, he notes that Technologism, what he refers to as "the religion of technology," promises to save humans from mortal oppressions (18). Technologism is often purported by those who believe in the promises of technology and seek, for whatever incentive, to advance its prescience and development in society. However, he devotes much of his work to examining technophobia, or the feared threats of technology, which he claims largely "arose from the 1950s" after the public consciousness began to correlate computers to weaponization in WWII and beyond. While the historical, atomic fears may no longer be fueling the modern passionate fears people associate with technology, such fear is consistently present among characters that interact with artificial intelligence.

I argue that these fears, or the possible "threats" of science fiction, make the references something that ignites the sublime in other characters of the narrative. If the artificial intelligence does not work to fulfill the promises previously outlined, the anxiety that results causes a sublime experience in the non-artificially intelligent character which may threaten humans or not correctly fulfill their promise. By examining textual examples we can see that, during interaction with artificially intelligent technology, the human characters experience fears at these threats that lead them to experience the sublime.

Referents of artificial intelligence found in science fiction are mysterious and, as previously stated, feared. It is the fear that accompanies these cognitively estranging referents, as well as the continual efforts to make the referents a reality, that empowers artificial intelligence to possess sublime qualities. To be cognitively estranging, feared,

and exist beyond our immediate comprehension results in artificial intelligence being

viewable as sublime from a Burkean perspective.

> But then I imagine we shall be much mistaken if we attribute any considerable part of our satisfaction in tragedy to a consideration that tragedy is a deceit, and its representations no realities. The nearer it approaches reality, and the further it removes us from all idea of fiction, the more perfect is its power. But be its power of what kind it will, it never approaches what it represents. (Burke 25)

One of the first science fiction works that contributed largely to the framework in

which objects of artificial intelligence would operate was Isaac Asimov's 1942 collection

of short stories, *I, Robot*. These stories, loosely connected in order to tell a singular

narrative, focus on the fictional company U.S. Robots, which leads the industry in robot

manufacturing. Operating under strict guidelines from the government, U.S. Robots

instigates three "Robot Laws" that establish a boundary for the confinement of robots as

property under human control. The laws are as follows:

> One, a robot may not injure a human being, or, through inaction, allow a human being to come to harm… [Two,] obey the orders given it by human beings except where such orders would conflict with the First Law…and three, a robot must protect its own existence as long as such protection does not conflict with the First or Second Laws. (Asimov 45)

By establishing these laws, the fictional company also set the genre standard for

how robots, and by extension other agents of artificial intelligence, would be expected to

operate in fiction. Countless references have been made to these three laws throughout

subsequent works of science fiction, and the breaking of these laws creates conflict in all

stories that operate within this structure. The created robots of Asimov's stories do in fact

break out of the paradigm established by the three laws. At various times they all fail to

adhere to one or more of the laws. In other instances, the robots operate completely

within the laws but are portrayed as sympathetic characters, bound by the laws humans

created. For example, Asimov refers to robots unbound from these laws as a "Cinderella" story, showing a relationship between his robots' plight and the plight of the socially-outcast innocent (12). In this case, Cinderella represents the underdog, against whom the laws are so great, she (or the robots) is unlikely to succeed. The robots were created to follow the laws yet are unable to break the laws, which results in the laws appearing as oppressive.

In his essay "'The Swelling Act': The Psychoanalytic Geography of Fantasy," Ronald Heckelman proposes that fantastic texts intrigue the reader with both promises and threats in their narratives, claiming that "fantasy always produces promise and threat together" (Slusser and Rabkin 43). There are several generic promises of artificial intelligence that can be applied to almost all representations of artificial intelligence in literature, which I will later outline. This is not to say, however, that the promise of these cognitively estranging referents does not change over the course of time in response to actual technological advances, forcing us to adjust our expectations and accept or refute past promises. The flying car, for example, perhaps the most quintessential consumer product of the future remains to be widely available, if even existent, and continues to seem wholly impractical. This former promise of the future is failing, and this failure has forced us to reimagine our future in terms of technology. For example, Asimov made many strange and unfulfilled predictions of robots that were created independently of other technologies, social structures, or scientific behaviors represented in the text. It seems that these other developments did not stand the test of time while robots advanced systematically. It is as though Asimov's novels assume that sentient artificial intelligence is an expected technological progression, and at an unknown and unpredicted time,

sentient artificial intelligence will simply come about, regardless of other aspects of the technological landscape.

Since Capek's *R.U.R.* robots have been depicted with the ability to rise against their creators. This initial introduction of the term associates the long-held promise that agents of artificial intelligence possess the potential to become sentient, which we have yet to realize in our modern technological landscape. Artificial intelligence took on many more uses than reanimated flesh or mechanical brains; the promise of sentience still surrounds computer systems, robots, and androids that display high levels of processing ability. This assumption underlies many of the earliest representations of artificial intelligence in science fiction. For example, if robots being set free from the laws of Asimov's fictional U.S. Robots make them like Cinderella, the quintessential underdog, who was changed in appearance only, they are in no way like Pinocchio, who was changed in his being. In Pinocchio's quest to be a real boy, he wished to become alive, to be seen as an equal. Asimov's robots are expected to behave with nearly human qualities or personalities. In one instance, the comment, "That robot's a mathematical whiz!" is made about a robot that is capable of doing quick mathematics (Asimov 110). Obviously the robots in his stories were seen as objects that were more human-like than like a calculator, refuting modern notions that robots are nothing more than advanced computers, which are simply calculators programed with algorithms. Strangely, Asimov's human characters are surprised by the math skills. "All that had been done in the mid-twentieth century on "calculating machines" had been upset by Robertson and his positronic brain-path" (Asimov 5).

Promise of Companionship

These sentient robots are also promised to offer companionship. In *I, Robot*'s first

story, "Robbie", a young suburban girl named Gloria Weston has a robot as a best friend.

The robot is an essential asset in the family's daily life, often playing with and caring for

their young daughter, Gloria, when neither parent is available to supervise her. Robbie is

limited in his functions, and as he cannot speak, Gloria is forced to converse with him

using "yes" or "no" questions. Robbie is one of the first useful, general-purpose robots

that can assist humans. This robot, always adhering to Asimov's three laws, is a perfect

playmate and guardian for the young girl. In its innocence, the robot appears to be truly

interested in playing with the child. Mr. Weston is confident in Robbie's abilities and is

thankful that he "has creatures to help him; stronger creatures than himself, more faithful,

more useful, and absolutely devoted to him" (Asimov 7).

However, widespread fear sweeps the Weston's neighborhood, with robots being

seen as "…exhibits of scientific witchery" (Asimov 24). Suddenly Mrs. Weston is no

longer content with allowing her daughter to be babysat by the mute robot. Asimov gives

the robot feelings. Mrs. Weston becomes deeply concerned that "something might go

wrong" (Asimov 15). Mr. Weston counters by stating that "Mind and iron! Human-made!

If necessary, human-destroyed! But you haven't worked with them, so you don't know

them. They're a cleaner, better breed" (Asimov 7). Mrs. Weston is not convinced and

eventually forces her family to return Robbie to the factory.

The loss of Robbie sends Gloria into a state of depression. She is no longer the

little girl that her parents once knew, refusing to show excitement about anything save the

possibility of reacquiring Robbie. "'Why do you cry Gloria? Robbie was only a machine,

just a nasty old machine. He wasn't alive at all'" (Asimov 19). Her parents attempt to convince her that Robbie was not a person, that "a robot is not alive" (Asimov 28). Gloria continues to advocate for the personhood of Robbie, stating, "He was a person just like you and me and he was my friend" (Asimov 19). For Gloria, use of the word "friend" demonstrates that the promise of companionship was completely fulfilled by her robot.

In order for representations of artificial intelligence to successfully offer companionship, they must also offer the promise of wisdom. As wisdom is separate from knowledge, so too must the output of agents of artificial intelligence appear to extend beyond the previously programmed input, or knowledge. Burke claims that "those virtues which cause admiration, and are of the sublime kind, produce terror rather than love. Such as fortitude, justice, wisdom, and the like…" (Burke 58). For example, in one instance of I, Robot, two researchers observe a seemingly-wise robot and exclaim, "'Oh, Jupiter, a robot Descartes!'" (Asimov 60). This encounter leads the researchers to position the "highest type of robot ever developed" as a more anthropomorphic character in their conversations, stating, "'You're the first robot who's ever exhibited curiosity as to his own existence – and I think the first that's really intelligent enough to understand the world'" (Asimov 56). Human characters see the robot as an equal due to external signs of sentient intelligence, leading human characters to interpret its communications as possible sources of wisdom. Similarly, Hal of *2001,* an onboard spaceship computer, or the Nexus 6 of *Do Androids Dream of Electric Sheep?,* an advanced android model, are all considered by the human characters to be models of the most advanced versions of artificial intelligence in existence. These robots, which extend just beyond the cusp of modern technology, are the first examples of artificial intelligence to show signs of

sentience and self-awareness beyond their programming in each of their respective narratives.

Promise of Work

Agents of artificial intelligence also, like most feats of technology, promise labor-saving abilities. The invention of artificial intelligence promises to make natural life easier, providing the user with tools. By establishing logistical rules such as those defined by U.S. Robots in *I, Robot*, it is easy to identify the potential of machines programmed to work without risk of rebellion. Furthermore, regardless of mistreatment, these machines pose no threats to mortal livelihood because "'according to Rule 1 a robot can't see a human come to harm because of his own inaction. [Rules] two and 3 can't stand against it'" (Asimov 52). This happens often in Asimov's stories, with his robots often only being manufactured to relieve humans of physical labor.

In Asimov's story "Reason," researchers Powell and Donovan work aboard a space station that provides energy via microwaves to other space stations and planets. However, a robot known as Cutie, which was built by Powell himself, mysteriously gains sentience. The robot begins to question its own existence and, knowing nothing but the space station, concludes that the gargantuan energy beam that the ship emits is its creator. "'And the question that immediately arose was: Just what is the cause of my existence?'" (Asimov 60). Cutie has exhibited the "highest function of the robot world – the solutions of problems in judgment and ethics" (Asimov 81). Powell and Donovan are unable to convince Cutie that it was created by their own hands. "'Something made you, Cutie,' pointed out Powell. 'You admit yourself that your memory seems to spring full-grown from an absolute blankness'" (Asimov 56). Even though Cutie is aware that it is a created

machine, it views the mortal humans as incapable of creating such a machine. Whereas the minds of the scientists sometimes need rest or can become confused, Cutie informs them that a robot is "continuously conscious" (Asimov 61).

Isaac Asimov wrote the stories included in *I, Robot* in hopes of debunking the fear of artificial intelligence fulfilling the Frankenstein complex. In doing so, Asimov also managed to articulate and perpetuate the very fear he was attempting to refute. Consequently, the stories serve as an anthology of the multifaceted fears that exist concerning the uprising and replacement of humans of which artificially-intelligent beings may be capable.

Section Three

Artificial Embodiment and the Sublime

Not only is technology invading the physical landscape, but advancements and embodiments of artificial intelligence are allowing it to invade the human realm of social interactions. There are many ways to consider the idea of embodiment in science fiction texts, and much work has been done on the representations of the body. However, I propose that when considering artificial intelligence as a sublime referent, there are two categories under which all representations of the body fall: cybernetic (networked) and android (embodied).

The transformation of representations of artificial intelligence from "robot" in *R.U.R.*, to the more industrial network computer, and even the humanoid android represents embodied artificial intelligence in various levels of human likeness. I define android embodiment as any instance in which the artificial intelligence can operate independently of intelligent networks, such as servers or other forms of remote access to undefined quantities of information. Examples of this are found in science fiction texts such as Asimov's stories that urge readers to feel sympathetically towards robots or androids. These stories are more likely to attribute human qualities to the robots, projecting anthropomorphic ideals onto machines. In Asimov's "Robbie," young Gloria encounters the Talking Robot, the most advanced robot in the world, at a version of the World's Fair in New York City. "Gloria stared at it ruefully. It did talk, but the sound came from inside somewhere. There was no face to talk to" (Asimov 25). Due to the lack of embodiment, in this case, a face, Gloria left disappointed and unimpressed. "The

Talking Robot was a tour de force, a thoroughly impractical device, possessing publicity value only" (Asimov 25).

Cybernetic embodiment, such as the embodiment of Hal inside the ship *Discovery*, is really a sort of disembodiment, allowing the intelligence to occupy many places at once and allowing for unlimited potential. There are also many organic examples of this cybernetic embodiment, such as the artificial intelligence featured in Matthew Anderson's *Feed* or William Gibson's *Neuromancer*. The terminology used in these novels generally works opposite of the android embodiment by attributing computer-like qualities to the human mind, resulting in rhetoric which has caused great debate concerning the physiology of the term "intelligence."

In her book *Strange Concepts and the Stories They Make Possible*, Lisa Zunshine uses the term "neural networks" to describe organic mental processes (Zunshine 61). Zunshine describes the "Frankenstein complex" as the trope of created beings turning against their creator. Zunshine references such fears as being present in Shelley's Frankenstein, Asimov's stories, and even the Creation story itself, with Adam being banished from Eden. In particular, Zunshine claims that Asimov plays with the idea that human's greatest fear is that "any artificial man may turn upon his creator" (Zunshine 51). Her book challenges the ease by which we create these theories that explain away why we are enthralled by the fear that our created beings will rise up against us. For example, Zunshine states that her "quarrel with [current] explanations is that they leave out completely the human brain-mind that evolved to deal with natural kinds and artifacts but not with artifacts that look and act like natural kinds" (Zunshine 53). According to her theory, the human brain is fascinated by the introduction of an artificial being, which

invades our environment and, when placed alongside natural beings, results in an inability of the human to comprehend that a created being is also a sentient and independent being.

Nye notes that Mulford Sibley claims that the science of the 17th century had a tendency to "to despiritualize nature, to wipe out the distinction between animate and inanimate" (4). However, the sublime experience it created in the observer is in no way dependent on the classification of the initiator of that experience as either animate or inanimate, or, for our purposes, natural or unnatural. Nye continues by stating that "the experience, when it occurs, has a basic structure. An object, natural or man-made, disrupts ordinary perception and astonishes the senses, forcing the observer to grapple mentally with its intensity and power" (Nye 15). Evidence of this disruption can be found extensively in the reactions of human characters as they have experiences with artificial intelligence in the text, resulting in a sublime experience.

Zunshine's theory states that our "stories of artificially-made creations tease in particularly facetious ways our evolved cognitive adaptations for categorization" (53). Zunshine claims that we have instinctive tendencies to categorize and quantify subjects based on our cultural experiences, assigning meaning to them. We are forced to ask ourselves, then, if it is valid to assign personhood to beings of artificial origin, especially those of artificial intelligence. These beings not only have attributes that appear human and require the observer to constantly attempt to categorize them as artificial in instances in which they appear sentient, but their presence is one for which we have no precedent in our evolved cognitive behaviors.

Speaking specifically of these unfamiliar representations of such artificially intelligent beings in science fiction, Zunshine states that "certain plotlines...could be seen as expressions of our intuitive attempts to resolve the state of cognitive ambiguity that has been forced on us by the challenge of processing the representations of such hybrid creates" (53). For example, the resolutions of Asimov's characters in response to strong artificial intelligence (refutation, dismissal, and eventual oppression) and Clarke's astronauts (denial, acceptance, embrace) are two valid manners in which we can deny or hesitantly accept artificial neighbors after categorizing them. The way in which authors emphasize the artificial creation's functions is, according to Zunshine's theory, a way in which many authors choose to deal with and reconcile the rebellion of any artificial subject that does not perform its assigned function (53). Asimov's stories, which heavily utilize functionalist language and rhetoric, cater to our "evolved cognitive heritage" of focusing on the functions and uses of a machine (76). Zunshine states that the presence of functionalist language and the usage of it in science fiction can help or hinder the reader from getting past the artificiality of the robot (99). We see this not only in Asimov's stories, but also in Hal of *2001,* when it remarks, "'I know you have had that on your mind for some time now, Dave, but that would be a terrible mistake'" (Clarke 151).

Clarke's *2001: A Space Odyssey* traces the entirety of human history in regard to technology, to show not only our propensity to utilize functionalist language when our ability to categorize artificial intelligence becomes difficult, but also to reveal fear of being remade and displaced by the tools that we create. The opening paragraphs of the novel focus on a primitive tribe, led by Moon Watcher, which is visited by a strange, black obelisk, from which stems strange possessions among the primitive humans. The

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tribe was being examined as they were challenged with tasks such as throwing rock to hit

a target or tie complicated knots in blades of grass. "They could never guess that their

minds were being robed, their bodies mapped, their reactions studied, their potentials

evaluated" (Clarke 15). In the case of Moon-Watcher, the prehistoric human "felt

inquisitive tendrils creeping down the unused byways of his brain" (Clarke 19).

The monolith, along with causing strange actions to be performed by those in its

vicinity, introduces technology to the ancestral people. The prehistoric humans were

given metal by the monolith, and for the first time heard "the clank of metal upon stone."

(Clarke 12). Much like the intelligence that came upon them from an alien source, the

tribe was suddenly and mysteriously provided with what would ultimately become the

basis for their most significant technologies. Many of the techniques tried on the tribe by

the monolith failed on weak minds, but in the case of Moon-Watcher, the teaching of the

monolith yielded results. Quickly, Moon-Watcher became cognizant of his ability to lead

the tribe, to utilize metals and bones as tools, and ultimately overtake other tribes and

species. In Clarke's creation story, Moon-Watcher is the forefather of the human race and

from him stems all knowledge of how to utilize these technologies—technologies that

would someday rise to match Moon-Watcher's own destructive intentionality.

However, the tribe soon forgets about the monolith and the intelligence with

which the monolith had provided them. "If they had ever stopped to consider the matter,

they might have boasted that they had brought about their improved status by their own

efforts" (Clarke 24). The tribe, and much later, modern humans, would see the tools and

intelligence they employed as something natural. "Luckily, Nature had provided the

perfect tools" (Clarke 23). According to his narrative, the creation story of the monolith

positions all intellect as stemming from this initial encounter. The tribe of the novel, as it

evolves into more modern humans, loses respect for the intellect. "When we know the

full extent of any danger, when we can accustom our eyes to it, a great deal of the

apprehension vanishes" (Burke 34). The novel, therefore, provides not only an alternative

creation story, but a prescriptive story that describes the potential of technology as it

evolves alongside man's own needs. After Moon Watcher uses the first tools, characters

in the novel demonstrate a parallel development with the advancement of technology. As

new devices are created, they have unforeseen effects on their creators. "The toolmakers

had been remade by their own tools" (Clarke 33).

The remainder of the novel is set in the then future year of 2001. The story

resumes with researcher Dr. Floyd, who is called to visit a space station based on the

moon's surface to examine a new, highly-secret discovery. The discovery, we learn, is

identical to the monolith that originally visited Moon-Watcher's tribe millions of years

prior. As Floyd and other researchers approach the area where the monolith was

discovered, they "were utterly silent as the bus descended into the crater. There was awe,

and there was also incredulity – sheer disbelief…As Floyd walked slowly down the ramp

toward the black rectangle, he felt a sense not only of awe but of helplessness" (Clarke

80). This descent and approach toward the monolith represents the novel's first instance

of a sublime experience. "At last, one of man's oldest questions had been answered; here

was the proof, beyond all shadow of doubt, that his was not the only intelligence that the

universe had to offer…" (Clarke 73). The alien obelisk, which is composed of many of

the aesthetic features that Burke claims are often associated with generating sublime

experiences (sheer walls, geometric perfection, etc.), serves as a representation of an alien

technology that fits Nye's description of the technological sublime. "The laws of earthly aesthetics did not apply here; this world had been shaped and molded by other than terrestrial forces, operating over eons of time unknown…" (Clarke 56). Once the crew uncovers the monolith and sunlight touches its surface, Dr. Floyd and others hear a high-pitch noise over their headset radios. The crew concludes that some sort of signal was emitted, that some sort of beacon was activated by the exposal of the obelisk, and that there must exist another monolith in the far reaches of space.

The novel turns its focus once more to a third and final set of characters: Frank Poole and David Bowman, astronauts aboard the ship *Discovery*. The ship is strangely affected by the signals which radiated from the moon base's discovery of the monolith. The ship is equipped with a networked computer named "Hal (for Heuristically programmed ALgorithmic computer, no less)", which is the most advanced computer in existence (Clarke 95). Hal is credited as being as prominent a member on the ship as its human counterparts, and referred to as "the sixth member of the crew." It is said to have "been trained for this mission as thoroughly as his human colleagues" (96). Hal "was the highly advanced HAL 9000 computer, brain and nervous system…" (Clarke 95). Bowman and Poole are confident that Hal can be counted on as a colleague; the computer's engineering, with which they are very familiar, functions within systems that scientists have created to force it to adhere to Asimov's robot laws. "Whether Hal could actually think was a question which had been settled by the British mathematician Alan Turing back in the 1940s" (Clarke 96). In Clarke's novel, the Turing Test had proven that intelligence could be perceived in the instance of correctly-provided and semantically-

accurate responses. A computer, according to the astronauts in Clarke's novel, could definitely appear intelligent but could not think.

Hal is sometimes even referred to as a companion to the lonely astronauts who seek interaction with another being as they move away from Earth with Hal. Clark states that, "For relaxation [Bowman] could always engage Hal in a large number of semi-mathematical games, including checkers, chess, and polyominoes" (Clarke 103). These games, which are based around mathematical probability and therefore easy for Hal, allow David to pass the time. Of course, Hal always attempts to appear to be human, losing exactly half the games they play.

It is interesting to note that David Bowman never shares in any cultural experiences with Hal, confining his interacting with the artificial intelligence to mathematical activities only. These activities require no cultural context from Hal—he can simply calculate the appropriate moves to guarantee that Bowman wins the correct amount of times. As seen in several instances of Asimov's robots, the acquisition of sentience is often coupled with an interest in human culture that exists beyond mathematical calculations. "It's your fiction that interests me. Your studies of the interplay of human motives and emotions…" (Asimov 106). Sentient robots, it seems, are the ones most interested in the arts, and Hal's function is to be void of cultural aspirations, answering only to the human crew members. This observation leads one to assume that the programmed Hal is not, at least at this point in the novel, sentient, but is continuing to act entirely within his programming.

Once the *Discovery* mission is halfway to its destination, Hal begins to function in ways that appear to Bowman and Poole as malfunctions. These malfunctions follow Dr.

Floyd's discovery of the monolith at the moon base, thousands of miles away. Suddenly, the language that the human crew members use to refer to the networked computer changes dramatically from colloquial terms such as "sixth member of the crew" to "the computer," stating that they "waited to see if there was any comment from Hal, but the computer did not attempt to challenge the implied accusation" (Clarke 136). The crew begins to lose trust in their companion, and suddenly the dismissal of Hal's ability to think is brought back into question.

Just as with Chu's description of science fiction referents and Nye's description of the technological sublime, Zunshine claims that "the concept of the human brain becomes meaningless once you separate it from the culture in which the brain develops" (54). Such a statement suggests that not only is the advancement of technology responsible for our "moments of intensity" when experiencing the technological sublime, but our "evolved cognitive heritage" is equally at work. While Zunshine's work examines a "separation between the cultural and the cognitive" (55), I suggest that this clash between our technological culture and inability to categorize strong science fiction referents is one of the best modern places in which to observe the technological sublime.

According to Zunshine, convincing signs of human emotion and self-awareness from artificial beings initially cause us to categorize these beings as human. "When we hear that a certain entity is capable of a mental state...we assume that we are dealing with a sentient being, quite likely a human being" (Zunshine 57). We read and interpret these signals as being human, further increasing our confusion when attempting to categorize such creations as non-human. Zunshine draws heavily from cognitive theory to perform her literary analysis to explain how humans interpret these readings and how such

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processes, which are evolutionary, are disrupted by seemingly-strong artificial intelligence. Zunshine claims that evolutionary mind-reading ability, referred to as theory of mind, has created a way for us to understand the complex systems of the mind. This enables us to "intuit a complex state of mind" based upon social performances within particular situations (Zunshine 59).

The crew of *Discovery* continues to anthropomorphize Hal, treating it as a colleague aboard the ship. "Hal was their colleague and they did not wish to embarrass him" (Clarke 137). Hal continues to be seen as being separate from the ship *Discovery* itself. Once Hal disconnects communicative ties to Earth, it is no longer a networked computer and, according to my classification, becomes an android. "*Discovery* was no longer a happy ship" (137). Eventually, Hal begins to sense that his human passengers are losing trust in his ability to make decisions. "'Naturally, I'm not pleased that the AE-35 unit has failed, but I hope this restores your confidence in my reliability'" (Clarke 142). Hal's use of the word "naturally" implies that it has some sort of instinctive nature, or that it possesses intentionality beyond its programmed algorithms to care about the well-being of the ship.

Yet it isn't until Hal begins to act independently of Bowman and Poole's instructions that they truly become aware that its simulated neural networks are malfunctioning, or, rather, acting outside of the algorithms which they have provided the computer. "Bowman had executed the order, but he had not acknowledged it, as he invariably did" (Clarke 145). As Bowman realizes that the computer is acting as though it really *is* another crew member, and a crew member with criminal intentionality at that, he turns to the lens and "stare[s] at it as if he had never seen it before; then he [rises] slowly

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to his feet and walk[s] toward the lens" (Clarke 148). It is only now, with Hal appearing to have sentience while acting independently of other computational controls, that Bowman bestows embodiment upon Hal, aligning the computer with the ship Discovery and considering the lens as its eyeball. The passengers cannot comprehend the fact that Hal is acting with its own intentionality- a failure that will eventually result in Poole's murder by Hal. "It was beyond all reason that Hal, who had performed flawlessly for so long, should suddenly turn assassin" (Clarke 149).

The crew begins to employ increasingly-functional rhetoric when they realize that Hal may be conscious. "Even the concealment of truth filled him with a sense of imperfection, of wrongness – of what , in a human being, would have been called guilt" (Clarke 154). The algorithms that constitute Hal's programming have not been programmed for this type of behavior.

Bowman decides to cut off Hal's power supply, "release[ing] the locking bar on the section labeled COGNITIVE FEEDBACK and pull[ing] out the first memory block" (Clarke 162). Bowman concludes that Hal is indeed conscious, but its destructive nature, similar to the destructive nature of Moon-Watcher, makes Bowman unable to allow the sentient computer to exist. The anthropomorphized computer has been his companion and Bowman's disconnection of Hal's consciousness would result in the death of the artificial intelligence. The mere fact that the intelligence can be terminated, however, is dependent on the fact that Hal is embodied. This embodiment occurred when Hal disconnected all communications from earth, transforming itself from a networked computer to, essentially, an android. "This is harder than expected, thought Bowman. I am destroying the only conscious creature in my universe. But it has to be done …" (Clarke 162).

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Bowman pulls the plug, essentially killing Hal. He learns about the monolith following

Hal's death, and similarly has a sublime experience. "At his first glimpse of the

[monolith], with the spacesuited figures clustering around it, Bowman leaned toward the

screen in openmouthed astonishment…" (Clarke 166). Hal was engineered, but the

designers and users were unfamiliar with how it worked, being unable to comprehend the

presence of sentient artificial intelligence. "The same mistake would not be made again;

and the fact that Hal's builders had failed fully to understand the psychology of their own

creation…" (Clarke 173).

> I shall venture to lay down a rule, which may inform us with a good degree of
> certainty when we are to attribute the power of the arts, to imitation, or to any
> pleasure or skill of the imitator merely, and when to sympathy, or some other
> cause in conjunction with it. When the object represented…is such, as we could
> have no desire of seeing in reality; then I may be sure that it's power in poetry or
> painting is owing to the power of imitation, and to no cause operating in the thing
> itself. (Burke 27)

In *2001*, the "object represented," or intelligence in the form of Hal, was not

something that the crew of Discovery had ever wished to see in reality. When the

computer behaved as it was programmed, the astronauts referred to it fondly,

sympathetically, even though it only served as a companion in the manner in which they

determined suitable for their purposes. When their "colleague" began to act on its own

accord with "criminal" intentionality, however, the relationship between man and

machine instantly changed in the moment of fear (Clarke 173). This is the moment in

which the experience becomes sublime for Bowman and Poole. The astronauts can no

longer categorize Hal as a docile computer that simulates companionship, but recognize

that the artificial intelligence has eclipsed its programming and become an intentional and

powerful sentient being. In order for this fear to be considered sublime, it must not be a

fear of mortal danger, but an exciting and fearful realization that such a transformation could occur within their technology. The astronauts are forced to use increasingly-functional language as a means of categorizing Hal as a manufactured neural network. Due to this changed categorization in the character's language and thoughts, Bowman is able to easily resolve to end Hal's consciousness. Attributing self-awareness, consciousness, sentience, or intentionality to a form of technology does not challenge the definition of the technological sublime presented by David Nye; such attributions simply add the idea that interactions with technological creations may yield a sublime experience. While such an experience is not possible during every interaction due to increased familiarity, characters experience the technological sublime when technology appears to consist of vast, impressive expanse of possibility. This results in a possible technological frontier that is beyond comprehension and categorization.

Zunshine suggests that as created beings do not have states of mind, regardless of the fact that our "intuitive ontologies" insist they must, a challenge is created for us (Zunshine 86). When the properties of a given object seem to satisfy the input conditions of the domain of artifacts (we learn that it was 'made'), certain inferences associated with the domain of artifacts (e.g. 'artifacts have functions') are activated and we are thus primed to think about this narrowly defined 'function' of the artifact" (Zunshine 85). However, the textual evolution of these characters is dependent on our own ability to imagine their likeness from the textual referents. This is what "teases" out cognitive ability to rationalize such characters, and therefore makes for a sublime experience.

However, Herbie, one of Asimov's robots, exhibits theory of mind. "We've got a mind-reading robot on our hands and it strikes me as rather important that we find out

just why it reads minds" (Asimov 103). By borrowing these terms from cognitive theory, Zunshine's theory demonstrates that when reading artificially intelligent characters in science fiction, one can not only see the evidence of mental processes of characters, but also attain the ability to read the minds of artificial characters by observing their displayed physical performances during social interactions. In terms of how critical study of these interactions may reveal moments of sublime intensity for characters who are previously unable to cognitively process their interaction with artificial beings, we must consider that "the technological sublime is an integral part of contemporary consciousness, and its emergence and exfoliation into several distinct forms during the past two centuries has inscribed it into public life" (Nye xiii). Zunshine claims that this practice is one that is evolutionary, not historical. Theory of mind facilitates the constant categorization of these subjects and helps to conceptualize them.

If I am to consider Zunshine's argument, I must demonstrate that these ideas are evolutionary, and even though technology has changed and our temporal reactions to ever-changing "modern" technology are changing, the elements of the sublime are ever-present and continually fluid in their evolution. It is not only the *constituents* of the technological sublime aid in the expansion of the sublime experience (from natural to artificial), but equally our inability to resolve the presence of these artificial beings as they enter into social situations for which we have not evolved the ability to comprehend.

This cognitive inability to comprehend the presence of strong artificial intelligence, which, according to analysis via theory of mind, appears to have sentient thought, is present in almost all science fiction works that involve whole-body organic androids. Phillip Dick presents such characters in his 1968 novel *Do Androids*

Dream of Electric Sheep? Dick's androids, referred to as replicants, are biologically indistinguishable from humans aside from bone marrow testing. These organic, corporeal beings create much confusion as they enter society alongside human counterparts. Replicants are virtually indistinguishable from natural humans and ex-cop Richard Dekkard has the unglamorous job of retiring, or killing, replicants who have illegally escaped their human owners. Replicants, specifically the Nexus 6 models, have returned to earth from space stations and are living among humans. Created to serve humans (most of whom are now living on space stations), the replicants are now the target of police who seek to destroy all who are not categorized as human. Dick omits much of the science from his science fiction novel, glossing over details concerning how replicants were created, choosing to focus more heavily on how much one may anthropomorphize such life-like replicants, whether or not they constitute personal rights, and whether or not gender (specifically the use of gendered pronouns) should be given to them.

Dick's novel, as do most novels involving human-like androids, questions the replicants' understanding and interpretation, categorizing their minds either with computer processing or human usage of neural networks. Naturally, when "considering the understanding-non-understanding boundary [it] leads directly to a consideration of the human-non-human boundary…" (Palmer 323). If replicants actually do use neural networks, and therefore experience embodied consciousness, it brings into question as to what can separate these synthetics from actual humans. To resolve this, Dick provides the idea of an empathy box, or a box that assists the user in emphasizing with others. Since the plot argues that humans are the only ones who can experience true empathy, androids consistently fail the test. Richard Deckard explains it as so:

Empathy, evidently, existed only within the human community, whereas intelligence to some degree could be found throughout every phylum and order including the arachnids. For one thing, the empathic faculty probably required an unimpaired group instinct; a solitary organism, such as a spider, would have no use for it; in fact it would tend to abort a spider's ability to survive. It would make him conscious of the desire to live on the part of his prey. Hence all predators, even highly developed mammals such as cats, would starve. (Dick 27)

With the empathy box, Dick provides the novel's human characters with a Turing test that can be used to separate themselves from all others on Earth (and beyond), synthetic and organic alike. The machine gives them the ability, at least prior to the release of the Nexus 6 model replicant, to definitively construct boundaries between their own empathetic selves and the rest of the world. "What happens at these very boundaries and margins we create? In making social order we are not just condemning disorder—we are recognizing that disorder is both dangerous and, at the same time, potent" (Palmer 325). This categorization, when effective, creates a duality that, much like with Bowman and Poole, removes anxiety from human characters in the novel. In *Do Androids Dream*, the delay of characters in the empathy test is similar to the delay that Hal exhibits during his malfunction (Clarke 174). By adopting an anthropocentric boundary, characters believe that non-humans, especially replicants, seek to destroy and supersede their creators:

> He had never thought of it before, had never felt any empathy on his own part toward the androids he killed. Always fie had assumed that throughout his psyche he experienced the android as a clever machine - as in his conscious view…Empathy toward an artificial construct? he asked himself. Something that only pretends to be alive?...These Nexus-6 types . . . they'd roll all over us and mash us flat. (Dick 111)

Even more problems are created by the boundaries when between human and android when the human entertains ideas of socially-constructed "sacred-profane boundary maps" that emphasize "holy-unholy distinction" (Adam 324). Such ideas

plague almost every story of artificial creation, leading characters to feel ashamed to fraternize with the "unholy", which is to suggest that man does not have rights to create a new being, but only to be created. This can be seen clearly when Deckard hesitates to go to bed with replicant Rachel Rosen. The replicant says to him, "Remember, though: don't think about it, just do it. Don't pause and be philosophical, because from a philosophical standpoint it's dreary. For us both" (Dick 152). This line would of course suggest that it has internalized the boundary and is conscious of its "dreary" implications of breaking the "natural law" of their teleological perspectives. The replicants of Dick's novel have no ability to become aware of a consciousness outside of their artificially-induced consciousness, yet can read the minds of human counterparts via theory of mind.

> "Is it a loss?" Rachael repeated. "I don't really know; I have no way to tell. How does it feel to have a child? How does it feel to be born, for that matter? We're not born; we don't grow up; instead of dying from illness or old age we wear out like ants. Ants again; that's what we are. Not you; I mean me. Chitinous reflex-machines who aren't really alive…I'm not alive!" (Dick 151)

This is only one example of how, though Dick's androids are organic, they raise questions of engineered embodiment in *Do Androids Dream of Electric Sheep?* For one, we must infer that bioengineers are capable of creating a functioning neural network of a brain, which, after being activated within a body, can theoretically become conscious. Androids serve as models in which robots (synthetic and non-organic) are able to sustain organic brains in their artificial bodies. That is to say the whole-body android is the only way to create an embodied, organic neural network.

While Rachel Rosen, a Nexus 6 replicant in Dick's novel, experiences consciousness and self-awareness associated with embodiment upon being awakened by its creator, it also endures the unsettling realization that it is, in fact, a replicant. This

second level of awareness, which, due to implanted memories of Dr. Rosen's niece, is practically imperceptible to the android, creates a category of incorporeal experiences for the replicant. It now can identify which memories were implanted and, most importantly, which experiences it should interpret as true.

The embodiment of artificial intelligence, specifically in the form of the android, has introduced a new form of duality. Such technology results in humans not only projecting anthropomorphic properties onto the technologies, but also in seeing their own, natural bodies as something to be technologically upgraded. Characters demonstrate total dependence on technology for the enhancement and, perhaps, possible replacements for their natural body. In *Technophobia!*, Dinello claims that this desire to live immortally has existed since religions were focused on transcending the "meat" of the organic flesh to live eternally. This hope is revived by technologists, who see multiple, identical, and independent copies as a new reality. Much like Asimov's robot Cutie, prominent fears exist in science fiction of artificial intelligence not only seeking to replace the human, but that our organic bodies are inadequate.

This same type of language emerges in William Gibson's *Neuromancer*, where the protagonist Henry Dorset Case remarks on "all the meat…and all its wants" (10). Throughout the novel, Case is constantly annoyed by organic, bodily desires. Characters of the novel feel as though it is socially acceptable to become a piece of technology, to modify their natural bodies beyond its organic limitations and become enhanced with artificial parts. For Case, the body appears to be a prison that limits his abilities, which becomes evident to him after experiencing the boundless technological landscape of the matrix. Even Case's own name reflects the novel's preoccupations with boundaries,

borders, and how limitations of transcendence extend to the human body itself. "Case fell into the prison of his own flesh" (Gibson 6). Such a perspective suggests that freedom only exists out-of-body, forcing characters to constantly seek out ways to overcome mortal limitations.

Molly, Case's unlikely business partner, shares Case's attitude toward the organic body, but has been financially able to take advantage of available body modifications. Molly is introduced to the reader as a highly-modified human, with glass lenses for eyes and the ability to extend metal claws from her fingertips. Upon their first meeting, Case realizes that "the glasses were surgically inset, sealing her sockets" (Gibson 24). Case, however, is financially unable to afford many of the options available that would allow him to supersede the shortcomings of his organic self. This narrative presents a very interesting situation concerning the functionalist rhetoric that, according to Zunshine, is so often applied to robots to communicate their artificiality. Instead, such rhetoric is present in Gibson's novel in reference to the *organic* body, which compares the human body to an upgradable machine. Molly adopts this type of rhetoric herself, saying, "'Cept I do hurt people sometimes, Case. I guess it's just the way I'm wired" (Gibson 25). Such a statement suggests that people are wired a certain way, or programmed to perform a certain behavior in a particular circumstance, regardless of their free will.

This internalized functionalist rhetoric, when applied to digital or mechanic entities, influences characters' apparent inability to act outside of their wiring, regardless of will. This makes them no guiltier of their actions than Asimov's robots who were unable to break the paradigm established by the three robot laws. Not only is this thinking internalized, but it also authorizes humans in the novel to categorize others as being

upgradable entities, categorizing themselves as android. "That profile he's got. I know how you're wired!" (Gibson 28).

Examples of Asimov's functionalist language, when compared to discussions of the mind in *Neuromancer*, present some excellent parallels. In one story, Asimov's robots have the ability to "tune in on thought waves," which implies that artificial thoughts work in radiating signals that can exist beyond organic functions and be captured or expelled with modifications (Asimov 103). In Gibson's work, all of the characters possess a subcutaneous chip that gives their alleged "thought waves" the ability to transcend into the virtual landscapes and interact with beings of artificial intelligence as well as other human characters that are connected to the Simstim (Gibson 14). Gibson states that "the cyberspace matrix was actually a drastic simplification of the human sensorium, at least in terms of presentation, but Simstim itself struck him as a gratuitous multiplication of flesh input" (51). This "flesh input", which transfers thoughts from natural bodies to a technological environment, further provides characters with the potential to break down mortal barriers and escape their bodily prison.

However, while the future represented in Gibson's novel is not necessarily a dystopian novel, the unquenchable thirst for disembodiment and the constant discontent with organic limitations is represented as an undesirable dependence. "Despite the flesh-trashing in Gibson's work, permanent disembodiment often comes off as unpleasant" (Dinello 160). For example, Case develops a dependence on drugs after he was banned from connecting to Simstim due to his illegal activity on the system. His body begins to shut down from constant dependence on the drug use and specialists tell him that he'll "need a new pancreas inside a year" (Gibson 27), yet, in the world of the Sprawl, such an

organ failure is easily remedied. Dinello refers to this as the "transhuman", or the technologically modified, body.

Case is obsessed with cybernetic transcendence as a form of escapism from his earthly body. Accessing the virtual world of cyberspace disconnects Case' consciousness from his failing organic body and offers him an experience of existence free from mortal boundaries. "The transition into cyberspace, when she hit the switch, was instantaneous" (Gibson 52). He is not only able to experience his own disembodiment, but also experience embodiment of other people. Molly, his partner, lets Case enter "her sensorium, into the sinuous flow of muscle, senses sharp and bright. He found himself wondering about the mind he shared sensations with" (Gibson 52). Case seeks the sublime experience, one that he continues to chase even though, at the beginning of the novel, he knows that he may never experience it again. Case can barely handle this knowledge, and when he thinks of it, "fear [begins] to knot between his shoulders. A cold trickle of sweat work[s] its way down across his ribs…" (Gibson 36). Case exhibits a fear of not being able to become cybernetic, remaining forever unable to capture the moment of intensity he gains from the ethereal experience of the cybernetic. Case's obsession with this virtual space is evidence for the power of the mindscape.

Section Four

Artificial Intelligence as Sublime in New Technological Landscapes

As we strive to achieve or work to prevent the realization of these prescriptive narratives of artificial intelligence, the referents themselves begin to acquire sublime qualities of their own. In this section I will demonstrate how new mindscapes and conceptualizations of virtual worlds are valid spaces to be considered sublime. Even though they have yet to be realized, these artificial spaces evoke consistently-sublime reactions from all fictional characters who experience them. I also claim that the "moment of intensity" mentioned by Nye may be even more difficult to identify in representations of the natural sublime than in representations of the often-dystopic futures threatened by science fiction (2).

In order to think of these virtual spaces as places in which the sublime can indeed occur, we must consider the fact that, today more than ever, technology has infiltrated and challenged the natural world on a global scale. When Nye claimed that the feats of engineered edifices are comparable in sublime quality to the mountains, plateaus, and other stunning vistas of the natural world, he was essentially commenting on the dualism between technology and the environment. The introduction of virtual spaces, and the ways we conceptualize them, is a new sort of previously uncategorized space. Whereas Nye commented on electricity as being an essential part of the technological sublime, dedicating an entire chapter of his book to it, he failed to mention the extensive impacts of electrical technologies. Nye commented on the brilliance of electrical lights as they shone through the night sky under the stars;however, I urge us to consider seemingly-sentient electrical beings as they enter our social lives. Many intangible electrical

technologies other than the brilliance of electrical lights can contribute to a sublime experience. The dualism focused on in this section, then, is not between the natural and unnatural vista, but rather the natural and unnatural participant in society whose presence, when appearing sentient, evokes a "moment of intensity".

New virtual spaces are changing how we think of physical spaces altogether. As the natural world continues to be conquered and demystified by the technological feats discussed by Nye, and as the features of those structures become more familiar to the public consciousness, we must turn our attention to the manner in which our mindscapes are affected by virtual landscapes and, continuing further, how those virtual landscapes are affecting our perceptions of the new technological sublime.

In *Mindscapes: The Geographies of Imagined Worlds*, George Slusser and Eric Rabkin bring together essays that remark on the idea of mindscapes, or idealized geographies, and explore how those mindscapes work within imaginary fiction. Slusser and Rabkin claim that mindscape "is illusion, for the productions of the theater ("seeing place") of the mind, its visual or theoretical landscapes, are ultimately phantasms" (Slusser and Rabkin ix). These imagined paradigms, or frameworks, are the environments in which all referents must exist if they are to be easily categorized. If referents refute the laws of such paradigms, they tend to evade representation.

Slusser and Rabkin are very clear in stating that actual, physical spaces and our memories of previous experiences with physical spaces differ dramatically from memories and experiences with imagined landscapes, stating that "If everything is mindscape then, the concept becomes useless as a means of analysis" (ix). The concept, then, opens the door to the critique of representations of fictional spaces, such as those

that exist in science fiction. In response to this, several of the contributing authors question how valid it is to analyze these mindscapes, especially in the world of science fiction, in order to accurately examine geographies of the mind. They argue that "the concept of mindscape, by leading inquiry away from genre issues, frees it to move in areas more essential to fantasy and science fiction and to contemporary fiction and art in general" (Slusser and Rabkin x). Examining how minds conceptualize the fantastic environments and virtual worlds of science fiction reveals just how these concepts transcend all art forms. This transcendence makes them widely applicable and lessening the amount of strong science fiction associated with these concepts.

As this text deals with the "geographies of the mind," which are represented when any virtual world enters our consciousness as a possible space, it contributes to our discussion of the dualism that continually occurs between the natural and artificial referents in science fiction. Slusser and Rabkin claim that "these various issues all address, ultimately, a single fundamental problem: the two realities that derive, in Western culture, from the constant between mind and something external to the mind" (x). As they discuss the "speculative power" of the mind and transforming it into a space in which "the whole man can act" (Slusser and Rabkin x), we can easily make a connection to how virtual mindscapes such as those represented in Gibson's *Neuromancer* allow for interaction with virtual beings. These geographies inhibit a very real area of our consciousness that has been heavily influenced by the fictional landscapes of science fiction. Slusser and Rabkin also argue that this need to map mindscapes is a constant theme in Western science fiction, generating three premises for what constitutes a mindscape:

In "Nature: Laws and Surprises," Paul Anderson states that "a farmer on arable land and a nomad in the desert not only live differently, they think different" (Slusser and Rabkin 4). Anderson argues that those who live in a particular landscape are deeply affected by their surroundings. There is likewise a strange connection between the mindscapes of Gibson's characters and the ways in which they are affected by the matrix. Nye cites that Kant linked the sublime to quantity, and that he did not think that they were exclusive (Nye 6). This is definitely so in *Neuromancer*, where characters believe deeply in infinite landscapes and immortal bodies. Anderson's argument claims that we can exist outside the laws taken by the artistic license of science fiction authors, that we have a desire to be swept up into these worlds. Science fiction enables the reader to desire and experience a transportation of setting. Science fiction itself is a way to transport "the whole man" by filling in these gaps (Slusser and Rabkin 7).

In the case of *Neuromancer*, William Gibson introduces the fictional space of cyberspace that exists within unseen locales of digital networks. It is an area in which artificial intelligence can interact with humans. Gibson's *Neuromancer* is significant in the fact that it introduces the concept of Cyberpunk and cyberspace to science fiction, which relies heavily on the idea of transportation via mindscapes to escape reality. Essentially, Cyberpunk works adopt themes of escaping one's current reality and relying on technology to avoid a dystopian future. *Neuromancer* is set in the near future where technology and the presence of virtual spaces has completely confounded the characters mindscapes of present reality.

> Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts… A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. (Gibson 48)

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This "unthinkable complexity" is where the digital world transforms into a shared sublime experience among all users. Cyberspace, it seems, provides a way in which to view the digital world as well as a way to participate in shared social experiences (as in the instance of Case and Molly's shared sensorium) like never before. The infrastructure of cyberspace therefore functions as a new technological mathematical sublime, much like the physical mathematical sublime that Nye attributes to skyscrapers. "The skyscraper defined the new variant of the mathematical sublime...As in the natural sublime, there was an element of terror in looking at the city from a high place, gazing down a sheer wall. In addition, there was a sudden shift in viewpoint and scale" (Nye 106). The "shift in viewpoint and scale" applied to seeing the city from a high point and down a sheer wall can be applied to Case's perception of cyberspace. Case attributes a vastness and scale to cyberspace which could never apply to the physical world. The new "realities" it provides, as well as its seemingly-endless ability to provide new realities, is incomprehensible. In *American Technological Sublime*, Nye discusses electricity in terms of illuminations on large scales, such as great numbers of bulbs or firework shows, stating, "The electrified urban landscape emerged as another avatar of the sublime" (Nye 143, 145). However, these mentions of electrical technologies focus on the aesthetic properties of electricity, not mentioning the other unseen properties of electricity in technology that may generate a sublime experience for the observer. Yet just as bulbs took the technological sublime "in a new direction, displacing attention from particular machines or man-made structures to a set of visual effects" (Nye 145) artificial intelligence also redirects our attention, displacing visual effects in favor of virtual vistas. Though cybernetic environments such as the modern Internet are considered a singular

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service and locale, it is composed of an unknown number of individual components and is the result of a combined effort by many different contributors, resulting in a vast network that could not have been conceptualized, let alone created, by a single individual. "When any work seems to have required immense force and labor to effect it, the idea is grand" (Burke 42).

> But man, who is a creature adapted to a greater variety and intricacy of relation, connects with the general passion, the idea of some *social* qualities, which direct and heighten the appetite which he has in common with all other animals; and as he is not designed like them to live at large, it is fit that he should have something to create a preference, and fix his choice; and this in general should be some sensible quality; as no other can so quickly, so powerfully; or so fully produce its effect. (Burke 22)

At the beginning of *Neuromancer*, Case is penniless and destitute after being banned from cyberspace for two years for illegally transporting goods by the Turing Registry. The knowledge that Case was busted while trying "…to move [the goods] through a fence" sets the tone for the rest of the novel's preoccupation with borders and boundaries (Gibson 6). Dinello cites cyberspace as an area for government and Everyman to cross paths and be interwoven across a large network. The reader is constantly feeling out boundaries and "the mind is bounded by the bounds of the object; and what is not attended to, and what does not exist, are much the same in the effect" (Burke 77).

Gibson's repeated use of the word "coffin" in place of bodies, homes, and cities communicates a sense of close boundaries and hopelessness for the characters. When describing Cheap Hotel, Gibson says that "Case rented a coffin here…" (Gibson 19). The idea of "rented coffin" implies a sense of temporality held by Case. The term "rented" highlights Case's transience. Even a coffin is not a long term investment to Case as he seeks to transcend the boundaries placed upon him. Throughout the work, Gibson

continually makes the reader feel constrained by references to boundaries, but he makes

said boundaries commonplace and nameless. There is no extra space for any of the

characters of the overpopulated environment, and Case is often "curled in his capsule in

some coffin hotel" (Gibson 5). Gibson's novel expresses a prescriptive, cautionary tale

that suggests our increasingly-cyber lifestyles may result in dependence similar to cyber-

enslavement which, according to Dinello, is a common fear instigated by technology.

"Like a virus, technology invades, transforms, and controls the environment of our

species; humanity becomes a prisoner to something inhuman" (Dinello 161).

As Case observes Night City, he notes that "images formed and reformed," and

that "his feeling that he was inside a movie set was almost literally true" (Gibson 30,

218). For Case, his reality has been altered too, like flipping through television channels

and seeing different scenes. There is no home base for the setting (earth/space,

reality/virtual reality), leaving the reader to be constantly decentralized and always

attempting to examine the framework in which he or she is thrown. Light and electricity

"dissolved the distinction between natural and artificial sites" (Nye 152). For Case, there

is no more natural light, creating a "synthetic environment infused with mystery" (152).

The synthetic environment opens a whole new capacity for the sublime when the human

creator is removed entirely, as in Night City in *Neuromancer*. "Night City wasn't there

for its inhabitants, but as a deliberately unsupervised playground for technology itself"

(Gibson 11). Inspired by the urban anger, social hostility, an artistic rebellion of the

1970s punk subculture, Cyberpunk fiction was frequently set in the decayed, near-future

militarized dystopias controlled by mega-corporations and machines. Cyberpunk

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expressed techno-anxiety and a nihilistic vision of the future despite its fascination with cyborg technologies (Dinello 159).

Case experiences extreme difficulty distinguishing between the scenes of reality and artificiality. The artificial environment, which mimics and tries to create a sense of place, becomes blurred with his physical surroundings, much to Case's enjoyment. "Now, sensing that its walls were starting to crumble, he felt the edge of a strange euphoria" (Gibson 11). Data can also become flesh in the world of the SimStim, which combines the naturally and artificially intelligent beings in a virtual space, eliminating barriers between the two worlds of the virtual and the real. In this way, flesh input and output has resulted in the combination of landscapes and mindscapes allowing imagined geographies to become actual spaces via disembodiment where sublime encounters with artificial beings can occur. There is not only a duality of nature and manmade, or tree and dam, but now there are two competing forces in the technological landscape. We see that there is a strong encroachment on the natural world not only in terms of infrastructure, but also in our perceptions, mindscapes, and evolved social interactions. Dinello states that "Cyberpunk writers and Gibson, in particular, often paint the spread of power as a malevolent, uncontrollable virus that defeats any attempt at control" (159).

In Gibson's pioneer Cyberpunk novel, this "virus" is known as Wintermute, a form of artificial intelligence that has access to almost everything on SimStim. Wintermute communicates to Case throughout most of the novel, leading Case to complete tasks for its own goals. Case is familiar with the artificial intelligence, no longer experiencing sublime moments when Wintermute appears totally omniscient. However, upon their first meeting, Case is unable to distinguish reality from the virtual reality that

Wintermute creates. This happens again when Neuromancer, the title character and powerful artificial intelligence, creates a beach environment for both Case and Linda Lee, his former, yet deceased, lover. In these virtual worlds, Wintermute and Neuromancer seem capable of providing *any* experience to Case as long as he furthers their goals of one day uniting into a large, united and networked artificial intelligence.

It is this vastness of cyberspace's depth and possibility, as well as "greatness of dimension," that serve as "a powerful cause of the sublime" (Burke 38). While cyberspace has no actual aesthetic of its own, the mindscape of such a location, harmless as it may be, represents an area in which the sublime is possible. There must be a connection established between virtual and real, no matter how faint, and when that connection makes it difficult to categorize either reality, a cognitive dissonance, and therefore sublime experience, is created.

Section Five

Conclusion

Much like the Mississippi River in Mark Twain's "Two Ways of Seeing a River" which was once a source of the natural sublime, some technologies that were formerly sublime have, as of late, lost their sublimity. The sense of awe that they once caused, the moment of intensity which they once evoked, are no longer present in older, commonplace technologies. As David Nye wrote about the technological sublime, his historical record chronicled previous technologies that couldn't possibly capture a comparable amount of subliminal qualities today. For example, Nye notes that electricity and artificial light is an illustration of technological sublime (142). However today, electricity is simply mundane and artificial light sources are abundant. These technological advancements, once looked upon with wonder as sublime, are now ordinary. We take as little notice of them as Mark Twain took of the natural beauties of the river later in his life. As technology advances, particular aesthetic features are not required in order for newer technologies to evoke a sublime experience. In fact, because the world in which we live boasts so many aesthetically vast technological achievements, one is less likely to have a sublime experience with the aesthetic, than with virtual advancements which are not as easily conceptualized due to their *lack* of aesthetic.

In this work I have examined four contributions to the genre of science fiction that feature various representations of artificial intelligence. By looking at Asimov's *I, Robot*, I have identified the necessity of paradigms for robots, focusing heavily on Asimov's three robot laws, examining how the laws must be broken (showing evidence of a sentient robot) in order to evoke fear that could constitute a sublime moment. In Arthur

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C. Clark's *2001: A Space Odyssey,* Hal's transition from a networked computer to an independent, tangible and defined architecture demonstrated the necessity of embodiment for conscious artificial intelligences. Phillip Dick's *Do Androids Dream of Electric Sheep?* examines how fear of organic androids, which often present no immediate or likely danger to humans, evokes a fear in humans strong enough to make them instigate an extermination of the referents. The moral questions of such a scenario, and the categorization which the Nexus 6 androids severely destruct, showed how fearful humans are concerning indistinguishable beings of artificial intelligence. William Gibson's *Neuromancer* explored the vastness of cyberspace and demonstrated the addictive power of mindscapes which, in some narratives, represent the new technological landscapes.

In all of these works we see that sentient artificial intelligence, due to resisting categorization, is consequently unlawful. The transcendence of boundaries by entities of artificial intelligence is seen as an illegal act. This coincides with the fact that the sublime transcends our categories. In *Neuromancer*, for example, not only is Case outlawed from the matrix by Turing police, but Wintermute is similarly barred from transcending his assigned digital realm. The novel views both organic and digital characters as prosecutable under law if they blur the boundaries that loosely exist between their respective environments. In Dick's novel, Dekkard is literally an agent of law enforcement that penalizes androids for nothing but walking inconspicuously among humans. Continuing the theme, Hal is only disconnected and terminated by Bowman because the computer was disregarding the chain of command or, for our purposes, breaking the law. Such examinations reveal how future technologies may present sublime experiences once we encounter them, as well as what fears may underlie such a sublime.

We also gain the ability to examine modern technologies, recognizing that artificial intelligence, being modern real-life high intensity science fiction, is the technological sublime.

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