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**SYSTEMS AND THE SUBLIME:
SCIENCE FICTION, TECHNOLOGY, AND SUBJECTIVITY**

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TABLE OF CONTENTS

Table of Contents.....	iii
Abstract.....	iv
Acknowledgements.....	vi
INTRODUCTION:	
Systems and the Sublime.....	1
CHAPTER ONE:	
Echo-Systems I: The Inscrutable Other.....	38
CHAPTER TWO:	
Echo-Systems II: Making-with Catastrophe.....	80
CHAPTER THREE:	
Magical Thinking: Contingency, Wish fulfillment, and <i>L'objet petit a</i>	136
CHAPTER FOUR:	
Cyberscions: The Cybernetic Sublime.....	182
CHAPTER FIVE:	
A Question of Consciousness.....	253
CONCLUSION:	289
BIBLIOGRAPHY.....	296

ABSTRACT:

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This dissertation examines representations of the sublime in late 20th century science fiction, a period of particularly fertile exploration of humanity's relationship with both external environments and interior, psychic landscapes. The science fiction examined here, produced during the New Wave and cyberpunk movements, brought to bear an increased scrutiny of the social, psychological, political, and ecological tensions emerging in Late Capitalist culture. This dissertation posits that the sublime arises at the intersection of t systems of nature, technology, and human subjectivities. I argue that the sublime, a theory with a long Western philosophical history which focuses on the excessiveness that transcends human limits of knowledge and experience, becomes a pertinent concept for thinking through human and posthuman subjectivity and agency. While the sublime is often fraught with a Euro-masculine chauvinist ethos, this dissertation attempts to recuperate an understanding of the sublime that privileges emergent properties and subjectivities that do not resolve so simply into the hierarchical power structures associated with capitalist and imperialist projects but instead fan out into new potentials for being-in and making-with our environments.

I draw from two disparate theoretical frameworks-- the sublime and systems theory--to cast new light on conventional notions of transcendence. The sublime, I

argue, remains a pertinent literary trope exactly because it celebrates human autonomy in conjunction with nature. However, this dissertation acknowledges that the category of nature would seem diminished in light of technological proliferation. In fact, as elaborated in this study, humanity's relation to nature has always been technological. I forward systems-thinking, then, as an apt methodological framework for literary analysis, particularly for reading contemporary science fiction, precisely because it draws critical attention to the interplay of systems which obscure human agency and social relations. My research articulates the social systems thinking of Niklas Luhmann with second-order cybernetics and the philosophy of technology to reveal how science fiction can, in the words of Jean-Francois Lyotard, "present the unrepresentable."

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INTRODUCTION: Systems and the Sublime

Systems and the Sublime endeavors to unfurl the multiple nodes of connection between individual persons and the larger constellations of technologies, environments, and social systems in which they find themselves imbricated. These are systems, I will establish, in which the subject often finds itself overwhelmed and out of touch with commensurate experience: what is often referred to as sublime. The sublime points to that which is excessive, transcendent, and emergent about human and more-than-human experience, and it can offer new liberatory potential for individual subjects. I argue that the encounter with the sublime as represented in speculative fiction functions as sites of subject-becoming for its characters, who by extension act as stand-ins for us. The sublime foments feelings of intense emotion and excessive experience in the perceiving subject, who, in sensing the sublime can feel within himself an elevated power of the self. I explore what these encounters of excessive incommensurability illustrate about our experience of being in the world, and how speculative fiction in particular attempts to present that which is “unpresentable”.

This study begins with the assertion that a contemporary instance of the sublime arises at the intersection of systems of nature, technology, and human subjectivities. The concept of the sublime has a long Western philosophical history that has traditionally focused on excessiveness that transcends the human limits of knowledge and experience. Over time and through myriad instantiations, the sublime has attained a unique conceptual status for thinking through human and posthuman

subjectivity and agency. The sublime remains a pertinent literary trope exactly because it celebrates human autonomy in conjunction with nature. However, we must also acknowledge the ways in which both systems theory and the sublime have been historically mobilized to promote imperialist, capitalist, and occasionally, fascist ideologies. For instance, the aesthetic of the sublime had been, since Kant, exclusively linked to the ascension of the white male experiencing subject—an experience in which man’s reason is mobilized to hold dominion over nature and its lesser beings. In a similar vein, the founder of General Systems Theory, Ludwig von Bertalanffy, a noted Nazi party member, found an easy conceptual link between the Nazi *Führerprinzip* and his “organismic” principle, a machine-like view of the organism as an open system.¹²

I attempt to recuperate an understanding of the sublime that privileges emergent properties and subjectivities that do not resolve so simply into the hierarchical power structures associated with capitalist and imperialist projects, but instead fan out into new potentials for being-in and making-with our environments. What many previous instantiations of the sublime lack, I argue, are the conceptual nuances made available through systems-thinking. Concepts explored here like complexity, contingency, and emergence offer a clearer vision of what the sublime is and can be in the scope of speculative fiction. Adding systems-thinking to the already crowded philosophical field of the sublime has the counterintuitive effect of

¹ Manfred Drack, et al. “On the making of a system theory of life: Paul A Weiss and Ludwig von Bertalanffy's conceptual connection.” *The Quarterly Review of Biology* vol. 82,4 (2007): 349-73. doi:10.1086/522810

² Ludwig von Bertalanffy, *General Systems Theory: Foundations, Development, Applications*, (New York: George Braziller, Inc, 1969),153.

fundamentally reshaping our understanding of the sublime; and conversely, my approach to systems theory is augmented by a humanistic appreciation of sublime experience.

Following a lineage of thought that moves from Martin Hiedegger through the work of Gilbert Simondon and later Don Ihde, this dissertation shares the premise that humanity's relation to nature is technological; a premise which understands the human being as co-constitutive of biological, environmental, and technological materials. As a result, I advance systems-thinking as an apt methodological framework for literary analysis, particularly for reading contemporary speculative fiction, precisely because it draws critical attention to the interplay of systems which tend to obscure from the subject the vast networks of power in which they are imbricated.

It is in the presence of technological objects and systems which are absolute in their totality and complexity that the perceiving subject strains toward comprehension. This dissertation will illustrate how the sublime, as both an aesthetic and metaphysical theory, shares affinity with systems-thinking in that they both offer approaches to what Jean-Francois Lyotard called "presenting the unrepresentable," or in other words, conceptualizing (thinking-through) that which extends beyond the boundaries of the human.³ I employ these two theoretical approaches as lenses that intersect at the level of lived experience. The sublime refers to the realization of a limit or a "pointing toward some limit beyond itself;" for instance, the self's

³ Jean-Francois Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi, (Minneapolis: University of Minnesota Press, 1984), 81.

relationship to a limit (such as knowledge) and its failure to achieve a recognition beyond that limit.⁴ The encounter with the sublime helps us understand our own experience of our environment, especially when faced with experiences that are beyond our capacity to comprehend them. Systems theory can help further elucidate the relationship between objects (like the subject) and their environment, as well as reveal the ways in which the ostensible boundedness of objects and environments are both fluid and contingent.

Systems theory, or systems-thinking, is an analytical framework that helps us describe the workings of our environment in a more holistic way, without the tendency of totalizing or universalizing it. Systems-thinking considers complexity in terms of how parts and wholes interact from a frame of reference that is non-hierarchical, networked and distributed. The intent of employing systems theory to read literature is not to reduce the sublime into scientifically describable terms—what David Chalmers calls *reportability*⁵—but to better reveal the myriad complexities at play in the experience of the sublime. Chalmers uses reportability to refer to the tendency in the technosciences to seek one-to-one explanations between experiential phenomena (like consciousness, for instance) and the physical operations known to science. The sublime, however, points to those very phenomena that resist easy

⁴ Tsang Lap-Chuen, *The Sublime: Groundwork Toward a Theory*, (Rochester, NY: University of Rochester Press, 1998), x.

⁵ David Chalmers, “Facing Up to the Problem of Consciousness,” *The Character of Consciousness*, (New York; Oxford: The University of Oxford Press, 2010), 4. Chalmers explores the “hard problem” of consciousness by discussing the discrepancy between the physically reportable phenomena of cognition (how the eye perceives color, for instance) and the black box of how we *experience* consciousness. The former, “easy problems” of consciousness boil down to a matter of reportability of cognitive function, but do little to explain what and how we experience.

explication. So systems theory and cybernetics, with their focus on the mechanics of whole systems and their complexity-inducing feedback processes can help model such phenomena without reducing the unrepresentable to the representable. While *Systems and the Sublime* holds that the sublime indeed remains an aesthetic, phenomenological, and ontological experience, a systems-thinking framework questions the conventional notion of a bounded liberal humanist subject. Systems-thinking attempts to escape an anthropocentric worldview that tends to reduce subject-object relations to antagonistic and hierarchical relationships. The primary conceptual shift is from transcendence to emergence. Emergence provides a new space for thinking through transformative properties of psychic and social systems.

Because the concept of the sublime has been a consistently discussed topic in Western philosophical discourse from the ancient Greeks to the present, the body of sublime discourse is too vast for the scope of this dissertation. The aim of this study, then, is not to offer a substantive analysis of the history of the sublime, nor to discern once and for all whether it is a discourse, a religious experience, an aesthetic theory, or phenomenology. Rather, my approach will be to locate pertinent aspects of the sublime that arise in contemporary science fiction and link them with systems theory. Science fiction, as a genre, is particularly well suited to the study of the sublime because it deals in imagined worlds, creations, and scenarios that move beyond our contemporary reality and present what could be. The *novum*,⁶ or new thing, postulated

⁶ Darko Suvin, *Metamorphosis of Science Fiction: on the poetics and history of a literary genre*, (New Haven: Yale University Press, 1979), 15.

by science fiction narratives is often a device or scenario that compels humanity to transcend their knowledge of and experience of the status quo world. Meanwhile, systems theory, as I will show, is particularly well suited as a theoretical framework for science fiction studies because its general principles seek to illustrate the interconnectedness of systems—organic and inorganic: human and machine. This dissertation overlays systems thinking onto a critical engagement with the sublime to reveal how new modes of transcendence may be rethought and redeployed.

In the following section, I lay out a genealogy of the sublime from Longinus to the present to serve as a conceptual ground for the rest of the work. This overview is by no means comprehensive but is meant to summarize key aspects of the sublime both as they are received in sublime studies and as they pertain to my analyses here. In particular, this dissertation acknowledges the significant imprint of Immanuel Kant on theories of the sublime from the 18th century to the present. It was chiefly Kant who brought the sublime from an aesthetic and literary concept to a metaphysical one by asserting that it is through the sublime experience that a human subject gains a transcendent feeling of liberation from the bounds of the “vulgar commonplace.”⁷ For Kant, this meant a moral elevation of the subject over society and nature, a stance that has been called into question by many subsequent critics. And so too here, my application of systems theory will further question if and how a Kantian brand of transcendence is possible.

⁷ Immanuel Kant. *Critique of Judgment*. trans by Werner S. Pluhar, (Indianapolis and Cambridge: Hackett Publishing Company, 1987), 128.

A Genealogy of the Sublime

The beginning of philosophical discourse on the sublime is attributed to the Roman-era manuscript *Peri Hypsous* (“On the Sublime”) by an unknown author, commonly referred to as Longinus. Robert Doran informs us that the title is derived from the Latin, *hypsos*, most often translated as “sublime” or “sublimity,” but more literally “‘height,’ ‘elevation,’ or ‘loftiness.’”⁸ *Peri Hypsous* is a treatise of literary criticism akin to Aristotle’s *Poetics*. The bulk of the work is devoted to an exploration of the rhetorical features of discourse which make it particularly compelling and persuasive to the audience. The sublime encompasses a set of psychological effects experienced by an audience that elevates their sense of being. Thus, lofty speech or “elevated thought” are evoked in sublime discourse.⁹ Longinus outlines five main attributes of sublimity, the first two of which pertain to effects and the other three pertaining to rhetorical production. Sublimity comprises 1) the ability to “conceive great thoughts;” 2) bolstered by a strong and inspired emotion; 3) using figurative language; 4) noble diction; and 5) a “dignified and elevated word arrangement.”¹⁰ The art of discourse, in other words, arises first and foremost from the “great thoughts” of the speaker—who already possesses an innate genius, Longinus would seem to suggest—and whose adept use and arrangement of language produces the dazzling effects of the sublime. Sublimity, then, is simultaneously an attribute of a great mind but also an inherent capacity of language itself. And rather than the momentary exaltation of

⁸ Robert Doran, *The Theory of the Sublime from Longinus to Kant*, (Cambridge: Cambridge University Press, 2015), 39.

⁹ Ibid.

¹⁰ Doran, 59.

being that has come to be synonymous with the sublime in modernity, Robert Doran points out that the Longinian sublime is “not simply a matter of momentary state of mind...but of a pattern of thinking,” in which one’s “expressive capacity is conditioned by having certain kinds of thoughts or a particular nature.”¹¹

It’s worth noting that after the *Peri Hypsous*, from the 1st century CE through the middle ages, the notion of the sublime remained primarily a literary theory. But significantly, some of Longinus’ assertions elsewhere in the *Peri Hypsous* anticipate key points made later by Immanuel Kant and William Wordsworth—two Eighteenth century figures whose work is integral to the modern sublime. In chapter 35 of *Peri Hypsous*, Longinus is the first to link a feeling of sublimity with the natural world:

What truth, then, was it that was present to those mighty spirits of the past, who, making whatever is greatest in writing their aim, thought it beneath them to be exact in every detail? Among many others especially this, that it was not in nature’s plan for us her chosen children to be creatures base and ignoble,—no, she brought us into life, and into the whole universe, as into some great field of contest, that we should be at once spectators and ambitious rivals of her mighty deeds, and from the first implanted in our souls an invincible yearning for all that is great, all that is diviner than ourselves. Therefore even the whole world is not wide enough for the soaring range of human thought, but man’s mind often overleaps the very bounds of space. When we survey the whole circle of life, and see it abounding everywhere in what is elegant, grand, and beautiful, we learn at once what is the true end of man’s being. And this is why nature prompts us to admire, not the clearness and usefulness of a little stream, but the Nile, the Danube, the Rhine, and far beyond all the Ocean.¹²

Because paragraph 35 of *Peri Hypsous* is so clearly predictive of later theories of the sublime, it’s necessary to be somewhat proleptic in my treatment of it. Longinus

¹¹ Doran, 62.

¹² Longinus, *Longinus On the Sublime: The Greek Text Edited After the Paris Manuscript*, trans. W. Rys Roberts, (Cambridge: Cambridge University Press, 1907), 35.

insists that since we must not be made to be “base and ignoble” creatures, then we must possess some greater purpose; thus, nature presents itself to us so that we might recognize within us “an invincible yearning for all that is great.” In the next line, nature is explicitly linked to the greatness of human thought, echoing the first attribute of sublimity cited above. Nature is, in fact, not even “wide enough for the soaring range of human thought,” because it “overleaps the very bounds of space,” a notion that predicts Wordsworth and his correlation of nature with the vastness of the imagination. In the next line, when we see life “abounding everywhere in what is elegant, grand, and beautiful,” we are in the realm of Kant’s aesthetic judgment and its moral imperative to recognize in nature what is great in man. It is in the presence of those great objects of nature like the Nile or the vastness of the ocean, Longinus insists, that compel in us a feeling of greatness, an effect similar to what we experience in hearing a great poem.

However, it wasn’t until the late 17th century when the modern trajectory of the sublime began, with Nicolas Boileau’s 1674 translation of *Peri Hypsos* into French. Not only did the appearance of Longinus in French spur new interest in the sublime, Boileau’s own preface to the treatise attracted much critical attention with its measured mix of interpretation and commentary. Though it’s beyond the aim of this brief genealogy to examine in full Boileau’s place in sublime studies, it’s worth noting that his contribution introduced a number of important ideas to the theorization of the sublime. First, departing from Longinus, he insists that the sublime is a matter of transcendence rather than style. Next, what is sublime is the mind’s own sublimity,

and accompanying it is the notion that the elevation of the self is both a “mental and moral” matter.¹³ That is to say, the elevation and transcendence of the subject in the sublime encounter is directed by an interior moral imperative. However, it was not until Edmund Burke that these notions of the sublime were adopted more widely.

Edmund Burke’s 1757 treatise, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*, sets out to enumerate the several affects and emotions he associates with the experience of the sublime, and puts them into contrast with what are according to him other, lesser affects—in particular, beauty. In matters of aesthetic judgment, objects of both beauty and the sublime entail a sense of delight that is pleasurable for the experiencing subject. However, the sublime stands apart from other aesthetic judgments in that its invocation of delight is paired with the darker affects of pain and, specifically, terror, which he calls “the ruling principle of the sublime.”¹⁴ He writes 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; that is, it is productive of the strongest emotion which the mind is capable of feeling... When danger or pain press too nearly, they are incapable of giving any delight, and are simply terrible; but at certain distances, and with certain modifications, they may be, and they are delightful.¹⁵

It’s important to qualify a distinction he makes in the passage above between the experience of the sublime evoked by “terrible objects” or in situations “analogous to terror,” and an experience that is “simply terrible.” How can it be that the sublime is

¹³ Doran, 105.

¹⁴ Edmund Burke, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*, (Oxford, UK: Oxford University Press, 1998), 54.

¹⁵ Burke, 36.

rooted in experiences of certain levels of intensity—those that evoke emotions such as pain and terror—but that are yet sources of delight? The distinction lies in first, the distance at which the experiencing subject observes the presentation of the sublime, and the reaction that that proximity to the sublime invokes. For one needs to be at a safe distance to behold the sublime so that no immediate harm can affect the subject. One might, for instance, view the terror of an ocean tempest from the safety of the shore and become enthralled with sublime feelings of terror and awe, but placed in the very midst of the ocean storm where one is liable to be drowned, one is subsumed by feelings of pure terror. Specifically, the reaction associated with sublime is that of *astonishment*, which is described by Burke as “that state of the soul in which all its motions are suspended with some degree of horror. In this case the mind is so entirely filled with its object, that it cannot entertain any other...hence arises the great power of the sublime...it anticipates our reasonings, and hurries us on by an irresistible force.”¹⁶ The delight of such astonishment is what Burke calls “negative pleasure,” a reaction in which “terror fills the mind with great ideas, and the soul delights in the experience.”¹⁷

Immanuel Kant’s work on the sublime marks a major transition from the sublime as an aesthetic theory to a more philosophical one.¹⁸ “The Analytic of the Sublime,” included in his *Third Critique* offers a substantive investigation which treats the sublime not only in matters of aesthetic sensibility, but also as a

¹⁶ Burke, 53.

¹⁷ Burke, 87.

¹⁸ Phillip Shaw expounds on this distinction in his chapter on Kant in *The Sublime*, (London and New York: Routledge, 2006), 72.

metaphysical and moral matter. It is here where the sublime attains its modern status as a mode of transcendence for the experiencing subject. In the encounter with the sublime, the subject feels elevated not only in emotion but also in their own sense of subjective freedom. This *Kantian sublime* will become a central trope of the sublime going forward and will be a central point of focus in this dissertation where I question if and how transcendence may be experienced in speculative fiction.

Like Burke, Kant poses the experience of the sublime in contrast to that of the beautiful; but whereas in sensing the beautiful, the subject feels a sense of pleasure in the orderliness and purposive form of natural objects, when encountering the sublime, the subject is taken aback by the apparent lack of purposiveness of the sublime object, distinguished by its formlessness and unboundedness. This feeling is not unlike Burke's sense of astonishment, where the subject feels a compound sense of confusion and delight at first beholding the sublime. Like Burke, Kant calls this a "negative pleasure," which is a liking "incompatible with charms, and since the mind is not just attracted by the object but is alternately always repelled as well, the liking for the sublime contains not so much a positive pleasure as rather admiration and respect, and so should be called a negative pleasure."¹⁹ The admiration and respect evoked by the sublime is borne precisely due to its being "contrapurposive for our power of judgment," and "incommensurate with our power of exhibition;" that is, faced with an object of the sublime, our faculties of judgment are denied full comprehension of its totality, and yet still experience a sense of elation at its

¹⁹ Kant, 98.

incommensurate grandeur.²⁰ In a significant departure from Burke, Kant transfers the process of sublimity from one that occurs externally (as a sense encounter between experiencing subject and object of nature), to one that occurs internally (as a process of intellectual cognition provoked by an external object). Important to his theory of the sublime and to his moral theory, it is not the objects of nature that are sublime, but our own capacity for aesthetic judgment. He writes that:

We express ourselves incorrectly when we call this or that *object of nature* sublime... Instead, all we are entitled to say is that the object is suitable for exhibiting a sublimity that can be found in the mind. For what is sublime, in the proper meaning of the term, cannot be contained in any sensible form but concerns only ideas of reason, which, though they cannot be exhibited adequately, which can be exhibited in sensibility.²¹

Kant contends, as an offshoot of his larger theory of transcendental idealism, that the sublime encounter involves the interplay of the cognitive faculties of imagination, understanding, and reason. Objects of nature exhibit themselves to our senses (“intuitions”), and the imagination is tasked with assigning them a representation—a form—which is in turn presented to understanding, the capacity to synthesize a unity of knowledge under a structure of rules. But objects of nature that invoke the sublime are un-intuitable by imagination, and so frustrates understanding. Kant tells us that “the sublime can be described thus: it is an object (of nature) the representation of which determines the mind to think the unattainability of nature as a presentation of reason’s’ ideas.”²² Rather than cognizing the object with an intuitable purpose, we are instead instilled with a supersensible power—one that goes beyond the ability of the

²⁰ Kant, 99.

²¹ Ibid.

²² Kant, 127.

imagination to produce a form but is cognizable as an idea of reason. It is at this point that reason, the superior faculty, recognizes that supersensible power within us, and it is this recognition of our own mind that is sublime. As Robert Doran summarizes, “this unequal conflict—in which the higher faculty, reason, makes its superiority felt over the lower, the imagination—allows us to experience sublimity as a transcendence of, or freedom from, sensible constraint.” This conflicting structure of transcendence, Doran contends, is “the *overwhelming* of our imaginative capacity and the *elevation* by our rational capacity” which makes the Kantian sublime compelling.²³ The dazzling worlds of science fiction illustrate precisely how the excessiveness of technological systems—the vast totality of which is obscured from view—outstrip human capacity to reckon with them, while those same systems paradoxically offer the type of freedom from constraint (in this case, physical human boundedness) that Doran speaks of.

In “The Analytic of the Sublime,” Kant distinguishes between two types of sublime encounters, the mathematical and the dynamical sublime, which can be summed as thus: the mathematical pertains to objects of vast scale or magnitude that are beyond apprehension; the dynamical pertains to forces of nature that are great beyond all conception.²⁴ The mathematical sublime is that which according to Kant is

²³ Doran, 212.

²⁴ Kant, 108. Kant further distinguishes between faculties of *apprehension* and *comprehension*. Apprehension is the faculty of the mind to grasp definite forms and magnitudes. In short, apprehension attempts to add up to a comprehension of the totality, a task that the imagination fails to do in judging the sublime: “In order for the imagination to take in a quantum intuitively, so that we can then use it as a measure or unity in estimating magnitude by numbers, the imagination must perform two acts: apprehension (*apprehensio*), and comprehension (*comprehensio aesthetica*). Apprehension involves no problem, for it may progress to infinity. But comprehension becomes more and more difficult the farther apprehension progresses, and it soon reaches its maximum, namely. The aesthetically largest basic measure for an estimation of magnitude. For when apprehension has reached the point where the

“absolutely large;” that is, “large beyond all comparison,” which equates to the counting of magnitudes that stretch toward infinity. Indeed, infinity is *the* concept of the mathematical sublime, the example that best illustrates the excesses of the natural world—the vastness of the starry night sky or ocean depths. “To be able even to think the infinite as a whole indicates a mental power that surpasses any standard sense,” he tells us; “if the human mind is nonetheless to be able even to think the given infinite without contradiction, it must have within itself a power that is supersensible.”²⁵ To think “without contradiction” is not to be confused with the failure of the imagination in assessing the sublime, but rather that in order for the mind [reason] to conceptualize infinity in the first place, it must point to some power of the mind to transcend itself:

What happens is that our imagination strives to progress toward infinity, while our reason demands absolute totality as a real idea, and so the imagination, our power of estimating the magnitude of things in the world of sense, is inadequate to that idea. Yet this inadequacy itself is the arousal in us of the feeling that we within us a supersensible power; and what is absolutely large is not an object of sense, but is the use of that judgment makes naturally of certain objects so as to arouse this feeling, and in contrast with that use any other use is small. Hence what is to be called sublime is not the object, but the attunement that the intellect gets through a certain presentation that occupies reflective judgment. Hence... the *Sublime is what is even to be able to think proves the mind has a power surpassing any Standard of sense.*²⁶

partial presentations of sensible intuition that were first apprehended are already beginning to be extinguished in the imagination. as it proceeds to apprehend further ones. The imagination then loses as much on the one side as it gains on the other; and so there is a maximum in comprehension that it cannot exceed.” In thinking through this in the classroom, my students illustrated it like this: one can apprehend the faces and names of the thirty or so people in the room, and further, could most likely apprehend, or hold in their minds all of the faces and names of the students in all of their classes, but when tasked with comprehending the total student body of the university, the total number of apprehensions one must hold begins to break down and the imagination fails to comprehend the totality.

²⁵ Kant, 111.

²⁶ Kant, 106. Emphasis in the original.

The relationship between imagination and ideas of reason that Kant articulates in the passage above and throughout “The Analytic of the Sublime” will serve as the groundwork for thinking through the sublime in this dissertation. The three interrelated conditions mapped out in the mathematical sublime, that are according to Doran “formlessness, limitlessness, and the idea of totality” are precisely the conditions encountered in science fiction works addressed here which consider burgeoning technologies, environmental excess, and the unknown as encounters with the sublime.²⁷

Before moving on to the dynamical sublime, I will add one more key motif to our working understanding of the Kantian sublime, and one which assumes a central importance in the Romantic sublime: the likening of the sublime to an abyss. In §27 of the “Analytic,” Kant informs us that “If a thing is excessive for the imagination and the imagination is driven to such excess as it apprehends the thing in intuition, then the thing is, as it were, *an abyss in which the imagination is afraid to lose itself*.”²⁸ The motif recurs in §28, on the dynamically sublime, and again in §30, the General Comment and is worth pointing out as a metaphor that yokes together two contrasting aspects of the sublime encounter. On one hand, the “negative pleasure” of fear and astonishment the experiencing subject feels before the sublime; the assertion that the imagination could “lose itself” implies the threat of madness if the mental faculties fail to assess the presentation of the sublime. But on the other hand, the excessiveness of the sublime object presents an opportunity for the expansion of the

²⁷ Doran, 211.

²⁸ Kant, 115. Emphasis is mine.

imagination's own excess beyond rational thought, a trope that, as I explain below, is central to the Romantic sublime. The figure of the abyss, as a void from which new properties or possibilities are borne out, also becomes a fitting analogy for thinking about the sublime through the system principles of emergence and complexity. I will illustrate in different ways in chapter two and chapter four how "the imagination, like an abyss" becomes a vehicle through which new forms of individuation occur and new ways of being in the world.

Where the mathematical sublime considers the absolute largeness of objects, the dynamical sublime is posed as "nature as might;" that is to say, the dominion of forces of nature over the individual. If the mathematical sublime makes us feel small, the power of nature that is sublime is that which makes us feel weakened in comparison. The weakness of the individual subject feels when faced with the dynamical sublime bears significantly on western culture and on the examination of subject autonomy undertaken here. While Kant devotes much more attention to the mathematical sublime, it's in his section on the dynamical sublime where he articulates what I take to be his most significant development, the moral quality of sublime experience. It is the tension between faculties of imagination and reason provoked by the sublime that move us to feel elevated at our supersensible power which also, for Kant, inspires in us a moral imperative "because it calls forth our strength (which does not belong to nature [within us])," in which we recognize that everyday concerns of "property, health, and life" do not hold dominion over us in

light of the sublime.²⁹ Rather, we sense what Kant calls an “inner vocation,” that for him is the sublimity of the mind that lifts it above even nature:

We like to call these objects sublime because they raise the soul’s fortitude above its usual middle range and allow us to discover in ourselves an ability to resist which is of a quite different kind, and which gives us the courage to believe that we could be a match for nature’s seeming omnipotence.³⁰

His insistence that the sublime is that which lifts our soul above its ‘vulgar commonplace’³¹ positions the individual subject in a hierarchical relationship over the natural world, ennobling the experiencing subject an air of superiority over nature and others (whose “usual middle range” has not been privileged by sublime experience). The implications of this effect are problematic, to say the least. Kant’s moral project in the Critiques and more specifically “The Analytic of the Sublime” has been substantively commented upon elsewhere. Jennifer Wawrzinek, for instance, has pointed out what she terms Kant’s “hierarchical sublime” as a model for German Nationalism, a mode of subject validation that too easily subjugates along lines of national, racial, and class identities. Kant’s moral imperative of the sublime becomes an important point of contention in this dissertation as I argue that systems thinking about the sublime de-centers a firmly hierarchical movement in sublime experience and contends instead that sublimity is an experience that emerges across systems without subjugating one over the other.

As Doran points out, by attaching an “Analytic of the Sublime” to his *Critique of Judgment*, “Kant indicated that [the sublime] was integral to an understanding of

²⁹ Kant, 124.

³⁰ Kant, 120.

³¹ Translation unknown.

the foundations of human thought, action, and feeling, thereby solidifying the sublime as a key concept in both aesthetics and modern intellectual history.”³² Kant assumes a weighted position in this dissertation because of the lasting impact of his contribution to the sublime, owing particular debt to his focus on its metaphysical and ethical aspects. He is at once a signal thinker and foil to *Systems and the Sublime*, and his “Analytic of the Sublime” in particular forms part of the ground of my own critical analysis. Specifically, I pose systems thinking as a rejoinder to the overt formalism of Kant’s “Analytic,” which is predicated on the belief that things in themselves (noumena) are unknowable. In Kant there is a distinct separation between the real and our sense perceptions of the world around us (phenomena). Systems-thinking eschews an absolute belief that things in themselves are knowable or unknowable; rather, it asserts that anything that is to be considered a reality is in fact co-constituted by the interplay of multiple systems. This casts sublimity as a phenomena of systems operations themselves, and, as I will elaborate in this dissertation, the sublime arises where complexity begets the emergence of transcendent properties. What remains unknowable, or in Jean-François Lyotard’s words “unpresentable,” are those elements of the system obscured by its totality.

In the period immediately following the publication of *The Critique of Judgment* in 1790, there emerged concurrent developments on the sublime among poets and thinkers in early 19th century Germany and England. In Kant’s schema, the imagination’s failure to produce a form adequate to the sublime put the subject at

³² Doran, 202.

some remove—at least mentally—from nature. The machinations of the sublime involved the internal workings of reason, but were abstracted from the objects of reality. The Romantics sought to reinstate the primacy of the imagination as a worthy match for nature. In the Romantic sublime, the imagination of the perceiving subject—rapt in a state of *astonishment*—allows his emotions to overwhelm the rational self. Rather than rationally cognize the sublime from a safe distance, the subject wants to be absorbed in and utterly subsumed by sublime nature.

While the German Idealists including Schiller, Schopenhauer, and later, Hegel explored the correlation between human spirit and sublime nature, the Romantic sublime found arguably its most noteworthy instantiations in the work of the English Romantics—Wordsworth, Coleridge, and Shelley, who found every opportunity to revel in nature. For these Romantic poets, the wildness of nature was an objective correlative of one's individual consciousness that strained against the rationalist confines of society, "an appreciation of nature in its wildness, uncontrolled by human intentionality." They found in the objects of nature—whether the craggy hills of the Lake District or snowy Alps—symbols for the power and expansiveness of their own imagination. Emily Brady points out the link between wildness in nature and human freedom implicit in the sublime: "It is a feeling of independence from our own sensuous or physical nature in the moment we discover our rational, free self as a distinct capacity"; the imagination is sublime because it represents "an autonomous and unconstrained force which enables humans to discover their own sense of

freedom.”³³ In contrast to the Kantian sublime, where the objects of nature invoke a supersensible quality that lies in the subject discovering the potential power of his Reason, the Romantic sublime more overtly presents a symbolic relationship between the objects of nature and the subject’s internal, supersensible power of imagination. With the imagination now standing as a correlative of sublime power, it meant that for the Romantics, art had an equal capacity as nature to represent the sublime,³⁴ and the power of poetic language or figurative painting could now invoke the same sublime feelings as Mont Blanc. Thus with the Romantics the sublime shifted away from its more philosophical, Kantian perspective back toward its aesthetic roots.

Thomas Weiskel has pointed out a further, psychological dimension of the Romantic sublime. He begins by recalling the formulation of the sublime in Kant in which the sublime is understood as a “sublimation of the imagination’s relation to the [sublime] object;”³⁵ That is to say, the unattainability of comprehension is internalized as an inner structure of the mind—its self-reflexive process of discerning its own “ungraspable” depth. This sublime encounter consists of a three-phase psychological experience—a “structure of Romantic transcendence.”³⁶ The first phase begins in a state of harmony between the experiencing subject and the object of representation, “a determinate relation to the object” that poses no initial problem. However, there still exists in this initial phase an “incipient disequilibrium” between inner and outer

³³ Emily Brady, *The Sublime in Modern Philosophy: Aesthetics, Ethics, and Nature*, (Cambridge, UK; New York: Cambridge University Press, 2013), 92.

³⁴ Shaw, 96.

³⁵ Thomas Weiskel, *The Romantic Sublime: Studies in the Structure and Psychology of Transcendence*, (Baltimore: Johns Hopkins University Press, 1976), 23.

³⁶ Weiskel, 22.

that has yet to register to the consciousness of the subject. This disequilibrium—undefined by Weiskel—is not yet powerful enough to disrupt the automatic rhythm of sensation and reflection. However, in the second phase, the representation of the sublime now causes a sudden break between mind and object—the normal comprehension that takes place in the mind’s relation to the object is disrupted by a Burkean sense of *astonishment* (either by excess of the object or the imagination) and there exists a gap or abyss in which the relation is rendered indeterminate. This emergent abyss³⁷ is the key feature of Weiskel’s structure of Romantic transcendence, for it is here that the experiencing subject shudders before the sublime, is taken aback in “a momentary inhibition of vital forces” and is left reeling.³⁸ The gap is significant for Weiskel (and subsequent deconstructionists) because it ultimately points to a semiotic indeterminacy of all thought and language in which a “signifier finds no reflected signified in our minds.”³⁹ What we are left with then, for lack of a determinant form of comprehension, is in Weiskel’s view, our own self-consciousness, which in the third phase of the sublime moment recovers balance of inner and outer by constituting a new relation with the object via a meta-reflective operation. This “meta” character, as Weiskel phrases it, is an operation in which the mind works to exceed the indeterminacy, much like in Kant, by transcending its former perception of image and sign to create a new formal relation between mind and object. The structure of transcendence, thus broken down

³⁷ Kant, 115. Recall in Kant, the sublime object is “like an abyss in which the imagination is afraid to lose itself.”

³⁸ Kant, 1.

³⁹ Weiskel, 24.

into a three phase sublime moment, at once offers a more granular framework for thinking through the affects of the sublime, while also functioning to help bridge the gap between the Romantic ethos and latter 20th century views of the sublime founded in psychoanalysis and deconstruction. *Systems and the Sublime* identifies a Romantic impulse in speculative fiction, in particular the works of J.G. Ballard, Ursula K. Le Guin, and William Gibson, and argues that the “autonomous and unconstrained force” of the imagination gains its sublimity through the proliferation of technological as well as natural systems.

The sweep of the Romantic ethos was far ranging, and with its matching of individual spirit with natural expansiveness, it found new instantiation in 19th century America, first through a doctrine of manifest destiny that sought to articulate an American identity as capacious and rugged as the western frontier, and then in the Transcendentalists of mid century, who were the first to articulate a distinctly American sublime linking the sublimity of the soul to the power of nature. The ethos of this American romantic sublime can be expressed in the following passage from Ralph Waldo Emerson’s “Nature,” which posits consciousness as the vehicle through which Nature is unified with spirit:

Many truths arise to us out of the recesses of consciousness. We learn that the highest is present to the soul of man; that the dread universal essence, which is not wisdom, or love, or beauty, or power, but all in one, and each entirely, is that for which all things exist, and that by which they are; that spirit creates; that beyond nature, throughout nature, spirit is present; one and not compound it does not act upon us from without, that is, in space and time, but spiritually, or through ourselves: therefore, that spirit, that is, the Supreme Being, does

not build nature around us, but puts it forth through us, as the life of the tree puts forth new branches through the pores of the old.⁴⁰

Here, Emerson avers that consciousness itself possesses the highest of truths that are inherent in nature, and indeed in Divinity itself. His view would seem to align with Kant that the sublimity one encounters in and through nature is in fact a sublimity interior to the subject, in this case Emerson swaps Kant's faculty of Reason with his notion of consciousness. The elision of consciousness (or "spirit") with Nature that was borne through Romanticism and which effortlessly carried itself over to American transcendentalism would form the groundwork for an ethos of 19th and 20th century American endeavors.

That ethos of an American sublime would transpose for the first time the sublime forces of nature onto the power inherent in technological objects. Whereas Wordsworth viewed the onset of industrialization as a bane against the Natural soul, with its coal fires blackening the skies and railroads scarring the landscape, in America, the triumph of those technologies of automation were readymade symbols of national empowerment. In public works projects powered by technology (such the Erie Canal) and projects of westward expansion (the Transcontinental Railroad), America saw in itself a heightened sense of savoir-faire, the potential to exceed its own sense of self. David Nye has termed this the "American Technological Sublime." His key distinction is that this sublime "underlines [the] enthusiasm for technology,"⁴¹ because American identity, he notes, has exhibited "a history of

⁴⁰ Ralph Waldo Emerson, "Nature," *Nature and Selected Essays*, (New York: Viking Penguin, 1982), 73.

⁴¹ David Nye, *American Technological Sublime*, (Cambridge: MIT Press, 1991), xiii.

enthusiasm for both natural and technological objects,” and as early as the 1830’s, that “sublime technological objects were assumed to be active forces working for democracy.”⁴² Sublime forces evoked both by the natural wonders of the American landscape (like the Columbia Gorge, as first witnessed by Lewis and Clarke, or the Grand Canyon, or Monument Valley) and through the triumphs of technological objects was no longer rooted so much in “self-conscious aesthetic theory,” but instead became more recognizable as a general cultural practice.⁴³ In short, “[the] American sublime comes down to positing America as the ground of the sublime.”⁴⁴

Rob Wilson identifies those same features of the technological sublime in a literary American sublime which positions the poet himself as the site of a “representative energy transformation,” with the sublimity of the self acting as a “recuperative force” that yokes traditional self-nature manifestations with the “power, excess, newness” and “wildness” of the New World.⁴⁵ He further characterizes the sublime as “a conversion scenario of self-empowerment” not as personal fulfillment “but as a sign of national grandeur and collective empowerment.”⁴⁶ In other words, Wilson’s American sublime equates traditional spiritual transcendence with the forces inherent in American landscapes and, by extension, the very conceptual ground of America itself. Wilson recognizes that the American sublime twists the Kantian ‘Dynamic Sublime’ from one of awe struck divinity; i.e., “God,” into one that

⁴² Nye, 33.

⁴³ Nye, 8.

⁴⁴ Rob Wilson, *American Sublime: The Genealogy of a Poetic Genre*, (Madison: University of Wisconsin Press, 1991), 24.

⁴⁵ Wilson, 25.

⁴⁶ Wilson, 26.

presents the reified power of “Capital.” The vocabulary of the sublime, he writes, “has migrated from configurations of natural power and symbolic immensity...to ones recenterted in technological power, mass mediation, and urban energy,” precisely the types of sites, I contend, of which speculative fiction concerns itself.⁴⁷ On the other hand, Joseph Tabbi locates a technological sublime in a paradoxical anxiety about machine power:

The image of the machine presents faceless impersonal forces that seem to conflict with the human imagination, but in their abstraction and precision can also call us outside ourselves. A simultaneous attraction to and repulsion from technology, a complex pleasure derived from the pan of representational insufficiency, has paradoxically produced one of the most powerful mode of modern writing in America—a technological sublime.⁴⁸

The types of sublime experience represented in the texts addressed in this study align with what Nye, Wilson, and Tabbi describe, and Frederic Jameson defines as postmodern; in particular, the way that individual subjects become subsumed under the “reified power of Capital” through structures of technological and social systems. A postmodern technological sublime, Jameson informs us, is an anxiety not only of “the physical incommensurability of the human organism with Nature,” as in Kant, but also combines with it a mesmerizing power of technology that is so overwhelming it can only serve as a “shorthand” for the ungraspable “networks of power and control” in which we find ourselves imbricated.⁴⁹ Those networks of power and control are synonymous with Late Capitalism (for instance,

⁴⁷ Wilson, 200.

⁴⁸ Joseph Tabbi, *Technological Sublime: Technology and American Writing from Mailer to Cyberpunk*, (Ithaca and London: Cornell University Press, 1995), 1.

⁴⁹ Frederic Jameson, *Postmodernism: Or, The Cultural Logic of Late Capitalism*. (Durham: Duke University Press, 1991), 38.

vast computer data banks that “transcend the capacity of each of their users”)⁵⁰ form a system Jameson contends is so totalizing that virtually every facet of human cultural production—even planetary production—is enveloped by it. Included in “cultural production” are the production of both knowledge and culture; i.e, what we know and how we live. In other words, the postmodern sublime theorized by Jameson includes not only the machines of capital and the social and economic institutions that drive them, but also extends beyond the objects of nature and technology to include reality itself as its object. Late Capitalism is a system so large with production on such a massive scale that the sum total of its individual particulars are withdrawn from the experiencing subject: production itself is the object of sublimity.

Where the technological and anticapitalist critiques of the sublime given by Nye, Jameson, and others rightly emphasize the subject’s subsumption within larger systems of power, they do not go far enough in revealing how both subject and system operate on one another. This dissertation aims, through systems-thinking, to both locate and elucidate the subject of the sublime in its tangle of networks. In chapter four, I propose a “cybernetic sublime” which adds to both Romantic and technological sublimines a new sensibility that accounts for the intensification of experience forged through the interplay of cybernetic systems. These systems are assemblages of human-machine hybrids and the vast computer networks of cyberspace. The cybernetic sublime tracks the emergence of new subjectivities that are situated in these systems.

⁵⁰ Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi, (Minneapolis: University of Minnesota Press, 1984), 51.

In light of the increasing inability of contemporary discourse to adequately and equitably express total reality, Jean-François Lyotard located the postmodern sublime in texts and works of art that sought to “put forward the unrepresentable in presentation itself.”⁵¹ The works he refers to are those that attempt to engage with human experience at a level that cannot be expressed via so-called realist forms of visual and literary art such as mainstream cinema, television, or fiction. Instead, the postmodern text is that which “searches for new presentations” in order to “impart a stronger sense of the unrepresentable” that is not governed by pre-established rules or categories; it does not attempt to “supply reality but to invent allusions to the conceivable that cannot be presented.”⁵² It’s my conviction that this is also precisely the role of speculative fiction, which generally does not concern itself with representing reality but rather expressing a verisimilitude of human experience that of which the real cannot capture. Lyotard links the sublime to his concept of the differend, which involves “a conflict or dispute that is irresolvable because it brings into play at least two language games which would describe what is at stake in incommensurable terms”⁵³ Enjoyment of the sublime is in this case “instigated by [an] irresolvable discord”—between facilities of judgment or levels of discourse. Like Jameson, Lyotard views the sublime as that which is concealed by or couched in systems that escape total description—the irresolvable discord occurring between

⁵¹ Lyotard, 81.

⁵² Ibid.

⁵³ Christine Battersby, *The Sublime, Terror, and Human Difference*, (London and New York: Routledge, 2007), 37.

observer and systems laid upon systems overlaying systems.⁵⁴ What the sublime ‘exceeds,’ in the end, writes Joseph Tabbi is the “very possibility of symbolization.”⁵⁵

By the end of the 20th century, reengagement with the sublime found broad application across many disciplines of art and critical theory. Postmodernists in general saw the sublime as a reflection of one’s “own conditions or the conditions of contemporary cultural life.”⁵⁶ That is to say, the admixture of anxiety and proliferation of new forms of attention can make everyday experience feel sublime. More pointedly, feminist scholars draw attention to the misogynist undertones of the Kantian sublime and consider what, if any, liberatory forms of the sublime exist for non-white, non-male subjects. Bonnie Mann, for instance, poses what she calls a “*countersublime* in women’s lives and women’s art”⁵⁷ Mann follows Barbara Clare Freeman and Eva Kittay in defining the sublime not as a reaction to nature but locating it in intersubjective relationships—those “relations of dependence that are [an] irrevocable aspect of the human condition” that include not only dependence on others but to the natural world as well.⁵⁸ In these intersubjective relations, the subject enters into a relation with an otherness—social, aesthetic, political, ethical, erotic—that is excessive and unrepresentable. It’s an otherness that as Barbara Freeman writes, “exceeds, limits, and defines” the female subject: “This encounter with alterity is terrifying because the boundaries of the subject lose their solidity in the face of Other.

⁵⁴ Lyotard, 78.

⁵⁵ Tabbi, 13.

⁵⁶ Johnson, 119.

⁵⁷ Bonnie Mann, *Women’s Liberation and the Sublime: Feminism, Postmodernism, Environment*, (New York: Oxford University Press, 2006), 131.

⁵⁸ Mann, 133.

One not only experiences the Other in the encounter but also is changed by the experience in ways that cannot be anticipated, controlled, or easily undone.”⁵⁹ In other words, for Mann and Freeman, the female subject’s encounter with radical alterity is not figured so much as an abyss of meaning but “a landscape of meaning so intense” it absolutely overwhelms the borders of the self.

Similar to Bonnie Mann, Jennifer Wawrzinek offers a way to think through a sublime that’s not contingent on the male subject position. Since the sublime in any of its forms is essentially about the way we understand and represent our relation to the world, a relation between self and other, notions of transcendence become all the more problematic for historically marginalized subjects. And since the sublime, in its traditional form “depends on hierarchies that (re)instate mechanisms of power and domination,” Wawrzinek theorizes a sublime that eschews any type of transcendence that moves hierarchically upward in status, from a base subject position to a more privileged one; i.e., precisely what Kant, the Romantics, and Weiskel aver, because as she points out, the rhetoric of the sublime historically has been employed to “(re)consolidate and (re)instate a sense of national [and cultural] identity.”⁶⁰ Rather, she posits a “horizontal sublime,” a kind of making-with, to borrow Donna Haraway’s phrase, in which “the subject does not colonise the place of the other in the act of constructing the self but engages in mutual participation with that world.”⁶¹ What can be called transcendent, then, becomes precisely the liberatory power of engagement with Otherness. Whatever affects are felt in communion with objects of the

⁵⁹ Mann, 132.

⁶⁰ Wawrzinek, 22

⁶¹ Wawrzinek, 28.

sublime—the terror felt in the shadow of domineering power; anxiety felt by the subject in light of the excessive “landscapes of meaning” she’s imbricated in—are mitigated through the mutual working through of difficulty—the reconciliation of mind, body, and Other in which the subject recognizes that 1) the positions of self and Other are reversible and 2) one’s identity seems entirely contingent on this horizontal relationality to Others. It is a sublime, Wawrzinek writes, where “emergence depends on connections and becomings rather than on overcomings.”⁶²

In a more pointed critique, Christine Battersby troubles the prospect of a “feminine sublime” by pointing out the ways in which other feminist critiques of the sublime merely invert or subvert a Euro-masculine subject position. In these feminine sublimines, modes of transcendence are more or less reducible to preexisting Kantian or psychoanalytic self-Other, subject / object relations. Instead, Battersby argues for a recuperation of female subjectivity not contingent nor subservient to models of masculine experience, but rather looks at

model[s] for subjectivity which [are] appropriate to the female subject who is capable of birthing the other within her own embodied self, and who thus fall outside the norms of oedipalized selfhood which represents the relationship between self and other in fundamentally oppositional terms...If we fail to see the characteristically female maneuverings around the problematics of the sublime—or if we cannot find any literary foremothers of the present-day ‘feminist’, ‘female’ and ‘feminine’ sublime—it is because we are viewing the sublime from a perspective that treats male psyches, experiential histories and dynamic interrelations as norm and/or ideal.⁶³

Battersby’s project is to acknowledge the ways in which women artists, writers, and thinkers have always worked to “develop alternative models for thinking self and

⁶² Wawrzinek, 29

⁶³ Battersby, 130.

transcendence” that stand apart from Euro-masculine concepts of self.⁶⁴ Significantly, she points to the ways in which female subjectivity is rooted in modes that are not always fixed, pre-given, equal, or autonomous. Her notion of *pregnant embodiment*, for instance, upsets any philosophy that views self and Other as necessarily opposed, since an “other within” that is neither the self but not separate from the self troubles what traditional transcendence can be.⁶⁵ Taken together, these feminist sublimes place emphasis on “the point of contact between subject and world (self and other) as a defining moment in the structuring of perception, thus making spaces for the co-existence of multiple differences.”⁶⁶ This dissertation engages with the above feminist and postmodern critiques of the sublime that question the privileged position of male cisgender subjects. Systems theory casts even sharper relief on those “intersubjective relationships” pointed out by Barbara Mann that are dependent on others as well as the environment and which animate a sublime that is politically liberated from its white European forebears. However, *Systems and the Sublime* broadens the trends situated in feminist critique—of what a non-hierarchical sublime could entail—to show how systems reveal a subjectivity that is already non-hierarchical and non-oppositional. In particular, I read the sublime as a “making-with” one’s environment, whether natural or technological.

The preceding overview of the sublime provides a frame of reference for the myriad experiences examined in this dissertation. However, as this genealogy shows and as I will argue in subsequent chapters, the experience of the sublime cannot be so

⁶⁴ Ibid.

⁶⁵ Battersby, 135.

⁶⁶ Wawrzinek, 28.

easily delimited into well defined and discrete categories. Enumerating the sublime is as multiple and immeasurable as the sublime itself. This dissertation argues that new instantiations of sublime experience arise in the imagined futures of speculative fiction. As previously stated, these new modes of sublime experience occur in the context of systems, so it is now necessary to give a brief synopsis of the systems theory I use to situate those experiences. I give more comprehensive explanations of specific systems-thinking concepts in the chapters where they are pertinent.

Systems, Cybernetics, Technics

To arrive at a working understanding of systems theory, it's necessary to first define a system. But if we begin with the question, "what is a system?," we may end up with an idea that is either too broad or too reductive. A dictionary would tell us it's "a set of things working together as parts of a mechanism or an interconnecting network." And while a set of interconnected things working together gets at the essence of a system, the picture it paints is of a collection of discrete structural parts that form a unitary whole. In other words, a large unitary thing consists of a given number of smaller things. This misses a more significant and granular systems-theoretical understanding, deriving primarily from Niklas Luhmann, that defines *system* as the relationship(s) between systems and their environments. What this understanding emphasizes are not the individual pieces but the boundaries themselves. By this logic, to understand a system it's necessary to consider the question of how the differences between myriad systems and their environments are maintained. This basic premise of systems theory will be explored here in depth by considering the ways in which the

characters of speculative fiction texts—who themselves are systems comprised of systems—interact with and are defined by their environments.

We can assume that a system does interact in a network of interconnected things. Systems abound. Everything is a system, and one would be hard pressed to point to a static object—a stone, let’s say, and not call it part of a system. By Luhmann’s differential theoretical approach, a rock is different from the earth it rests upon and so maintains itself as a system distinct from the environment. However, in its early inception systems theory was posed as an interdisciplinary scientific approach, seeking to integrate disparate branches of knowledge—science, mathematics, psychology, sociology—in the off chance that we might stumble upon some unifying theories. General System Theory, developed by the aforementioned Ludwig von Bertalanffy, sought to synthesize human understanding of nature by imagining the sum total of human knowledge as an open system, “world as organization,” which imagined the world-system as a superorganism. His axiom that “everything is interconnected and therefore, we should study interconnectedness as a means of understanding the world” became the battle cry of hosts of scientists and academics who followed in his footsteps. What General System Theory proposed that remains pertinent today is, first, that human knowledge ought to be interdisciplinary; second, that categories are relative to each other and not fixed; and by extension, the paradigm shift introduced by systems-thinking held potential to alter the way humans cognize reality.⁶⁷

⁶⁷ von Bertalanffy, 188, 223 respectively.

While von Bertalanffy was developing the first general systems approach in the late 40s, there simultaneously arose two other systems-theoretical models that would come to bear more significantly on the human sciences: cybernetics and social systems theory. Due in no small part to von Bertalanffy and later, Talcot Parsons, systems theory had since its inception developed a reputation as merely a functionalist discipline, reducing complex and sometimes ineffable phenomena to mechanical schema. But it was with the advent of second order cybernetics and Luhmannian social system theory that system theory was able to somewhat “tame” its functionalist reputation via an “explication of [cybernetics’] ability to reflect epistemological engagement with the world.”⁶⁸

The field of cybernetics was borne from the work of a cadre of mathematicians, physicists, computer scientists, and biologists in the late 1940s as another (actually chronologically first) transdisciplinary field that focused on the behaviors of systems, in particular the circular relationships of feedback between systems. The study of feedback in systems led to an understanding of how some systems are able to produce, maintain, and regenerate themselves, an idea called autopoiesis. Cybernetics can be identified as a parallel field or even subgenre of systems theory; in fact they are often lumped together, with many thinkers associated with both. The basic goal of cybernetics is, in the words of Devin Proctor, to “apprehend how systems (mechanic, biological, or social—including humans

⁶⁸ Bruce Clarke, *Emergence and Embodiment: New Essays on Second-Order Systems Theory*, ed. Bruce Clarke and Mark B.N. Hansen, (Durham and London: Duke University Press, 2009), 219.

themselves) process and react to experience.”⁶⁹ For the purposes of this dissertation, I will treat cybernetics as synonymous with systems theory. Here it’s worth pointing out two thinkers in cybernetics who will be key to this study, Norbert Wiener and Hienz von Foerster. Norbert Wiener is the originator of cybernetics and is associated with its so-called first wave, which tended to focus on the observation of the interaction of organisms and machines, with servo mechanical devices such as a thermostat or steam governor serving as models for understanding “communication and control” in systems. For Wiener and the first wave of cyberneticists more generally, biological and technological systems were ready-made analogs of each other and could be viewed [studied] as interchangeable systems. According to Wiener, for machines, there was “no reason why they may not resemble human beings,” because like humans, to account for the behavior of machines, they “must have central decision organs which determine what the machine is to do next on the basis of information fed back to it.”⁷⁰ Wiener was at heart a humanist who remained ideologically committed to an anthro-centric view that systems (and their feedback phenomena) needed to be understood so that they may be controlled.

By contrast, the turn to second-order cybernetics developed in the 1970s as a result of a handful of papers published respectively by Heinz von Foerster, biologists Humberto Maturana and Francisco Varela, and others. Second-order cybernetics distinguishes itself by its focused critical attention on the role of observation itself as

⁶⁹ Devin Proctor, “Cybernetic Animism: nonhuman personhood and the internet,” *Digital existence: Ontology, Ethics and Transcendence in Digital Culture*, ed. by Amanda Lagerkvist, (London and New York: Routledge, 2019), 232.

⁷⁰ Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*, (Boston: Houghton Mifflin Co, 1950), 32-33.

an inescapable part of the self-reference of systems. That the observer of systems forms an integral role in its “circular causality” places emphasis on self-reference as an “ineluctable form of operation” and privileges emergence and recursion rather than form and operation as key features of understanding systems. According to scholar Bruce Clarke, second-order cybernetics “radicalizes the constructivist epistemology inscribed within the first cybernetics by shifting to an autological rather than ontological theory of form.”⁷¹ In other words, understanding systems as entities of form and function must necessarily recognize the situatedness of the observer (knowing subject) as both part of and co-constructor of the system itself. It’s essentially a “cybernetics of cybernetics”—to borrow the phrase coined by von Foerster— which simply put, touts itself as the study of observing systems. This becomes most significant in thinking through notions of cognition and subject-becoming, where a fixed or essentialist understanding of being and knowing is called into question. This conceptual shift will serve as a theoretical ground for my analyses in chapters two and four, which take as their central concern both ecological and technological feedback systems, respectively.

Second-order cybernetics was also chiefly influential to the work of sociologist Niklas Luhmann, whose Social Systems theory features prominently in this dissertation. Because Luhmann wrote so prolifically, there is not world enough nor time to express the many nuanced applications of systems theory he applied to all manner of the sciences and humanities. Suffice here to articulate a few of his most

⁷¹ Clarke, 4 and 35 respectively.

important contributions. As stated earlier, he begins from the presumption that a system is defined according to its differentiation from an environment; that an environment comprises itself as a multiplicity of other systems; and that a system is an environment for a multitude of internal systems. He acknowledges that “the entire system multiplies itself as a multiplicity of system/ environment differences. Every difference between subsystem and internal environment is an entire system...Therefore system differentiation is a process of increasing complexity that greatly affects what can be observed as a unity of the entire system.”⁷² One can see in such a recursive understanding of systems the clear influence of second-order cybernetics. From this understanding, he extrapolates a theory of society as a system of multiple parts that communicate with each other in feedback loops which sustains and reproduces itself and boundaries by continually distinguishing parts from the whole, with the whole perpetually being consecrated as an assemblage of its parts. Social systems are cybernetic systems because they are both self-referential (recursive) and self-organizing (autopoietic). It is from this framework of systems that Luhmann develops his theories concerning communication and meaning. Both of these operate on the modes of differentiation a social system is able to establish between the persons which constitute it. Luhmann variously describes meaning as a “closure of self-reference” in and between systems, and as the co-evolution of persons and systems:

⁷² Niklas Luhmann, *Social Systems*, trans. John Bednarz, Jr., with Dirk Baecker, (Stanford: Stanford University Press), 1995. 18.

Psychic and social systems have evolved together. At any time the one kind of system is the necessary environment of the other...Persons cannot emerge and continue to exist without social systems. Both kinds of systems are ordered according to it, and for both it is binding as the indispensable, undeniable form of their complexity and self-reference. We call this evolutionary achievement “meaning.”⁷³

Meaning parses an abundance of information and extracts differences to arrive at mutually shared possibilities of “experience and action” for the constituents of the system.⁷⁴ The closure of self-reference, then, points to the way systems meaningfully differentiate themselves from their environments; that is, self-reference is the closed loop that defines a system. Connecting communication and meaning for Luhmann is the concept of double contingency, a process of communication and meaning discernment in which two entities (psychic systems, in Luhmann’s terms) are compelled to act (or not) in accordance with the action of the other. Double contingency is elaborated more fully in chapter three.

We now shift our attention from the philosophy of systems to the philosophy of technology, which forms part of a conceptual piece with the latter. Significant contributions to understanding the role of technology in human affairs, from thinkers like Gilbert Simondon and Don Ihde, straddle systems thinking in their methodology and worldviews. They both in their respective ways build upon previous concepts of technology brought to bear by Lewis Mumford and Martin Heidegger, in particular an understanding of *technics*. Technics is derived from the Greek root *technê*, which originally referred to both the practical knowledge of and skillful production of crafts.

⁷³ Luhmann, 58.

⁷⁴ Luhmann, 63.

In modern thought, technics refers most broadly to the relationship between humans and nature through their use of technical objects. From its inception as an academic term in the 19th century to its appearance in Lewis Mumford's seminal study of the machine age, *Technics and Civilization*, technics served as a shorthand for "use of technical objects," but it was not until the influence of Martin Heidegger that technics evolved a more nuanced and phenomenological connotation. Technics can be taken as the interrelationship and co-evolution of culture and technical artifacts.

For Lewis Mumford, technics entails the understanding of modern cultural development as has been "profoundly modified" by the development of the machine. But this is not to say that technics is synonymous with the machine age—indeed, as Mumford acknowledges, humans exhibited mechanical savoir-faire long before they developed machines to express their interests. Nonetheless, Mumford focuses on the development of modern civilizations as they evolved in accordance with technical know-how, from paleolithic to post-industrial man. His use of the term technics equates most simply to human utilization of material resources and tool-making.

By contrast, Martin Heidegger in his later work developed an understanding of technics as the very ground of being and becoming. A central question for Heidegger is what he understands to be the "essence" of technology. Essence here does not point to a discrete set of qualities to which technics is reducible, since technology, he understood, is as mutable as the cultural reality to which it corresponds; rather, Heidegger's essence of technology refers to a more general (and problematic) scientific worldview that tends to obscure the true sense of nature.

Technology is a way that we conceptually enframe the natural world that reduces it to a “standing-reserve” of resources. In “Conversation on a Country Road,” he explains that, “generally speaking, technology is a particular kind of thinking, namely the sort of thinking that concerns itself with the practical application of the theoretical sciences for the purpose of dominating and exploiting nature.”⁷⁵ Furthermore, it is this conceptual sense of technology, he argues, from which stems the ontological ground of being. Because the essence of technology is that which serves as the conceptual framework from which one can understand nature, humans are essentially technical beings. Technology serves as the enframing (*Gestell*) device [or “framework”] to understand reality.⁷⁶

Heidegger established a seminal theory of technology that presents technics as more than an anthropological concern; his work shifted the study of technology from the mere study of material culture to a truly philosophical matter that takes up questions of metaphysics concerning the way humans know and exist in the world. At around the same time that Heidegger was developing his late work on technology, the French philosopher and student of Maurice Merleau-Ponty, Gilbert Simondon, was simultaneously developing his two *magna opera* on technology: *L'individuation à la lumière des notions de Forme et d'Information* and *Du mode d'existence des objets techniques*. Like Heidegger, Simondon understands technics as the ground of being, but Simondon resists delineating an essence of nature from an essence of technology.

⁷⁵ Heidegger, quoted in Albert Borgman, “Technology,” *A Companion to Heidegger*, ed. Hubert L. Dreyfus and Mark A. Wrathall, (Malden, MA: Blackwell Publishing, 2005), 426.

⁷⁶ *Gestell* is typically translated as “enframing,” though Don Ihde and others prefer the notion of a “framework.” For example, refer to Don Ihde’s critique of Heidegger in *Existential Technics*.

Rather, both form part of a preexisting field of individuation. That is to say, in order for Simondon to eschew any substantialist notion that views nature, persons, or technical objects as preestablished individual entities, Simondon develops a theory of individuation which posits that individuation occurs from a state of what he calls *preindividual* being, taken to mean the field of potential forces and energies inherent in a system from which an individual emerges. In this manner, technics (or more concretely, technical objects) must be understood as an element of a larger system of being. Being constitutes that preindividual field from whence individuation occurs. He explains that “one mustn't consider being as substance, matter or form, but as an oversaturated system in tension, above unity,” so that an individual emerges not as a property of superior complexity within itself but emerges out of tension of the “oversaturated system” [*système tendu, sursaturé*].⁷⁷ To sum up, similar to Heidegger, Simondon views the role of technology as fundamental to being, but rather than a conceptual frame from which to view nature, technology is more akin to a field of potential energy from which, part and parcel with nature, individuals emerge. To understand the relation of nature and technology one must view it through the lens of individuation. I take up this idea further in chapter two when I explore the transformational subjects in J.G. Ballard's fiction.

⁷⁷ Gilbert Simondon, *L'individuation à la lumière des notions de Forme et d'Information* (Grenoble: Éditions Jérôme Millon - 2013 [1 re édition 2005]), 25. My translation. The full sentence reads: “*Pour penser l'individuation il faut considérer l'être non pas comme substance, ou matière, ou forme, mais comme système tendu, sursaturé, au-dessus du niveau de l'unité, ne consistant pas seulement en lui-même, et ne pouvant pas être adéquatement pensé au moyen du principe du tiers exclu; l'être concret, ou être complet, c'est-à-dire l'être préindividuel, est un être qui est plus qu'une unité.*”

Ultimately, technology should be viewed as a fundamental part of systems thinking, as it constitutes, along with nature, a significant element of “life” (understood by Simondon as biological, psychic, and social systems). The preceding overview of the interrelated branches of systems theory, second order cybernetics, and philosophy of technology help to frame the human subject as always already integrated in complex assemblages of material and social environments. I hope also to have made it implicit some of the ways in which systems theory can map onto but also question philosophies of the sublime. Systems theory helps us question the autonomy of the individual subject by complicating our traditional understanding of freedom; for instance, as the right of absolute and uncoerced expression implied in Kant’s triumph of reason. The autonomy of individual reason over nature inherent in the Kantian sublime gets recast here in light of the systems concepts *emergence* and *complexity*, both of which point to autonomy as more-than-human phenomena. Complexity points to the unfathomability of the whole (system), while emergent properties of a system point toward a gap between effects and their causes which I read in terms of Kant’s sublime abyss.

In this way, systems theory exposes the relationships of the individual to nature, environment, and technology. As touched on earlier, this dissertation assumes the systems perspective of Niklas Luhmann and Gilbert Simondon in asserting that being is non-essential. It doesn’t exist *a priori* to something—it happens as a process of becoming. It emerges in any environment, natural or technological, entails a systemic process of individuation (becoming) that emerges as a part and product of its

environment. This can be mapped more or less directly onto the sublime: imbricated in vast systems, the subject faces the indeterminacy of the self as it becomes increasingly difficult to differentiate individual parts from the excesses of the whole. A primary aim of this dissertation will be to underline the systems-constructedness of both human embodiment and human consciousness, phenomena which cannot be so simply located in a discrete unit we call an individual human being. I will argue that cognition—those faculties of understanding, reason, imagination—are technologically embodied and as such, create situations of emergence and transcendence.

Chapter Overviews

Chapter one examines Stanislaw Lem's novel, *Solaris*, a planet seemingly covered with a sentient ocean as a model of the incommensurability of human systems of knowledge to parse the unknowable universe. I coined the term *echo-system* as a way to conceptualize the feedback loop created between Solaris and the human scientists who would feign to categorize and measure what is beyond commensurability. The idea of feedback loops are of central importance throughout this dissertation as they help illustrate the ways in which subjects and environments are not discrete unto themselves but have qualities that are interdependent with each other. In chapter one I argue that the sublime encounter we recognize between the character Kelvin and the planet Solaris occurs as a result of such feedback systems, which in turn call into question the limit of human understanding.

Chapter two extends my conceptualization of *echo-systems* to consider how ecological and technological systems have transformative impacts on human

subjectivity. I consider the trio of early climate fiction novels by J.G Ballard, which explore the correlation between ecological disaster and the human psyche. Ballard's work is acutely concerned with the mapping of external landscapes with the interior ones of the human mind. The catastrophic environments of extreme climate change represented in his work mirror the unconscious drives of the human subject.

Borrowing a phrase from Donna Haraway, *Echo-systems II* posits that these narratives are paradigms of "making-with" catastrophe; that is to say, these echo-systems, I contend, are feedback systems which compel sublime transformation of the psyche.

Chapter three explores human desire as a thing sublime, what Lacan infamously calls the *objet petit a*, and considers how human desire, a thing taken to be unknowable, indescribable, and unfulfillable, is further constrained by systems motivated by social, political, and economic factors. I read two disparate texts, Ursula K. Le Guin's *The Lathe of Heaven*, and Arkady and Boris Strugatsky's *Roadside Picnic* as two case studies documenting the effects of such systems on human will. I depart somewhat from a Lacanian-Zizekian reading of sublime desire to incorporate the broader impact of social system communications, which I read through Niklas Luhmann double-contingency. I recognize the human subject as an entity who is contingent on such social systems—systems which, I argue, make one's desire and will unknowable.

Chapter four turns attention to the cyberpunk genre to more closely examine to what extent cybernetics and cybernetic principles are inherent in cyberpunk texts. I offer an extended reading of William Gibson, whose work most saliently explores

themes of machine embodiment and transcendence. Cyberpunk tropes, in the hands of Gibson, can eschew cliches and offer both real and imaginative potential for human freedom. At the same time, Gibson remains somewhat ambivalent about the stakes of a cybernetic future. I conclude that cybernetic operations form an integral part of our lived experience. I argue that various instances of the sublime occur in cybernetic processes, beginning with the premise that technical objects have replaced the natural objects of the sublime of Burke and Kant. The technological landscapes of cyberpunk pose experiences for the characters that surpass the capacities of normal human cognition and embodiment.

To close this dissertation, I turn attention briefly to examine representations of artificial intelligence in literature, in particular how they exhibit questions concerning the “hard problem” of consciousness. The hard problem concerns accounting for that part of reality that living systems experience (and perhaps others too—digital objects, for instance) but that yet have to be explained by modern science. In other words, what we know as *conscious experience* involves some extra bit beyond known qualia and physiological function. I posit two things for consideration. First, consciousness is that which exceeds a systemic understanding of itself, and as such, an essential aspect of it remains indefinable. This, I contend, falls under the aegis of the sublime. Conversely, non-living systems—such as AI, that exhibit what appears like consciousness—can not be proved to be conscious or nonconscious entities. This holds implications for considering consciousness as a privileged quality exclusive to certain species. I conclude my discussion of systems and the sublime by underscoring how

systems thinking aids us in thinking through the representation of complex social, technological, and philosophical themes in speculative fiction. I reiterate that humans and humankind are systems that are so thickly enmeshed in other encircling systems that one cannot be understood or particularized without considering the whole. I stress that systems theory does not explain but rather help to model the unknowable and unrepresentable in human affairs.

CHAPTER ONE: Echo-Systems I—The Inscrutable Other

“Progress threatens to nullify the very goal it is supposed to realize - the idea of man" (v).”

When Wordsworth “first beheld / Unveiled the summit of Mont Blanc,”⁷⁸ and, when beholding it, “gathered with one mind a rich reward / From the far-stretching landscape,”⁷⁹ there was no question of where he stood, nor of what he saw. Mountains and “wondrous Vales” and “rivers broad and vast” were objects and phenomena that presented to the poet analogies for the wildness of his own imagination. But all the same, they encapsulated concepts that could be readily synthesized and understood. For a thinker like Kant, the objects of capital-N Nature convey inherent laws that *ought* to be knowable to the perceiving subject.⁸⁰ Nature, he wrote, “carries with it a purposiveness in its form, by which the object [of nature] seems as it were predetermined for our power of judgment.”⁸¹ In other words, order inheres in nature purposefully for our own discernment. Nature is “objectively purposive” to our understanding of it when “its particular laws should actually be commensurate with our ability to grasp [that order].”⁸² However, when natural objects present to us features that are incommensurate with discernable concepts, those objects are said to represent the sublime. For both Wordsworth and Kant, the incommensurate features

⁷⁸ William Wordsworth, *The Prelude, 1799, 1805, 1850: A Norton Critical Edition*, (New York and London: W.W. Norton & Company, 1979), 213.

⁷⁹ Wordsworth, 197.

⁸⁰ “Ought” is a key figure of speech for Kant; the term connotes both the purposiveness and volition of the subject. It implies “can” but reflects an obligation to abide by moral law.

⁸¹ Immanuel Kant, *Critique of Judgment*, trans by Werner S. Pluhar, (Indianapolis and Cambridge: Hackett Publishing Company, 1987), 98.

⁸² Kant., 26.

of nature that exceed our ability to rationalize them could yet spur the imagination to greater heights; this, in part, forms the experience of the sublime.

In contrast, the scientific principles we have devised since at least the Enlightenment have sought to explain how the objects of nature might *always* be rationalized. In their defense of the inherent rationality of nature, professors of mechanical engineering Adrian Bejan and J. Peder Zane inform us that “Humanity’s great fortune is that nature has shape, structure, configuration, pattern, rhythm, and similarity. It has rules and order. It is knowable, reliable, and *on the whole*, predictable. From this stroke of luck, science was born and developed to the present day, where it is responsible for our well-being.”⁸³ They argue that similar patterns in natural phenomena, such as the similarities in pattern between a root system and a lightning strike, evince a unifying law, akin to Kant’s notion of objective purposiveness, that design in nature is governed by reason. Natural phenomena present their workings to us so that we may know them, that there might be, as Theodor Adorno and Max Horkheimer put it, a “‘happy’ match between human understanding and the nature of things.”⁸⁴ Thus, nature serves as a kind of educational textbook, an anatomy of what *ought* to be known of the natural world.

But when confronted with the sublime, the textbook is tossed aside and suddenly the perceiving subject is uncertain how to apprehend the object he

⁸³ Adrian Bejan and J. Peder Zane, *Design in Nature: How the Constructal Law Governs Evolution in Biology, Physics, Technology, and Social Organization*, (New York: Random House Anchor Books, 2012), 148.

⁸⁴ Max Horkheimer and Theodor W. Adorno, *The Dialectic of Enlightenment: Philosophical Fragments*, trans by Edmund Jephcott, (Stanford: Stanford University Press, 2002), 2.

perceives. For Kant, the object of the sublime encounter presents something that is not intuitively comprehensible by the faculties of mind, but rather compels in us a “supersensible” power of subjective purposiveness.⁸⁵ That is to say, the object of the sublime does not present to us in its form and phenomena purposive rules of nature; its purpose, instead, is supersensible in the way it compels us beyond our own sense perceptions and faculties of mind, and in doing so proposes that there ought to be a way above—that human subjects ought to be capable of extending above their “usual middle range.”⁸⁶

Both the objective purposiveness of nature and the sublime encounter are opportunities, in Kantian terms, for humans to reflect on the world around them and how they fit into its scheme. One has the capacity to attune one’s own sensibilities to the information presented by the natural world. In both Kant and Wordsworth, nature serves as ready-made metaphors for understanding ourselves. Wordsworth’s reflection of his ascent of Mont Blanc is what “reconciled [him] to realities,” allowing him to recognize his own limits,⁸⁷ yet the “raging torrents” and “unveiled summits” are meant as analogies for the wildness of imagination and the ascension of human intellect. Kant posited that natural objects could be apprehended when our faculty of reason was able to produce concepts to match our perception. If Kant’s transcendentalism sought harmony between the faculties of mind and the concepts that inhere in nature, Wordsworth’s egoism deployed the power of the imagination to rule over the natural world. These two modes of apprehension—the one privileging

⁸⁵ Kant, 103.

⁸⁶ Kant, 121.

⁸⁷ Wordsworth, 212.

reason and the other the imagination—are ways that the subject, confronted with a thing greater than himself, can come to understand himself. But on the same token, enlightenment rationality has, from the 17th century onward, positioned man as an intellectual creature separate from (and above) the natural world. Under the enlightenment rubric, the sublime encounter is less about a sensory experience and becomes more about the hierarchical ascension of man over nature. The human (masculine) intellect meets the sublime object of nature, and through his own powers of reason is able to subjugate the scope and force of the natural world into his own context. A primary problem of this mode of the sublime has been its philosophical kinship with other totalizing forms of knowledge, including institutional racism, and more specifically to this chapter, instrumental reason.

In this chapter, I read Stanislaw Lem's novel *Solaris* as a model of recalcitrance to human reason. *Solaris* presents systems of natural phenomena that thwart human attempts to understand it. I show that the human scientists' endeavors to understand the strange phenomena of the planet fall back on anthropogenic metaphors and therefore foreclose any possibility of understanding the planet as it is. I've identified this as a trope common to speculative fiction, which I've termed an "echo-system." Here I distinguish echo-system from ecosystem. Ecosystems, on the one hand, are complex networks of interacting systems—composed of organic and inorganic materials, live and inanimate matter, and sentient and non-sentient organisms. Both living and non-living elements of the ecosystem operate coextensively with each other. Each part is explicable in its function and correlation

to the whole. The ecosystem connotes energy flow, renewal, and symbiosis. I use echo-system, on the other hand, as a term to describe the humanist compulsion to reflect ourselves in the environment. I argue that nature, represented by the planet Solaris, is an echo-system that mimics and subverts our modes of apprehension. Echo-systems are explicable so far as they correspond to human analogies. Landscapes and physical phenomena become analogs for human understanding. A seemingly sentient planet is a brain; the emergence of a prehistoric climate is correlated to the human psyche. We instrumentalize our technologies and scientific principles under the façade of attaining greater understanding of the natural world, but our observations only end up reflecting our own values. An echo-system is a space that has come within the purview of human savoir-faire and presumes that the human subject can be abstracted from the system they observe. Or in another sense, that nature has been abstracted from the individual.

When we step foot on any terra incognita, its use-value automatically becomes subject to the human capacities that judge it. For many critics, this has come to define the enlightenment.⁸⁸ In *The Dialectic of Enlightenment* for example, Theodor Adorno and Max Horkheimer stress that the enlightenment project poses the human power for reason and scientific inquiry above all:

Enlightenment stands in the same relationship to things as the dictator to human beings. He knows them to the extent that he can manipulate them. The man of science knows things to the extent that he can make them. Their “in-itself” becomes “for him.” In their transformation the essence of things is

⁸⁸ Most notably, see Bruno Latour, *We Have Never Been Modern*, and Adorno and Horkheimer, *The Dialectic of Enlightenment*.

revealed as always the same, a substrate of domination. This identity constitutes the unity of nature.⁸⁹

In posing the enlightenment subject (“the man of science”) as a dictator that stands above nature, Adorno and Horkheimer correlate the enlightenment project, including its scientific apparatuses, with the mass objectification of the material world and the world of men. Nature becomes a thing to be measured independently of its observer; it is to serve as a means to an end (for example, that a river should exist to turn a water wheel, or that a river’s course should *have* to be altered for the sake of industry). To further this point, Horkheimer argues that reason—itself once considered to be an objective aspect of the natural world—has, over the intervening years, become increasingly a subjective faculty instrumentalized to serve the most efficient ends. “Concepts,” Horkheimer writes, “have become streamlined, rationalized, labor-saving devices.”⁹⁰ That is to say, that to rationalize the material world is only reasonable so far as we can produce concepts that are meaningful to our own end. We seek that in nature which we can easily identify with our own a priori concepts, not because we are lazy and that concepts we know already are “labor-saving devices,” but because recognizing that which jibes well with our own rationale reduces anxiety about what is other. Instrumental reason is the primary mode enabling human subjectivity in the modern world.⁹¹ And yet, “the more all nature is looked on as a ‘mess of miscellaneous stuff’, as mere objects in relation to human subjects,” Horkheimer argues, “the more is the once supposedly autonomous subject emptied of content,

⁸⁹ Horkheimer and Adorno, 6.

⁹⁰ Max Horkheimer, *Eclipse of Reason*. (New York: Oxford University Press, 1947), 21.

⁹¹ Max Weber, “Science as Vocation,” *From Max Weber: essays in Sociology*, trans by H.H Gerth and C. Wright Mills, (London and New York: Routledge, 2009), 24.

until it finally becomes a mere name with nothing to dominate”.⁹² The paradox here is that in deploying rational concepts that fit nature’s phenomena to our own ends, the subject himself becomes another object instrumentalized as a means to an end. We see this play out in *Solaris* as Kelvin and the other scientists gradually become “emptied” of purpose, having exhausted every concept and failed every measurement, perhaps even becoming “the object of an experiment” themselves.⁹³ The echo-system, then, illustrates that once humanity has excised itself from belonging to nature, it still seeks itself there. The subject, obsessed with “the total transformation of each and every realm of being into a field of means” has in the process destroyed his own center.⁹⁴ As an echo-system, *Solaris* simultaneously reflects and pushes back against the scientists’ compulsion to rationalize it. As I will show in this chapter and the next, echo-systems reflect human value on one hand, but on the other hand create paradoxes and contra-purposive tendencies to its human observers. Echo-systems refuse to be transformed into “a field of means.” In doing so, I argue, there opens a space for irrational and paradoxical thinking that is sublime.

Instrumental Reason and Earthly Metaphor

In Stanislaw Lem’s *Solaris*, a small crew of scientists orbit the planet’s vast ocean in order to examine its odd phenomena. The *Solaris* ocean is variously described as exceeding “terrestrial organic structures in complexity,”⁹⁵ and as a “a monstrous entity endowed with reason, a protoplasmic ocean-brain enveloping the

⁹² Horkheimer, 93.

⁹³ Stanislaw Lem, *Solaris*, trans. Joanna Kilmartin and Steve Cox, (San Diego: Harcourt, Inc, 1970), 17.

⁹⁴ Horkheimer, 93.

⁹⁵ Lem, 18.

entire planet.”⁹⁶ The scientists currently aboard the Solaris space station are preceded by a century of solaristics—a scientific and academic discipline devoted to study of the planet—that has, in the intervening years, only proliferated more theories rather than achieved any real understanding. Human culture, as represented in the novel, is obstinate about measuring and categorizing the universe according to their own rubric. Even as the planet Solaris presents as an object-entity entirely foreign to human understanding, the crew—Snow, Sartorius, and the novel’s protagonist, Kris Kelvin—continue to deploy human concepts in the attempt to somehow assimilate Solaris phenomena into the domain of human *savoir-faire*.

At first, some planetary phenomena seem like they could be rationalized. It is commonly accepted among the scientists that the “ocean was an organic formation,” and despite the fact that “no one dared called it living,” descriptions of its phenomena often lapse into life-like analogies.⁹⁷ For instance, it seems like the planet can exhibit attributes of agency and consciousness.⁹⁸ Because the planet revolves in an irregular trajectory around twin stars, and yet seems to self-correct itself, they muse that the ocean is like a “gigantic entity” which is capable of “exerting an active influence on the planet’s orbital path.”⁹⁹ The scientific rationalization of this kind of phenomena is that the planet must be in some sense self-aware and furthermore able to correct itself as if it were alive. There are many other potential explanations for planetary motion

⁹⁶ Lem, 22.

⁹⁷ Lem., 17.

⁹⁸ I will further discuss Solaris consciousness below.

⁹⁹ Lem, 18.

that are conveniently excluded from the narrative, but the point remains that for the original solarisists, these phenomena correspond to easily parsed human concepts.

The Solaris ocean is capable of creating amorphous, gelatinous formations the scientist dub “mimoids.” Mimoids seem to react to human input and can even seem to represent human concepts. Inexplicably, they appear to mimic not merely the subconscious of its human visitors, but also to be capable of arraying entire constellations of human history and its collective unconsciousness. At one point, a particular form of mimoid called a symmetriad morphs into shapes resembling human cities, as if the ocean itself were thinking human thoughts, and, as one solarist observes, its mutations “are to be seen as stages in the life of an evolving organism,” until “we finally arrive [at] some understanding of the symmetriad.”¹⁰⁰ Indeed, Solaris’s reactions to the humans signal that it is in some way aware of the subtext of their visit. On one hand, the “proto-plasmic ocean brain” exhibits problem-solving skills (regarding the correction of its orbit) and is also observed in a never-ending process of “ontological autometamorphosis”¹⁰¹ as it appears to behave like a living thing, and yet on the other hand the mimoids are said to not be “stimulated by human beings themselves, and in fact [do not] react to any living matter.”¹⁰² And thus, the solarists conclude, “it proved impossible to sustain the concept that the living ocean examined problems of matter, the cosmos, and existence.”¹⁰³

¹⁰⁰ Lem, 120.

¹⁰¹ Lem, 24.

¹⁰² Lem, 115.

¹⁰³ Lem, 119.

The attributes of consciousness and agency that the scientists ascribe to Solaris not only reflect concepts that they are already familiar with, but also underscore the difficulty of parsing alien systems. While they are eager to attribute features like consciousness to what could be, for all intents and purposes, a non-sentient ecosystem, Solaris proves that consciousness is a concept that is “impossible to sustain” outside of the human domain. Solaris could very well *be* conscious, but the point I want to emphasize here is that the echo-system is constituted by both the human compulsion to see themselves echoed by the universe, and the problems incurred when what is reflected back cannot be parsed in human terms.

Beyond life-like analogies, the scientists are also fond of assigning machine-metaphors to Solaris, and in particular to its symmetriads. In “The Monsters,” one of the chapters of the novel devoted to the discursive history of Solaris studies,¹⁰⁴ Kelvin reads from the annals of the scholar Giese, who years before had condensed observations of the mimoids into “three hundred chapters” of “the standard formations.”¹⁰⁵ Giese notes, conversely, that the “interior of the symmetriad becomes a factory for the production of ‘monumental machines’” and that it would be only natural to suppose that the symmetriad is a “computer of the living ocean, performing calculations for a purpose that we are not able to grasp.”¹⁰⁶ By instrumentalizing anthropocentric analogies to account for the alien phenomena of the

¹⁰⁴ In the English translation by Joanna Kilmartin and Steve Cox, copyright 1970. Some translations of chapter titles, and even character names (Snaut = Snow) diverge from the original and were disapproved of by Lem.

¹⁰⁵ Lem, 116.

¹⁰⁶ Lem, 118 and 119, respectively.

planet, such as assigning the ocean the properties of thought, or to the mimoids the activity of a factory, the scientists deliberately misprize their observations and replace them instead with observations from their own world, in their own context, as a means to an end of expeditiously ‘solving the problem’ of Solaris. What anthropomorphic observations and analogies serve to do in the first place is to assimilate the other into our own schemata. Once we have ascribed the objects, organisms, and other phenomena of the universe to our own principles, it becomes all the easier to subjugate those things, first into fields of knowledge and then into vectors of power.

What Kelvin and the other scientists come to realize is that expeditious anthropocentrism has spawned a century worth of discourse that adds up to no more than a catalog of anthropomorphized observations. Even Giese, the “scholarly classifier,” has made it evident that “genius and mediocrity alike are dumbfounded” by the oceanic formations of Solaris—so that “no man has ever become genuinely conversant with them.”¹⁰⁷ Both the current scientists aboard the Solaris station and the body of human knowledge that precedes them fail to adequately apprehend Solaris phenomena. In a conversation with Snow that Kelvin has shortly after he arrives on the station, Snow, perhaps the most rational of the human scientists, aptly surmises that humankind doesn’t want to “conquer the cosmos:

we simply want to extend the boundaries of Earth to the frontiers of the cosmos. For us, such and such a planet is as arid as the Sahara, another as frozen as the North Pole, yet another as lush as the Amazon basin. We are humanitarian and chivalrous; we don’t want to enslave other races, we simply

¹⁰⁷ Lem, 111.

want to bequeath them our values and take over their heritage in exchange. We think of ourselves as the Knights of the Holy Contact. This is another lie. We are only seeking Man. We have no need of other worlds. We need mirrors.¹⁰⁸

Snow insists in this passage on an essential truth that Kelvin has not yet realized. The human compulsion and enthusiasm for exploration is a “sham,” he argues, since the prime motive of human expansion, he’s suggesting, is not to seek out new worlds,¹⁰⁹ but rather to search “for an ideal image of our own world;” a civilization that is perhaps superior to ours, but all the same rooted in some idea of our own “primordial past.”¹¹⁰ The prime directive, when all is said and done, is simply to extend our boundaries and bequeath our values upon the Other. And in order to impart those earthly values, we must first ascribe to alien cultures our earthly metaphors. *Solaris*, however, lacks those terrestrial features such as an icy pole or arid Sahara and instead presenting its vast, amorphous, ocean-like surface for the scientists to guess at. It’s no coincidence either, that at the time of this writing our own ocean is still the least explored and least known feature of our own planet. Our go-to metaphor for the ocean—that its depth represents the unknown, or the repressed—and that is a symbol of our unconscious, are ready-made concepts that are undermined in the novel. When Snow suggests that “we need mirrors,” we get *Solaris*, an echo-system that is paradoxically reflective and impenetrable.

In light of Snow’s monologue, we can begin to view in structural terms how both the planet *Solaris*, and the novel *Solaris*, function as echo-systems. While the

¹⁰⁸ Lem, 72.

¹⁰⁹ An easily identifiable trope in SF has earthly travelers encountering ‘strange new worlds,’ that are yet quite similar to our own; as in *Star Trek*, or *Gulliver’s Travels*

¹¹⁰ Lem, 72.

phenomena of the alien planet tend to subvert or push back against human input, likewise, Lem has structured his narrative as a subversion of the very rationality his human characters project onto the universe. The narrative structure of *Solaris* is somewhat unique among science fiction novels of its time, as it serves on one hand as a parody of first contact narratives, yet at the same time delivers that satire via very dense, discursive chapters that detail an imagined techo-scientific history of the planet. Arguably, the discursive chapters of *Solaris* are what make it a stand-out science fiction text. That discourse at once echoes what we privilege about human endeavor—the compulsion to explore the unexplored and understand the unknown—yet undermines our hubris by reminding us that whatever alien life might look like, it will most likely not look like us, nor be analogous to our ways of understanding.¹¹¹ In the next section I will read the planet Solaris as an individuated subject that emerges precisely through its capacity to *read* and *echo* its environment.

Solaris: Thing-power

In a lecture given in 1917 at the University of Munich, sociologist Max Weber argued in front of a crowd of academics that science was inadequate to account for the complex realities of lived experience. Science, he claimed, could only produce “self-clarification and knowledge of interrelated facts,”¹¹² but could not adequately discern human value or meaning. “The fate of our times,” he claimed, “is characterized by rationalization and intellectualization and, above all, by the

¹¹¹ It’s been observed that any self-respecting scientist would already realize this, as Lem did, and yet the fantasy of human-like life persists in popular culture.

¹¹² Weber, 21.

'disenchantment of the world.'"¹¹³ The phrase “disenchantment of the world,” made famous here by Weber, connotes the loss of a mystical aura of the unknown in a rapidly modernizing world in which anything unexplainable *ought* to be made explainable through the principles of scientific discovery. He argues that what had hitherto made us human, those “ultimate and sublime values,” as he calls them, had begun to retreat from human relations, only to be replaced by technological rationality. This is an essential conflict that lies at the heart of the human condition. We at once strive for the application of those sublime values (in Weber’s case, religious and mythic sensibilities that connect us), and Enlightenment ideals such as reason and the scientific method that, by serving to answer our questions about inexplicable phenomena, freed us from the domain of religiosity. The paradox of sublime value versus scientific knowledge is essentially human.

Elsewhere, Max Weber describes that the increased reliance on scientific rationalism has enclosed us in an “iron cage” (*stahlhartes Gehäuse*).¹¹⁴ It follows that with an increase in technological specialization (especially in terms of one’s labor) comes a decrease in individual autonomy and a loss of individuality. Writing in communist Poland, Stanislaw Lem may have felt the effects of such rationalization acutely, and much of his output can be read as discreetly disparaging centralized bureaucracies. To that point, the iron cage metaphor is particularly suited to the scientists who study *Solaris*, each of whom represents a specialized discipline, but none of whom can explain its phenomena, nor indeed even communicate with each

¹¹³ Weber, 20.

¹¹⁴ Max Weber, *The Protestant Ethic and the Spirit of Capitalism, with Other Writings on the Rise of the West*, trans by Stephen Kalberg, (New York and Oxford: Oxford University Press, 2009), 158.

other. Conspicuously, Kris Kelvin is a psychologist—arguably the most anthropocentric discipline—not a “hard” scientist like the rest of the crew, so he’s ostensibly been sent there to study the other humans and not the planet itself. Kelvin, trained as both a scientist (and astronaut), and as a studier of human mental and emotional phenomena, is astutely specialized for this mission. As it turns out, upon his arrival at the station his encounters with the other scientists prove as strange as the planet itself. While Kelvin initially privileges his rational mind, the strange events and phenomena he is confronted with first make him question his sanity (along with that of the other scientists), compelling him to “think up some experiment in logic”¹¹⁵ that would prove or disprove the validity of his empirical experiences. Eventually—after proving himself perfectly reasonable—he begins to concede to the notion that Solaris presents to him what would be those ‘sublime values’ of Weber. Ultimately, Kelvin’s arc is that of *re-enchantment* with the world.

As I stated earlier, the Solaris ocean would seem to the scientists to exhibit both agency and consciousness, and they are compelled to correlate their observations with earthly lifeforms and technology. However, I want to emphasize the idea that both agency and consciousness are not exclusive properties of sentient life, nor any life. While the ocean looks and acts “alive” the reader is never led to believe that the planet is a being in its own right. It does, however, seem to react in ways that call into question what properties make a thing “alive” or sentient. This is illustrated early in the novel, when humans first deploy scientific devices to ‘measure’ the ocean:

¹¹⁵ Lem, 49.

The first attempts at contact were by means of specifically designed electronic apparatus. The ocean itself took an active part in these operations by remodeling the instruments. All this, however, remained somewhat obscure. What exactly did the ocean's 'participation' consist of? It modified certain elements in the submerged instruments, as a result of which the normal discharge frequency was completely disrupted and the recording instruments registered a profusion of signals—fragmentary indications of some outlandish activity, which in fact defeated all attempts at analysis.¹¹⁶

“Participation” here is accorded to the fact human instruments were remodeled and “modified” through some undescribed action. However, it does not mean that this kind of “participation” is a resultant action of sentient life. We need to look no further than our own earthly plants as models of non-sentient organisms that “participate” in their environment: actively seeking out sunlight above, and the nutrient-rich water table below. But also, plant communities such as mixed pine forests participate in the active “remodeling” of their landscape as a result of their growth, decay, fuel build-up, and erosion. One must only witness a fallen tree blocking a river to see how this works. In fact, couldn't a simple house-plant participate in the passage cited above, perhaps remodeling the instruments by inserting its tendrils and maybe short-circuiting the device's measurements? In short, plants are non-sentient organisms that exhibit traits of agency and consciousness. These attributes of “action” are merely signs of organized life as we know it.

What's not entirely made clear, or, one should say, what is left intentionally ambiguous is whether the planet Solaris is to be considered as a life-form or not. The alien material acts and reacts, and seems to perceive both human action and thought, but this is not to say that matter must be sentient to exhibit these attributes. A long

¹¹⁶ Lem, 21.

history of human thought precedes the passage above in considering what provokes the powers of agency, from Plato to Kant to Henri Bergson. Kant, for instance, sought in the purposive of nature some clue that would account for the difference between animate and inanimate matter.¹¹⁷ He postulates that life, as a “self-organizing being”¹¹⁸ must possess an “inscrutable power” that distinguishes its natural purpose from the mechanistic organization of inanimate matter. Bergson similarly describes an *élan vital*, a vital impetus that distinguishes life and its “process of becoming”¹¹⁹ from surrounding inert matter through its own “inner directing principle.”¹²⁰ But unlike Kant, who thought that the design of nature ought to be purposive to some end (i.e., purposive of our own discernment of and attunement to it), Bergson argues that the evolution of life is purposive in that is compelled to distinguish and dissociates itself from lesser forms of matter.¹²¹ The impetus of life, then—that inner directing principle—is simply to evolve, which might only necessitate increasing organizational complexity.

Political philosopher Jane Bennett reads in both Kant and Bergson the vague, “inscrutable power” separating life from non-life as a failure to imagine a vitalism that privileges matter itself as discrete. In particular, she singles out Kant’s use of the notion of *Bildungstrieb*. *Bildungstrieb*, translated roughly as ‘the impetus to learn,’ names “the inscrutable self-organizing power present in organisms but not in mere

¹¹⁷ See Kant, *Critique of Judgment*, sec. 73, 78, 80, and 81 for a discussion on the supposed mechanistic system of natural purposiveness.

¹¹⁸ Kant, 253.

¹¹⁹ Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell, (New York: Barnes & Noble, 2005), 23.

¹²⁰ Bergson, 81.

¹²¹ Bergson, 73.

aggregates of matter.”¹²² It is an innate “ability” that is distinguishable from the mere mechanisms that inhere in organic (if inanimate) forms. Bennett’s critique of Kant focuses on the fact that, while *bildungstrieb* is what “impels an undifferentiated crude mass” to become “an organized articulation of cooperating parts,”¹²³ it all the same remains anchored to forms of organic, sentient life.

Bennett’s project, then, is to examine the idea of agency that is integral to materiality as such. She implies that that “impetus to learn,” ought not just inhere in persons and trees, but in things. Her vital materialism, as she has named it, seeks to refocus power relationships between persons and their environment (subjects and objects) to show how “every nonhuman body shares with every human body” an “active impulsion” to be recognized, affected by, and to affect the other.¹²⁴ “Thing-power”¹²⁵ seeks to place objects in the position of actors, in part by establishing that things *do* affect us, and not just the other way around. Thing-power provokes us to think about our relation to everyday trivial material. Bennett suggests that a glint from a piece of broken glass could be said to exhibit agency, “catching” the sun just right. “Stuff,” she insists, “issues a call” that results in our noticing it.¹²⁶ Thing-power bears some superficial allegiance with Bruno Latour’s work on Actor-Network-Theory (ANT), which elucidates how “assemblages” comprised of both the social (people / institutions) and material (technical objects) coordinate to

¹²² Jane Bennet, *Vibrant Matter: A Political Ecology of Things*, (Durham and London: Duke University Press, 2010), 65.

¹²³ Bennet, 66.

¹²⁴ Bennet, 2.

¹²⁵ Bennet, 3.

¹²⁶ Bennet, 4.

produce “actions” that are not attributable to just people.¹²⁷ These actants,¹²⁸ as Latour calls them, can exhibit power or produce effects independent of human input. “The notion of thing-power,” Bennett writes, aims to “attend to the [thing] as actant” and tries, “impossibly, to name the moment of independence (from subjectivity)” and to give voice to a vitality intrinsic to materiality, in the process absolving matter from its long history of attachment to automatism or mechanism.”¹²⁹

In *Solaris* we can read a case study of thing-power. The ocean’s “active part” in producing a “profusion of signals” from the measurement instruments points to some “inscrutable power” vital to the material of the ocean itself. It is a thing that *acts* like a non-thing. It is, in systems terms, a self-organizing system of increasing complexity. Its orders of complexity and organization, however, remain indiscernible to humans. Rather, they know but cannot grasp that “beyond the limits of perception or imagination, thousands and millions of transformations are at work.” It is a “symphony in geometry” as one scholar puts it, “but we lack the ears to hear it.”¹³⁰

Reenchantment

When Thomas Nagel poses the question “What Is It Like to Be A Bat?”, he is pointing out the fact that, if an organism has “conscious experience *at all*, means basically that there must be something it is like to *be* that organism” [emphasis in the original].¹³¹ This suggests that whatever it means to *be*, means also that there are

¹²⁷ Bruno Latour, *Reassembling the Social: an Introduction to Actor Network Theory*, (Oxford: Oxford University Press, 2005), 9, 131, 235, respectively.

¹²⁸ Latour, 54.

¹²⁹ Bennet, 3.

¹³⁰ Lem, 121.

¹³¹ Thomas Nagel, “What is it Like to Be a Bat?” *The Philosophical Review*, Oct., 1974, Vol. 83, No. 4 (Oct., 1974, Duke University Press. pp. 435-450), 436.

relatable criteria for *being that way*. The problem for Nagel lies in the fact that relatable criteria are at best infeasible if not impossible between different organisms. Between humans and bats, for example, lie several differences in the structures of our respective physicality and sense apparatuses. Because we don't fly or have sonar, nor do we perceive or process inputs to our nervous systems the same way, it would be impossible to imagine the experience of being a bat.

It will not help to try to imagine that one has webbing on one's arms, which enables one to fly around at dusk and dawn catching insects in one's mouth; that one has very poor vision, and perceives the surrounding world by a system of reflected high-frequency sound signals; and that one spends the day hanging upside down by one's feet in an attic. In so far as I can imagine this (which is not very far), it tells me only what it would be like for me to behave as a bat behaves. But that is not the question. I want to know what it is like for a *bat* to be a bat.¹³²

Instead, we would be imagining simply what it is like for a human to experience *what it is like* to be a bat. And here we are stuck again in the inescapable identification-by-analogy problematic. He points out the reality that it is possible our own minds lack the faculty for understanding an organism, even a higher lifeform mammal such as bat, that is in the end unlike us in significant ways. He extrapolates from this that there may be “facts which *could* not ever be comprehended or represented by human beings” simply because we lack a structure that would “permit us to operate with concepts of the requisite type.”¹³³ This is precisely what the human scientists struggle with on Solaris.

¹³² Nagel, 440.

¹³³ Nagel, 441.

Solaris's very materiality, in fact, represents a body of incommunicable knowledge. In a barrage of mixed signals, Solaris repeatedly defies human scientific principles.¹³⁴ A paradox persists, in the novel as well as our own reality, in which scientific discourse is counted on to rationalize contradictory outcomes. The planet's symmetriad formations, for example, are said to contradict "various laws of physics" and in which the instability and capriciousness of their structure, "even the laws of physics do not hold." On the other hand, they still adhere to the theory that the "living ocean is endowed with intelligence."¹³⁵ While its behavior—to use the term cautiously—had "shown no signs of aggression," and "appeared to shun any direct contact with men," "recoiling whenever anything approached its surface,"¹³⁶ the ocean is yet, "especially interested in our sleeping hours, and that is when it locates its patterns."¹³⁷ The inability for humans to apprehend its phenomena one way or the other reiterates the fact that they lack a proper starting point from which to compare.

Feminist philosopher Karen Barad, in her analysis of a form of sea-life called a brittlestar, elucidates that even earthly creatures do not adhere to fixed notions of a mind-material split. The brittlestar is a cousin to the starfish that lacks discrete visual organs (eyes); instead, its visualizing system is dispersed across its entire body. "Brittlestars don't *have* eyes; they *are* eyes," she writes. "It's not merely the case that the brittlestar's visual system is embodied; its very being *is* a visualizing

¹³⁴ Our scientific principles are laws only because they have become naturalized through repeated study and discourse.

¹³⁵ Lem, 118, and 117 respectively.

¹³⁶ Lem, 39.

¹³⁷ Lem, 127.

apparatus.”¹³⁸ In other words, there exists no separation between “the mind of the knowing subject” as she puts it, “and the outside world.”¹³⁹ Solaris, too, is best interpreted as existing without dividing lines between its materiality and its affects. Solaris is neither an earth-like planet nor a planet-like organism, but its effects are read by the scientists as indicators of agency that coalesce discretely in its symmetriads—those “computer[s] of the living ocean.”¹⁴⁰ It’s worth adding that slime molds, while not “alive,” also exhibit similar conflations of physical and sensory systems. A slime mold can read and react to its environment, can deduce patterns, can communicate, split, and rejoin with itself, all while lacking sense organs or a nervous system.

Since Solaris seems capable of both reading and reacting to specific human input and yet eschews, at every turn, conceptual framing (the hyphen in earth-like planet or planet-like organism is one such conceptual failure), its refusal to be “named” so to speak, can be read as a re-enchantment of the world—a pushback against rationalization. If we are to read agency and consciousness in the phenomena of Solaris, we must be careful to note that “obedience” to our concepts “does not constitute evidence of cooperation.”¹⁴¹ In fact, as it becomes clear to Kelvin later in the novel, it is perhaps the humans themselves that were “the object of an experiment.”¹⁴² Solaris’ very incommensurability serves as a salve to Weber’s

¹³⁸ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, (Durham and London: Duke University Press, 2007), 375 (emphasis in the original).

¹³⁹ Barad, 375.

¹⁴⁰ Lem, 119.

¹⁴¹ Lem, 115.

¹⁴² Lem, 103.

“disenchantment of the world.” Its paradoxes, profusion of mixed signals, and recalcitrance to human concepts are meant as a reflection of those “sublime values” lost to technical rationality.

In the next section, I explain how the sublime is represented in *Solaris* through the encounter between humans and the human simulacra projected by the ocean. In particular, Solaris’ projection of Rheya, Kelvin’s deceased wife, represents a sublime simulacrum—itsself an echo-system that attempts to mimic human interiority, but in so doing emerges as a subject in [her] own right. I argue that Rheya’s evolution from object to subject, and Kelvin’s resignation to human insignificance are what constitute the sublime.

Sublime Simulacrum

Of the many enchanting phenomena of Solaris, its most conspicuous trick lies in its replication of human forms which it projects on to the space station as flesh-and-blood apparitions. These “visitors” are representations of the human scientists’ past recollections.¹⁴³ Ostensibly more complex than the mimoid formations of the planet’s ocean, the visitors are simulacra of human beings in matter and form. They are “ordinary human [bodies], with muscles, bones, joints.”¹⁴⁴ They speak, think, and act with autonomy, and Kelvin’s visitor is for all intents and purposes “a real person, someone you can touch, someone you can...draw blood from.”¹⁴⁵ The problem with the visitors is that they are, in outward appearance, actual beings, but in

¹⁴³ Lem, 160.

¹⁴⁴ Lem, 62.

¹⁴⁵ Lem, 33.

practice are accepted as simulations of actual beings, and by an ironic turn are physical reproductions of the inner consciousnesses of their human counterparts.

In art and philosophy, a simulacrum is an aesthetic concept in which a representation or copy of a thing is inauthentic, or somehow works to conceal the truth. In Plato, a simulacrum is *mere appearance* with no underlying substance or truth to it. This is why poets were bad news for him: they created imaginary representations that could detract from the truth of the original form. Postmodernist Jean Baudrillard takes it one step further in asserting that simulacra no longer conceal the truth, but they have taken on a new form of representation in which a truth no longer has an original reality. One of his most important points is that a simulation is more dangerous than a replica or copy, because it's difficult to objectively differentiate a simulation from the truth. He writes that

To dissimulate is to feign that you don't have what you have. Simulation is to feign that you have what you don't have. The one is a presence, the other an absence. But the matter is more complicated, because to simulate is not to feign: 'One who feigns a sickness can simply lay in bed and make believe they are sick. One who simulates an illness has to produce some symptoms (in themselves).' Thus, to feign, or dissimulate leaves intact the reality principle: the difference is always clear, it is only a mask. While simulation questions the difference of "true" and "false," of "real" and "imaginary." Is the simulator sick or not, since he produces 'true' symptoms? We cannot treat him objectively as sick or not sick.¹⁴⁶

¹⁴⁶ Jean Baudrillard, *Simulacres et Simulation*. (Paris: Éditions Galilée, 1981), 12. [*Dissimuler est feindre de ne pas avoir ce qu'on a. Simuler est feindre d'avoir ce qu'on n'a pas. L'un renvoie à une présence, l'autre à une absence. Mais la chose est plus compliquée, car simuler n'est pas feindre : "Celui qui feint une maladie peut simplement se mettre au lit et faire croire qu'il est malade. Celui qui simule une maladie en détermine en soi quelques symptômes." (Littré.) Donc, feindre, ou dissimuler, laissent intact le principe de réalité: la différence est toujours claire, elle n'est que masque. Tandis que la simulation remet en cause la différence du "vrai" et du "faux", du "réel" et de l' "imaginaire". Le simulateur est-il malade ou non, puisqu'il produit de "vrais" symptômes? On ne peut ni le traiter objectivement comme malade, ni comme non malade.*]My translation.

Kelvin's visitor takes the form of his deceased wife, Rheya, who appears without recollection of how she arrived or of what she had been doing or thinking before her encounter with Kelvin. Initially, her interior state is merely one of astonishment for simply *being*. Kelvin's reaction is abject terror, then skepticism. But Rheya seems at every turn to soften Kelvin's hard rationalizations. Rheya as a simulation is challenging to consider as completely real or completely fake. It's important to keep in mind that the human being known as Rheya (who is a character in Kelvin's backstory) is never introduced to the reader, and if the simulation is a projection of Kelvin's consciousness, then we can never be sure if there is any objective Rheyanness to the simulated Rheya.

Rheya and the other "visitors" are sublime simulacra which echo and subvert the endeavors of the human scientists. As simulations, the "visitors" function as mimics of the very systems of scientific observation the humans undertake on the planet; they are the ostensible instruments of observation. But the simulacra also serve as a reflection of the inner space of the human visitors—a space that for all their human endeavor remains incomprehensible to them.

According to the traditional notion of the sublime, when Kelvin (and the other scientists) come up against an object of nature (an Other) that exceeds the limits of comprehensibility, the limits of one's own subjectivity also get called into question—what Kant identified as a sublime abyss, a gap that exists between our rational concepts and the thing itself. "If a thing is excessive for the imagination," he writes, "(and the imagination is driven to [such excess] as it apprehends the thing in

intuition), then the thing is, as it were, an abyss in which the imagination is afraid to lose itself.”¹⁴⁷ The sublime encounter is marked by this space of incommensurability—or impossibility—between the subject and the sublime object, a space across which the imagination struggles to apprehend. The subject feels threatened to lose its sense of itself (imagination) in relation to a sublime object. In other words, when a subject cannot apprehend what lies beyond itself, the boundaries between subject and object break down. The beyond can be figured as an object, or another subject, or, more ephemerally, it could be forces exerted either externally upon the subject or internally from within, such as political coercion or one’s own fear.¹⁴⁸ In the experience of the sublime, the subject is able to overcome this abyss, at least in part, through the realization that a concept *could* exist that *could* account for the incommensurate other. However, that concept still remains out of reach for the subject.

The sublime presents itself in a number of ways to the inhabitants of the Solaris station. Solaris itself presents as an object that is sublime to the beholder, inducing sensations of both terror and astonishment. The symmetriad shapes bedazzle the solarists—one astronaut recalls encountering a child that was “extraordinarily large” rising “twelve feet above the surface of the ocean;” it was alive but wasn’t human, with dyssynchronous facial expressions, “one half gay, the other sad, one half scowling and the other amiable.”¹⁴⁹ As the astronaut, Berton, struggles to reconcile or

¹⁴⁷ Kant, 115.

¹⁴⁸ See Judith Butler, *The Psychic Life of Power*, for a thorough examination of the nuances of subject / subjugation.

¹⁴⁹ Lem, 83.

even explain his experience, the council, “anxious to preserve its authority,” deems his report “symptomatic of hallucinations.”¹⁵⁰

To Kelvin, the simulated Rheya is both uncanny and sublime. Kelvin’s initial terror when confronted with the form of his dead wife is gradually overcome “by the conviction that it was the real Rheya there in the room with me, even though my reason told me that she seemed somehow stylized, reduced to certain characteristic expressions, gestures, and movements.”¹⁵¹ Almost every detail seems to be correct, including the mark in her arm where she injected herself with poison. Other telling details expose her artifice: her eyes did not blink; her dress had no working buttons—when Kelvin cuts her dress from her, he later finds “two identical dresses” laid across the back of a chair, “absolutely identical,” “each decorated with a row of red buttons.”¹⁵² But over time, he comes to understand “without the least shadow of doubt” that when he “held Rheya in [his] arms, he “understood in that moment that she was not trying to deceive [him]; it was [he] who was deceiving her, since she sincerely believed herself to be Rheya.”¹⁵³

The matter is further complicated by the development of simulated Rheya, who progresses from a blank shell—a “ghost made of memories”—into an autonomous subject, so that she comes to experience her own sense of the sublime.¹⁵⁴ Her self-awareness progresses from an utter *unawareness* of herself and her origins to

¹⁵⁰ Lem, 86.

¹⁵¹ Lem, 58.

¹⁵² Lem, 92-93.

¹⁵³ Lem, 92.

¹⁵⁴ Lem’s use of personal pronouns she / her / hers to refer to the apparition of Rheya in the narration is telling. While Solaris is objectified as “it,” the visitors are privileged with personal pronouns both in dialogue and the narrator’s exposition.

understanding herself as “not a human being, only an instrument,”¹⁵⁵ and then as “something different.” Finally, she recognizes that that difference—namely, her apparent ability to respawn after ingesting liquid nitrogen—is what “saved [her] life” by allowing her to transcend human mortality.¹⁵⁶ She becomes reconciled to her existence as a simulation of a human being, yet also acknowledges herself as an individual, asserting ultimately that “I am the one who is here, not *her*” (emphasis mine).¹⁵⁷ Rheya’s experience of the sublime lies in her struggle to apprehend herself simultaneously as an extension of the planet, a projection of Kelvin’s memory, and an autonomous entity.

By the novel’s end, Kelvin has grown weary of parsing rationalized Solaris research and begins to think in more emotional terms. As a “xenopsychologist,” he has finally accepted Solaris as a subject, albeit one which he perceives as a “despairing God.” The metaphor doesn’t quite break away from the human compulsion to think anthropomorphically, but through this recognition, Kelvin does take a step toward connecting with Solaris in a more *affective* way. He connects first through the Rheya, whom he has now accepted as an autonomous being and not a mere representation of his dead wife. She is pure simulacrum in the Baudriallardian sense—a copy that exists as original—and Kelvin has come to love her, this rendition. By this time, Rheya has developed her own feelings, her own internalization that can be said to be distinct from both what the remembered Rheya would feel, and also

¹⁵⁵ Lem, 143.

¹⁵⁶ Lem, 144.

¹⁵⁷ Lem, 146.

what Kelvin might project of Rheya's persona. At one point in her process of self-becoming, she confronts Kelvin, asking him, "who am I? A dream?" to which he responds indignantly that she is only a "puppet" that doesn't realize herself. Her retort, "And how do you know what *you* are?"¹⁵⁸ signals that she has cognized her own existence as external to Kelvin and / or the planet, and can reason with the same subject / object correlation as her human counterpart. In short, she is a subject that has grown and evolved, from the first empty vessel that appears in bed next to Kelvin one morning, to a fully thinking and emoting individual. "Whatever I may be," she admits, "I'm certainly not a child."¹⁵⁹

Rheya begins to feel guilt and despair for tormenting Kelvin, for forcing him to reconcile his own feelings of guilt about his dead wife. Rheya's not aware, or seems unaware of whatever machinations Solaris is performing, even though she recognizes herself as an instrument. Ultimately, Rheya's subjectivity comes into sharper focus as Kelvin's seems to be devolving, so that he has "to make a conscious effort to smile, nod, stand and perform the thousands of little gestures which constitute life on Earth."¹⁶⁰ He has lost his own purpose on the Station; he recognizes himself as an empty representation of human endeavor, his own metaphor. He's resolved to be with the simulated Rheya, to remain perpetually in orbit, a connection that is itself a kind of simulation, that is both real and fake. He is a man who "at one and the same time is ashamed of the object of his desire and cherishes it above

¹⁵⁸ Lem, 134.

¹⁵⁹ Lem, 137.

¹⁶⁰ Lem, 196.

everything else [...] there are things, situations, that no one has dared externalize.”¹⁶¹ He’s just going through the motions though, with an “underlying feeling” of “profound indifference,” as if real agency has faded.¹⁶² He has come to resemble the machine metaphors once applied to the planet itself.

Near the book’s end, he has a dream of contact in which he loses himself and imagines that it is he himself that is the alien matter, a prisoner “clothed in a dead, formless substance—or rather, I have no body, I *am* that alien matter.”¹⁶³ But afterwards he has the impression that he has “just left a state of true perception,” and everything after waking seems “hazy and unreal.” When Rheya dies, succumbing to intense radiation the other scientists have subjected her to, Kelvin is left in an existential abyss, and this compels him, in this final gesture of the novel, to deploy to the surface and make contact with the ocean. In this moment there is a bittersweet epiphany: first is that the lived experience of contact changes him—in short, nothing of what he could read about in books is really what it’s like—and the second epiphany is that he realizes that he is completely inconsequential, in fact, the planet hardly “notices” him. For the reader, this calls to question the intensity of his relationship with the simulated Rheya. He remains wholly committed to her, and yet the planet is oblivious to him, perhaps even to her.

As he stands on a small islet watching mimoids form in the ocean, a wave envelops his hand in a gesture that must be interpreted as *reading him*. The wave

¹⁶¹ Lem, 64.

¹⁶² Lem, 132.

¹⁶³ Lem, 179.

“enveloped [his hand] without touching it,” and when he raises the hand it “rose at the same time...the gelatinous substance stretched like a rope, but did not break.

The main body of the wave remained motionless on the shore, surrounding my feet without touching them, like some strange beast patiently waiting for the experiment to finish. A flower had grown out of the ocean, and its calyx was moulded to my fingers. I stepped back. The stem trembled, stirred uncertainly and fell back into the waves, which gathered it and receded.¹⁶⁴

To the very end, *Solaris* continues to eschew any tidy representation, even in intimate contact. Is *Solaris* the subject and Kelvin the object? He recognizes finally what Snow had warned him of before: “Any attempt to understand the motivation of [*Solaris*] is blocked by our own anthropomorphism. Where there are no men, there cannot be motives accessible to men.”¹⁶⁵ The final connection with the ocean—which even then is separated by “a thin covering of air”—shows only that Kelvin might begin to apprehend the inscrutable other by confronting it and contacting it rather than rationalizing its behaviors. But first he has to understand himself. When Kelvin admits to Rheya that “Contact means the exchange of specific knowledge, ideas, or at least findings, definite facts. If an elephant is not a microbe, the ocean is not a giant brain,” he may have come to accept his own complicity as part of an echo-system, but still lacks full self-understanding.¹⁶⁶ His transcendence is only partial, recognizing at least that “we need mirrors,” and not other worlds. But his rationale has been subsumed by the simulation he is imbricated in, content to continue chasing his “own

¹⁶⁴ Lem, 203.

¹⁶⁵ Lem, 134.

¹⁶⁶ Lem, 145.

labyrinth of dark passages and secret chambers, and without finding what lies behind doorways that he himself has sealed.”¹⁶⁷

We have no need of other worlds, warns Snow. And yet, *Solaris* presents as an object so inscrutable to us that our rational and scientific methods fail to categorize and measure it; its mechanics and motivations remain obscure; and its projections of human forms are incommensurate with human reality. *Solaris* is an abyss, as it were, in which human imagination loses itself. I have shown it to constitute an echo-system in which it paradoxically mirrors and subverts human expectations; it serves to “re-enchant” our concepts of Nature. Ultimately, reading *Solaris* as an echo-system elucidates the inner depths and the transformations of mind necessary in order to connect meaningfully with nature. In the next chapter, “Echo-Systems II: Making-with Catastrophe,” I will further explore echo-systems as presented in the novels of J.G. Ballard. I argue how “making-with catastrophe,” which I identify as a deliberate reconnection with a collapsed ecology, is transformative and sublime. I will show that “making-with catastrophe” eschews technical culture and anthropocentric time, as it necessitates a move toward geologic time as a way to transcend environmental ruin.

¹⁶⁷ Lem, 157.

CHAPTER TWO: Echo-systems II: Making-with Catastrophe

Replenish the earth, and subdue it: and have dominion
over the fish of the sea, and over the fowl of the air, and
over every living thing that moveth upon the earth
Genesis (1:28)

If every just man that now pines with want
Had but a moderate and beseeeming share
Of that which lewdly-pamper'd Luxury
Now heaps upon some few with vast excess,
Nature's full blessings would be well dispens't
In unsuperfluous even proportion. ...
John Milton, Comus (763-64)

Staying with the trouble requires making oddkin; that is,
we require each other in unexpected collaborations and
combinations, in hot compost piles.
*Donna Haraway, Staying with the Trouble:
Making Kin in the Chthulucene*

From time immemorial, the richness of the natural world has captivated the human mind; the abundant resources of nature laid at our feet, it would seem, by divine mandate. When God commands Adam to “be fruitful and multiply” and to “dress the earth and keep it,” the implication is that man is bound as the keeper of nature. But which nature? In the Judeo-Christian tradition at least, two antithetical categories of nature endure: the garden and the wilderness. On one hand, sublime vastness, peace, and ecstasy; on the other, wicked excess. The tension derived between these paradoxical depictions of nature drives much of what has come to be described as climate fiction; that is, narratives that explore humanity’s place in the environment. A pervasive theme in western culture more broadly, and climate fiction more specifically, is that humanity has fallen, that we perpetually desire a return to a prelapsarian state.

Attitudes described in the epigraphs above, from Genesis to John Milton, expound the liberal human subject as the focal center of nature; s/he¹⁶⁸ is that by which nature is “proportion[ed]” and “subdue[d].” This chapter examines the climate fiction novels of J.G. Ballard, which serves as a critique of the liberal humanist subject, a concept described by N. Katherine Hayles as “the bounded individual—the rational, enlightened self” that thinks and acts in a solipsistic universe—a unitary being individuated from Nature.¹⁶⁹ The bounded individual connotes total autonomy from an environment that it is individuated from. In this view, the thing that makes us unique as individuals is that we have always been unique, the substance of our individuality inhering in us from the beginning. However, notions of the unitary individual breakdown when placed in the context of systems. For instance, we have to question our role as entirely autonomous beings and separately constituted from the environment in light of the increasingly volatile range of ecological effects brought by climate change. This notion is called into question here through the work of Ballard and philosopher Gilbert Simondon. As I noted in chapter one, climate change is a hyperobject whose wide-ranging and deleterious effects imbricate human beings as both culpable agents in and vulnerable subjects of a network of the physical and ecological systems they have little control over. To be bound as a discrete self in this

¹⁶⁸ In classical humanism, the subject is almost always gendered male. However, in Milton’s *Comus*, cited in the epigraph, the speaker is gendered female.

¹⁶⁹ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, (Chicago and London: University of Chicago Press, 1999), 109. Capital-N Nature denotes a construct of the physical world that stands separate from the liberal subject. But is the bounded individual akin to a bounded system? The bounded individual connotes a separation from- and autonomy over its environment, where a bounded system is, by definition, interdependent with other systems.

case is to suggest that one is either immune or invulnerable to changes in one's environment. No organism can be discrete unto itself without operating as part of an ecosystem.

I read the early climate fiction of J.G. Ballard as paradigms for making-with catastrophe.¹⁷⁰ In these narratives, Ballard examines how ecological catastrophe might expose the precarity of modern human life. In this chapter, I again employ my concept of an echo-system to refer to the relationship between individual human subjects and their external environment. Recall that I identify the echo-system trope as a reflexive pattern that projects human analogies onto nature, and the subversion of those analogies which inhere philosophical crises. Echo-systems put into play questions about human rationality and autonomy, and by doing so open opportunities to explore transformative modes of being. In chapter one, I described how the planet Solaris paradoxically mirrored and resisted its human interlocutor. In this chapter, I explore the transformative power that an echo-system exerts on human identity.

An echo-system is dynamic. It can appear to behave autonomously—so far as we can use the term behave to describe our observations of non sentient objects. It is affected by human input but follows its own path, moving in vectors of space and time that are often indiscernible by human consciousness. An echo-system can consist of a complex of disparate systems with radically alternate aims and operations which are non-locatable in discrete elements, but distributed across the whole. And despite this, as I have described in chapter one, what makes an echo-system an echo-system

¹⁷⁰ Donna Haraway, *Staying with the Trouble: making kin in the Chthulucene*, (Durham: Duke University Press, 2016), 5. I borrow her term here to refer to a mode of being that recognizes the self as an integrated element of the environment.

is the human observer. As humans, we are often misguided in our assessment of the environment precisely because we fail to fully comprehend ourselves as part of it.

To help conceptualize the way human characters interact with an echo-system, I turn, in part, to Gilbert Simondon's theory of individuation. Simondon's thinking about the human individual begins in the non-human world and works toward the human *through* the process of individuation.¹⁷¹ That is to say that the individual—any individual—does not already inhere in and of itself, but rather *becomes individuated* through systemic processes. Simondon's radical thinking about the individual is key to understanding how environments and subjects coevolve, both forming and shaping each other. I examine how systems in states of extreme precarity (disequilibrium) can compel a radical transformation in human identity, one that privileges attunement to the environment even at the cost of annihilation. The self-becoming, even if obliterative, must necessarily be read as a liberatory transformation of the individual from a point of futility to a moment of actuation.

In the novels I examine here—*The Drowned World* (1962), *The Drought* (1964) and *The Crystal World* (1966), the narratives enact echo-systems through which feedback between subject, environment, and technical objects emerges a new, transformative mode of existence. The echo-systems present in Ballard's fictions are not the irascible, unknowable Other of *Solaris*; they are neither *tabulae rasae* on which we can project our own human wish-fulfillments, nor are they completely inscrutable; rather, a Ballardian echo-system acts both as sublime object and

¹⁷¹ Matt Bluemink, "Simondon and the Process of Individuation," *Epoche*, (September 30, 2020).

collective entity that compels a new kind of metamorphosis. My reading of three of Ballard's climate catastrophe novels begin from the conventional critical view that the cataclysmic environments depicted represent an internal psychic journey—in so far as Ballard himself intended this to be the case.¹⁷² The conflation of landscape with imagination has become a traditional point of reference for unpacking the surrealism in Ballard's writing. However, I read those inner and outer landscapes not as reflecting Ballard's surrealist tendencies, but as echo-systems, feedback loops between subject and environment from which emerge new modes of becoming.

Ballard's novels all feature a human subject who must negotiate a *post*-postlapsarian world. The narrative arcs of all three novels privilege a person who is compelled in varying circumstances to remain behind in the disaster area in order to seek a self-affirming mode of being, even if it means his own obliteration. In these worlds, humanity has fallen, but rather than regaining a supposed Eden as it was, Ballard's protagonists are charged with founding a new Eden in a fallen landscape. Ballardian landscapes constitute a different type of echo-system from the one identified in chapter one. The Ballardian echo-system is a landscape that mirrors the unconscious drives of the human subject. This is distinct from an echo-system such as *Solaris*, which I've argued is active and iriscable toward human subjectivity. In a Ballardian setting the individuation of both system and subject undergo a process of perpetual becoming. It is from these wasteland milieu that arise new transformational subjectivities.

¹⁷² See, for instance, Ballard's own essays from around this time: "Time, Memory and Inner Space," published in *The Woman Journalist Magazine* (1963), and "The Coming of the Unconscious," published in *New Worlds* (1966).

When modern technological and social systems collapse, the typical Ballard protagonists in these stories are thrust “back in time” to a state of survival that echoes that of our pre-modern forebearers. As Mathew Gandy and others have pointed out, through cataclysm, a common theme of these early works, “the apparent order of modernity is sustained by accepted codes of behavior in combination with vast technological networks: without these complex structures of organization and control, there is a return to small-scale human societies dominated by fear, violence, and the brutal reassertion of male authority.”¹⁷³

The ecological crises depicted are often man-made—rampant pollution causing an abrupt shift in climate, for instance (*The Drought*)—but in the other two works addressed here, the ecological catastrophes are not a direct result of human endeavor, but rather natural phenomena. In *The Drowned World*, for instance, “gigantic geophysical upheavals” resulting from “a series of violent and prolonged solar storms” transform the Earth’s climate, raising both the sea level and mean geothermal temperature.¹⁷⁴ These conditions are then exacerbated by human engineering endeavors meant to counteract the climate change effects, so that much of the planet’s continents now resemble intensely tropical lagoons. *The Crystal World*, on the other hand, a tropical forest surrounding an outpost in the interior of colonial Africa is slowly metamorphosing into crystal. While the mysterious phenomenon is left ambiguous, the “phantasmagoric forest” and its “pervading auroral gloom” mirrors a kind of spiritual malaise inhabiting the lives of both the Anglo and

¹⁷³ Mathew Gandy, “J.G. Ballard and the Politics of Catastrophe,” *space and culture*, (vol. 9 no. 1, February 2006 86-88), 86-87.

¹⁷⁴ J.G. Ballard, *The Drowned World*, (New York and London: WW Norton and Co., 1962), 32-33.

indigenous characters.¹⁷⁵ Finally, the premise of *The Burning World* is that a build-up of ocean pollution has beget a reaction of long-chain polymers which minutely cover the surface of the ocean, vastly altering evaporation cycles and ultimately, global precipitation. The resulting decades of drought have forced the population to crowd along the receding coastlines. In short, in this era of human dominance over earth—a geological period known as the Anthropocene—Ballard explores what could happen when those complex yet fragile systems of control seemingly keeping humanity afloat break down. Regardless of whether they are natural disasters or man-made catastrophes, the Anthropocene is directly implicated as a contributing factor in social collapse. His settings are the abandoned cities and ruined infrastructures, and his characters commonly inhabit roles of explorers of these strange new worlds who—in an ironic re-inscription of colonial conquest—typically seek refuge amidst post-anthropocentric wreckage where, as Gandy notes, “the technological debris of an abandoned modernity acquires a mysterious significance, as if the crumbling streets and buildings were the ruins of an ancient civilization whose belief systems have long since been forgotten.”¹⁷⁶

Climate Fiction

Climate fiction, or climate-change fiction, retronymically describes a set of literary tropes that have appeared in science fiction throughout the history of the genre, from its early beginnings (Mary Shelley’s *The Last Man* in 1826) through its Golden Age (for example, John Wyndham’s *The Day of the Triffids*, 1951) to the

¹⁷⁵ J.G. Ballard, *The Crystal World*, (New York: Farrar, Strauss, and Giroux, 1966), 201 and 3, respectively.

¹⁷⁶ Gandy, 88.

present. These tropes include lifestyle-altering changes to humankind as brought about by sudden and extreme changes to the environment. Climate fiction has its thematic and metaphorical roots in the Biblical apocalypse narratives of Genesis and Revelation; the Flood, of course, is the climate catastrophe *par excellence* that finds itself repeated most frequently in popular narratives (including in Ballard). It was not until the 1960's, however, that climate change became an increasingly prevalent theme in science fiction (coextensive, perhaps, with Rachel Carson's *Silent Spring* in 1962).

Contemporary scholarship on climate fiction tends to ascribe its rise in popularity to the advent of environmental activism borne from movements and institutions such as Earth Day, the Whole Earth Catalog, Earth First!, and Greenpeace.¹⁷⁷ And while it does bear true that many of the works of climate fiction in the last twenty-five years bear correlation to an increased awareness of, and indeed a direct encounter with the effects of climate change, earlier examples of climate fiction, by Ballard, Brian Aldiss, Philip K. Dick, and Ursula K. Le Guin to name a few, were produced at a time before such problems were made visible at a mainstream level. Adam Trexler perhaps more accurately accounts for these types of texts as anthropocene fictions. "The Anthropocene," he writes, "by emphasizing a geological process, can usefully indicate the larger, *nonhuman* aspects of climate, as well...By using the term Anthropocene, this study takes the firm position that climate

¹⁷⁷ For example, see Jim Clarke, Adam Trexler and Adeline Johns-Putra, Rachelle Dini, and Gregers Andersen.

change is upon us.”¹⁷⁸ Ballard and the other writers’ early examples of climate catastrophe narratives aren’t typically included in contemporary criticism of climate fiction, but Ballard’s early climate novels in particular, are noteworthy because they do not ascribe climate change to anthropogenic causes; rather, human culpability tends to be either abstracted from the cause of cataclysm, or as a secondary result.

This is not to deny any or all human implication in social and environmental breakdown, but only to stress that Ballard’s project is not primarily concerned with social critique, per se, but on a critique of the rational, autonomous subject themselves. Importantly for Ballard, cataclysms of the physical environment are projections of the human psyche, no doubt a manifestation of his chief artistic influence, surrealism. Not only are Ballard’s stories and novels saturated with references to surrealist literature and artwork, he himself sought to work in the same vein. For Ballard, the surrealists expressed an essential but long-suppressed facet of our humanity—our unconscious drives—those irrational desires that compel in us some latent meaning. His project, then, is to manifest what is latent, to chart those “imaginative geographies in which the outer world of reality and the inner world of the psyche fuse in a number of fascinating and startling ways.”¹⁷⁹ While topically and thematically diverse, many of his narratives follow a basic format: in his explorations of “inner space,”¹⁸⁰ Ballard poses a central protagonist, often a member of the

¹⁷⁸ Adam Trexler, *Anthropocene Fictions: The Novel in the Time of Climate Change*, (Charlottesville: University of Virginia Press, 2017), 4.

¹⁷⁹ Jeanette Baxter, “J.G. Ballard and the Contemporary,” *J.G. Ballard: Contemporary Critical Perspectives*, ed. Jeanette Baxter, (London and New York: Continuum International Publishing Group, 2008), 4.

¹⁸⁰ Baxter, 4.

scientific or medical community, who is yet alienated from the techno-rational society of which he is part. The rest of the narrative then, is less of a plot to solve a problem (like climate disaster, for example), and more about uncovering our latent urges to resist technical, rational, or capitalist modes of expertise. *Ballardian*, as it were, is a term that has come to describe “dystopian modernity, bleak man-made landscapes, and the psychological effects of technological, social or environmental developments.”¹⁸¹ In a Ballardian setting, whether it is a drowned city, an apartment block, or the side of the interstate, a tension comes to pass between, on one hand, the existing social infrastructure as a still-viable rational system, and on the other, the submerged will of the subject. The landscape becomes a gestalt of both exterior and interior impulses. The Ballardian wasteland literally makes objects of analysis of both social and psychic material.

The Idea of Wilderness

Whether in landscapes of stacked cars, sunken cities, or crystalized rivers, Ballard’s catastrophe narratives are set in spaces in which the ruins of civilization have become new wildernesses. Ballardian wildernesses function both as a setting and as presumptive antagonists. The Ballard protagonist must reconcile himself with his new conditions of existence, an experience I identify as sublime, and in the process become himself transformed.

Historically, the term wilderness has suggested a paradoxical relationship of humans with their environment, connoting a space that is unruly and untamed—while

¹⁸¹ *Collins English Dictionary*, quoted in Jeanette Baxter, *J.G. Ballard: Contemporary Critical Perspectives*, 1.

also at times a pure space in which the human subject might realize its own liberation. Wilderness gathers its pejorative literary connotation (ie, “lost in the wilderness”) from its Biblical settings in *Genesis*, *Exodus*, and the *Gospel of Matthew*, where Adam and Eve, then Cain are cast into it; and Moses and the Israelites—then later, Jesus—wander through it. It’s in this context that wilderness becomes synonymous with godlessness, temptation, and sin. But, paradoxically, these narratives also serve as motifs of enlightenment in which a subject is ennobled through his struggles there.

In *Wilderness and the American Mind*, Roderick Nash outlines a genealogy of the wilderness as it has come to be known in the West, tracing the evolution of the concept as it resonates from Puritans to Romantics to Environmentalists. European Puritans brought an Old Testament regard for wilderness to the New World, where vast uncharted woodlands looming over their settlements stood as corruptible and godless lands. As “self-styled agents of God,” many 17th century settlers drew a correlation between wilderness and worldly sin—“that desolate and outgrown wilderness of humane nature”[1]—and took it as imperative to install a sense of pious governance over the New World. Roger Williams, for instance, wrote that “the Wilderness is a cleer resemblance of the world, where greedie and furious men persecute and devoure the harmlesse and innocent as the wilde beasts pursue and devoure the harmless and innocent Hinds and Roes,”[2] while John Winthrop, one of the leaders of the Massachusetts Bay Colony, admitted that they were “fleeing ‘into...the wilderness’ to found the true Church.” Some two hundred years after the

first Puritans, Nathaniel Hawthorne still found the wilderness to be “a powerful symbol of man’s dark and untamed heart.”¹⁸²

The European Romantics championed the wilderness for the same paradoxical values that the Puritans vilified. To poets such as Wordsworth and Shelley, an untamed and uncivilized wilderness could only serve as a vehicle for greater self-reflection. While Williams and Winthrop may have forged into the wilderness to both escape “greedie and furious men” and carve out a new Jerusalem from raw nature, Wordsworth forayed there to reconnect with and embrace his own inner wildness. Counter to the Puritan sensibility, the Romantic wilderness was one that teemed with godliness in its unbounded and unruly nature, and yet like the Puritan wilderness, was an essential setting for one’s own spiritual becoming. The Puritan compulsion to overcome the evils represented by uncharted nature, coupled with the Romantic vision of wilderness as an emblem of boundless imagination would eventually become driving factors of Western liberal-humanist identity. Wilderness has come to signal the empowerment of the liberal subject, particularly in frontier narratives which pose the rugged individual against the forces of an uncivilized landscape. The cataclysmic landscapes of Ballard, however, complicate human empowerment in nature. The concepts of wilderness outlined above are important to track because, as I will explain, Ballardian identity is forged in relation with and integration into these new wildernesses.

¹⁸² Roderick Nash, *Wilderness and the American Mind*, third edition, (New Haven and London: Yale University Press, 1996), 34.

Inner and Outer Landscapes

Since Nash's seminal book, the concept of wilderness has been subject to myriad re-examinations and critical debates that range across the humanities. Literary scholars, historians, feminists, and environmentalists all have a stake in identifying our problematic relationship to nature. Much of the study of Ballard's climate catastrophe fiction has focused its critical attention on the duality of the outer environment with the inner landscape of the protagonists. In short, the catastrophes posed by the novel's external settings echo the interior psychic drives of the characters. Time and again, Ballard gives narrative deference to describing the innerscapes of the psyche in conjunction with the external events of the plot: figured in visions, dream logics, the repetition of symbols and archetypes propagate the notion that humans are inexorably linked to their environments—often through some inner turmoil that is turned outward and manifested in catastrophic events, or vice versa, through a catastrophe that triggers some atavistic internal drive. Exterior and interior are paired in strange and often incongruous ways. D. Harlan Wilson, for instance, characterizes Ballard's protagonists as "more like archetypes or dream-pieces than people, responding to stimuli in ways that don't sync with the usual flows of cause and effect."¹⁸³ They move against the flow of humanity in these novels, trusting the logic of their own inner drives over the collective thrust of society—whether that be deeper into a crystalized jungle or further south toward an inhospitable equator—the characters are compelled by an inexplicable sense of

¹⁸³ D. Harlan Wilson, "Disaster Areas: The Natural Disaster Quartet," *J.G. Ballard*, (Urbana: University of Illinois Press, 2017), 54.

allegiance to deteriorating environments, while others seek the relative safety of social numbers, or, more significantly, seek to resist climate catastrophe with reliance on machinery and technical savoir-faire. The major issue he seems to be working through in these novels is not what to do about catastrophe, but how catastrophe is a vehicle of transformation. His problem is, as Gregory Stephenson puts it, the problem of transcendence, of “exceeding, escaping the limitations of the material world, time and space, the body, the senses and ordinary ego-consciousness.”¹⁸⁴

While this inner–outer duality is central in understanding Ballard’s climate fiction, I will read this duality as forming part of a larger structure of meaning. The interplay of inner and outer landscapes form constituent parts of an active echo-system—each informing and formed by the other. It is clear in Ballard’s work that catastrophe is intended to produce some effect on the consciousness of the protagonist. I go further to posit that these novels reveal how the environment constitutes part of the very subject itself. Ballard himself has alleged that “these are transformation stories rather than disaster stories,” in which the central character “sees the imaginative possibilities represented by the disaster.”¹⁸⁵ In his theory of individuation, Gilbert Simondon borrows the concept of metastability from physics to model the dynamic flow of tensions in an individuating system (such as a person) in which forces of attraction can inhere in one part with forces of repulsion inhering in

¹⁸⁴ Gregory Stephenson, “The Quest for Ontological Eden,” *Out of the Night and Into the Dream: A Thematic Study of the Fiction of J.G. Ballard*, (New York, Westport, and London: Greenwood Press, 1991), 38.

¹⁸⁵ Sellars and O’Hara, in Rachele Dini, “Resurrected from its Own Sewers”: Waste, Landscape, and the Environment in J.G. Ballard’s 1960s Climate Fiction,” *ISLE: Interdisciplinary Studies in Literature and Environment* 28.1 (Spring 2021, p. 215-216), 90 and 202.

another. Accordingly, I read catastrophe as a complex yet metastable echo-system in which conditions for new modes of individuation can occur. In such states of catastrophe in which converge psychic, social, and environmental forces, the subject is transformed through attunement between radical internal psychic and external precarious one, a process I identify as sublime.

Ballard and the Ecological Sublime

What does the sublime look like in light of ecological catastrophe? Recall that in conventional notions of the sublime, received through Burke and Kant, nature stands as a sublime object in the presence of which the perceiving subject becomes intellectually disoriented or overwhelmed with emotion. Through this confrontation emerges a dialectic between self and nature in which the subject paradoxically finds himself estranged from a nature that is alien to him, yet finds within himself autonomy over that nature. This is given that, according to Kant, our faculties of reason and imagination allow us the capability to reconcile the incommensurate experience. A sublime encounter with nature seems to have the power to jolt us momentarily out of a perspective constructed by reason and language, a perspective in modern Western culture that has rendered nature mute. As critic Rachele Dini observes, the sublime offers a host of ways to “circumvent, deny, escape, or overcome” that “unfathomable otherness of nature [that] unnerves us.”¹⁸⁶ Or as Frances Ferguson observes, “the sublime establishes nature as the instrument for the

¹⁸⁶ Dini, 203

production of individuality”; that is to say, the profound and incommensurable forces of nature must necessarily be overcome in order for human subjectivity to emerge.¹⁸⁷

However, as pointed out earlier, this conventional or transcendental notion of the sublime is fraught with a host of problematic implications. Of particular emphasis here is that the sublime tends to reinscribe the dichotomy of Nature / Culture. This becomes particularly troubling if we consider how the escalating impact of climate change is forcing us to acknowledge humanity as a part-of and not separate-from nature. Each of Ballard’s climate catastrophe narratives can be read as a quest of the central figure to relocate aesthetic pleasure in nature. Ballard doesn’t strictly reinscribe the Nature / Culture split, but attempts to explore tensions the subject experiences, in the words of Frances Ferguson, “between intimacy with the landscape and a sense of the confinement of society.”¹⁸⁸ It’s through these contradictions that sublime metamorphoses occur.

Thus, a sublime aesthetic that privileges belonging to nature rather than dominion over it can still be a productive concept for thinking about subjectivity. An “Ecological Sublime,” as Christopher Hitt names it, seeks to offer “a new kind of transcendence which would resist the traditional reinscription of humankind’s supremacy over nature.”¹⁸⁹ In light of climate change escalation and increasing likelihood of ecological catastrophe, an ecological sublime positions the human subject as both a critical participant in and steward of the environment. A sublime

¹⁸⁷ Frances Ferguson, *Solitude and the Sublime: Romanticism and the Aesthetics of Individuation*, (New York and London: Routledge, 1992), 132.

¹⁸⁸ Ferguson, 130.

¹⁸⁹ Christopher Hitt, “Toward an Ecological Sublime,” *New Literary History*, (1999-07, Vol. 30 (3), p.603-623), 606.

ecology entails a subject's attempt at making-with the oblitative forces of nature, forces which compel radical transformation and transcendence.

Attuned to Oblivion—*The Drowned World*

The Drowned World offers insight into the sublime experience by revealing how new subjectivity emerges in a post-cataclysmic echo-system. The novel follows protagonist Robert Kerans, a scientist attached to a military envoy whose directive is to comb the lagoons of a flooded Europe, post-cataclysm, ostensibly to chart “the emerging land masses and lagoons” of the new ecosystem, and “to get to grips with the changing nature of the world in order to adapt to it.”¹⁹⁰ It's apparent, however, that the experiments at Kerans' mobile testing station are of secondary importance to the reclamation of materiel from the submerged and overgrown cities. Though which city they inhabit isn't made explicit—“had it once been Berlin, Paris or London? Kerans asked himself”¹⁹¹—the military presence would indicate that their ulterior motive is one of occupation and recuperation of lost territory rather than of diligent scientific observation.

At the opening of the novel, the state of the world has undergone a series of “geophysical upheavals which had transformed the Earth's climate,” first by years-long solar storms that effectively increased the earth's exposure to solar radiation, that in turn melted the polar ice caps, dissolved entire ice sheets of the Antarctic plateau, along with tens of thousands of glaciers.¹⁹² With the increased heat

¹⁹⁰ Andrzej Gasiorek, *J.G. Ballard: Contemporary British Novelists*, (Manchester and New York: Manchester University Press, 2005), 34.

¹⁹¹ Ballard, *The Drowned World*, 19.

¹⁹² *The Drowned World*, 32.

intensity and rising waters, the earth's ecosystem has over a span of about "sixty or seventy years" essentially reverted to the Triassic era, replete with the reemergence of Triassic era flora and fauna. Robert Kerans stands on the balcony of the Ritz Carlton Hotel—sixty storeys of which are already below sea level—and beholds the "giant groves of gymnosperms" and feels, under the "relentless power of the sun" a heat so powerful that "water would seem to burn."¹⁹³ While the team quickly find their lagoon to be uninhabitable due to the rapidly increasing heat and prepare to move back northward, Kerans feels inexplicably compelled to stay put.¹⁹⁴ He is resigned to the fact that his contributions are futile, since "he knew his real motive was his acceptance that little now remained to be done. The biological mapping had become a pointless game [...] and he was sure that no one at Camp Byrd in Northern Greenland bothered to file his reports, let alone read them."¹⁹⁵ The narrative traces the tensions that arise between Kerans' surreal hallucinations drawing him southward, and the instrumentality of the Military-Scientific Complex which seek to reinscribe their foothold on nature, but are perpetually driven back north by the intensity of the climate.

It is via the visionary world of Kerans and through his attunement to a world that is by turns cataclysmic and sublime that a transcendent subjectivity emerges. From the outset of the novel, the parallels between the climate's ecological reversion and Kerans' inner ruminations are made evident. At the same time, the narrative

¹⁹³ *The Drowned World*, 17.

¹⁹⁴ It's revealed that the remainder of Earth's population is relegated to crowd onto Greenland and bits of land mass north of the Arctic circle.

¹⁹⁵ *The Drowned World*, 19.

emphasizes a parallel tension between the material world—represented at turns by reemergent flora and fauna, and later by a reemergent city—and the visionary world, represented both by Kerans’ dreams and hallucinations, and by allusions strewn throughout the text to surrealist artwork and imagery. The symbolic meaning of the novel inheres in this correlation between material and visionary realms. It is, according to Gregory Stephenson, a story “more to be understood through its imagery rather than through its action.” The material world is rationalist but ultimately obliterative, while the visionary world is the “internal world of timeless, transcendent reality.”¹⁹⁶ *The Drowned World* tracks Kerans’ simultaneous journey toward the intersection of both: south toward the inhospitable equator and inward toward the psychic past, a locus that for him holds the promise of rebirth.

The material world in the novel is represented in two juxtaposed ways. First, descriptions of the climate, rising seas, plants, and animals highlight a primordial, prelapsarian world that is characterized as organic and fetal. The subsumption of land by water and the reemergence of Triassic era organic life not only signals a move back “through geophysical time” but also implies, in a kind of reverse-birthing analogy, a move to “re-enter the amnionic corridor and move back through spinal and archaeopsychic time.”¹⁹⁷ The return to a seaborne state is roughly analogous throughout with a return to origins: the Earth Mother. Likewise, the reemergence of bygone life forms represents a regression to a pre-human past. The new ecology teems with proliferating jungle vegetation (“non-lignified plants”¹⁹⁸), huge insects, a

¹⁹⁶ Stephenson, 40.

¹⁹⁷ *The Drowned World*, 57.

¹⁹⁸ *The Drowned World*, 27.

few birds, even fewer mammals (a “hammer-nosed bat”¹⁹⁹), and significantly, giant lizards. At the top of the reconfigured food chain, bands of enormous iguanas patrol the lagoons where the military holding unit is stationed. The transformed physical environment poses a threat to the once domineering humans. Outflanked by lizards, and incapable of bearing the extreme conditions, the unit considers abandoning the station and moving northward in hopes of finding more accommodating conditions, a move which suggests to Kerans that the “genealogical tree of mankind was systematically pruning itself, apparently moving backwards in time, and a point might ultimately be reached where a second Adam and Eve found themselves alone in a new Eden.”²⁰⁰ The marauding iguanas and other creatures that move so effortlessly between aquatic and terrestrial worlds signal to Kerans the precarity of his own situation.²⁰¹ These curiosities signal a psychic change in Kerans: the lagoon and outlying area constitutes an echo-system through which Kerans feels compelled to position himself apart from the rest of the unit—in the sense that he is in no hurry to escape being subsumed by the “new Eden.”

By contrast to the organic world, descriptions of the man-made world including infrastructures, machines, instruments, and the detritus of material culture are characterized as dilapidated, outmoded, or outright violent, and highlight humanity’s postlapsarian phase. In the city, the “brick houses and single-storey factories of the suburbs had disappeared,” while only the “steel-supported buildings

¹⁹⁹ *The Drowned World*, 20.

²⁰⁰ *The Drowned World*, 35.

²⁰¹ J.G. Ballard, “Time, Memory, and Inner Space,” *A User's Guide to the Millennium: essays and reviews*, (London: Harper Collins, 1996) 1.

of the central commercial and financial areas had survived the encroaching flood waters.”²⁰² The buildings tall enough to emerge from the rising sea levels are inundated with silt, latticed with vines and, with “huge sail-like fronds of the fern-trees sprouting from their roofs,” the structures serve as little more than a substrate for newly formed jungle habitats, with reptiles occupying the erstwhile boardrooms. The intense heat of the lagoons make it all but intolerable for human habitation—the atmosphere is languid, oppressive, and “smothering.”²⁰³

Most of the men of the unit stay in the mobile testing station (a large floating base and laboratory) or patrol the lagoons in their diesel-powered cruisers.²⁰⁴ Inside the station, it is “cramped but bustling,” cluttered with instruments, and clanging with the background drone of the air conditioners and power generators. The kinetic goings-on of the station—replete with a gamut of military ordinances, scientific laboratories, stockades, sick bays, a rec room—presents an undiminished facade of society, ordered in a military-scientific-civilian hierarchy. However, the society aboard the base has devolved into “loose, fragmentary relationships” where no one cares if one had been there “two days or two years.”²⁰⁵ The station is a self-sustaining piece of technology—a literal floating city to replace the sunken one.

Additionally, machines are represented as violent, sickly, or monstrous. They perform violence to both the ecosystem and to the psyches of the central characters.

The blades of a helicopter, for instance, throw “brilliant lances across the water,” or

²⁰² *The Drowned World*, 30.

²⁰³ *The Drowned World*, 31.

²⁰⁴ No mention is made in the story of where or how fossil fuels are still being manufactured. Perhaps, we are to suppose, there are stockpiles of crude that would last “sixty or seventy years” into the future.

²⁰⁵ *The Drowned World*, 47.

under the rotor wash of which the jungle lays exposed “like an immense putrescent sore.”²⁰⁶ Diesel engines “[cough] and surge.”²⁰⁷ At one point, a small band of pirate vessels “bursts” suddenly into the lagoon, “tearing the vegetation away”--their “square black-hulled craft” with “paint peeling from the giant dragon-eyes and teeth slashed across their bows.”²⁰⁸

Ballard underscores a contrast between the outmoded technological systems of the city ruins and testing station, and the verdance of the emerging ecosystem which is overtaking it. Despite the tension between the forces of organic and technological material, Kerans chooses to stay in the remnants of the Ritz Carlton, in a vault-like and opulent room.²⁰⁹ His decision to separate himself from the rest of the unit positions him as an intermediary figure, and functions narratively to juxtapose several opposing ideas. His occupancy in a dilapidated luxury hotel presents his attachment to a diminished technological--but nostalgic--past, which is set in direct opposition to the technological--but authoritarian--present of the testing station. In addition, Kerans’ disillusionment with the bustle and kineticism of the station, as well as to his own scientific directives, are juxtaposed with his increased acclimation to the intensities of the climate. Even his appearance is contradictory. As a forty year old, he sports a beard “turned white by the radio fluorine in the water,” but had a “deep amber tan [that] made him appear at least ten years younger.”²¹⁰

²⁰⁶ *The Drowned World*, 31 and 66, respectively.

²⁰⁷ *The Drowned World*, 21.

²⁰⁸ *The Drowned World*, 102.

²⁰⁹ Since the drowned city no longer has working utilities, power to the hotel is produced, in a pointed bit of irony, by 2-stroke gas generators, including the “250-amp air conditioning unit,” Ballard, 20.

²¹⁰ *The Drowned World*, 21.

These descriptors of the external, material world of the novel—contradictions between the organic and the technological; between past and present—can now be contrasted to the visionary world of the unconscious; the interior world of Kerans’ own psyche. Kerans’ primary quest is to undertake his own “zone of transit” from the material to the psychic, from the present material conditions of cataclysm into the “world of total, neuronic time” that “calibrates his existence.”²¹¹ From the beginning Kerans is strangely fixated on the submerged aquatic world beneath the lagoons. At the same time, he’s haunted by strange dreams echoing memories of a distant past. He feels inexplicably connected to the reversion of the climate and reemergence of life of the Triassic era. At one point, he finds himself surrounded by giant lizards: “Kerans felt, beating within him like his own pulse, the powerful mesmeric pull of the baying reptiles, and stepped out into the lake, whose waters now seemed an extension of his own bloodstream.”²¹² He is experiencing what Bodkin, a fellow scientist, calls “archaeopsychic time;” which is something akin to primordial memories of pre-human existence. While he does not yet understand this fixation on the submerged lagoons, or what is taking place, he’s compelled to heed these psychic callings. Kerans’ decision to live in what’s left of the Ritz, in its diminished and fetid opulence, seeming to rise from the submerged past, serves as an external counterpart to his own inner frame of mind. It’s made apparent that water symbolizes the visionary world, and the external, material world serves as a veil of that which lies

²¹¹ *The Drowned World*, 47 and 62, respectively

²¹² *The Drowned World*, 86.

submerged. Ballard himself, writing shortly after the novel was published, made this connection explicit:

One of the subjects of the novel is the journey of return made by the principal characters from the 20th century back into the paradisaical sun-filled world of a second Triassic age, and their gradually mounting awareness of the ambivalent motives propelling them into the emerging past. They realize that the uterine sea around them, the dark womb of the ocean mother, is as much a graveyard of their own individuality as it is the source of their lives.²¹³

Ballard here equates a return to the amniotic “ocean mother” with the obliteration of the individual; a trope that is itself partly a reversion of the symbolic articulation of water to rebirth, traditionally read as biblical.²¹⁴ However, Ballard is more invested in Jungian archetypes than biblical allusion, so while renewal is not made explicit in the above passage, through Kerans’ vision-quest we see the tropes of obliteration and rebirth as inextricably linked.

Ballard was well steeped in surrealist art and Jungian psychology. It is primarily in his use of the latter’s notion of the collective unconscious that frames the psychic landscape of *The Drowned World*. Jung theorized a collective unconscious as a layer of psychic content that existed deeper than mere personal subconscious. While the unconscious denotes “a state of repressed or forgotten contents,” the collective unconscious transcends the personal because it represents psychic content at a universal rather than individual level.²¹⁵ That is to say, there exists a level of psychic data that transcends personal experience; it is likened to deep borne images, memories of species existence. The manifestation of that content he called an

²¹³ Ballard, “Time, Memory and Inner Space,” 2.

²¹⁴ One may think of the Biblical narrative of the flood, or of John the Baptist.

²¹⁵ C.J. Jung, “Archetypes of the Collective Unconscious,” *The Archetypes and the Collective Unconscious*, trans R.F.C. Hull, (New York: Princeton University Press, 1969), 3-4.

archetype: “The archetype,” Jung writes, “is essentially an unconscious content that is altered by becoming conscious and by being perceived, and it takes its colour from the individual consciousness in which it happens to appear.”²¹⁶ The archetype is thus a symbol or image of universal psychic data.

Two primary archetypes inhere in the visionary world of the novel: that of water and that of the womb. The centerpiece of the novel, “The Pool of Thanatos,” concerns Kerans’ decision to dive the lagoon to explore a submerged planetarium. Kerans again finds himself, through recurring visions, oddly drawn to the submerged space, and under the auspices that the planetarium might hold material valuable to the reclamation crew, he decides to dive. As soon as he enters the water, it:

had become a closed world, the barrier of the surface like a plane between two dimensions. The diving cage was swung out and lowered into the water, its red bars blurred and shimmering, so that the entire structure was completely distorted. Even the men swimming below the surface were transformed by the water, their bodies as they swerved and pivoted turned into gleaming chimeras, like exploding pulses of ideation in a neuron jungle.²¹⁷

Jung tells us that “water is the commonest symbol for the unconscious,”²¹⁸ so that on one hand, Kerans’ compulsion to dive the depths of the lagoon signals his need to plumb the depths of his own unconscious. The murkiness of the lagoon, the distortion of sounds and images evoke a hallucinatory journey, not just through the depths of the unconscious, but seemingly through space and time as well. Once he attains entrance to the submerged planetarium, he is enraptured by the “cracks in the dome [that] sparkled with distant points of light, like the gigantic profiles of some distant

²¹⁶ Jung, 5.

²¹⁷ *The Drowned World*, 118.

²¹⁸ Jung, 18.

universe,” and his visionary quest is likened to that of “some pelagic Cortez emerging from the oceanic deeps to glimpse the immense Pacific of open sky.”²¹⁹

The cracks in the dome seem to form for him some insignia of erstwhile constellations, whose patterns already “seemed more familiar than those classical constellations. In a vast, convulsive recession of the equinoxes, a billion sidereal days had reborn themselves, re-aligned the nebulae and island universes in their original perspectives.”²²⁰ Indeed, he becomes so entranced by the otherworldliness of the planetarium that he nearly drowns. The planetarium itself is a womb-like space, and his descent there proves near fatal, so that rebirth and obliteration are conflated into a single action.. It is as he is leaving the “huge vacant womb for the last time” that he trips and his intake valve apparently stops functioning. Dizzy, numb, and slowly losing consciousness, he feels “the warm blood-filled nausea of the chamber flood in upon him [...] the water penetrating his suit so that the barriers between his own private blood-stream and that of the giant amnion seems no longer to exist.”²²¹ As he slowly succumbs to the lack of oxygen, he feels a “deep cradle of silt” carry him “gently like an immense placenta” and he is unsure of whether he is hallucinating or willfully letting himself expire. As it turns out, it is Strangman, along with his band of pirates who have come to loot the swamp, that have sabotaged Keran’s diving equipment. And while Kerans doesn’t yet understand the motives for his own compulsions, it is through his identification with the archetypal womb through which is implied—if not explicitly revealed—some greater truth of existence. Regardless, it is

²¹⁹ *The Drowned World*, 126.

²²⁰ *The Drowned World*, 127.

²²¹ *Ibid.*

through his visionary encounter in the planetarium that he eventually becomes “aware of the faint glimmer of identity within the deepest recesses of his mind.”²²² As I will go on to show, these encounters with the incomprehensible visionary world constitute the sublime.

Kerans’ journey of self-transformation combines tropes of the unconscious, individuation, and transcendence. In Jungian psychoanalysis, for instance, individual identity is a product of unconscious symbols and drives. For Jung, individuation is a process that arises through the conflict between conscious and unconscious realms, a process he called the “transcendent function.”²²³ There are two parts that comprise the transcendent function which pose a conflict between the two “incongruous halves” of the psyche.²²⁴ The first, the conscious, or *ego-consciousness*, refers to the psychic data that is manifest in the mind of the individual and perceived in the real world. The conscious comprises the more or less concrete thoughts, symbols, and information we perceive. The other part, the *collective unconscious*, refers to a latent psychic realm that signifies a system of universal symbols Jung called *archetypes*. According to Jung, because the content of the collective unconscious can’t be fully understood by ego-consciousness, the archetype “is essentially [unconscious] content that is altered by becoming conscious by being perceived, and it takes its colour from the individual consciousness in which it happens to appear.”²²⁵ This means that the nebulous content of the collective unconscious that can only be given shape by an individual

²²² Ibid.

²²³ Jung, 289.

²²⁴ Jung, 287.

²²⁵ Jung, 5.

consciousness is represented in a way that is unique to the individual. A process of individuation occurs as a result of this; for Jung, it is the resolution or “harmonizing of conscious and unconscious data” out of which union “emerge new situations and new conscious attitudes.”²²⁶ However, Keran’s psychic quest fails to resolve so neatly into Jungian terms. Gregory Stephenson points out that the rising oceans of *The Drowned World* are an image of the “overflowing and overpowering of the individual, conscious, rational intellect, ego-mind, by the ascendent energies of the unconscious... by a primordial, transcendent, collective consciousness.”²²⁷ It seems then that Keran’s conflict of consciousness simultaneously illustrates and undercuts the transcendent function, as he’s torn between the realm of the submerged, unconscious world and the surface world of ego-consciousness. As this tension plays out throughout the narrative, we see in him emerge a ‘new conscious attitude’—one whose affinity is with the nebulous unconscious and its archetypes of an emergent aquatic world.

Whatever is emerging in Keran’s consciousness is a direct product of his attunement to the cataclysmic world. He’s compelled to feel the intensity of the light and heat of the lagoon rather than stay indoors; and he becomes increasingly detached from the others as he tends to inhabit a kind of waking-dream state, “bathing the submerged levels below his consciousness, carrying him downwards into warm pellucid depths where the nominal realities of time and space ceased to exist. Guided by his dreams, he [moves] backwards through the emergent past, through a

²²⁶ Jung, 289.

²²⁷ Stephenson, 47.

succession of ever stranger landscapes.”²²⁸ His dreams, as Dr Bodkin suggests, are less hallucinations than they are “ancient organic [memories] millions of years old. The expanding sun and the rising temperature are driving you back down the spinal levels into the drowned seas submerged beneath the lowest layers of your unconscious.”²²⁹ They serve as his foray into the unconscious, but also they serve as a foreshadowing of his own sublime encounters, first in the sunken planetarium, and later as he travels south through the increasingly inhospitable environment.

Central to Kant’s analysis of the sublime is a quality of mental attunement to the sublime object—in Kerans’ case the extreme climate. Attunement is a key faculty for any aesthetic experience, as it serves for Kant to be “the subjective condition [of the very process of] cognition,” but in the case of the sublime—an experience that seemingly moves beyond the capacity for cognition—attunement is especially key.²³⁰ “What is sublime,” Kant avers, “is not the object in itself but “the mind’s attunement in judging the sublime;” it is “not a feeling of the sublimity of our own nature, but rather submission, prostration, and a feeling of our utter impotence; and this mental attunement is in fact usually connected with the idea of this object when natural events of this sort occur.”²³¹ In other words, what is sublime is the feeling of attunement one gets in the presence of an object that presents itself as sublime, and not the sublime object itself. Kerans’ ability to withstand the extremities of the climate (though not without consequence), coupled with his attunement to the

²²⁸ *The Drowned World*, 100.

²²⁹ *The Drowned World*, 89.

²³⁰ Immanuel Kant, *Critique of Judgment*, trans by Werner S. Pluhar, (Indianapolis and Cambridge: Hackett Publishing Company, 1987), 88.

²³¹ Kant, lxxi and 122.

changing landscape signal a “making-with” the environment that is akin to the sublime. As the layers of unconscious content percolate to the surface, enacted in both the landscape and his psyche, we can begin to see that the sublime experience encompasses both the incomprehensibility of the newly emergent nature, and the incommensurability of the rational ego-consciousness with his own inner psyche.

The sublime encounter finds its aegis in Kerans’ return to the wilderness. As the story progresses, he is drawn more and more to its call “beating within him like his own pulse,” drawing him southward toward the equator. His final journey of self-transformation reaches its tipping point when the makeshift world of the testing unit and lagoon are upended by the shadow figure Strangman and his crew of pirates. The gang, “like most of the other freebooters still wandering through the Equatorial lagoons and archipelagoes,” had been “pillaging the drowned cities, reclaiming the heavy specialized machinery such as electrical power generators and switchgear that had been perforce abandoned by the government.”²³² They hold Kerans and the other members of the testing unit captive under the auspices of performing salvage operations for them. However, it is Strangman who coerces Kerans to dive the sunken planetarium. His experience in the womb-like planetarium “plumbing the depths of his own unconscious” is both dangerous and enlightening, and serves as a first catalyst of transformation. However, his tipping point comes shortly after his near-death experience in the planetarium, when he awakes from one of his dreams to find the lagoon is being drained. As Kerans and his lover Beatrice watch in

²³² *The Drowned World*, 105.

astonishment as the waters recede, the emerging cityscape is described in terms that are paradoxically majestic and putrid:

Looming just below the dark pellucid surface were the dim rectangular outlines of the submerged buildings, their open windows like empty eyes in enormous drowned skulls. Only a few feet from the surface, they drew closer, emerging from the depths like an immense intact Atlantis.²³³

While the horrid image of buildings resembles drowned skulls with empty eye sockets, the city at first emerges like Atlantis with its promise of hidden culture. However, the onlookers quickly realize the true stakes of Strangman's reclamation project. The city, in fact, cannot be remade simply by restraining the forces of nature.

It's horrible!" Kerans felt Beatrice seize his arm, her long blue nails biting through the fabric of his dinner jacket. She gazed out at the emerging city, an expression of revulsion on her tense face, physically repelled by the sharp acrid smells of the exposed water-weeds and algae, the damp barnacled forms of rusting litter. Veils of scum draped from the criss-crossing telegraph wires and tilting neon signs, and a thin coating of silt cloaked the faces of the buildings, turning the once limpid beauty of the underwater city into a drained and festering sewer.

Likewise, the planetarium, formerly the regenerative site of sublime encounter, has been degraded and likened to decaying corpses:

No longer the velvet mantle he remembered from his descent, it was now a fragmenting cloak of rotting organic forms, like the vestments of the grave. The once translucent threshold of the womb had vanished, its place taken by the gateway to a sewer.

The reemergence of the drowned city breaks the spell for Kerans, who sees its "organic forms" and festering sewers" as even more fetid than the humid swamp. As

²³³ *The Drowned World*, 139

one last attempt to hang on to some vestige of the former world, he retreats to his room at the Ritz to find it completely destroyed by Strangman's men. It's at this point that his return to wilderness becomes clear:

In a sense [the Ritz's] destruction, with it all his memories of the lagoon, merely underlined something he had been tacitly ignoring for some time, and which Strangman's arrival, and all it implied, should have made him accept-the need to abandon the lagoon and move southwards. His time there had outlived itself, and the air-sealed suite with its constant temperature and humidity, its supplies of fuel and food, were nothing more than an encapsulated form of his previous environment, to which he had clung like a reluctant embryo to its yoke sac. The shattering of this shell, like the piercing doubts about his true unconscious motives set off by his near drowning in the planetarium, was the necessary spur to action, to his emergence into the brighter day of the interior, archaeopsychic sun.²³⁴

As the city is reclaimed from the wilderness in order to mine its material resources, it comes to resemble that place where Roger Williams avered that "greedie and furious men persecute and devoure the harmlesse and innocent."²³⁵

The Drowned World is prescient in its whole-cloth imagining of climate disaster, but remains detached in tone from political finger pointing. Rather, in emphasizing the stakes in the psyche of the individual rather than in the actions of society as a whole, Ballard privileges individual attunement to ecological crises over social action. The drained lagoon stands as an overt emblem of humanity's impudent attitude toward irreversible climate change. And it would seem to be this attitude that compels Kerans away from the rest of his cohort and draws him southward toward and unknown but presumed inhospitable destiny. He understands at last that to continue his "descent through archaeopschic time... the external world around him

²³⁴ *The Drowned World*, 167-68

²³⁵ Nash, 34.

would have become alien and unbearable.”²³⁶ Ultimately, climate cataclysm impels transcendence towards new modes of being and knowing, and an acquiesce to one’s own annihilation. As I will continue to elaborate below, it’s a mode of making-with that implicitly understands that a change in ecological systems must signal change in the human.

An Eden to Ransom—*The Drought*

Like Robert Kerans in *The Drowned World*, *The Drought*’s protagonist Dr. Charles Ransom lives in solitude and holds the same macabre fascination with the catastrophic climate change occurring around him. The book’s premise is an opposite image of *The Drowned World*: “Industrial wastes discharged into the ocean basins during the previous fifty years” have created a kind of impermeable membrane over the surface of the ocean which prohibits evaporation, spurring a global drought.²³⁷ The novel begins in Mount Royal, a fictional town implied to be a colonial territory in the tropics. Charles Ransom is initially comfortable at Mount Royal, adapting to and even welcoming his current situation, which includes the recent dissolution of his marriage and the drying up of the town. The world is burning up, but Ransom, a general medical practitioner, whiles away his time beach-combing and sailing the increasingly mudbound river.²³⁸ He “had been unable to grasp that the failure of [his] marriage [was] in fact a failure of landscape, and that with this discovery of the river

²³⁶ *The Drowned World*, 100

²³⁷ J.G. Ballard, *The Drought*, (New York and London: WW Norton and Co., 1964), 47.

²³⁸ I’ll point out that the book’s original title, *The Burning World*, fits more symmetrically with the other two titles of this unofficial trilogy, not to mention the easy allusions to hell and to Margaret Cavendish’s 17th century Utopian novel, *The Blazing World*. Like the other novels here, *The Drought*’s hellish landscape will become an Eden to Ransom.

[he] had at last found an environment in which he felt completely at home, a zone of identity in space and time.”²³⁹ It is a landscape becoming less and less inhabitable for the residents who stay in Mount Royal, and the novel takes shape as another quest for the protagonist to find a new eden.

Rachele Dini points out the link between the novel’s premise and contemporaneous research published in 1960 issues of *Chemistry & Industry*, particularly two pieces entitled, “Cetyl Alcohol Reduces Evaporation Losses,” and “Water Pollution,” both published within a week of each other in September of that year.²⁴⁰ Ballard was in fact the acting editor of the journal at that time, and is suspected to have penned the latter article, given its epigraph from Coleridge’s *Rime of the Ancient Mariner*: A polymer layer covering the ocean will feel eerily prescient to modern readers with its resonance to the Great Pacific Garbage Patch. And while air and water pollution was by no means a new concept in 1960 (familiar to literature readers since Dickens, at least), it added itself to an increasing list of human activities during the 19th and 20th centuries that effectively re-engineered nature into man’s image. Placer mining during the California Gold Rush, for instance, rerouted whole rivers and stripped vegetation and topsoil from entire hillsides until drawn down to bedrock; stands of two thousand year old Sequoia were felled to create the flumes while public works projects such as the massive Central Valley Project inundated whole ecosystems (along with human settlements) behind hydroelectric dams.

²³⁹ *The Drought*, 22.

²⁴⁰ Dini, 215-216.

By midcentury, the impact of ecological crises such as pollution caused by environmental engineering were becoming acutely felt, but did little to move the needle of public opinion. Environmental policy was still excluded from mainstream politics. By the time of Carson's *Silent Spring* in 1962, the needle was starting to move. But *The Drought*, published two years after *Silent Spring*, offers itself as less of a cautionary tale about the effects of pollution or the consequences of human transgression against the environment, but as an exploration of human adaptation to catastrophe. Dini states the novel is first about the "re-purposing of natural landscape" and then the "ensuing desiccation of the landscape, mass migration, and abandonment of established social norms a mode of habituation to the increasing clash between humans and nature."²⁴¹ As the natural landscape changes, man-made detritus piles up where abandoned, creating a new habitat combining refuse, household items, plastics, car wreckage, TV sets, and the dune-like mud-wastes left by the receding waters.

The exploration of this new world, again, involves both the outer and inner quests of its protagonist. Like *The Drowned World*, the transformation of the landscape mirrors the transformation of the self, a new becoming to adapt to catastrophe. On the surface, the incommensurability between human life and the desiccated landscape presents an instance of the dynamic sublime: climate change is a force beyond all human sense. But to read Ballard only in terms of the individual whose psychic turmoil is reflected in the external environment misses a deeper

²⁴¹ Dini, 216.

theme—that the individual and environment indeed form one collective: what philosopher Gilbert Simondon called the transindividual reality.²⁴² In this, he is referring to a process of individuation that insists that an individual subject cannot exist *a priori* to an external reality comprising both the physical and social—an “associated milieu.”²⁴³ I read *The Drought* as an instantiation of Simondon’s notion of individuation in order to elucidate what is truly sublime in Ballard’s texts, that of individuation itself. Simondonian individuation is sublime because it portrays the individual as not a cause but an effect of the relationship between itself and what is external to itself, so that individuation entails the subject always surpassing itself, a point I will make more clear shortly. I identify the world of *The Drought* as an echo-system which, by emphasizing the interrelatedness of the protagonist with his environment, foregrounds a radical process of individuation.

The insistent notion in Western culture that the individual subject stands outside of and separate from nature is also an insistence to anthropomorphize the universe. Ballard emphasizes the material world as a significant and fundamental element of his characters’ reality, at the expense perhaps of a deeper, humanistic characterization that is more relatable to readers. One critic, Robert Platzner, echoed such an anthropocentric tendency when he observed that “Ballard’s vision of

²⁴² Gilbert Simondon, *Individuation in Light of Notions of Form and Information*, translated by Taylor Adkins, (Minneapolis and London: University of Minnesota Press, 2020), 179.

²⁴³ Simondon, 50. “But the energetic system in which an individual is constituted is neither more intrinsic nor extrinsic to this individual: it is associated with this individual, it is this individual’s associated milieu. Through its energetic conditions of existence, the individual does not merely exist within its own limits; it emerges from a singularity. For the individual, relation has the value of being; the extrinsic cannot be distinguished from the intrinsic; what is truly and essentially the individual is the active relation, the exchange between the extrinsic and the intrinsic.”

irreversible, regressive transformation has left him with very little to write about except the inhuman and inorganic.”²⁴⁴ By vilifying the inhuman and inorganic as poor subjects to write about, Platzner’s sentiment speaks to a primary issue in conventional and even surrealist readings of Ballard: they ignore that anything except the human could be germane to the human condition. But the correlation of the human with the inhuman and inorganic has been precisely Ballard’s project his entire career, and what this dissertation emphasizes.

Ransom’s quest for a more authentic sense of self, a sense of meaningful experience more connected to the current lived conditions of the novel, is posed on one hand as movement paralleling the desiccation of the landscape, and on the other, a movement away from the social. He comes increasingly to identify with the landscape and less with the band of hangers-on at Mount Royal. Ballard maps this on to the movement of time as well. While his milieu represents the present and an idea of hope for the future, the drying landscape represents the stoppage of time altogether. Many have already left the town and moved toward the beach, but Ransom resents this, for “he had developed a fierce moral contempt for those who had given up on the fight against the drought and retreated to the coast.”²⁴⁵ The more he stays on at Mount Royal, the more he feels identity “slipping away” along with the vitality of the town. But looking toward the landscape he entertains “hopes of isolating himself among the wastes of the new desert, putting an end to time and its erosions.”²⁴⁶

²⁴⁴ Cited in Michel Delville, *J.G. Ballard*, (Plymouth, UK: Northcote House Publishing, 1998), 9.

²⁴⁵ *The Drought*, 58.

²⁴⁶ *The Drought*, 107.

The social, represented by the settlement at Mount Royal is “drab and joyless,” reflecting the “gradual attrition of life;” and later, the crowds at the shoreline are drawn as “a meaningless replication of identity.”²⁴⁷ Society, in other words, by clinging together against the strain of catastrophe, has lost its individual color. By contrast, the landscape is linked ironically to the promise of personal renewal, a reality which Andrzej Gasiorek points out “must provide the starting point for imagining alternatives...the technology that made the world what it is seems to function both as blight and as a source of renewed activity.”²⁴⁸ As the river dries up at Mount Royal, Ransom decides to leave the settlement to join the swells of humanity that have already gathered at the vast shoreline. Even as he decides to leave the port and head south toward the shoreline, he “felt an increasing sense of vacuum, as if he was pointlessly following a vestigial instinct that no longer had any real meaning to him.” The group of people with him “were becoming more and more shadowy, residues of themselves as notational as the empty river.”²⁴⁹ The thousands of people at the beach live in enclaves in the dunes “in the bodies of old cars,” but where the sea nonetheless “remained as distant as ever, always present and yet lost beyond the horizon.”²⁵⁰ They subsist by herding rivulets of ocean water “to trap and steal the sea” in small collecting-pools.²⁵¹ For Ransom, the existence is mundane, and he longs to rejoin the inhospitable landscape farther inland, a topography which “appears to

²⁴⁷ *The Drought*, 162 and 125, respectively.

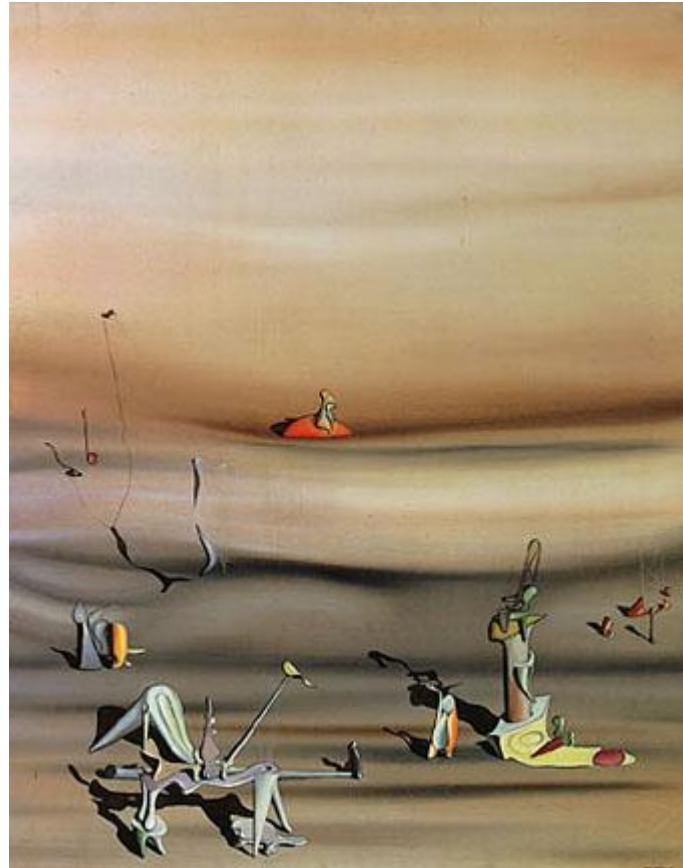
²⁴⁸ Gasiorek, 41.

²⁴⁹ *The Drought*, 122.

²⁵⁰ *The Drought*, 125.

²⁵¹ *The Drought*. 150.

signify a posthuman order.”²⁵² People exist at the beach in a kind of time lapse—they go on living but have faded from his psyche, reflected in several allusions to Yves Tanguy’s *Jours de lenteur*; a surrealist work that would seem to depict the malaise of post-catastrophe humanity:



253

With its smooth, pebble-like objects, drained of all associations, suspended on a washed tidal floor, this painting had helped to free him from the tiresome repetitions of everyday life. The rounded milky forms were isolated on their ocean bed like the houseboat on the exposed bank of the river.²⁵⁴

²⁵² Gasiorek, 42.

²⁵³ Image Credit: Centre Pompidou, MNAM-CCI/Philippe Migeat/Dist. GrandPalaisRmn
<https://www.centrepompidou.fr/en/ressources/oeuvre/cgzzR55>

²⁵⁴ *The Drought*, 24.

It's this malaise, this heat-death of society, I suggest, which jumpstarts the reemergence of his identity. His disaffectation with his current social conditions are echoed by an environment that has become increasingly extreme and inhospitable, but which nevertheless pulls him toward it. In order to be reborn, Ransom intuitively knows that human relations to the land and to each other must be redrawn. The figures in the painting are non-definite entities—neither human nor object but suggesting an amalgam of both, nonetheless wilting, or as Ballard puts it “drained of all associations.” It's from this point that Ransom's new individuation occurs.

In *The Drought*, psychic and environmental forces converge while environmental and social forces diverge. In order to connect the dots, I return now to Simondon to explore how new individualities emerge from the complex relational layers. Individuation occurs as a result of a metastable give-and-take of forces that are formed between the individual and its external reality. These forces include physical, social, psychic, and affective elements. Some of those forces, which Simondon refers to as the pre-individual field, reside in the individuating being but are non-individual, meaning they are forces that have not been fully integrated into the individual subject. For Ransom's new individuality to emerge, it first must be drained of the stability that has thus far kept it in a steady state of being. His disaffectation with his social milieu, coupled with his compulsion to “re-join” the natural world are the ground for a new level of individuation.

Add to that an additional layer that Simondon defines as anxiety, which occurs as a result of a subject calling itself into question “without really being able to unify

itself.”²⁵⁵ Anxiety is integral to subject individuation as it is most often the chief motivator of the metastable condition of individuation. As Simondon tells us:

in anxiety, the subject feels as if it exists as a problem posed to itself, and it feels its division into pre-individual nature and individuated being; the individuated being is here and now, and this here and now prevent an infinity of other here and nows from coming into existence.²⁵⁶

The subject’s anxiety is an affective state produced as a result of its awareness of itself as nature (i.e., as a unity of self and nature) but at the same time as the infinitude of potentialities it realizes it will never be able to actualize in the “here and now.” The state of anxiety is the tension the subject feels in wanting to resolve its state of metastability (which, recall, is itself a state of tension between the dynamic inner and outer forces working on it) on its own, of its own volition, without needing to resort to the collective milieu (i.e., social group). In short, it is the state of tension between the dissatisfaction of the self and the resolution it wants to mitigate directly without “mediation or delay.”²⁵⁷ In Ransom’s case, this is evident when he divests himself from the safety of the group and is compelled to move further inland, into the ruined wilderness. In so doing, he is in effect ensuring a new state of metastability created by multilayered tensions between the stasis of the self and the threat of obliteration of the self by environmental desiccation. He seeks, like Kerans, some attunement with the landscape that will affirm his place in the order of things, but with the tacit understanding that that place is no longer that of the ennobled liberal subject. Both characters realize that in the sweep of climate disaster, human

²⁵⁵ Simondon, 283.

²⁵⁶ Simondon, 282.

²⁵⁷ Simondon, 283.

civilization gets relegated to a thing of the past, a collective curio no longer willing or able to evolve. For Kerans, his impulse to dis-individuate from the rest of humanity drives him away from the relative shelter of the lagoon and deeper into the obliterative heat of the equator. Ransom likewise intuits an individuating impulse away from the safety of the group. Humanity represents a static state with no possibility for further subject individuation—the group is stuck where they are and must collectivize to sustain basic needs. They have become, like figures in Tanguy’s painting, objects in a bleak field. At one point that echoes *Jours de lenteur*, they spot a distant figure atop one of the dunes who, “detached from the pressing anxieties of the drought and exodus, seemed a compass of all the unstated motives that Ransom had been forced to repress.”²⁵⁸ Ransom views his group as “shadowless” under the vertical sunlight, their forms “eroded of all but a faint residue of their original identities, like ghosts in a distant universe.”²⁵⁹ It is at this point—when he intuitively recognizes the echo of outer with inner landscapes—that he feels the implicit need to detach himself from the others.

The end of Ransom’s quest finds him leaving the shore to return to Mount Royal in the hopes of rediscovering a river further inland. He doesn’t find it; in fact, the little water that’s left at Mount Royal is lost when their collecting pool is sabotaged by the town’s crazed proprietor, Lomax. With no remaining bond to society, Ransom is finally at liberty to shed his exterior self (which had hitherto felt beholden to others). His subsequent move upriver is an attempt to bring the inner

²⁵⁸ *The Drought*, 122.

²⁵⁹ *The Drought*, 187.

landscape closer in line with the outer to “at last complete his journey across the margins of the inner landscape he has carried in his mind for so many years.”²⁶⁰ In the words of Gregory Stephenson, he has at last “divested himself of the last remnant of his ego-identity, and [experienced] the reality of his interior identity and of the world within.”²⁶¹ It is at this point, at the very end of his quest that a new individuation has come into being, one renewed and transformed of spirit, if not of body. Ransom transcends a type of humanness that has gone extinct—one that persists in measuring itself against the natural world. Ransom, on the other hand, ceases to feel the blistering heat and “vertical light” of the world, or rather, feels a part of it rather than subject to its effects. And in fact, to such an extent that at the novel’s closing he “had hardly noticed that it started to rain.”²⁶² What had hitherto been a draining of identity is now a making-with the cataclysmic landscape. Ultimately, Ransom’s journey suggests that human identity is not singular but “formed by and out of the external world” as one element in a constellation of individuating forces in a much wider reality.²⁶³

Many of the hallmarks of Ballard’s oeuvre—metamorphosis and rebirth; the matching of an interior landscape with an outer one, the cataclysmic divide between the natural world and the technological, and man’s divestment of the social and technological world in an attempt to rejoin nature are revisited in Ballard’s next novel, *The Crystal World*. While he retreads much of the same ground in each novel,

²⁶⁰ *The Drought*, 237.

²⁶¹ Stephenson, 53.

²⁶² *The Drought*, 237.

²⁶³ Gasiorek, 46.

it is the nature of the cataclysm that supposes the nature of human transformation and which, I believe, compels continued interest in his work. I'll turn my attention briefly to *The Crystal World* to explore its metaphor of crystallization, which by turns serves as a central metaphor in Simondon's theory of individuation.

The Crystal World: The Prismatic Sublime

The Crystal World again finds a protagonist, Dr. Edward Sanders, drawn inland toward a cataclysmic event. In this case, the forest upriver is subject to a mysterious crystallization effect. He is drawn there out of a sense of duty to the nearby leper colony, but more so by the sense that by investigating the crystalizing forest he may be able to resolve his own psychic crisis. Like Kerans and Ransom of the previous novels, Sanders identifies with the transfigured landscape; he comes to welcome the inexplicable crystallization as "the natural order of things." *The Crystal World* enacts a mode of echo-system similar to that of the other novels which pose the interpenetration of human biological and psychic systems with an environment that has been radically Othered. Through this process, humanity, too, becomes othered, which also happens to entail the interpenetration of "external reality [with] inner perception."²⁶⁴

The crystallization of the flora and fauna precipitate eerie, paradoxical effects. When the crystallization process occurs, it marks a transition from animate to inanimate, with objects moving from a more active, metastable state to a more stable state "frozen in time." However, it's worth noting that the crystallization process only

²⁶⁴ Gasiorek, 52.

appears to slow its movement in time; in actuality, a seed germ will crystallize for perpetuity, steadily aggregating more and more material. For Sanders, who is at the outset alienated from others as well as from the “ordinary lack-lustre world,” the crystalized forest impells a sense of personal transformation; an inner, spiritual clarity and an external, material unity with the world.²⁶⁵ As a central metaphor for identity, crystallization also symbolizes both light (rebirth) and death (transfiguration), representing two forms of psychic clarity. On one hand, the “prismatic light” emitted from the crystals signals a movement from obscurity to clarity, a light that suggests “a process of inner clarification and evolution,” as well as a mode of harmony between animate and inanimate matter.²⁶⁶

On the other hand, crystallization is also associated with the stoppage of time and the ceasing of life processes. The onset of a new region of crystallization betokens death to the extant flora and fauna. Objects which become crystalized are frozen in time yet inexplicably remain in an active process of metamorphosis. The effects of such crystallization, however, seem more healing rather than harmful. Only after Sander’s arm becomes partially crystallized does he feel “any marked sensation,” but it is less one of pain but of “a feeling of warmth as if the crystals annealed themselves.”²⁶⁷

This paradoxical tension between a static and a transformative state can be better accounted for by returning to Simondon’s notion of individuation, which uses the process of crystallization to illustrate the way an individuating object is

²⁶⁵ *The Crystal World*, 94.

²⁶⁶ Stephenson, 58.

²⁶⁷ *The Crystal World*, 184

simultaneously fixed and multiple. Crystallization is the “controlled change of a substance to an ordered solid.” It refers to a natural process in which an original substance grows into a highly structured solid object. The original substance may be a liquid, vapor, or even a smaller solid (seed crystal), but the process generally implies a transformation from low organization to higher organization through a process of *translation*, or a symmetrical accretion of material into a highly structured, but more static object.²⁶⁸ Simondon employs this idea as a paradigm for the individuation of objects and subjects alike.²⁶⁹ Like a crystal, the basis for an object’s individuation are the relative conditions of equilibrium that exist between the object and its surroundings which foment change. In the process of individuation, this is what Simondon calls transduction.²⁷⁰ In the account of the crystal, a “tiny germ” begins in a supersaturated solution; i.e., a solution in which the soluble material overwhelms its substrate. This condition occurs in a state of metastability in which germ and solution are out of equilibrium with each other, the settling of which precipitates a crystal. The newly forming crystal is emergent in the same way that complex systems beget other, emergent systems. That is to say, what emerges in the form of a new crystal is an object which had not before existed in that form, with properties that were not inherent in the preexisting materials. Simondon’s account of individuation follows the same model. Like the crystal, the individuating object in its milieu “increases and

²⁶⁸ Lynn F. Schneemeyer, “Crystal Growth,” *Encyclopedia of Physical Science and Technology* (Third Edition) Editor: Robert A. Meyers, (Academic Press, 2003), 79-89

²⁶⁹ I use the term subject here to refer to what one would typically call a living individual person. Strictly speaking, Simondon disavows the concept of the individual—there are only individuating beings.

²⁷⁰ Simondon, 13. “By *transduction* we mean...an operation through which an activity propagates incrementally.” Emphasis in the original.

extends following all the directions in its supersaturated mother liquor,” each layer serving as the “structuring basis for the layer in the process of forming.”²⁷¹ In his words the individual is a “progressive iteration” borne out of the tensions of its domain:

The physical object is an organization of thresholds and of levels maintained and transposed throughout various situations; the physical object is a bundle of differential relations, and its perception as individual is the grasping of the coherence of this bundle of relations. A crystal is an individual not because it possesses a geometrical form or an ensemble of elementary particles, but because all of its [properties] undergo an abrupt variation when we pass from one facet to another; without this coherence of a multitude of properties with highly variable values, the crystal would be nothing but a geometrical form [and not] a veritable individual.²⁷²

The case is the same for individuating subjects, who in Simondon’s view, are complex assemblages of biological, psychical, emotive, and sociotechnical individuals. They are neither the fixed nor bounded individuals of classical liberalism, but always caught in a process of individuation, always in tension with their environment. The subject has an existence precisely because “it is placed into question” by the transindividual reality that structures it.²⁷³

For Simondon, physical individuation is a resolution of a metastable condition in that it offers a temporary stability of energies between the individual and the collective; the object re-establishes itself as individuated from the whole. But in the case of the subject (incorporating at once physical, biological, psychological and

²⁷¹ Simondon, 13.

²⁷² Simondon, 264-65.

²⁷³ David Scott, *Gilbert Simondon’s Psychic and Collective Individuation: A Critical Introduction and Guide*, (Edinburgh: Edinburgh University Press, 2014), 11.

technical beings), individuation is an incessant activity. By its very nature, its complexity (i.e., bundle of metastable tensions) necessitates that it never attains a static state but perpetually vacillates from one condition of potential energy to another. The crystallization which occurs in the novel does so without end—once an object is crystallized, the crystal does not “end” but rather continues its metastatic reach, *ad infinitum*. It is in this manner that certain individual subjects in the text can identify with the crystals; both are compelled to individuate for perpetuity.

The crystal is an object of transformation, and as such, serves as an apt metaphor for the sublime. However, while Ballard infuses his description of crystals and their effects with the qualities of transcendence, for Gilbert Simondon, the crystal can only offer itself as an analogy of transformative self-becoming, not transcendence, since transcendence is contingent on a pre-existing state from which one transcends. Rather, crystallization here serves as a metaphor for sublime reflection, introspection, and self-clarification, a model of individuation that is no less radically transformative.

The effects of crystallization that mark Sanders’ inner transformation coincide with the mechanisms of individuation in which the subject finds itself grappling with “the coherence of [a] bundle of relations.” Part of the reason that Sanders identifies with the crystal is because in its ready ability to shift phases, he recognizes a key potential: through crystallization, an object which has hitherto been a bundle of metastable tensions is able to better clarify its relation to its environment. Sanders’ mental state at the outset is one of ennui; there is no longer anything at Port Matarre

to compel him, the wreckage of his past life with Suzane no longer elicits an emotion. From his far vantage point at Port Matarre, Sanders at first sees the forest as “minatory and oppressive,” as if it were “draining all light from the sun.”²⁷⁴ But once he has entered the forest, he begins to see reality in a new light. What had been perceived as darkness from above and from afar is inside the crystalized forest an explosion of light and color, the darkness obscuring some inexplicable power. It is inside the forest that Sanders reaches a psychic tipping point. He follows the “serpentine course of the river as if revealing a secret pathway.”²⁷⁵ For Sanders, the crystals bring into sharper focus his own psychic condition; the crystallization and light catalyzes a sense of freedom from the oppressive ennui of Port Matarre and sets him on a liberatory journey that climaxes in his own partial crystallization. In the sense of the greater cataclysm, his psychic individuation can be seen as a move away from his social milieu as he comes to identify with the process of crystallization that symbolizes renewal, continued growth, and ultimately, the transformation of all matter: “There is an immense reward to be found in the frozen forest,” he observes, “there the transfiguration of all living and inanimate forms occurs before our eyes, the gift of immortality.”²⁷⁶

Crystals also mark an outer transformation for Sanders, one that moves him closer to personal annihilation. The effects of crystallization on organic matter simultaneously seem to cease vital function yet forestall death and disease. After extracting a drowned man from a partially crystallized river, he observes that “the

²⁷⁴ *The Crystal World*, 23 and 19, respectively.

²⁷⁵ *The Crystal World*, 49.

²⁷⁶ *The Crystal World*, 202.

man had been immersed in water for four or five days, and [he] was surprised to find that rigor mortis had still not occurred. The joints and tissues were malleable, the skin firm and almost warm.”²⁷⁷ The man’s arm is not encased in the crystal material but more precisely had “effloresced into a mass of translucent crystals...like a huge jeweled gauntlet.”²⁷⁸ Later, after Sanders becomes partially crystallized himself, the effects are similar. As he treads upriver, his feet become “encased in huge crystal slippers.” When his arm becomes immersed in the crystallized river, it’s observed that “although the crystalline tissues were cold as ice, an no movement of his hand or fingers was possible, the nerves and sinews seemed to have taken on a new life of their own, glowing like the hard compacted light they emitted.”²⁷⁹ Upon his encounter with the tubercular character Serena, holed up in a dilapidated mansion, he notes the crystal’s restorative powers. Although the illness has almost completely depleted her, she seized “a handful of the jewels, [and] brought them up to her neck and pressed them tightly against her skin” and he observes that “their contact seemed to revive her.”²⁸⁰ In the outside world, she is tubercular and near death, but with crystals scaling her body, the disease is quelled. However, Ballard’s wry nod to new age-y crystal healing properties is not so easily dismissed here as “ju-ju magic.”²⁸¹ For the sick, invalid, and deceased souls who take shelter in the crystal forest (including the tubercular Serena, a leper colony, and a lapsed priest “diseased in spirit”), crystallization is preferable to whatever prospects might befall humanity beyond the

²⁷⁷ *The Crystal World*, 53.

²⁷⁸ *Ibid.*

²⁷⁹ *The Crystal World*, 183.

²⁸⁰ *The Crystal World*, 126.

²⁸¹ *The Crystal World*, 131.

forest. Serena would much prefer the “half-animate immolation within the crystal vaults to her physical death in the world outside.”²⁸² Ultimately, the physical process of crystallization seems to transform degenerate organic matter into something more illustrious, spiritual even.

The Trouble with Transcendence: Simondon’s anti-Kant

At every turn, Ballard emphasizes modes of spectacle, enchantment, and transfiguration that are induced by the crystals and associated with transcendence. According to Andrzej Gasiorek, the novel portrays a “transfigured world in which every living thing shimmers with a new found light.”²⁸³ The forest is presented as a “house of jewels,” and a “blurred kaleidoscope” that “erupted into cascades of color.”²⁸⁴ A “spray of leaves shone with a dozen images of themselves refracted through the face” of their surroundings, and the overhanging trees “seemed to drip and glitter with myriads [sic] of prisms.”²⁸⁵ The crystal light that dapples Sanders’ suit transforms it “into a brilliant palimpsest of colors.”²⁸⁶ In witnessing the “spectacle” of light emanating from the crystals, the folks are “moved to astonishment.” Time and again, the forest is presented as a kind of prismatic reality as if, like a fractal, it were reflecting some inner infinitude. As evinced by these passages, all that crystals come into contact with come to exist in some new state, as if overwritten with light. For instance, Sanders and his ex-lover Suzane see the light

²⁸² *The Crystal World*, 132.

²⁸³ Gasiorek, 48.

²⁸⁴ *The Crystal World*, 77.

²⁸⁵ *The Crystal World*, 75-76.

²⁸⁶ *The Crystal World*, 76.

emitted by the crystal forests suggests a return to an earlier, prelapsarian identity, one marked by purity:

The beauty of the spectacle had turned the keys of memory, and a thousand images of childhood, forgotten for nearly forty years, filled his mind, recalling the paradisaical world when everything seemed illuminated by that prismatic light described so exactly by Wordsworth in his recollections of childhood. The magical shore in front of him seemed to glow like that brief spring.²⁸⁷

The sense of reverie evoked by the dizzying display of light—of both the fallen past and ineffable present—of the “sense sublime/ of something far deeply infused”²⁸⁸—the words described so exactly by Wordsworth, indicates that the crystal world is a return to a sublime wilderness. Unlike Kerans or Ransom, who inhabit their worlds with existential abandon, Sanders is more clearly linked to the Romantics than his predecessors. His drive toward the forest is not one of morbid compulsion but of rapt fascination; he’s compelled to venture there “as if he were some fugitive Adam chancing upon a forgotten gateway to the forbidden paradise.”²⁸⁹

A number of Ballard scholars, most notably Andrzej Gasiorek and Gregory Stephenson, have pointed out the sublime reverie implicit in a Ballard protagonist’s venture into the wilderness. Stephenson, for example, calls Sanders’ foray into the crystal forest a move of “psychic interaction and transcendence.”²⁹⁰ Andrzej Gasiorek underscores the overt connection between the effects of crystallization and a particular mode of the sublime, observing that the novel “draws imaginatively on the resources of Romanticism,” but noting in its reworking of the romantic sublime:

²⁸⁷ *The Crystal World*, 77.

²⁸⁸ William Wordsworth, “Lines Composed a Few Miles Above Tintern Abbey,” Poetry Foundation, *Poetryfoundation.org*. <https://www.poetryfoundation.org/poems/45527>

²⁸⁹ *The Crystal World*, 89.

²⁹⁰ Stephenson, 57.

The Crystal World neither evokes the feelings of awe and terror so often associated with the sublime nor emphasizes its unrepresentability—the radical incommensurability between felt emotion and its articulation, between the object of perception and its representation—but embodies an experience of ecstasy that harks back to Longinus.²⁹¹

The novel focuses the reader's attention on the dazzling effect of the sublime rather than dwell on its more philosophical underpinnings. The novel is written "out of metamorphic reverie, a longing for a reconciliatory transformation of both self and world" that seeks to "reengage with the "all but forgotten ecstatic experience of oneness with nature."²⁹² Sanders, in the role of "metaphysical detective" is less concerned with the commensurability of events than their metaphysical meaning. He feels unthreatened, non-harried by the crystallization's destructive force, and rather enthralled by its light. If the novel presents the sublime, then it is not about being overpowered (as in Burke), nor about any kind of disassociation between subject and object (as in Kant), nor does it consistently present as the self's reconciliation with nature (ala Wordsworth). In fact, Sanders never really transcends anything. After his sojourn, he returns to Port Matarre, lamenting those "missing fragments of himself, living on in their own prismatic medium."²⁹³

While we should acknowledge the novel's overt allusion to Romanticism, Gasiorek's assessment doesn't adequately hit the mark. There is more than reverie going on; Sanders is not compelled to sound his barbaric yawp into the void, but quietly acquiesces to it. Sanders' sojourn in the forest is indeed a return to wilderness, but he does so, I argue, not as a transcendental subject yoking together modes of the

²⁹¹ Gasiorek, 49.

²⁹² Gasiorek, 52.

²⁹³ *The Crystal World*, 209.

Kantian and Romantic sublime, but as the individuating subject transfigured by and transfiguring its own reality. If anything is transcended, it would be as Isobel Armstrong has explained “about the possibility of the transformation of categories, new knowledges.”²⁹⁴ It’s the idea of transformation, rather than transcendence, on which Simondon bases his theory. Simondon is skeptical of the idea of transcendence because it presupposes that the transcendent subject must necessarily transcend an a priori subject. Simondon insists, rather, that individuals are always individuating, so it is not possible to provide a teleological scaffold for the subject, moving from one realm to the next whether ontologically, epistemologically, or affectively:

The foundation of the problem of transcendence lies in the successive rapport of these phases of personality; all the schemata that seek to explain the inherence of a transcendent principle in man or, on the contrary, that want to show that everything emerges genetically from experience, ignore the initial reality of the operation of individuation. It's true that the being, to the extent that it is individuated, does not have and will never have the complete course of its explication within it; the individuated being cannot account for itself or for everything that is within itself, no more than it can account for its emotion facing the starry sky and the moral law within it or the principle of true judgment.²⁹⁵

A true philosophy of the subject, he continues, “arises from a real anterior to individuation, a real which can neither be sought in the objectified object or in the subjectified subject but, instead, in the limit between the individual and what remains outside of it.”²⁹⁶ In other words, individuation underscores that the relationship between interiority and exteriority is never fixed or hierarchical, but is always in

²⁹⁴ Isobel Armstrong, *The Radical Aesthetic*, (Oxford: Blackwell, 2000), 99.

²⁹⁵ Simondon, 299.

²⁹⁶ Simondon, 300.

process, always fluid. It is in a similar manner in which the continued differentiation of a system from its environment is what catalyzes a system's (or individual's) identity. Niklas Luhmann reminds us that meaning emerges at that boundary between system and other, which slowly accretes from "a surplus of possibilities of experience and action," much in the same way that Simondon emphasizes boundary between individual and collective as the locus of meaningful becoming.²⁹⁷

Through the metaphor of the crystal, Sanders crystallizes his psyche in a new configuration of symbiosis with the environment. The transformation of the self implies a sense of belonging with and part of a transformed environment, and along with those changes, new psychological goals. His experience in the crystalized forest emphasizes what others have pointed out: if the climate changes, we must change too. If he laments those "missing fragments of himself living on in their own prismatic medium," what he's gained psychically is "the gift of immortality."²⁹⁸ This thinking casts new light on questions about what it means to care for and be a part of the environment if that also necessarily entails our demise. Ballard, of course, resists easy answers. In the three novels examined here, he uses climate catastrophes to explore the relation between external, environmental stresses and the interior psyche, associations that are by turns surreal and sublime. I've taken an admittedly more prescriptive approach, examining his novels both in light of their function as cautionary tales and as speculative roadmaps for the necessity of radical

²⁹⁷ Luhmann, *Social Systems*, trans. John Bednarz, Jr., with Dirk Baecker, (Stanford: Stanford University Press, 1995), 60-61.

²⁹⁸ *The Crystal World*, 208.

transformation in light of climate change. These climate catastrophes, I conclude, reveal the illusory nature of ourselves as subjects autonomous from nature.

Ballard's climate catastrophes show us, in varying ways, how the impact of ecological crises produce deleterious effects on human individuals, calling into question the very notion of human subjectivity and autonomy. Echo-systems, which are rooted in human conceptions of scientific and environmental systems, reveal the ways in which human subjects attempt to position themselves with respect to systems that are incommensurate with their experience; i.e., sublime. In the face of sublime force, human subjects recognize a liberatory power of transformation, typically entailing a demise of both society and the individual body but the transcendence of the psyche. This is the cost of transcendence amidst such catastrophic forces. In the following chapters, I depart from echo-systems to explore more closely modes of the sublime which emerge through social, psychological, and technological systems.

CHAPTER THREE:
Magical Thinking: Contingency, Wish-fulfillment, and *L'objet petit a*

In this chapter I examine science fiction texts in which unfulfilled desire serves as an operative mode of the sublime. What I am identifying as unfulfilled desire hews closely with what Fredric Jameson calls wish-fulfillment and Jacques Lacan terms *l'objet petit a*. Where Jameson reads desire (wish-fulfillment) as a Utopian impulse which stagnates into dystopia, I view desire as an ineffable force that short circuits social relations. At stake are the terms of meaning-making for individual subjects who strive to overcome both inner and outer (social) conflicts. While both thinkers have treated at length the desiring impulse for individual subjects—Jameson in relation to a social whole and Lacan in relation to an Other—what I illustrate here is that desire is an object sublime not only because one's desire cannot be fulfilled or ultimately known, but more pointedly because that wish-fulfilling desire is an unresolvable tension in social systems between individuals and the whole.

L'objet petit a

In Alfred Hitchcock's *Vertigo* (1958), police detective Scottie (James Stewart), becomes obsessed with the mysterious Madeleine (Kim Novak) after he is asked by her husband, Galvin Ester, to follow her. A noteworthy series of events ensue that ends in Madeleine's fall from the upper story of the Mission San Juan Bautista. Depressed, Scottie returns to San Francisco and is haunted by his memory of Madeleine until he encounters Judy, who bears an uncanny resemblance to Madeleine. His obsession is reignited by the seemingly impossible likeness, and he eventually compels Judy to change her appearance to even more closely resemble

Madeleine. As they continue to see each other, Judy fails to fulfill Scottie's desire for Madeleine. When the truth is finally revealed, Scottie's obsession intensifies to such an extent that he forces Judy to "re-live" the events leading up to Madeleine's death, which it turns out to have been staged to cover up a murder.

The premise of *Vertigo* illustrates a dilemma common to modern life: that the object of desire, once attained, fails to live up to its promise of fulfillment. This is a phenomenon that has been most frequently reiterated in Late Capitalism, and is arguably even its defining feature. When we strive to attain an object of desire, a fancy car, say, or a better job—once attained, the thing we've gained fails to keep us satisfied for long. And so we are compelled to strive for something different or something more, the desire always there, always marked by a lack, a perpetual abyss wanting to be filled. Lacan posits that an object of desire that cannot be attained actually marks a deeper, unconscious drive—the *objet petit a*.²⁹⁹ The *objet petit a* does not refer to an object of desire in itself, but the object-cause-of-desire: the thing that, for whatever reason, causes the object to be desirable to the subject. It is the inexpressible force that lifts objects from the ordinary realm of things and transforms them into exceptional objects of desire. As Lacan notes, it "denotes the object which can never be attained, which is really the cause of desire rather than that towards which desire tends."³⁰⁰

²⁹⁹ *Objet petit a*, or *objet a*, represents a lowercase-a *autre* [other], as distinguished from the capital-A *Autre*. For Lacan, the little other marks a part of the self that it lacks (phallus) which has been split off or fragmented (castrated). When the subject encounters an object of desire, it experiences both anxiety and compulsion to recuperate what it lacks, some part of which it identifies with the object.

³⁰⁰ "Objet petit a" *No Subject: an Encyclopedia of Lacanian Psychoanalysis*, www.nosubject.com, web.

As expressed in *Vertigo*, the object-cause of desire revolves around Scottie's quest to regain his sense of self-determination. In a figuration that Hitchcock repeats elsewhere, Scottie is first presented as an awkward, milquetoast, even impotent male³⁰¹—visually represented in the film by his fear of heights, and through interactions with his gal-pal office assistant, Midge. Scottie's object of desire is Madeleine, a woman by whom he is mesmerized because she symbolizes a sense of *je nais se quois* pertaining to his own sexual desire and the suppression of the male libido. But what is it about Madeleine that distinguishes her as an object of desire? Or, more precisely, what inheres in Madeleine that compels in Scottie an impulse toward wish-fulfillment? For Scottie, his desire for her is not merely for desire's sake, nor simply to satisfy his libido; rather it's an unconscious drive, the *cause* for his desire rooted in the *objet petit a*. And it is a cause that, for Lacan, remains undefinable; it is that essential, ineffable part of the subject that drives it.

As I elaborate in this chapter, the desire that can never be fulfilled—which is like Kant's "imagination, like an abyss"—serves as an operative force of social systems. My analyses build upon Jameson and Lacan, but contend that a working understanding of the operations of desire can only best be thought through systems theory. In particular, I interpose double contingency as a way to elucidate the ways in

³⁰¹ Consider, for instance, Gregory Peck as Dr. Constance Peterson in *Spellbound* (1946); James Stewart's Jeff Jeffries in *Rear Window* (1954); Cary Grant's Roger Thornhill in *North by Northwest* (1959); and of course, Anthony Perkins' Norman Bates in *Psycho* (1960). In each case, in differing ways, the male protagonist initially presents-as in a way that marks him as less normatively "masculine." One subtext of *Vertigo* is that Scottie needs to overcome his fear of heights (emasculaton) by attaining and exhibiting ownership of a female object of desire.

which, under differing terms of wish-fulfilling practices, desiring subjects tend to be subsumed under totalizing systems of power.

A question that may arise from considering how ordinary objects become objects of desire is to also consider how wish-fulfillment operates. First, it's important to distinguish wish-fulfillment from the broader concept of desire. Desire, it should be noted, is an attitude a subject holds toward a future proposition; it revolves around an idea of how things *should* be. Desire is a motivating impulse—inspiring agency and action from the subject. One may desire a cup of coffee, or a change in their social conditions; or one may desire no change at all. For Lacan, desire is the impulse of the *objet petit a*, but as such, does not emanate there. Desire arises from seemingly nowhere and is not part of the drives; it is a concept unto itself. But wish-fulfillment, by comparison, is what Freud posits occurs as the primary function of dreams, which process and reconcile both our conscious and unconscious desires. “What instigates a dream is a wish, and the fulfillment of that wish is the content of the dream,” he writes; “this is one of the chief characteristics of dreams. The other, equally constant one, is that a dream does not simply give expression to a thought, but represents the wish fulfilled as a hallucinatory experience.”³⁰² In other words, the subject's unconscious desires are given representation in dreams, and the dream is a manifestation of both the problem (the wish) and the solution (fulfillment); or as Freud puts it, “*a dream is a (disguised) fulfillment of a (suppressed or repressed)*

³⁰² Sigmund Freud, *Introductory Lectures of Psycho-Analysis*, trans by James Strachey, (New York and London, W.W. Norton, 1966), 158.

wish.”³⁰³ Wish-fulfillment, then, is the manifestation of a (unconscious) desire that is put forth in a way that is perceptible to the subject.

Another important task of dreams, according to Freud, is “*the transformation of a thought into an experience*,” which is also precisely what literary texts and cinema try to accomplish.³⁰⁴ The very nature of narrative functions as a system that creates meaning from language, actions, and reactions over time. Science fiction is particularly suited to the representation of unconscious impulses, and as I explore below, social systems derive identity and meaning through similar processes. That is not to say that all films and novels are like dreams, but it is worth noting that both the symbolic nature of language and the visual language of cinema offer the same capacity to translate ideas into experiences. At another level, we can then read certain science fiction texts as expressions of wish-fulfillment—since it by definition involves—like desire itself—a projection of what *could* or *should* be. Science fiction can also represent, like the social novels of the 19th century, human desires on a much larger social scale.

In *Archaeologies of the Future*, Fredric Jameson distinguishes between utopias as they are represented on the page of literary texts (form and praxis) and Utopias as they are manifested subtextually as a kind of inherent wish (akin to a symptomatic reading).³⁰⁵ Jameson chooses to delineate two analytic movements: a

³⁰³ Sigmund Freud, *The Interpretation of Dreams*, trans by James Strachey, (New York, Basic Books, 2010), 183. Italics in the original.

³⁰⁴ Freud, *Introductory Lectures*, 158. Italics in the original.

³⁰⁵ Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*, (London and New York, Verso, 2005), 2. His version of symptomatic reading is developed in his earlier text, *The Political Unconscious: Narrative as a Socially Symbolic Act* (1981).

systemic dimension of how potential utopias could form, as well as a symptomatic dimension where he focuses attention on what kinds of wish-fulfillments are manifested in such narratives. One line, he writes, is “intent on the realization of the Utopian program,” while the other, he stresses, is a more “obscure yet omnipresent Utopian impulse finding its way to the surface in a variety of covert expressions and practices.”³⁰⁶ These two lines he traces from More’s *Utopia*, and offers extensive commentary of how Utopian forms can resolve Utopian impulses.³⁰⁷ However, my intent is not to offer a systematic overview of Utopian literature, but rather to investigate where wish-fulfillment and the Utopian impulse becomes a site of the sublime. These impulses point toward moments of incommensurability between individual and whole which creates disequilibrium in the social order. It is through an individual’s perpetual desire toward a utopian ideal that one confronts the sublime.

This chapter draws together several strings of thought in order to articulate instances of the sublime traced through what I identify as wish-fulfilling impulses in science fiction. Wish-fulfillment, a common thread running through these texts and indicated by the *objet a*, stands as an abyss that can be neither defined nor reconciled by the desiring subject.³⁰⁸ I argue that the wish-fulfilling impulse is troubled by what Niklas Luhmann describes as double contingency: a dialectical operation between subjects that paradoxically give rise to both action and indeterminacy.³⁰⁹ It’s my

³⁰⁶ Jameson, 3

³⁰⁷ Jameson, 72-73.

³⁰⁸ By subject, I am referring to the principal characters in the literary texts examined. They and the texts they inhabit act as stand-ins for real world human desire, particularly under global capital.

³⁰⁹ Niklas Luhmann, *Social Systems*, trans. John Bednarz, Jr., with Dirk Baecker, (Stanford: Stanford University Press, 1995), 108. “Social systems emerge, however, through and only through the fact that

contention that the *objet a*, which I identify as the impulse that compels the subject to reconcile with its desire, is incommensurate with the larger social system's compulsion to resolve conflict. In this case, the sublime object of desire is the ideal sought beyond existing conditions or social structures—it is the ideal that is beyond materiality. Desire is what can be thought but not comprehended in its totality. Meaning is derived through a double contingent relationship between parts of a system, in this case individual subjects (psychic systems) and the larger whole (social systems), but is short circuited by desires which cannot be resolved. The *objet a*, whose “impossible nature” Lewis Kirchner has characterized as “unsymbolizable and unimaginable” becomes the sublime object of the Utopian imagination.³¹⁰

Contingency and Free Will in *The Lathe of Heaven*

Much critical attention has been given to the early fictions of Ursula K. Le Guin that question the idea of Utopia. Her seminal novels *The Left Hand of Darkness* and *The Dispossessed: An Ambiguous Utopia* have garnered the most attention, since they most explicitly deal with and are set in ostensibly Utopian societies. However, her 1971 novel, *The Lathe of Heaven*, has received far less attention by comparison, perhaps owing to its relatively couched Utopian themes. The novel is set in a future Portland, Oregon in the year 2001, a future affected by severe climate change and overpopulation. George Orr works as a draftsman, a common joe beset by mental health issues and drug addiction, and one very particular affliction: his dreams can

both partners experience double contingency and that the indeterminability of such a situation for both partners in any activity that then takes place possesses significance for the formation of structures.”

³¹⁰ Lewis A. Kirchner, “Rethinking Desire: The *Objet Petit A* in Lacanian Theory,” *Journal of the American Psychoanalytic Association*, (2005, Vol.53 (1), p.83-102), 91.

change reality. But George is at first the only person cognizant of the results of his self-described “effective” dreams.³¹¹ After a mental breakdown, he’s put under the care of psychiatrist Dr. Haber, whose dream-tracking machine the Augmentor he hopes can cure George’s ‘psychosis’. Once Dr. Haber recognizes and admits that reality is being affected by Orr’s dream work, Dr. Haber’s intention is to use his Augmentor to control the outcome of George’s dreams. The narrative thus sets up an essential tension between George Orr’s desire to stop having reality-altering dreams, and Dr. Haber’s intention to use Orr and his Augmentor to change reality for the better.

The two protagonists represent two modes of being in society. On the one hand, Orr, who throughout the novel is described as about as unassuming and average as one could be— “Unaggressive, placid, milquetoast, repressed, conventional”—represents a social status quo.³¹² He’s an ordinary working man with a modest existence. At the outset of the novel, he lives in a State Housing Complex and self-medicates using a friend’s “pharm card.” He’s content to exist simply, with as little complication as possible. He’s not only resistant to change—but owing to his effective dreaming—he fears it. On the other hand, Dr. Haber starts out as an ambitious but pretentious “oneirologist,” whose interior office “did not have a view of Mt. Hood,” but rather a large wall-sized mural of it. At the outset, Dr. Haber affects a manner of condescension and speaks in a heavy handed techno-rhetoric toward his subordinates with the implication that he’s more knowledgeable and deserving than

³¹¹ Ursula K. Le Guin, *The Lathe of Heaven*, (New York: Avon Books), 18.

³¹² Le Guin, 12.

his current position. Both the wall-sized mural of majestic Mt. Hood, and later, a painting of a noble racehorse Tammany Hall hint at the inner will-to-power of Haber. He represents social progress in the form of upward mobility and technological instrumentality. As Carl D. Malmgren has underscored, *The Lathe of Heaven* sets up these two protagonists as “two different kinds of sensibilities, two different ways of looking at the world. Since the stakes in the novel are high—Haber tries to use Orr's power to realize [u]topia—LeGuin is clearly examining the extent to which these two types of mental talents can bring about significant change.”³¹³ While the novel does concern itself with the question of change—what kind and whether it is necessary—I believe its deeper subject is its implicit investigation of the inner workings of desire itself. The different ways of looking at the world then become two case studies in the object cause of desire, each which elucidate an essential anxiety about being in the world.

George Orr's effective dreams offer an ironic play on the adage “be careful what you wish for” since the result of the wish is never precisely the thing wished for. His effective dreams first occur at a point before the beginning of the novel when, out of a sense of unease, he dreams his sexually predatory aunt out of existence. His dreams begin as ordinary anxiety dreams, reflecting his sense of uneasiness at his aunt's sexual advances, until at one point he dreams she is killed in a car crash. Upon waking, he finds no one remembers the aunt and soon realizes that his dream had “made a different reality, retroactively.”³¹⁴ Orr's original, unstated desire was simply

³¹³ Carl D. Malmgren, “Orr Else? The Protagonists of Le Guin's *The Lathe of Heaven*,” *Journal of the Fantastic in the Arts*, 1998, Vol. 9, No. 4 (36), Special Issue: On Psi Powers (1998), 314.

³¹⁴ Le Guin, 17.

for the aunt to leave him alone, but the resulting fulfillment of the wish points toward something darker and incomprehensible. He is utterly shaken at the dual prospect of deleting a person's existence and simultaneously altering everyone else's reality. In his reading of the novel, Fredric Jameson asserts that this premise is "one of totality: that the world is one immense and self-sufficient system—change anything in it, no matter how small, and the rest will necessarily be altered in unexpected ways."³¹⁵ That Orr's inner psyche is a self-sufficient system, a totality unto itself, underscores the tenuous state of social meaning—one misreading can upend the stability of both subject and system. Orr's effective dreams therefore comprise two conflicting impulses: what his unconscious mind "centers as the explicit object of its concentration," and the contrasting result which ultimately "turns out to be a mere detail" of a larger picture at play.³¹⁶

As the conflict between the personalities of George Orr and Dr. Haber escalates, so too does the discrepancy between discrete objects of desire and large-scale systemic outcomes. For instance, Dr. Haber's dream sessions work like a kind of hypnosis in which the patient's dream is instantiated by a key word or phrase. In Orr's first dream on the Augmentor, Dr. Haber's instruction had been to dream of a horse, with the resulting effect of transforming his wall mural of Mt. Hood into Tammany Hall.³¹⁷ Because previous timelines are erased with each effective dream, only George is aware of a before and after; he holds "two sets of memories, two full

³¹⁵ Jameson, 77.

³¹⁶ Jameson, 78.

³¹⁷ Le Guin, 27.

systems of information.”³¹⁸ Once Dr. Haber becomes a first hand witness to Orr’s reality-altering capability and realizes the potential benefits to humanity, his suggestions become more and more ambitious. In a subsequent dream, the dream induction word isn’t stated, but Orr’s dream involves telling John F. Kennedy he won’t need an umbrella—he awakes to a world in which air pollution has cleared and torrential rains have stopped. In another session, Dr. Haber instructs Orr to focus on a problem that bothers him—with the intent to unpack whatever anxiety lies at the heart of Orr’s “psychosis”—Orr suggests that he feels “crowded in on” while riding the subway to work. Dr. Haber suggests that his real anxiety is with overpopulation, which he insists is “your word, your metaphor, for this feeling of unfreedom.”³¹⁹ Orr’s subsequent effective dream results in a plague that has killed six billion people. And when Haber suggests peace on earth, Orr dreams of an alien invasion. Because George is unable to control or even predict his effective dreams, the gap between an outward objective of wish-fulfillment and how the unconscious interprets and manifests that wish is dire. George Orr is presented as neither meek nor aggressive—he is resistant to change, embodies balance and fluidity, and is likened time and again to a jellyfish. The jellyfish is set up in the novel as both Orr’s spirit animal and as a symbol of the desired state of being—one that is in equilibrium or flow with the environment. Therefore, the anxiety that results from such extreme outcomes is what motivates Orr to resist acting in any way, lest he upset the balance of nature (and reality itself).

³¹⁸ Le Guin, 66.

³¹⁹ Le Guin, 60.

Dr. Haber, on the other hand, is willful, ambitious, and manipulative. Haber's office is an emblem of his own will-to-power, despite what he might suggest to George. After Orr's first dream-work session, the wall-sized mural of Mt. Hood in Dr. Haber's office is altered to depict a racehorse named Tammany Hall. The racehorse is clearly a reflection of Haber's hubris; first in believing that he alone is empowered to cure George, then foreshadowing the *de facto* political control he will eventually manifest through his manipulation of George. The Augmentor symbolizes not only control of the unconscious but control of the political unconscious as well. Dr. Haber's office and title become more prestigious as the narrative progresses through each instance of altered reality. He begins in what is described as "just a small psychiatric practice;" he works in a humble "Efficiency Suite" that features plasti-coated metal furniture that "didn't have the platinum-and-leather assurance of financial success" and gave off an air that "nothing whatever was genuine."³²⁰ Eventually, he ends up as head of the Oregon Oneirological Institute—his office now possessing a "large corner window, looking out east and north over a great sweep of the world," a vista including not only the real Mt. Hood, but also the "pure cone of St. Helens," and still farther northward, sticking out "like a baby looking around its mother's skirt: Mt. Rainier."³²¹ His upwardly mobile status is a result of his attempts to solve social problems through Orr's effective dreaming: climate change, overpopulation, war, racial tension—all of which have disastrous unintended social effects. Yet in each new reality, Haber thrives. He's the only character who is not only

³²⁰ Le Guin, 32.

³²¹ Le Guin, 54.

unscathed by Orr's dreams but reaps tangible social and material benefits each time around, the most overt symbol of which is his corner office, which must be prominently set in the Portland skyline to be able to behold both the view east to Mt. Hood and north into Washington State.

The two characters reflect two differing approaches to the Utopian ideal—the technologically progressive exhibited by Haber and the communal exhibited by Orr. As various critics have pointed out, Dr. Haber's will-to-power reflects western liberal individual values, so far as he applies his agency toward social progress, while George Orr reflects principles of harmony between one's inner self (the soul) and outer world (nature) often associated with Taoism. On one hand, to employ human reason and technological savoir-faire toward some abstract teleological end goal—say, the obliteration of crime or end of poverty—reminds one, at best, of a “New Dealer and a social democrat,”³²² but at worst reminds us of neoliberal projects of the 1980's that sought to “end” crime by incarcerating and thus disenfranchising thousands of citizens. Dr. Haber's implied social philosophy, writ large across the portico of his last and largest office building is “THE GREATEST GOOD FOR THE GREATEST NUMBER,” suggesting that he likens himself to a social democrat or even a socialist, and yet the outcome of his actions bely this at nearly every turn.³²³ However, it's clear that “what Haber lacks is the moral conscience to see that the ends do not necessarily justify the means.”³²⁴ On the other hand, George Orr's passivity, his need to run away

³²² Jameson, 80

³²³ Le Guin, 132. All caps in the original.

³²⁴ Susan M. Bernardo and Graham J. Murphy, *Ursula K. Le Guin: a critical companion*, (West Port, Connecticut: Greenwood Press, 2006), 38.

from his problems, and persistent shrinking from the burden of responsibility is reminiscent of Nixon's silent majority—that hypothetical (but for Nixon real) percentage of the population who felt the best course of action was to “go with the flow,” provided that that flow was dictated by the current administration. George's resistance to face the real material conditions of his life may align closely with the political malaise of post-Woodstock American society, but his deeper thematic resemblance, evinced by his desire to isolate and live simply, is actually much more egalitarian. Orr's two key motifs are the jellyfish and water. The jellyfish is “spineless” and amorphous. Water is fluid, but can be alternatively forceful or nurturing; it seeks its own level.

Ultimately, both characters symbolize a kind of strength to stand against adverse material conditions, and both offer their own unique rationale toward resolving social ills, directly or indirectly. They can be viewed as two modes of Utopian impulse, one that employs a techno-rational imperative as its organizing principle, and the other that relies on an organic, passive attitude toward attaining unity.

Because Orr's views “tell only one side of the story,”³²⁵ and because he remains, until the final pages, so resolutely static in his choice of action, his one-sidedness can indeed be read as inflexible and thus unbalanced. It would follow that in this formulation, it is Dr. Haber's machinations that pose a Yin to the Yang of Orr's effective dreams. From this standpoint, however, Orr's relative stasis as the

³²⁵ Ursula K. Le Guin, paraphrased by Tony Burns, *Political Theory, Science Fiction, and Utopian Literature: Ursula K. Le Guin and The Dispossessed*, (Lanham, Boulder, New York, Toronto, and Plymouth: Lexington Books, 2008), 56.

center point of a perpetually altered reality would seem to position him along the middle way toward which wisdom leads. It seems more likely that Haber and Orr are not in fixed opposition, but in a relationship contingent upon a continual updating of information, both working toward a perceived middle. Both Haber's will to change and Orr's effective dreaming problematize the very foundation of Utopia as an ideal space that reconciles problems in an eternal present because neither view seeks synthesis with the other. It is precisely this embrace of contradiction and resistance to closure that the Utopian impulse fails—becomes impossible, even if the impulse toward an ideal condition persists for either “side.”

The tension for either side to produce a favorable result is in, systems-thinking terms, a foundational structuring principle of any social system, which occurs through the process of double contingency. Double contingency is typically described as a problem affecting the process by which social structure (systems) arise through the coordinating actions of two or more agents, usually termed *alter* and *ego*. *Ego* acts, or makes a gesture, toward which *alter* is compelled to respond, or not. A problem arises due to the fact that the actions of either are initially undetermined by the other, at least at first—they are contingent. Contingency, Niklas Luhmann tells us, refers to two senses simultaneously: “On the one hand, there is ‘contingency’ in the sense of ‘being dependent on’ or, as one says colloquially, ‘contingent on’. On the other hand, there is ‘contingency’ in the sense of the possibility that things could be different, which is to say, as the negation of impossibility as well as necessity.”³²⁶ Something is contingent

³²⁶ Niklas Luhmann, *Introduction to Systems Theory*, trans. Peter Gilgen, (Cambridge, UK: Polity Press, 2013), 35.

“in so far as it is neither necessary nor impossible; it is just what it is (or was or will be), though it could also be otherwise.”³²⁷ At the crux of the issue of double contingency is the question of how social order is possible because, as he writes, “no action can occur without first solving the problem of double contingency.”³²⁸ Luhmann begins by considering “how it is possible, that under the conditions of evolutionary drift, a social order emerges with the capacity to become increasingly complicated and construct regulations that come with an increasing number of prerequisites”³²⁹ and critiques the conventional idea of double contingency brought forth by Talcott Parsons:

“[This] model includes an *ego* and an *alter* that oppose one another. Each of them can be an individual or a group and has its own needs and effective abilities. The former depends on the successful performance of the latter, and the latter on those of the former. Each one is able to perform the required service or refuse it. Under such circumstances, the question arises of how a course of action can be found in which expectations and the corresponding achievements can be established as complementary and not simply be pulled apart as separate elements?”³³⁰

Luhmann is quick to point out that Parsons’ model presumes that both *ego* and *alter* already possess a predetermined intentionality toward one another. That is to say that communication is always already contingent on the intention to arrive at meaning. Parsons supposes that *alter* would be compelled to respond (or not) in a *meaningful* way; that without a meaningful response that anticipates the desire of the other, no communication is possible. Luhmann, however, takes an askance view of this

³²⁷ Luhmann, *Social Systems*, 106.

³²⁸ Luhmann, *Social Systems*, 103.

³²⁹ Niklas Luhmann, *Introduction to Systems Theory*, trans. Peter Gilgan, (Cambridge, UK; Malden, MA: Polity Press, 2013), 234.

³³⁰ Luhmann, *Introduction to Systems Theory*, 235.

interaction, pointing out the very impossibility of a predetermined intentionality for either *ego* or *alter*:

Highly complex meaning-using systems that are opaque and incalculable to one another are part of the infrastructure presupposed by the theorem of double contingency. These can be psychic or social systems. For the time being we refrain from distinguishing between them and talk of them both as "black boxes." The basic situation of double contingency is then simple: two black boxes, by whatever accident, come to have dealings with one another. Each determines its own behavior by complex self-referential operations within its own boundaries. What can be seen of each is therefore necessarily a reduction. Each assumes the same about the other. Therefore, however many efforts they exert and however much time they spend (they themselves are always faster!), the black boxes remain opaque to one another. Even if they operate in a strictly mechanical way, they must still suppose indeterminacy and determinability in relation to one another. Even if they themselves operate "blindly," they proceed in relation to one another more effectively if they mutually assume determinability in their system/ environment relationship and observe themselves through this. Any attempt to calculate the other will inevitably fail. One could be more successful and could gain experience by trying to influence the other from his environment. Incalculability is absorbed --one could almost say "sublimated"--by concessions of freedom. The black boxes, so to speak, create whiteness when they come upon each other, or at least sufficient transparency for dealing with each other. Through their mere assuming they create certainty about reality, because this assuming leads to assuming the alter-ego's assuming. The assimilation of meaning material on this level of order presupposes two self-referential systems reciprocally observing each other.³³¹

As already pointed out, the contingent desires of Dr Haber and George Orr are at cross purposes, as neither party can act with any certainty upon the whims of the other, a problem which extends on a deeper level than just a difference of ideology. Luhmann points out that in the initial stages of double contingency, the parties would "not even know yet what values one actually has;" in essence, social values arise only after a repeated process of, as he puts it, "forming complementary expectations and

³³¹ Luhmann, *Social Systems*, 109.

enacting suitable actions.”³³² Rather than social structures forming upon a consensus of values, Luhmann argues that there must be a temporal factor that is the true organizing principle. In other words, contingent behaviors between agents do not operate according to some “guessing at” what might best appease the other or move the situation forward, but rather, that “social order comes about when someone sets the agenda, begins with an activity, makes a suggestion, or presents himself and forces everyone else to react.”³³³ So instead of proceeding from the outset toward a shared sense of value, meaning becomes contingent simply by the compulsion of each party to act in response (or not) to the prompt of the other.

We can thus map each of the characters in *The Lathe of Heaven* as psychic systems in a double contingent relationship in which desire disrupts social stability (ie, meaning). The Utopian ideal which each character either explicitly or implicitly pursues is contravened by the sublime desire of the other. This occurs when Dr. Haber sets the agenda by insisting that he is going to “use your dreams... To face your fear and, with my help, see it through.”³³⁴ Orr, for his part, merely goes along with Haber’s instruction without tacitly affirming value. “Now doesn’t that strike you as right,” Dr. Haber insists, “as the right thing to do?” To which Orr simply replies, “I don’t know.”³³⁵ Their relationship thus proceeds to unfold teleologically—one acting; one reacting—toward Dr. Haber’s stated end goal of “curing” Orr’s psychosis. In Luhmann’s view, values—if they are to be identified as such—emerge much later and

³³² Luhmann, *Introduction to Systems Theory*, 236.

³³³ Luhmann, *Introduction to Systems Theory*, 237.

³³⁴ Le Guin, 35.

³³⁵ Ibid.

more closely resemble a shared consensus of meaning rather than any ideology. It is upon this point, I argue, that the double contingent relationship between Haber and Orr breaks down—becomes impossible, in fact. It is because for each, who may outwardly embody opposing ideological stances, the innermost wish that motivates their action / reaction is withdrawn, even from them, from their own consciousness. It is the *objet petit a*, and not their respective ideologies, that wreaks havoc on the formation of meaning and by extension, social stability.

Throughout Lacan's work, *l'objet a* was never consistently defined or given substantive, focused attention in any specific lecture or essay. Rather, its definition as a concept was mutable, and from seminar to seminar it was deployed to illustrate a given topic at hand. However, it came to symbolize the sense of lack that a subject experiences as part of the Symbolic order—the would-be thing or part of itself the subject feels is missing and wishes to recuperate in order to feel whole. As Lacan writes, “The *objet a* is something from which the subject, in order to constitute itself, has separated itself off as organ. This serves as a symbol of the lack, that is to say, of the phallus, not as such, but insofar as it is lacking. It must, therefore, be an object that is, firstly, separable and, secondly, that has some relation to the lack.”³³⁶ It is in Lacan's later work where he links the *objet a* to the subject's sense of desire of the Other, first through the phallus, and later, via the gaze. In his earlier seminars, the phallus becomes a central signifier of desire; however his insistence that one's desire is linked to castration anxiety is ultimately untenable. Notwithstanding, the *objet a* is

³³⁶ Jacques Lacan, *Seminar XI: The Four Fundamentals of Psychoanalysis*, trans. Alan Sheridan, (New York and London: W.W. Norton & Company, 1998), 112.

still a useful analogy to express the otherwise inexpressible lack that motivates desire. In referring to desire as *l'objet petit a*, I'm using Lacan's terminology simply to point to an oblique lack (in the subject, or in the social system) that yearns to be fulfilled. In this case, I am conjoining with Luhmannian systems theory in order to further underscore the way the sublime disrupts the social fabric.

George Orr first presents Dr. Haber with what Haber perceives is a complex psychosis, a manifestation of George's sexual anxiety and meek persona. A case, Haber presumes, will be easy to diagnose and fix; it would only be a matter of getting Orr to open up about his problems—his *real* problems. Haber believes that “he so often knew what his patients were going to say,” and “could say it for them better than they could say it for themselves. But it was their taking the step that counted.”³³⁷ Haber is the epitome of Ego; his overinflated belief in his psychiatric savoir-faire, paired with his condescending belief that he can and *needs* to help others paints him as one who projects his deepest need onto his patients—in his case, to be fulfilled by their admiration for him and their affirmation of his medical prowess. He has a “geniality” that “was not faked, but it was exaggerated.”³³⁸ Haber's object of desire becomes whichever patient will present him the best opportunity to advance his own agenda and self-worth. Even Orr senses in him “a wish to be liked and a desire to be helpful; the doctor was not, he thought, really sure that anyone else existed, and wanted to prove they did by helping them.”³³⁹

³³⁷ Le Guin, 14.

³³⁸ Le Guin, 32.

³³⁹ Ibid.

Importantly, Dr. Haber's will-to-power is also tied to his capacity for discourse. Whenever he's questioned about his methods or called upon to give an explanation, he "launched into an answer easily, glad to hear his own voice."³⁴⁰ He comes off as the type of self-important male who particularly likes to hear himself talk—partly, no doubt, as a symptom of his narcissism, but probably as an impulse to speak his ambitions into reality. He is notably self aware, admitting to Orr that "I frequently daydream heroics. I am the hero. I'm saving a girl, or a fellow astronaut, or a besieged city, or a whole damn planet. Messiah dreams, do-gooder dreams. Haber saves the world!"³⁴¹

These explicit figurations expressing a need to be perceived as "good" recall Lacan's claim that the underlying source of a subject's anxiety is desire of the Other. Anxiety, Lacan explains, arises out of the subject's contingent fear of displeasing or misreading the desire of the Other—what the Other desires of it. That is to say, one's own insecurity derives from a speculation about how the Other will respond to its own actions. It's "the desire for a desire to respond to the subject's appeal. *It's the desire for a desirer.*"³⁴² In this case, quite simply it is Dr. Haber's own insecurity which compels his anxiety, his desire for a desirer. I can now begin to articulate the *objet a* with Dr. Haber's action (as *ego*) in a double contingent relation with Orr. Lacan locates the *objet a* precisely as the force compelling the "desire for desire" itself. As such, it is not locatable as a specific figure in the subject's psyche, but rather

³⁴⁰ Le Guin, 57.

³⁴¹ Le Guin, 36.

³⁴² Jacques Lacan, *Le Séminaire livre X, L'angoisse*, (Paris : Éditions du Seuil, 2004), 34. [*Le « désir de désir » au sens hégélien, est donc désir qu'un désir réponde à l'appel du sujet. Il est désir d'un désirant.*] Emphasis is mine.

a kind of invisible and “incommunicable” motivator.³⁴³ Neither is *objet a* an object, nor is it a drive; but it is the cause of the subject’s anxiety-transfigured-as-desire and projected onto an object or Other. For Dr. Haber, the *objet a* that first motivates his desire to control Orr—to act as his superior and savior—is also the anxiety that undermines his contingent relation with Orr. Although it is Dr. Haber who, in Luhmann’s terms “sets the agenda,” he is perpetually unable to create a stable system of communication with Orr—and by extension, a stable social system—because he is unable to act contingently toward George Orr’s *alter*. Any Utopian sense is undermined by the indeterminacy of each other’s

Counter to Haber’s prescriptive attitude toward engineering social meaning, George Orr would seem to exist in a more fluid state of meaning. He lives in flux, uncertain of what suppressed affect or suggestion might cause irreparable change. He evidently has very little control over his power of effective dreaming; even if his “strong effective” dreams typically occur at times of greater internal turmoil, it’s implied that many of his dreams might alter reality in ways that are imperceptible to him and others.³⁴⁴ He goes along with Haber’s experiment not out of any explicit indifference, but simply because he believes that “This was the way he had to go; he had no choice. He had never had any choice. He was only a dreamer.”³⁴⁵ Contrary to Haber, whose spirit embodies a Nietzschean will to power, Orr feels he has very little free will, little agency of his own in light of his terrible unconscious power. He is,

³⁴³ Lacan, *Le Séminaire livre X, L'angoisse*, 104. [*Comment s'effectue cette transformation de l'objet, qui, d'un objet situable, repérable, échangeable, fait cette sorte d'objet privé, incommunicable et pourtant dominant qui est notre corrélatif dans le fantasme ?*]

³⁴⁴ Le Guin, 39.

³⁴⁵ Le Guin, 83.

according to the rationalist Haber, a man who is “afraid of [his] own mind,” “afraid of losing [his] balance,” but that fear only serves to underline the great power and unfathomable depths of the unconscious.³⁴⁶ For Haber, George’s ability for effective dreaming recalls the power of the Romantic sublime which privileges the vastness of the imagination to counter the constraints of reason. “Don’t be afraid of your unconscious mind!” Haber asserts, “It’s not a black pit of nightmares. Nothing of the kind! It is the wellspring of health, imagination, creativity. What we call ‘evil’ is produced by civilization, its constraints and repressions, deforming the spontaneous, free self-expression of the personality.”³⁴⁷

George’s timidity belies the fact that he has a greater level of access to the sublime—even if the true nature of his unconscious remains unfathomable to him. In this sense, his desire can be likened to a Romantic impulse which privileges the transcendence of the irrational unconscious over the rational conscious mind. This is an access that is unavailable to Haber and his great technological marvel, the Augmentor. Both in Orr’s capacity to flow with powerful (inner) forces of his nature—here symbolized by a water motif, and more specifically the jellyfish—and in his role as the constant of every reality, he is not the “meek characterless man” that Haber makes him out to be. Instead he is “peculiarly solid” —the still point of the turning world— as he wades the “infrafluvial dark” of his unconscious and feels its “weight bearing down endlessly.”³⁴⁸

³⁴⁶ Le Guin, 35 and 135.

³⁴⁷ Le Guin, 88.

³⁴⁸ Le Guin, 59, 48 and 41.

On the surface, George Orr's stated desires are twofold: one, he does not want to hurt anyone as a result of his effective dreaming, and two, he does not want Haber using him "as an instrument."³⁴⁹ Unlike Dr. Haber, Orr pursues no tangible object of desire—no pursuit of status or wealth—but only as stated, not to hurt anyone. He goes as far as to state at one point that maybe "I don't have enough desires."³⁵⁰ However, George is consistently likened to a jellyfish, like the one that inhabits his dream at the outset of the novel. It's implied to be the object George most identifies with. Like the jellyfish—spineless but amorphous—George has little agency but to be "current-borne, wave-flung, tugged hugely by the whole might of the ocean;" he feels himself adrift in the "tidal abyss" of his own unconscious.³⁵¹ As such, he is disconnected from a sense of his own desire, his own will-to-power. He does want change—in the form of escape from his terrible ability, but feels little capacity to do so, and there is no direct objective to accomplish. He knows he has "got to *do* something," but admits "I haven't any strength. I haven't any character...I haven't any destiny. All I have is dreams."³⁵² Through his agonistic struggle with Dr. Haber, George's narrative arc is one of self-discovery; he yearns to understand, if not fully overcome, his own unconscious drives. Unconscious desire approaches the sublime because, for George, it is at once unfathomable, and yet yields extraordinary material change. Desire remains unresolvable, which is to say unfulfilled throughout the multiple-contingent realities. Like the jellyfish that is flung from "anywhere to anywhere," and like the

³⁴⁹ Le Guin, 48.

³⁵⁰ Le Guin, 87.

³⁵¹ Le Guin, 7.

³⁵² Le Guin, 75.

Taoist inscriptions that begin each chapter, he knows instinctively that “nothing is precise and certain,” and also that “it’s wrong to force the pattern of things.”³⁵³ “We’re in the world, not against it,” he warns:

It doesn't work to try to stand outside things and run them that way. It just doesn't work, it goes against life. There is a way but you have to follow it. The world is, no matter how we think it ought to be. You have to be with it. You have to let it be.³⁵⁴

The object-cause of his desire, the thing that would make him feel whole is precisely to attain harmony with his own unconscious and to “let understanding stop at what cannot be understood.”³⁵⁵ The *objet a* for each character is tied to ego’s desire to be complete. For Haber, this means to stand out as an individual. For George, this means to maintain equilibrium, even if it means destruction of the self; to create unity with his dreams, his unconscious, and the universe. George is able to transcend ego to find balance with the universe. Haber cannot transcend his own ego and is unable and unwilling to see the middle ground in order to build a stable future. Instead, his machinations have “so thoroughly rearranged the whole social system.”

Ultimately, *The Lathe of Heaven* poses Dr. Haber and George Orr as “black boxes,” those “highly complex meaning-using systems that are opaque and incalculable to one another.”³⁵⁶ To recall Luhmann, each has to move from a position of relative indeterminacy to relative determinability in order for the system to stabilize and for meaning to inhere. They must make assumptions about the other’s position as well as imagine what the other would contingently desire for them.

³⁵³ Le Guin, 7, 44, 83.

³⁵⁴ Le Guin, 136.

³⁵⁵ Le Guin, 30.

³⁵⁶ Luhmann, *Social Systems*, 109.

However, the issues befalling them are manifold. First desire, for each, is either withdrawn or misdirected. George Orr feels he “doesn’t have enough desires” in the first place—and the results of those of his unconscious desires that become manifest are incommensurate with his *objet petit a*. Each altered reality fails to resolve individual desire for the sake of the larger system. Dr. Haber’s desire is misplaced altogether. His ulterior motive throughout is to stroke his own ego, but he belies his own truth by posing, altruistically, to make the world better through the manipulation of George. But as *alter* to Haber’s *ego*, George is incapable of making a determination. Next: the message of the novel seems to be that free will is inaccessible to us. George’s only agency is sublimated into his effective dreams, and so he wields little to no power to make his own choices; he must simply ride the wave of his id. It seems of little use to him to try to engage in meaning-making with Haber. Dr. Haber, by contrast, is inflated by a false sense of his own agency. As the narrator at one point recounts:

The quality of the will to power is, precisely, growth. Achievement is its cancellation. To be, the will to power must increase with each fulfillment, making the fulfillment only a step to a further one. The vaster the power gained, the vaster the appetite for more. As there was no visible limit to the power Haber wielded through Orr's dreams, so there was no end to his determination to improve the World.³⁵⁷

To put this more plainly: because Haber’s sense of self (*ego*) is tied to his will to gain greater and greater achievement, he either loses sight of the fact, or willfully ignores that his will to power is only contingent on Orr’s effective dream ability. He wields little power of his own. So on one hand desire is misplaced and agency is contingent,

³⁵⁷ Le Guin, 136.

and on the other, desire is withdrawn and agency is sublimated, and thus as Luhmann states, “Any attempt to calculate the other will inevitably fail” because together they are ultimately unable to “create [any] certainty about reality.”³⁵⁸

No matter which instantiation of social order, fulfillment is perpetually foreclosed to Orr, Haber, and the rest of the social system, in part because desire is an object that cannot be easily transcended. Orr serves as an illustration of the individual’s relation to larger systems, in particular how *l’objet petit a*, the subject’s sublime cause of desire works to obfuscate both individual and social meaning. I’ve joined a psychoanalytic theory of the sublime to Luhmannian systems theory in order to demonstrate how in complex social systems, desire remains unknowable and unattainable.

Roadside Picnic: the Capitalist Unconscious

Wish-fulfillment takes on a different timbre in Boris and Arkady Strugatsky’s *Roadside Picnic*, first published in the Soviet Union in 1972. The novel focuses on the outcome of an alien visitation in which no direct contact had been made but the only evidence of which are six Zones that possess inexplicable physical phenomena, as well as material objects—alien artifacts—left by the visitors. The narrative does not focus on humanity’s collective response to first contact (ala *Rendezvous with Rama*), but rather on the discrete effects that such unfathomable events hold on the communities surrounding the Zones. Those artifacts—inexplicable as they are—quickly become objects of desire for the scientific community and military-industrial

³⁵⁸ Luhmann, *Social Systems*, 109.

complex, who seek to discover their secret properties or reverse-engineer the alien technologies to their own ends. But because the Zones are fraught with danger, and are both “a goldmine and a deathtrap,” they are closed off to the public.³⁵⁹ The science and military interests attempt to monopolize the resources of the Zone, but because of its hazards, extracting the artifacts becomes the specialty of stalkers—local guides with the *savoir-faire* to negotiate their way through the Zones. Conversely, a black market emerges through which stalkers can peddle illegally obtained artifacts and demand market share of the Zone’s economic promise. The centerpiece and climax of the novel is a foray into the Zone to seek an artifact called “the Golden Sphere,” an object that’s said to grant one’s innermost desire.

Roadside Picnic takes place in the fictional Harmont, a downtrodden industrial town implied to be somewhere along Canada’s eastern seaboard. Red Schuhart is the protagonist and primary focal character, a young man of twenty-three who at the outset works for a local scientific institute and moonlights as a stalker. The narrative is divided into four episodes—three of which follow Red on an adventure into the Zone, and a fourth (“Chapter 3”) consisting primarily of a conversation between two secondary characters about the philosophical implications of the Visitation. Red is a working-class guy in a working-class town, but owing to circumstances and the decaying material conditions of Harmont, he’s also what one might call a hustler. At the end of the first episode, he’s preparing to do a short prison stretch after illegally entering the Zone. By the time he returns in the second episode,

³⁵⁹ Gabriel Burrow, “Humanizing Harmont: Place and Desire in *Roadside Picnic*,” *Foundation*; Dagenham, (Vol. 50, Issue 140, (2021): 5-17), 5.

he has “no known occupation,” i.e.; he’s a full time stalker.³⁶⁰ Red’s outward desires are to provide for his young family, to survive each arduous journey into the Zone, and escape his lot in life by drinking excessively. In this section I will examine the ways in which *Roadside Picnic* articulates unconscious desire in a framework of materialism and technological rationality. I argue that the inner desire for Red to provide for and preserve his family unit is attenuated by both market forces and alien technology that confound a meaningful existence. The alien technology, as a kind of sublime object, becomes a shorthand for “the incomprehensible totality of global capital.” I contend that the Zone and its mystical properties serve both as a metaphor for the unconscious itself as well as the social construction of desire, an abstract ideal which remains obscured by the machinations of capital. To this end, Jacques Camatte reads the modern subject’s unconscious as “the affective-sensual life of the human being repressed by capital.”³⁶¹ Confronted simultaneously by sublimity of the Zone and by the unfathomability of his own unconscious, Red’s altruistic wish—to reach the Golden Sphere to cure his mutant daughter—is complicated and ultimately suppressed by other desires, known and unknown to him, that are motivated by capital. He’s ultimately unable to articulate his own desires—as we all are, the novel suggests—under the shadow of capitalism.

Roadside Picnic is remarkable in its unconventional take on a common trope. Because no rationale is given for the Visitation, nor any clear moralization about what

³⁶⁰ Arkady and Boris Strugatsky, *Roadside Picnic*, trans. Olena Bormashenko (London: Orion Publishing Group, 2012), [Original copyright, 1972], 57.

³⁶¹ Jacques Camatte, *The Wandering of Humanity*, trans. Fredy Perlman, (Detroit: Black & Red, 1975), 35.

a Visitation without contact means, the mysteriousness of the event is allowed to stand as all the more incomprehensible to humanity. As Stanislaw Lem points out in his essay on *Roadside Picnic*, the *novum* of the novel offers a departure from the approach to first contact stories in Western science fiction such as H.G. Wells' martian invasion. Lem questions what motivates alien invasion plots in the first place, reiterating a belief that an alien race capable of interstellar travel would find Earth inconsequential. In the passage cited below, he critiques science fiction plots in which the conquest of Earth in itself is supposed to stand as ample motivation for alien races:

By equipping their aliens with ever greater power, they filled the entire universe with civilizations whose desire to expand is wholly irrational. The greater the power attributed to the aliens, the more irrational is their invasion of Earth. In this phase, SF became a fantasy of imposture and of paranoid delusions, because it claimed that the cosmic powers were sharpening their fangs the better to eat humanity, as if Earth and its treasures were of incalculable value not only for the inhabitants of a small desert planet like Mars, but for every imaginable civilization in the galaxy. Yet the preconception that a power with armies of starships at its disposal could be dead set on taking over our property is as naive as the assumption that one of the superpowers of Earth would mobilize its armies in order to expropriate a grocery store.³⁶²

But *Roadside Picnic*, he concludes, flies against this trope. By omitting the purpose of the Visitation, the Strugatskys eschew the presumption that a first contact must be purposive; i.e., that it must serve either as some rallying cry to unite humanity, or else that it will prove the validity of this or that nation's technical rationality. Instead, the effect is to throw light on our very lostness—how much the sum total accomplishments

³⁶² Stanislaw Lem, "About the Strugatskys' *Roadside Picnic*," trans. by Elsa Schieder and RMP, *Science Fiction Studies*, (Nov., 1983, Vol. 10, No. 3), 318.

of humanity are meaningless in the face of the abyss. When, in the novel, Dr. Pillman is asked what the most important discovery has been in the years since the visitation, his answer is simple: “the fact of the Visit” itself.³⁶³ The Visitation has fundamentally altered humanity’s understanding of itself, and not toward the ennobled enlightenment achieved at the end of other such narratives. There is, instead, an underlying mood of nihilism that pervades and motivates the characters. And it’s true that the world of the post-Visitation is peopled with alcoholics and depressives and risk-takers, folks who now more than before feel they have less at stake. But the survival instinct is still an implicit quality, and folks like Red (who is certainly a depressed alcoholic) still feel compelled to take risks for something greater.

Roadside Picnic’s rogue’s gallery of characters, which includes déclassé stalkers like Red, and Institute officials on the take like Dr. Pillman and General Lemchen, illustrate a moral ambivalence that eschews conventional SF tropes which feature protagonists that can be clearly identified as good. This departure from the clichéd approach to first contact stories which privilege a heroic rugged individual to “focus on ‘dregs’,” as Lem puts it, underlines how the emptiness of the Visitation correlates to an emptiness of human spirit, a kind of moral bankruptcy.³⁶⁴ However, as a place of uninhabited nature, the Zone represents a paradox contrasting the technical rationality of capitalist society with the wildness and irrationality associated with early notions of wilderness. The narrative structure puts into tension those who would exploit the Zone and those who are able to successfully navigate its alienness. This

³⁶³ Strugatskys, 4.

³⁶⁴ Lem, 323.

places Red not just as a go-between for the Military-Industrial complex, but more as a frontier explorer, a Romantic hero. In the article, “Miracle Stalker: Personal and Social Transformation in Arkady and Boris Strugatsky's *Roadside Picnic*,” John Moore articulates Red’s story with the pattern of frontier narratives:

Stalkers are frontiersmen, fierce individualists who pit their lives against the alien wilderness of the Zone. But the narrative traces the effective closure of the frontier, as the various pioneers meet their deaths, become maimed, jailed or domesticated, and are increasingly supplanted by automated exploration probes. As a result of this attrition, by the end of the novel Redrick Schuhart remains the last of the great, old-time frontiersmen.³⁶⁵

Even within a generic framework of western frontier hero, Red and the rest of the inhabitants of Harmont are yet haunted by what Frances Ferguson has called the “nuclear sublime,” which under the threat of annihilation forecloses the possibility of subjectivity in the first place, let alone subjective heroics. She informs us that

An evocation of the sublime [that] invokes the specter of accidental nuclear holocaust is not just to promote all of our impulses toward self-preservation but also to make us love the world of our conditions. The sublime renewal of our consciousness of the desire for self-preservation both frees us from the sense of our being bound by the world of circumstances beyond our control and also returns us to the world of circumstances with a certain benevolence toward them, as if a commitment to our own survival could easily be translated into a commitment to a world of conditions that repeatedly appears as the world of society and domestic life.³⁶⁶

If the original nature of the sublime was to “think the unthinkable,” and that kind of elevation of thinking becomes a testament to the individual, what happens when the individual could / would / does succumb to nuclear annihilation? To comprehend one’s annihilation assumes this paradox: “to think the sublime would be to think the

³⁶⁵ John Moore, “Miracle Stalker: Personal and Social Transformation in Arkady and Boris Strugatsky's *Roadside Picnic*,” *Foundation*, 71 (Autumn, 1997), 66.

³⁶⁶ Frances Ferguson, “The Nuclear Sublime,” *Diacritics* (Summer, 1984), 6.

unthinkable and to exist in one's own nonexistence," which is to say that in cases of nuclear holocaust, or in *Roadside Picnic*, the existential threat of the Zone and its dangers, notions individuality forged under the conditions of the sublime, and of the Romantic hero of the frontier, tend to collapse.³⁶⁷

If we can understand the human drive to identify and reverse-engineer the artifacts as a way of bridging the emptiness of the visit itself, then it would become evident that the alien technology represents humanity's desire to fulfill its own purpose. And because the artifacts lack what Kant calls an objective purposiveness (an implicit design in natural objects from which we can intuit a purpose), the struggle to discern a purpose for the artifacts compels us to find some supersensible purpose for it within our own faculty of reason. This act of cognition falls under the aegis of the sublime. Kant distinguishes the acts of discerning objective and subjective purposiveness as such:

For in their case the purposiveness does have its basis in the object and its shape, even though it does not indicate that we are referring the object to other objects according to concepts (so as to give rise to a cognitive judgment), but merely concerns the apprehension as such of this form, insofar as that form manifests itself in the mind as conforming to the power of concepts [the understanding] and the power of their exhibition (which is the same as the power of apprehension [the imagination]). [...] But then consider the sublime in nature, when our judgment about it is purely aesthetic, unmixed with any concepts of perfection, i.e., of objective purposiveness, in which case it would be a teleological judgment. The sublime in nature can be regarded as entirely formless or unshapely and yet as the object of a pure liking, manifesting a subjective purposiveness in the given presentation.³⁶⁸

³⁶⁷ Ferguson, 7.

³⁶⁸ Immanuel Kant, *The Critique of Judgment*, trans. Werner S. Pluhar, (Indianapolis and Cambridge: Hackett Publishing Company, 1987), 142. Kant alludes to the distinction between objective and subjective purposiveness throughout 'The Analytic of the Sublime,' but his most sustained treatment is

In other words, when we discern objects and forms in nature, we are often able to intuit some innate purpose to them; i.e., what they are, and perhaps why they exist, but in the case of the sublime, that objective purposiveness is absent, and in its place we sense a subjective purposiveness which signals some more obscure purpose within us that we ought to have the capacity to discern or figure out the sublime. For Kant, the subjective purposiveness of the sublime is paramount moral significance: that we don't know, or can't know the objects of the sublime, but that we yet have some capacity to behold them which elevates us.

For Red and the other stalkers who behold the myriad objects, physical anomalies, and terrors of the Zone (for example, "hell slime," a type of ooze that dissolves bones, or "bug traps," areas of intensified gravitational fields), their aesthetic experience entails a mix of astonishment, terror, and incommensurability of the natural phenomena of the Zone with normal objects of nature. However incomprehensible the Zone remains, Red initially holds onto the promise that human science and ingenuity will someday "crack the code" of the Zone:

Our little town is a hole. Always was and always will be. Except right now," I say, "it's a hole into the future. And the stuff we fish out of this hole will change your whole stinking world. Life will be different, the way it should be, and no one will want for anything. That's our hole for you. There's knowledge pouring through this hole. And when we figure it out, we'll make everyone rich, and we'll fly to the stars, and we'll go wherever we want. That's the kind of hole we have here . . ."³⁶⁹

His "hole into the future" analogy belies his own sense of foreboding of needing to return to the Zone and its dangers. But as the story progresses, Red comes to the

in the aptly titled §30-'The Deduction of Aesthetic Judgments about Objects of Nature Must Be Directed Not to What We Call Sublime in Nature But Only to the Beautiful'.

³⁶⁹ Strugatskys, 42.

realization that the Zone's secrets will never be uncovered by human science, and instead of plunging deeper into his existential dread, he gradually assumes a greater sense of purpose in his Zone missions, and the artifacts themselves assume a different significance.

The alien technology becomes imbued with a Lacanian sense of '*das Ding*,' an object without definition that is "the cause of the most fundamental human passion."³⁷⁰ Lacan himself appropriates the phrase from Freud's *The Interpretation of Dreams* where Freud theorizes it as the impenetrable core of a dream that is beyond interpretation. It is according to Lacan scholar Sean Homer, "the object-cause of desire and can only be constituted retrospectively. The Thing is 'objectively' speaking no-thing; it is only something in relation to the desire that constitutes it."³⁷¹ I will qualify this definition a little more: for Red and the other humans vying for artifacts, the objects have value only potentially—they have no inherent use-value for humans, but only the contingent value associated with commodities. The artifacts are thus paradoxical, as both representations of some impenetrable core of desire beyond interpretation, but also as socially constructed and contingent objects of value, empty of purpose until arbitrarily assigned what value they *could* someday have. Red and the stalkers operate according to profit motive; they exhibit little or no interest in how the artifacts ("swag") might be utilized once they are extracted from the Zone, yet they form the integral link that connects human desire to the commensurate objects of desire.

³⁷⁰ Jacques Lacan, *The Seminar of Jacques Lacan, Book VII, The Ethics of Psychoanalysis*, trans. D. Porter, (London: Routledge, 1992), 57.

³⁷¹ Sean Homer, *Jaques Lacan*, (London and New York: Routledge, 2005), 85.

On another level, the deeper forces that motivate capital—beyond profit motive—also assume a timbre of *das Ding*. The machinations of capital—the desires that propel it forward—are as opaque as the unconscious. Slavoj Žižek identifies the *objet petit a* as the empty motivator of mass media and consumer capital. Entertainment media and consumer products possess, he argues, a kind of “surplus” value which signals “something in it more than itself” which preys upon human wish-fulfillment.³⁷² Whether those cultural objects are status symbols, or political slogans, or unassuming products like Coca-Cola, they are only, he insists, “an objectification of a void.”³⁷³ Žižek famously argues that Coke’s slogan is “the real thing” precisely because it signifies something beyond itself, the ostensible reality (of an authentically-lived life) that is withdrawn from us under the proliferation of consumerism, which paradoxically renders “that unattainable something” attainable.³⁷⁴ In *Roadside Picnic*, I contend that “that unattainable something” is a fulfilled sense of self for subjects like Red, who live like a nail under the hammer of capitalism. It’s the ostensible real thing offered up by the Zone’s “Golden Sphere,” an object that will grant its user their innermost desire.³⁷⁵

By the end of the novel, Red comes to identify himself less with the market forces that have transformed Harmont and other Zone communities into consumerist tourist traps, and more with the miracles the Zone offers, not least of which is a potential cure for his mutant daughter. Owing to its purported ability to grant one’s

³⁷² Slavoj Žižek, *The Sublime Object of Ideology*, (London and New York: Verso, 1989), 104.

³⁷³ Ibid.

³⁷⁴ Žižek, 106.

³⁷⁵ Strugtatskys, 59.

innermost wish, the Golden Sphere can be differentiated from other objects of the Zone in that it resists easy commodification. First, it cannot be extracted due to the “meat grinder,” a kind of physical phenomenon that effectively serves as a boobytrap. But more importantly, because of the intangible nature of its gift, it bypasses object-value altogether and points directly back toward the subject, toward what Lacan in his discussion of the *objet petit a* identifies as “the major, most intimate point of itself.” He writes:

It is one of the forms of the object of desire. What the subject shows would be nothing other than the major, most intimate point of itself. What is supported by this object is precisely what it cannot reveal, even to itself, it is this something which is on the very edge of the greatest secret³⁷⁶

The Golden Sphere is the correlative for that innermost secret that cannot be revealed—it serves as an emblem for the unplumbable depth of human desire. In the final scene in *Roadside Picnic*, Red is charged with bringing Arthur (the naive son of his deceased fellow stalker, Richard Burbridge) to the Golden Sphere. On the cusp of their approach, the two discuss what they would wish for. Arthur’s altruistic approach is simple: “Happiness for everyone! Free! As much happiness as you want! Everyone gather round! Plenty for everyone!”³⁷⁷ But for Red, the answer is less obvious, for he still has “some dark forces burrowing in his consciousness” that make him question his own capacity for good.³⁷⁸ For starters, he has premeditated the death of Arthur by

³⁷⁶ Jacques Lacan, *Le séminaire de Jacques Lacan, livre VI; Le désir et son interprétation*, edited by Jacques-Alain Miller (Editions de la Martinière et Le Champ Freudien Editeur), [“C’est une des formes de l’objet du désir. Ce que le sujet montre ne serait rien d’autre que le point majeur, le plus intime de lui-même. Ce qui est supporté par cet objet, c’est justement ce qu’il ne peut dévoiler, fût-ce à lui-même, c’est ce quelque chose qui est au bord même du plus grand secret.”], 61.

³⁷⁷ Strugatskys, 190.

³⁷⁸ Strugatskys, 182.

sacrificing him to the “meat grinder” so that he himself may pass through to the Sphere. And even when he recognizes that he’s served as no more than a machine to the institute,³⁷⁹ and is “done being led by the nose,” and is faced with articulating his innermost wish, he still cannot fathom his own desire because, as Lacan informs us, the relationship between the object and the wish is not a simple one of need. Lacan remarks that “*Le rapport du sujet à l’objet n’est pas un rapport de besoin, le rapport du sujet à l’objet est un rapport complexe,*” [The relationship of the subject to the object is not a relationship of need, the relationship of the subject to the object is a complex relationship], but it is rather:

this relationship of articulation of the subject to the object, that the object happens to be this something which is not the correlative and the corresponding of a need of the subject, but this something:

- which supports the subject at the precise moment when he has to face, so to speak, his existence,
- which supports the subject in its existence, in its existence in the most radical sense, namely in this precisely
- that it exists in language.³⁸⁰

In this case, the Golden Sphere and the desire he must articulate before it becomes the thing Lacan describes above—not the direct object of his need (for he does not need the Sphere itself), nor even his wish (which in itself is withdrawn from consciousness), but rather the object that represents to him the crisis of “*son existence*

³⁷⁹ Strugatskys, 186. “A machine, he thought. You’ve made a machine out of me.”

³⁸⁰ Lacan, *Le désir et son interprétation*, 61

[*ce rapport d’articulation du sujet à l’objet, que l’objet se trouve être ce quelque chose qui n’est pas le corrélatif et le correspondant d’un besoin du sujet, mais ce quelque chose :*

- *qui supporte le sujet au moment précisément où il a à faire face, si l’on peut dire, à son existence,*
- *qui supporte le sujet dans son existence, dans son existence au sens le plus radical, à savoir en ceci justement*
- qu’il existe dans le langage.]*

au sens le plus radical." That is to say, it is the representation of the inner forces of anxiety and dread pushing down on him as a result of his life in Harmont; the deleterious effects of the Zone—on himself, his wife Guta, his mutant daughter, "Monkey," and his risen-from-the-dead father—the treachery of "those bastards" at the institute that prey on his labor and on his life; and the dread of the Visitation itself, ultimately leaving him and humanity no answers.

And yet his presumptive wish—to care for his family and cure his daughter—remains inarticulable. This might be attributable to the fact that the *objet petit a* is that which foists upon him the burdens that continually carry him into the Zone, while bringing into sharper focus some truths of his own existence. For instance, by the end of the novel he comes to realize that despite his desire to be good, he is not heroic, and often he is not even the hero of his own story. He drinks too much. Throughout the narrative he sacrifices others for his own advancement or well-being. Shortly after Red sacrifices Arthur to the "meat grinder," that "transparent emptiness lurking in the shadows,"³⁸¹ he reflects upon the nature of his life and what and whether any action is worthwhile:

Here, too, they've cheated me, left me voiceless, the bastards . . . Riffraff. I was born as riffraff, and I've grown old as riffraff. That's what shouldn't be allowed! You hear me? Let that be forbidden in the future, once and for all! Man is born in order to think (there he is, Kirill, finally!). Except that I don't believe that. I've never believed it, and I still don't believe it, and what man is born for—I have no idea. He's born, that's all. Scrapes by as best he can. Let us all be healthy, and let them all go to hell. Who's us? Who's them? I don't understand a thing . . . But how do I stop being a stalker when I have a family to feed? Get a job? And I don't want to work for you, your work makes me

³⁸¹ Strugatskys, 190.

want to puke, you understand? If a man has a job, then he's always working for someone else, he's a slave, nothing more—and I've always wanted to be my own boss, my own man, so that I don't have to give a damn about anyone else, about their gloom and their boredom . . . ³⁸²

For Red, the attempt to reflect more abstractly upon the human condition quickly collapses back onto the alienation he feels about his role as stalker, as “riffraff.” In fact, he either refuses to or has trouble thinking critically about big picture ideals, such as Kirill’s proclamation that “Man was born to think.” Instead, Red can only see the world and think in terms of its material conditions. It is his worldview that “man is born, that's all. Scrapes by as best he can.” If the Golden Sphere presents the opportunity for thinking ‘grand thoughts’ or acting in service of some undefined moral imperative, Red is not the guy. While the Golden Sphere would be the ostensible central metaphor of the novel, the most apt one is that of the “meat grinder,” that cynical analogy of capitalist production. If Red didn’t find access to the Sphere, it would be someone else—the Institute, the military, a European terrorist.³⁸³ So it is with the tacit understanding that Red must sacrifice his competitor to gain advantage and which compels him to question whether he could or even ought to articulate some innermost desire, a desire that is decidedly fraught with contradictions.

Red’s dilemma—or, let’s call it indecisiveness—before the Golden Sphere makes him guilty of a kind of magical thinking, a belief that his forays into the Zone could result in some substantive, positive change to the conditions of existence. This

³⁸² Strugatskys, 191.

³⁸³ This becomes the central philosophical conundrum of Andrei Tarkovsky’s film adaptation, *Stalker*, in which it is revealed that one of the visitors to the Room has planned to blow it up.

line of thought is also akin to what Lauren Berlant calls “cruel optimism.” It is a kind of belief structure in which we attach impossible hopes to objects of desire. First, she qualifies an object of desire not as a single thing but as “a cluster of promises [to] allow us to encounter what’s incoherent or enigmatic in our attachments, not as confirmation of our irrationality but as an explanation of our sense of our endurance in the object, insofar as proximity to the object means proximity to the cluster of things that the object promises.”³⁸⁴ This relationship between hope and object is cruel because, as she posits, it’s “a relation of attachment to compromised conditions of possibility” that are either impossible or “sheer fantasy.” “What’s cruel,” she writes, is that we do not endure the loss of an object of desire:

because whatever the content of the attachment is, the continuity of its form provides something of the continuity of the subject’s sense of what it means to keep on living on and to look forward to being in the world.³⁸⁵

In Berlant’s view, conditions of possibility are compromised precisely because they are vested with meaning that is contingent on the subject’s continued projection of self-worth onto the object. The potential to move outside of the loop is deferred by our continued attachment. It is a type of magical thinking in which the *objet petit a* serves as the engine of optimism that keeps one engaged with their attachment regardless of outcome. Hope, in these cases, becomes incomprehensible and irrational. In Red’s case, it’s the Zone itself more than any of its artifacts that motivate “relations of attachment” between his current conditions and an ideal life. He’s stuck in a kind of repetition compulsion which involves “a sustaining inclination to return

³⁸⁴ Lauren Berlant, *Cruel Optimism*, (Durham: Duke University Press, 2011), 23.

³⁸⁵ Berlant, 24.

to the scene of fantasy that enables [him] to expect that this time, nearness to this thing will help [him] to become different in just the right way.”³⁸⁶ He continues to risk life and limb to return to the Zone simply because it is the thing that identifies him as a stalker—he’s no scientist or man of ideas—but like them clings to the Zone as a source of identification with the indefinable realm of possibilities.

Returning to Red’s inability to articulate a wish, we can attribute it to the type of anxiety, reiterated earlier, that Lacan asserts is the anxiety of the Other. Red’s final act before the Golden Sphere is not a hesitation to decide *the* right or best course of action, but instead he’s frozen in fear of the myriad contingencies of desire itself. Lacan defines anxiety as the uncertainty of knowing and ultimately having to decide what the Other could want of the subject, which I’ve mapped here to a systems process of meaning-making. We can understand this anxiety in terms of Luhmannian double contingency as anxiety about the indeterminate desire of the Other; or, to put it another way, what the Other desires of the subject. This is what I would call, for lack of a better term, the sublime anxiety of desire which, in double contingent relationships like Red’s, work to disrupt both personal and social meaning. For Red, this anxiety percolates as a result of the multiple social and economic pressures that bear on him in the Zone. It is impossible to know, let alone choose a right course of action, since any action could be simultaneously right or wrong, redemptive or annihilating.

³⁸⁶ Lacan, *L'angoisse*, 2.

Ruth Ronen locates in this anxiety an instance of the sublime. She explains that the disconnect a subject experiences between the object of desire and desire itself is a source of anxiety. When an object of desire is foreclosed to the subject, similar to the way Berlant describes, “the subject is anxious,” Ronen tells us, “because in her or his desire she or he is barred from the object that caused desire.”³⁸⁷ In other words, the object of desire is “barred” from the subject, or withheld from attainment in conjunction with the continued deferral of desire onto the object the subject identifies with. It “not only points the gap between what the subject desires in reality and the object that caused this desire but also to the necessary asymmetry between the subject’s being identified with the object of desire and the subject having that object.”³⁸⁸ I acknowledge Ronen’s assertion that this gap between object and desire that is instantiated by the subject’s anxiety invokes an encounter with the sublime. However, Ronen’s reading of desire remains more strictly grounded in her reading of Kant through Freud. In her view, the object-cause-of-desire instantiates sublime feelings only in and through the psychology of the subject³⁸⁹ (i.e., the lack of commensurability between the object of desire and her anxiety about that desire) but stops short of taking into account bigger picture issues that also contribute to a subject’s anxiety in encountering the sublime. We must consider not only the mental processes that instantiate the sublime for Kant, but also the larger material concerns of capital and the profusion of technologies that pervade the inner life of the subject.

³⁸⁷ Ruth Ronen, *The Aesthetics of Anxiety*, (Albany: SUNY Press, 2009), 111.

³⁸⁸ Ibid.

³⁸⁹ Ronen, 108.

In the case of the capitalist unconscious, individual desire also implies an entire constellation of networked forces pushing and pulling on him.³⁹⁰

Before the most profound of all the alien objects, Red is subsumed by the unfathomable directive that he voice his innermost desire. But, as Ronen points out, in a scenario like this “The imagination fails with regard to an object other than the object of nature, and it is in the encounter with this other object that the experience of the sublime can be claimed to cause anxiety.”³⁹¹ This idea is illustrated in *Roadside Picnic* at the point that Red finally faces the Golden Sphere, when “only then did [he] raise his eyes and look at the Sphere. Carefully. Apprehensively. With a suppressed fear that it would be all wrong—that it’s disappoint, raise doubts, throw him out of the heaven he’d managed to ascend to, choking on shit along the way.”³⁹² Here, faced with the sublime, and with it a promise that one wish—granted it was a well-thought one—could amend the wreckage of the Visitation, he’s unable to resolve those contingent and incommensurable forces between individual desire and the desires which motivate the social structure.

Unable to imagine the object-cause of his desire, Red collapses into a state of resentment, “no longer trying to think or understand but at least to envision something, how things ought to be,” but all he can envision are ruins of capital: “money, bottles, piles of rags that used to be people...columns of numbers.”³⁹³ In lieu of imagining the thing that would elevate him above the dregs, and restore his

³⁹⁰ What Fredric Jameson calls “intensities.” *Postmodernism: Or, The Cultural Logic of Late Capitalism*, (Durham: Duke University Press, 1991), 40.

³⁹¹ Ronen, 112.

³⁹² Strugatskys, 188.

³⁹³ Strugatskys, 192.

daughter's health, he can only lament his own dread. In his final address, incapable of naming the thing that compels him, he resolves to poke back at a universe that has left his community and family damaged, and left humanity with no answers: "if you really are—all powerful, all knowing, all understanding," he insists, "figure it out! Look into my soul...everything you need is there." To hell with it, he proclaims, "I can't think of a thing other than those words of his:

HAPPINESS, FREE FOR EVERYONE, AND LET NO ONE BE
FORGOTTEN.³⁹⁴

The novel ends on a note that is by turns sentimental and cynical. The reader is left to reach their own conclusions about whether Red's final message is sincere, or given the conditions of a post-Visitation world, even possible. It belies an impulse toward a Utopian ideal that is continually undermined by real-world conditions. Happiness and freedom are overwritten by the ruins of capital, the "money" and "pile of rags," by the incomprehensibility of the alien Other, and fear that compels our own desires. Ultimately, we find in the unconscious and through the machinations of capital realms of sublimity which disrupt the conformity and cohesion of the social whole.

Red's dilemma to name the thing that compels him most is occluded by the conditions of capital and the anxiety of the other. Similarly, George Orr lives in fear of the capacity to render the unconscious real. In this chapter, I've sought to underline that idea that sublime desire is not only turbulent for the subject, but works to disrupt systems as a whole. In *The Lathe of Heaven*, I illustrated how George Orr and Dr.

³⁹⁴ Strugatskys, 193.

Haber enter an arrangement of double contingency, which I read as a paradigm of how individual subject autonomy undercuts the function and coherence of social systems. Orr's inability to fathom the desire of the other sews chaos for both subject and system. In *Roadside Picnic*, the totality of global capital, here symbolized by the Zone, is the object of the sublime anxiety which casts individual desire into oblivion. Together, these texts illustrate the incommensurability between the depth of the human unconscious and the rational social and technological systems that seek to instrumentalize and exploit human desires.

CHAPTER FOUR: Cyberscions: The Cybernetic Sublime

In his *American Technological Sublime*, David Nye recognizes the way in which modern technologies like the railroad or Hoover dam evoked the same heightened emotions and sense of elation in the viewer as did the majestic objects of landscape for 18th century subjects. In the 19th and 20th centuries, technological objects replaced the objects of nature as new sites of excessive experience. But by the information age, where vast networks of analog and digital machinery undergird our lives, these computational technologies have taken the sublime one step further. A cybernetic sublime acknowledges the ways in which machine and digital technology together form new kinds of intense experience for the perceiving subject. Cybernetic technologies can simultaneously extend and exceed our human limits, and bring new levels of awareness to our understanding of what it means to be human. In the imaginative literatures I explore here, a new kind of perceiving subject emerges, a cyberscion whose interaction with the objects of the technological landscape induce encounters with the sublime that Burke nor Kant could ever have imagined.

Alphaville—When IBM Ruled the Planet

Jean-Luc Godard's *Alphaville* (1965) posits a world run by a giant computer. The citizens of Alphaville live their lives under the guidance of scrupulous computer logic. It has managed to organize all of those factors of modernity rendered "too complex for human understanding," including but not limited to "train and airplane departures," "the movement of people and goods," "electricity distribution, crime

suppression,” and “war operations.”³⁹⁵ As an extension of this streamlining, the citizens, too, have been made to abdicate essential human qualities like emotion and irrationality, and are stripped of the necessary vocabulary to express those things. Folks are summarily executed for falling in love or grieving the dead. The protagonist, Lemmy Caution, is at one point brought before an interrogation computer to answer for his irrational behavior, but rather than questions impugning his misuse of logic, the questions posed are metaphysical riddles:

Alpha 5: What is the privilege of the dead?

Lemmy Caution: To die no more.

Alpha 5: Do you know what turns darkness into light?

Lemmy Caution: Poetry

Alpha 5: What is your religion?

Lemmy Caution: I believe in the spontaneity of conscience.³⁹⁶

The interrogation scene unfolds with an effect that is both absurd and uncanny. The computer would appear to have some insight into the human psyche, but at the same time remains coldly pragmatic. The viewer is left to wonder at the implications if such an interaction were to be possible in real life. How much should we augment and organize ourselves through the use of technology? Could computers understand us better than we can?

In other words, *Alphaville* is precisely the type of prototypical dystopia that hinges on a fear of advanced technology. In the middle of the film, Alpha 60, the

³⁹⁵ “12. Professors Eckel and Jeckel,” *Alphaville*, dir. Jean-Luc Godard (1965; Paris: Chaumiane Film Studios; The Criterion Collection, 1998), DVD.

³⁹⁶ “11. The Love of Money and Women,” *Alphaville*. It’s worth noting that Lemmy’s responses reference Blaise Pascal, Henri Bergson (“the spontaneity of conscience”), and Paul Eluard, whose book of poetry, *Capitale de la douleur* has a central place in the plot. For more about Lemmy’s philosophy, see Andrew Jones, “Art and logic: Godard’s *Alphaville* as philosophy,” *Studies in French Cinema*, (2017:VOL. 17, NO. 2) 165–181.

immense central computer governing society, voices the following proclamation: “The essence of the so-called capitalist world or the communist world is not an evil volition to subject their people by the power of indoctrination, or the power of finance, but simply the natural ambition of any organization, to plan all its actions. In a word, to minimize unknown quantities.”³⁹⁷ While on one hand, the term organization denotes that an entity is organized around one or more structuring principles, it does not necessarily imbue the sense that an organization seeks to “plan all its actions.” This would be, it seems, quite impossible. On the other hand, the structuring principle to “minimize unknown quantities” can connote that an organization (or just “organization” in a stricter systems-thinking sense) is compelled to keep itself differentiated by continually reinscribing its identifying properties. There is a troubling sentiment in Alpha 60’s pronouncement which speaks to an underlying anxiety about modern, post-war society; that it was becoming too irrational, too complex, too many-splintered. The vision of the future illustrated in *Alphaville* underscores the feeling that a cybernetic worldview, one that privileges “communication and control,” is also one that is coldly technocratic.

This chapter explores the field of cybernetics as the real and imaginative framework for literary works that comprise the genres of cybernetic fiction and cyberpunk. This literature reveals emergent new modes of being in the world which transcend our previous concept of the individual subject. Cybernetic fiction emerged coextensively with late 20th century advances in computational technologies in the

³⁹⁷ “8. The Teachings of Alpha 60,” *Alphaville*.

fields of communication, digital memory, data transfer, economics, and warfare. Works of cybernetic literature also reflect a broader cultural shift to so-called information societies, the rise of neoliberalism, and late stage capitalism. I identify the cybernetic principles inherent in cyberpunk literature—a genre whose tropes of machinic embodiment, disembodied consciousness, and virtual reality have so saturated contemporary culture as to essentially render anything else implied by the cyber- prefix to be moot. By distilling an understanding of the cybernetic metaphors at work in cyberpunk, I seek to illustrate the prescience these works have in representing human-technical systems. I also consider the implications that the cybernetic principles and cyberpunk tropes expressed in these literary works have on our increasingly cybernetic present. It may go without saying that we are much more cybernetically embodied in the 21st century than we may care to admit; our own realities hewn much closer to cyberpunk visions than we realize. I demonstrate how the systems concepts illustrated in cyberpunk such as distributed cognition and emergent subjectivity are not merely science fiction, but are to be recognized as real-world modes of understanding and being. I argue, further, that these cybernetic modes of embodiment and cognition are sublime in that they invoke feelings and sensory experiences that exceed the limits of the human mind and body. Of particular interest here are the cybernetic theories put forward by Norbert Wiener, Heinz von Foerster, Francisco Varela, and Niklas Luhmann, whose social systems theory is inspired by second-order cybernetics. I draw as well from philosopher Don Ihde's work on postphenomenology and embodied technics, which make clear the

irrevocable relationship between our technologies and perceptions of our lived environment. Taken together, all of these provide a pertinent systems scaffolding to explore the cybernetic sublime.

Due to the proliferation of cyberpunk works, I deem the authors and texts that I've selected in this chapter as "originator" texts; those that offer strong examples of the cybernetic roots of cyberpunk. By originator, I do not necessarily mean those who came first or invented the genre, but rather those whose work represents the paragon of cybernetic literature. I give special attention to William Gibson, James Tiptree, Jr, and Pat Cadigan. I opened this chapter with an analysis of a work not often grouped with cyberpunk: Jean Luc Godard's science fiction film, *Alphaville* (1965). While this film does not fit cyberpunk per se, it serves as a fitting prologue to the works of cyberpunk. The film offers its viewers a more traditional vision of the cybernetic future that, in the 1950's and 1960's, traded on anxieties that a cybernetic, computer-controlled society threatened to replace human autonomy.

Cybernetics is nearly as broad as its larger umbrella systems theory in that it cannot be denoted by any singular approach or definition; rather, it can be better understood as a collection of principles regarding the flows of information in systems environments between human (or organic) elements and machine (or inorganic) elements. The terms cybernetics, cybernetic fiction, cyberspace, and cyberpunk are often wielded interchangeably to describe a set of similar scientific and literary tropes, but they are not coterminous. In brief, cybernetics describes the causal relationships between elements of a system. However, the term has come more

generally to refer to relationships between humans and computational systems. The word cybernetics is derived from the Greek word, *kibernetes*, which refers to a pilot or ‘steersman,’ and, according to cyberneticist Norbert Wiener, is meant to invoke the at-the-time emerging field of information communication and control.³⁹⁸ The analogy of the steersman (or later on, the mechanical governor) evokes a sense of control that does not dictate the action of a system but is contingent on the system’s feedback. That is to say, cybernetics broadly encompasses the view that—in their myriad constellations of interactions—both machines and humans form self-regulating systems. The key to understanding cybernetics, at least for Wiener, is in studying the flow of information as it passes through networks composed of machines (computers) and humans (societies). One could consider such a cybernetic system consisting of both humans and machines as forming one self-sustaining organism. As a field of thought, cybernetics seeks to understand the relationship of information—inputs, outputs, and throughputs—as multivalent. Second-order cybernetics would further trouble these relations by emphasizing the role of the observer as an active participant in cybernetic systems; an observing system, in engaging in a feedback relationship with the system they are observing, alters the very act of cognition.³⁹⁹ [Thus], observation, as a form of understanding itself [recursion], is a fundamental trope of understanding cybernetic systems.

³⁹⁸ Norbert Wiener, *Cybernetics: or Control and Communication in the Animal and Machine*, (Cambridge: The MIT Press, 1948), 12.

³⁹⁹ Bruce Clarke, *Neocybernetics and Narrative*, (Minneapolis and London: The University of Minnesota Press, 2014), xiii.

The Politics of Cybernetics: Does Cybernetics have a Point of View?

Since its inception in the 1940's, cybernetics has been deployed in fields various and sundry: mathematics, computer science, sociology, neurobiology, governance, linguistics, economics, military defense, narrative theory, and the law. Depending on whom one asks, cybernetics has been variously described as neoclassicist, progressive, neutral, Marxist, Anarchic, Cartesian, a response to Marx, a response to Descartes, radically apolitical, radically postmodern, and / or a salve to postmodernism. The question raised by cybernetics' seeming panacea is "does cybernetics have a point of view"? For original cyberneticists like Norbert Wiener and Claude Shannon, the answer is no. Cybernetics is an observation of what is happening. Mathematicians and businessmen are fond of this answer. But for all work that came after, the answer has to be yes.

Weiner and Shannon's work were marked by a bias toward system stasis rather than change, in which the dynamic of control between machines and social systems were conceived in terms of closed systems, "with all forms of change interpreted as deviations" in need of correction [by cybernetic inputs].⁴⁰⁰ In the final analysis, the first-order cybernetics of Wiener offers little more than a recapitulation of Cartesian ethics transposed on to social systems and machine technologies. Wiener's tagline of "communication and control in the animal and machine" does little to redress Descartes' mind-body problem by offering a notable alternative;

⁴⁰⁰ Sabine Heuser, *Virtual Geographies: Cyberpunk at the Intersection of the Postmodern and Science Fiction* (Amsterdam and New York: Rodopi, 2003), 21.

instead Wiener's overtly humanist philosophy simply adds a third dimension to the mind-body equation—the machine or technological object.

Second-order cybernetics, on the other hand, shifted the methodology from observing how systems self-regulate in relation to a singular environment toward more reflexive consideration about how systems operate in relation to each other and to their respective environments. The most salient political implications of second-order cybernetics are threefold: it calls attention to the necessary unity between all systems and their environments; calls into question presumed hierarchies between one type of system and another, or of a particular system and its environment; and privileges nonhuman modes of cognition and autonomy. The types of cybernetics I examine below involve a constellation of systems-oriented concepts that serve as frameworks for understanding how human and machine components interact to extend human capacity and to form larger cognizing systems through machine and computer prostheses and the feedback loops they employ.

What is Cyberpunk?

In its broadest sense, cybernetic fiction concerns itself with tropes of information systems, self-reference, feedback networks, computational logic, and the interface of humans and machines. As David Porush explains, cybernetic literature should not be thought of as a subset of another genre such as science fiction, but more as an assemblage of related themes, including the notions “that humans are machines, that the observer affects the phenomenon being observed, that information can be quantified”—themes that are sometimes conflated with the concerns of

postmodernism.⁴⁰¹ Computers may not even figure prominently in cybernetic literature, nor should it be supposed to be especially contemporary. *La Bête Humaine*, for instance, Emile Zola's 1889 novel that conflates systems of industrial and mechanical power with male sexual compulsion can be read as essentially cybernetic. However, Porush identifies Thomas Pynchon, John Barth, and Joseph McElroy among those whose work exemplifies cybernetic fiction. However, his list seems to represent a specific moment (postmodernism) and specific voice (white male) in fiction, a fact that the cyberpunk subgenre attempts, at least on the surface, to redress.

Cyberpunk is a broadly defined—but perhaps more derisive—category. In its simplest, most obvious sense, cyberpunk yokes together the two root connotations of its label. *Cyber* refers to the revolution in computer technology emerging at the beginning of the 1980's, and *punk* refers to the countercultural attitudes of punk music that one critic describes as “an anarchic attitude toward society.”⁴⁰² Punk culture of the late 70's and early 80's revolved around modes of resistance to mainstream values, artistic experimentation, a Do-It-Yourself mentality, and engagement with semi-legal and / or transgressive activities. The original progenitors of cyberpunk style envisioned themselves as “rebels, revolutionizing science fiction and overthrowing the old order.”⁴⁰³

Cyberpunk assumes its name from the title of a 1983 Bruce Bethke short story. But the movement predates this term. Before the Bethke story, so-called cyberpunk authors were variously referred to as the “neuromantics,” “the

⁴⁰¹ David Porush, *The Soft Machine: Cybernetic Fiction*, (Methuen: New York and London, 1985), x.

⁴⁰² Heuser, xi.

⁴⁰³ Heuser, 31.

Mirrorshades group,” “Punk SF,” and “the third wave”—after the Alvin Toffler book and suggesting a next phase after New Wave SF. “Cyberpunk” is a label that none of its originators chose for themselves, likely because while they shared similar sentiment, they did not feel they were working in a unified movement. And of course, cyberpunk is not to be conflated with punk, even if both movements began as revolutions that were quickly absorbed into the mainstream marketplace. Yet, cyberpunk’s “vague outlines and ill-defined limits” characterize a mode of science fiction produced in the early 1980’s by a small community of writers.⁴⁰⁴ The core group of cyberpunks are identified as William Gibson, Bruce Sterling, Pat Cadigan, and Lewis Shiner, who all knew each other and began developing work in a similar mode. But there’s little consensus on who else should be included or even what its most essential features are.

Cyberpunk merges cybernetic tropes with influences from older established genre patterns in hardboiled fiction, film noir, and New Wave SF. As a literary movement, cyberpunk is as much concerned with style as it is with substance. It draws its most conspicuous stylistic influences from hardboiled fiction and film noir. Like hardboiled fiction, cyberpunk frequently focuses on the adventures of a romanticized individual crusader. *Cyber* and *punk* are commonly condensed into the figure of the computer hacker, a “console cowboy,”⁴⁰⁵ typically male, who combines their technological literacy with social disaffection, and who, like the hardboiled P.I., leverages their skill to the highest bidder.

⁴⁰⁴ Heuser, xxviii.

⁴⁰⁵ William Gibson, *Neuromancer*, (New York: Penguin, 1984), 28.

Cyberpunk settings are global, urban underworlds of organized crime and corporate subterfuge. Nefarious forces may manifest equally via yakuza hitmen or multinational corporations. The spaces of cyberpunk fiction mirror those of classic film noir. For instance, William Gibson's first novels take place primarily among the dingy, neon-saturated streets and back allies of the Sprawl, a megapolis that stretches from Boston to Atlanta, situated under huge geodesic domes. But other locations include Chiba City (new Tokyo), Istanbul, New Delhi, and Freeside—a settlement in outer space—just to name a few. They each feature one or more of the prototypical hacker figures, who are imbricated in vast systems of techno-capital. The oft repeated formula of “high-tech / low-life” serves as an apt descriptor of the cyberpunk aesthetic.

Cyberpunk extends tropes such as the cyborg and cyberspace to their most visceral and ethereal ends. According to Bruce Sterling, describing its early evolution, cyberpunk's primary themes include “prosthetic limbs, implanted circuitry, cosmetic surgery, genetic alteration” as well as artificial intelligence and brain-computer interfaces.⁴⁰⁶

What's So Cybernetic about Cyberpunk?

It's important to distinguish between the principles of cybernetics and the tropes of cyberpunk literature, as they are not coextensive terms. This chapter elucidates how cyberpunk literature enacts cybernetic principles through an examination of the genre's tropes as well as through a reading of the texts themselves as cybernetic.

⁴⁰⁶ Bruce Sterling, *Mirrorshades: The Cyberpunk Anthology*, (New York: Arbor House, 1986), xi.

Technology is the new nature. In the technological sublime, technology can be perceived, as Fredric Jameson writes, as “the sensible tip of an unlimited expanse that lies beyond it.”⁴⁰⁷ The modes of technology that feature in cyberpunk are taken to be new forms of the natural environment. Technology, like the sublime, “provides us a glimpse of an infinite ideal realm that exists beyond our perception or experience.”⁴⁰⁸ Both cyberpunk and cybernetics work against conventional humanist notions that humans exist independently of technological objects and systems—that indeed, if we follow Marx or Elull, we are enslaved by technology. Instead, cyberpunk poses a more realistic picture of technology and humans as belonging part and parcel to the same environment—a picture that at turns valorizes technology while simultaneously diminishing humanity. The cybernetic view holds that reality itself is constructed through the interplay of systems—living, social, technological—with environments. That is to say, technology is as integral to our own being as are our hearts, lungs, eyes, and legs.

Machine Metaphors

Because the first wave of cybernetic thought articulated the “control and communication in the animal and machine,” it could not help but ground its theory in analogies comparing humans to machines, and vice versa. It’s an oft-repeated tenet of cybernetics that the body is a machine. As an autopoietic (self-organizing and self-referencing) system, the body uses energy inputs to produce its motive power in order to go on producing the parts that reproduce itself. Norbert Wiener's seminal

⁴⁰⁷ Fredric Jameson, quoted in Christopher Bolton, *Sublime voices: the fictional science and scientific fiction of Abe Kōbō*, (Cambridge, MA: Harvard University Press, 2009), 78.

⁴⁰⁸ Bolton, 109.

works, both *Cybernetics* and *The Human Use of Human Beings*, make frequent use of machine analogies figuring, respectively, humans as types of machines and machines as types of “living” systems. He asserts, for example, that each human technical age can best be illustrated by a specific machine: the age of clocks, the age of steam, the age of electricity—all serving as metaphors for the inner workings of man and society; or, conversely, he asserts that “the modern ultra rapid computing machine was in principle an ideal central nervous system.”⁴⁰⁹

But animal-machine metaphors are nothing new. Analogies articulating human tool use as mechanical extensions of the body were already in use in early civilizations. According to historian of technics Bertrand Gille, the ard body plough, for instance, was adapted in the mid-Neolithic era as a bodily extension of a sickle, attached to the user, so that the motive power of the human body and cutting power of the scythe worked in tandem as an extension of the human user’s own arm. In early territories of what are now Iraq and Egypt, the rise of organized agricultural society, with its assemblage of animal labor and machine technologies such as the yoke and plough was likened to a great machine.⁴¹⁰ However, from the Greeks to the middle ages, the pendulum swung (no pun intended) toward the opposite end of the spectrum, when we predominantly favored organic metaphors to describe our world.

⁴⁰⁹ Norbert Wiener, *Cybernetics: or Control and Communication in the Animal and Machine*, (Cambridge: The MIT Press, 1948), 26, 48-50.

⁴¹⁰ Bertrand Gille, *The History of Techniques, vol 1: Techniques and Civilizations*, 200. A little bit earlier in the chapter, the rise of agriculture is described by Andre Leroi-Gourhan as a “techno-economic mechanism” (quoted in Gille 148). By the onset of the Industrial Revolution, however, it was a different story. Wiener seems to share Karl Marx’s resentment about the age of machinery, suggesting the real revolution was the “devaluation of the human arm by the competition of machinery” (Wiener, *Cybernetics*, 26).

Society and the universe it was part of formed a large living organism: the body politic or the great chain of being. A shift back to machine metaphors most likely arose from an Enlightenment era focus on natural philosophy and its tendency toward prescriptive observations. Isaac Newton's mechanical laws set the framework for how we were to understand the natural world. Rene Descartes and Thomas Hobbes, in respective ways, argued that the body and the polis were natural machines. Technological metaphors have become so pervasive now that their constructions pepper our everyday language. Whether we say "the eyes are the window to the soul," or that we will "zoom in" on a particular feature, or that a non-sequitur statement "does not compute," we tend to take for granted just how deeply embedded is our use of technical means to describe the world.

Organismic metaphors also persist, of course, but regardless of whether we describe the interpenetration of living systems as a great machine, or the interpenetration of living systems with technological ones as some greater organism, what cybernetics seeks to point out is the relations of feedback that are present between systems. Norbert Wiener's claim that "the physical functioning of the living individual and the operation [of the] newer communication machines are precisely parallel in their analogous attempts to control entropy through feedback"—means that all autopoietic systems operate at the same fundamental level and so can be illustrated through interchangeable metaphors, and in so doing call into question such boundaries.⁴¹¹ Feedback can be observed to operate at both mechanical and organic

⁴¹¹ Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*, (Boston: Houghton Mifflin, 1954), 26.

levels because it is distributed through such widely various means, whether it's a technological mechanism (such as Wiener's example of the steam governor), or organic mechanism (such as the human sense of proprioception that keeps us from falling), or a computer algorithm (such as an AI interface), or human volition (such as reaching to pick up a pencil), or as aleatory condition (such as entropy).

Both machinic and organic metaphors are of central interest because analogies hold particular resonance in Wiener's cybernetics. As N. Katherine Hayles has pointed out, Wiener's use of analogy is "not merely an ornament of language but a powerful conceptual model that constitutes meaning through relation. [When] analogy is used to constitute agents in cybernetic discourse, it makes an end run around questions of essence, for objects are constructed through their relations to other objects."⁴¹² The relational constructedness of objects also calls into question the ostensible hard boundaries that the metaphors blur.⁴¹³ In cyberpunk especially, these permeable boundaries become significant. As I will demonstrate below, the figure of the cyborg in particular, along with key concepts like cyberspace and virtual reality, are key nodes of hybridity where both machinic and organic analogies exist. Through continual metaphoric play between organic and mechanical interfaces, bodies, and systems, meaning gets encoded in multivalent and sometimes paradoxical ways. At the heart of this chapter (and this dissertation), is the dissolution of boundaries that cyberpunk provocatively explores—key among them the association and / or dissociation of flesh from consciousness, of person and computer.

⁴¹² N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, (Chicago and London: University of Chicago Press, 1999). 91.

⁴¹³ Hayles, 93.

Sabine Heuser has pointed out how metaphor, rather than being merely decorative, is the central narrative operator in cyberpunk fiction. In the proleptic first line of *Neuromancer*, for instance: “The sky above the port was the color of television, tuned to a dead channel,”⁴¹⁴ interpretation is contingent on unpacking the tension in the correlation between color, port, and television. Whatever color the sky *is* is mediated through one’s understanding of technology (the reader’s as well as the character’s). This “semantic clash,” Heuser suggests, serves as an entrée into a new kind of world-building and as an indicator of things to come: “Mapping the television screen onto the limitless expanse of the sky triggers semantic interactions between concepts of nature and concepts of media technology, cityscape and datascape.”⁴¹⁵ In the first line of the novel there is already established a new phenomenological ground for the reader in which are yoked together multivalent sensory perceptions. An understanding of the natural world—indicated by “sky”—is filtered through an ostensibly more natural understanding of technology (for the characters).

Cyberpunk traffics heavily in metaphors borrowed from its primary precursor, *film noir*. William Gibson’s prose, in particular, is able to lift noir cliché into a new kind of technical patois. Just as Gibson’s chief influence, Raymond Chandler, brought literary artistry to hardboiled fiction, so too does Gibson create new expressions by combining hardboiled lingo with technological metaphor. His turns of phrase have all the semantic markings of hardboiled fiction—terse prose, vernacular speech, jargon, and characters with tough attitudes and flat affects—but he overlays this with a

⁴¹⁴ Gibson, *Neuromancer*, 3.

⁴¹⁵ Heuser, 104.

technological world view. Clichés received from noir such as *asphalt jungle* and *naked city* form readymade shorthand for the conflation of the artificial and natural that already occur in the modern world. Gibson employs these types of cliché as a scaffold to imbue his futures with familiar trappings. “Asphalt jungle,” for instance, resonates in the “neon forest” and the “wired electric night” of Chiba City, and reinforces the notion that urban and cyber-spaces are stand-ins for nature, a new kind of wilderness.⁴¹⁶ However, while cyberpunk metaphors do cash in on familiar noir expressions, they also tend to bleed both ways—not only mapping wilderness tropes onto urban detail, but inflecting inorganic matter with organic detail. The effect can sometimes be startling, and works to paint a more integrated vision of the future. In the following passage, we see how technology is imbued with a sense of grotesque corporeality, indicating just how deep the notion of technological embodiment is ingrained in reality of the novel:

the guts of a television so old it was studded with the glass stumps of vacuum tubes, a crumpled dish antenna, [...] An enormous pile of old magazines...flesh of lost summers staring blindly up as he followed her back through a narrow canyon of impacted scrap.⁴¹⁷

There is a certain goriness implied in the piles of technical detritus: the television lies with its “guts” exposed, vacuum tubes are obliterated into “stumps,” the technological decay forming its own kind of organic matter amassed in side streets and back alleys of the teeming megapolis. The “junk looked like something that had grown there, a fungus of twisted metal and plastic.”⁴¹⁸ And those “narrow canyon[s] of impacted

⁴¹⁶ Gibson, *Neuromancer*, 31 and “New Rose Hotel,” in *Burning Chrome* 113, respectively.

⁴¹⁷ Gibson, *Neuromancer*, 48.

⁴¹⁸ Ibid.

scrap” evoke a real lived-in technological environment, which may be to the modern reader reminiscent of more recent science fiction imagery, such as those from the films *Wall-E* or Ernest Cline’s novel, *Ready Player One*, both of which are set in a future landscape of urban ruins. Gibson’s stories, which are set in the Sprawl, or BAMA (Boston-Atlanta Metropolitan Axis), were the archetypes for many subsequent remediations.⁴¹⁹

Just as film noir’s exteriors reflect the psychological interiors of its protagonists, cyberpunk’s external, constructed environments mirror the constructedness of both the body and psychology of its characters. In *Neuromancer*, Case’s past manifests as a “flesh of lost summers,” something “hot and tangible,” while his present state is reflected in the “dead signs in the windows” and “lifeless neon.”⁴²⁰ He views the corporeal self as no more than “meat,” a “prison of flesh” as lifeless as the twisted metal and plastic around him.⁴²¹ Meanwhile, he yearns to connect to his cyberspace deck where he is destined to voyage “under a constellation of chrome.”⁴²² Similarly, in “Fragments of a Hologram Rose,” the narrator attempts to gather his fragmented memories, but “[however] you shuffle them they form the same printed circuit.”⁴²³ These analogies emphasize the correlation between self and external environment while crystalizing the organic body into the informatic terms of data, information, and circuitry. These images together build a structure of reality and verisimilitude for the reader that transcends the noir clichés it’s built upon.

⁴¹⁹ Gibson, *Neuromancer*, 38. “Home was BAMA, the Sprawl, the Boston-Atlanta Metropolitan Axis.”

⁴²⁰ Gibson, *Neuromancer*, 47 and 44, respectively.

⁴²¹ Gibson, *Neuromancer*, 6.

⁴²² Gibson, *Neuromancer*, 12.

⁴²³ Gibson, “Fragments of a Hologram Rose,” *Burning Chrome*, 38.

The most prevalent cybernetic metaphors are those that correlate computer networks to human nervous systems, and human brains to CPUs, analogies that are a direct continuation of Norbert Wiener's conception that the human body is itself a communication network whose mode is to reproduce an external signal.⁴²⁴ Scott Bukatman has pointed out the prevalence of these analogies in cyberpunk: "that the brain is like a computer, or even that the brain is a computer, finds expression in countless narratives about artificial intelligence, where the brain is figured as only so much programmable software, well-suited for duplication and even simulation."⁴²⁵ These two analogical modes— the organic figured as computer, and the network figured as organism— indeed abound in cyberpunk literature. For instance, the organic-figured-as-computer is a central premise of James Tiptree, Jr.'s story, "The Girl Who Was Plugged In" (1974). The story is about a disfigured woman who through the use of complicated computer prostheses is wired to inhabit the body of a youthful "remote," a synthetic female body without consciousness. The woman, Philadelphia Burke, is a human being with a fully functioning brain and nervous system, who acts as the stand-in consciousness for her remote, Delphi. Delphi is an organic, living system too, but grown in a lab, and is only alive so much as P. Burke inhabits her.⁴²⁶ P. Burke is the de facto computer operating system for the otherwise

⁴²⁴ Wiener, *The Human Use of Human Beings*, 32-35.

⁴²⁵ Thomas Foster, *The Souls of Cyberfolk Posthumanism as Vernacular Theory*, (Minneapolis and London: The University of Minnesota, 2005), 271.

⁴²⁶ James Tiptree, Jr., "The Girl Who Was Plugged In," *Her Smoke Rose Up Forever*, (San Francisco: Tachyon Publications, 2004), 49. "They grow 'em. [...] He couldn't care less about the flesh department. [Without] an operator, it's just a vegetable." Conversely, "vat grown" is a phrase that pops up in the work of William Gibson, perhaps borrowing the idea from Tiptree. In at least three stories "vat grown" is used as a pejorative for humans that have been technologically reborn. See *Neuromancer*, ; *Count Zero*, ; and "Burning Chrome", .

inert machine, Delphi. P. Burke, however, is sequestered in a “cabinet” miles away from her remote, and so there is a “forty thousand mile parentheses in her nervous system.”⁴²⁷ Burke’s handler, Joe, explains to her the sensory process of remote embodiment in all too familiar computer terminology: “‘Feeling’ is actually a potential-pattern flickering in your brain...via the long circuits from your hands.”⁴²⁸ Both “pattern flickering” and “long circuits” describe in *de facto* terms the computeresque electrical impulses of the human nervous system, although here those long circuits are stretched to their metaphorical and conceptual limit of forty thousand miles, straining, too, the limits of the human brain-computer processor, which has “only so much bandwidth.”⁴²⁹ Similar allusions are made throughout Gibson’s *Sprawl* works as well. In one instance, the focal character can “hear” his lover’s “synapses whining” as the “wizz opened every circuit of her brain.” In another, more anachronistic metaphor, a slow realization is likened to the “whir of Victorian clockwork.”⁴³⁰

Even characters that don’t directly interface with computer technologies are rendered with similar analogies. Paul Isham, a handsome young man who falls in love with Delphi, has a heart that is rendered as “one dumb protoplasmic drive.”⁴³¹ *Drive* here has the double entendre connoting both unconscious desire and computer disk drive which elucidate a correlation I will explore later between “dumb” meat and

⁴²⁷ Tiptree, Jr., 54.

⁴²⁸ Tiptree, Jr., 49.

⁴²⁹ Tiptree, Jr., 55.

⁴³⁰ Gibson, *Burning Chrome*, (New York: Harper Collins, 1986), “The Winter Market,” 128, and “New Rose Hotel,” 123.

⁴³¹ Tiptree, Jr., 66.

intelligent machine. The complex phenomena of human “feeling” that is reduced to binary “pattern flickering” in the example above also speaks to an ever present anxiety in cyberpunk about the technological lifeworld. More often than not, when the organic is parsed in computer terms, it is a fable of techno-alarmism, that the complexity of the human self can be diminished or corrupted by ubiquitous computing technologies. “The Girl Who Was Plugged In” offers an extended parable of this anxiety, with its rampant computer tech that would stand-in for, replace, or outright invade us (“a pile of GTX basic where her brain would be”).⁴³²

These analogies express a purview that blur the boundaries of human and machine, animate and inanimate, organism and system. By not privileging one or the other, they resist collapsing into simple dichotomies of mind/body or animal/machine. Instead, they open out into realms that reveal the broader systemic workings of the digital age. The subject is no longer bound by her own skin and flesh, but belongs and is defined as part of a larger technological network; her mind no longer limited by the vocabulary of human physiology, but understood by those network terms. The machine metaphors deployed in cyberpunk literature attempt to transcend clichés while pointing out the essential anxiety of a perceived technological future which threatens to diminish our humanity.

In the next section, I will move my focus to examine technological embodiment as perhaps the central concern of cybernetic literature, particularly cyberpunk, and its integral figure, the cyborg. The constructedness of cybernetic

⁴³² Tiptree, Jr., 59.

environments and cyberpunk people will be further explored through the subject's embodied relation to the world. I use the term embodiment as the sum total being in the world of the subject. A subject's sense of embodiment—its recognition and affirmation of its *self* in the world—includes a sensorium comprising a whole raft of organic and technological apparati. Our eyes and limbs and locomotion, our neural networks and proprioception are components of an organic system of biofeedback that affirm our sense of being embodied. But those networks also extend outward beyond the limits of flesh and nervous system and are augmented by our clothes and tools and technologies, forming prosthetic extensions of ourselves.

I will aim to show how cybernetic literature illustrates the claim—put forth by several theorists in differing ways—that our technological prostheses are integral to the formation of the human.⁴³³ As humans, we have always already been constituted by our technologies. To stress what Marshall McLuhan had famously argued long before computer interfaces were part and parcel of everyday existence, to understand technology is to understand it not as an object external to us, but as an extension of ourselves—he means, our *being*—that we need realize that “technology could only add itself to what we already are.”⁴³⁴

The Cyborg

Perhaps the central figure of cybernetic literature is the image of the cyborg, a hybrid organism comprising organic, mechanical, digital, and networked systems. The most basic premise of the cyborg is the augmentation of the organic human body with

⁴³³ Marshall McLuhan, Bernard Stiegler, Don Ihde, and N. Katherine Hayles, among others

⁴³⁴ Marshall McLuhan, *Understanding Media: the Extensions of Man*, (Cambridge, The MIT Press, 1964), 9.

technological apparati. The term was first proposed in 1960 by Manfred E. Clynes and Nathan S. Kline to describe “self-regulating man-machine systems” that “exogenously [extend] complex functioning as an integrated homeostatic system unconsciously.”⁴³⁵ In essence, the cyborg was thought of as an artificial organism that would be able to alter its bodily functions to suit different environments (i.e., space). Shortly after, the cyborg figure became synonymous with the human-machine hybrid. Cyborgs are made when machine technologies are used as prosthetics the human wears or incorporates into her body. David Tomas articulated the popular conception of the cyborg as such: “A hardware-based cyborg integrates or interfaces, in its most extreme and evocative form, a human body with a pure technological environment (machine elements, electronic components, advanced imaging systems).”⁴³⁶ And we are of course familiar with the most pervasive cultural image of the cyborg: the Terminator, a mechanical robot skeleton hung with fleshy window dressing in the image of a man (Arnold Swartzenegger). However, this enduring image is a cyborg *in extremis*. Or more accurately, the Terminator is not a cyborg at all but a robot in disguise. As far as we can tell, his mechanization, sensory processing and main operating systems are all machinic—the organic matter that covers him is only there for show. He belongs to the literary lineage of machines we want to fear; of robots who will take over. These include Karel Čapek’s 1920 play *R.U.R.*, Isaac Asimov’s *I, Robot*, and Arthur C. Clarke’s *2001: A Space Odyssey*. While an investigation into

⁴³⁵ Clynes and Kline, quoted in David Tomas, “Feedback and Cybernetics,” *Cyberspace, Cyberbodies, Cyberpunk: Cultures of Technological Embodiment*, ed by Mike Featherstone and Roger Burrows, (London: Sage Publications, 1995), 35.

⁴³⁶ Tomas, 38.

our cultural fear of robots is not the purview of this chapter, suffice it to point out the distinction I draw between sentient machines (robots) and human-machine hybrids (cyborgs). The robot is a mechanical entity—non-human and ostensibly non-living; the cyborg, simply put, is a human living with and in technology; she not only uses technology but is constituted by it. While I go on to address sentient machines further below, I now turn to an examination of the cyborg.

Donna Haraway thinks of the cyborg beyond purely cybernetic terms—not just as a human-machine hybrid—but more broadly acknowledging a subject’s positionality within larger social systems, institutions, and technologies that regulate their social life. The cyborg’s hybridity is that its social identity is fluid and multivalent, constructed of many disparate and competing elements, so that “the dichotomies between mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilized are all in question ideologically.”⁴³⁷ As in cybernetics, Haraway’s metaphor of the cyborg points out that there are no hard boundaries between any of the above social categories—that in fact, they are by nature interpenetrating and mutually defining, recalling the maxim that every system simultaneously defines itself and its environment. Haraway’s utopian vision for the cyborg is that its hybridity offers us a “powerful infidel heteroglossia” that works to dissolve historically oppressive dualisms.⁴³⁸ An important takeaway from Haraway is her insistence in boundary breakdowns, particularly between human and machine, organic and nonorganic. The

⁴³⁷ Donna Haraway, “A Cyborg Manifesto,” *Simians, Cyborgs and Women : The Reinvention of Nature*, (London : Free Association Press, 1991), 163.

⁴³⁸ Haraway, 181.

cyborg as a composite entity always already acknowledges the blurring lines (or in the case of cybernetics—nonexistent lines) between organism and machine: each can be considered as an information system or component of the other—the living system is a biotic component of the greater technological system, and the machine is a technological component of the living organism. Cyberpunk literature offers myriad illustrations of what Hayles, Haraway and others in Science and Technology Studies refer to as assemblages—those networks of social, organic, material and technological systems which frame our social reality. The primary interventions that cyberpunk pose are to emphasize that the social in such assemblages exhibit agency not only through corporeal human subjects, but also include actants embodied in and by machines as well as disembodied in computer code and flows of information. Examination of such systems, as I undertake here, transcend previously understood notions of subjectivity and agency.

Prostheses: Embodiment Relations

Integral to the understanding of human-machine systems is understanding how fully we are embodied in the material world through technology. Technological objects and technological systems alike form prostheses that are extensions of our own sensory apparati. This mediation between the human and their sensory experience of the external world is what philosopher Don Ihde calls “embodiment relations,” which he defines as “the relation of experiencing something in the world through an artifact, a technology.”⁴³⁹ Embodiment relations are essentially an extension of phenomenology

⁴³⁹ Don Ihde, *Bodies in Technology*, (Minneapolis: The University of Minnesota Press, 2002), xi.

that takes into account the crucial and varied ways technology constitutes our sensory perceptions. It's important to emphasize that in this case, a technological prosthesis does not simply augment an organic perception, say, eyesight; it constitutes it. When we take in the world through technology, our way of perceiving through such technologies transforms our perception and bodily sense. Ihde illustrates it like this:

My glasses become a part of the way I ordinarily experience my surroundings; they 'withdraw' and are barely noticed, if at all. I have then actively embodied the technics of vision. [...] Embodiment relations, however, are not at all restricted to visual relations. They may occur for any sensory or microperceptual dimension. A hearing aid does this for hearing, and the blind man's cane for tactile motility.⁴⁴⁰

Throughout his body of work, Ihde's chief examples of this kind of prosthetic embodiment are primarily via visual technics, from eyeglasses to IMAX screens. As in the example above, one's eyeglasses can be said to correct one's vision, but Ihde argues that what in fact occurs is that our perception of reality is normalized through the use of the glasses—becoming what he terms “transparent”—so that without the glasses we are less embodied. When the prosthesis is removed, however, our sense of perceptual relation is no longer constituted in full—we are diminished. In other words, embodiment relations are so internalized that reliance on the prosthesis that form our perceptual praxis are only noticed once they are removed, *via negativa*. To help drive home this point, Ihde asks his readers to consider the question of whether the cane is part of the blind man; unlike the eyeglasses example, the cane does not extend or augment a preexisting sense. It constitutes its own sensory inputs that form part of a

⁴⁴⁰ Don Ihde, “A Phenomenology of Technics,” *Readings in the Philosophy of Technology*, ed. By David M. Kaplan, (Lanham: Rowman & Littlefield, 2008), 98.

complex apparatus of sensory experiences that do not “make up for” a sense that was not there in the first place. In this instance, Ihde argues that the prosthesis is as much a part of the blind person as any other sense of embodiment.

In a similar vein, Bernard Stiegler echoes Ihde’s claim that the prosthesis does not function as a supplement—in so much as it “does not replace what would have been there before it and would have been lost...The prosthesis is not a mere extension of the human body; it is the constitution of this body...It is not a "means" for the human, but its end.”⁴⁴¹ So, to be an embodied human necessarily means being embodied through prosthetic means. Eyeglasses and canes and hiking boots do as much for our proprioception as our own nervous systems, so that by the time we scale to cybernetic prostheses, we understand that we have always already been clothed in technology.

We are all cyborgs, by both Wienerian and Harawayan accounts, even in our most mundane and pedestrian experiences—reading the paper, checking the time, crossing the street. The cyborg is heightened to the level of fantasy so that it is able to take on myriad cultural valences. By splicing human organic material with digital or servo-mechanical mechanisms, the prostheses-equipped cyborg is able, by turns, to become a grotesque figure of human excess, or a vaunted emblem of technological potential.

Just as the prosthesis augments innate human capacity, the cyborg as a whole intensifies human feeling and experience. One such trope of the cyborg that

⁴⁴¹ Bernard Stiegler, *Technics and Time, vol. 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins, (Stanford: Stanford University Press, 1998), 152-153.

permeates the literature is the “bionic” person, augmented with prosthetic implants or limbs, or with augmented capabilities in the form of strength or weaponry. In Gibson's iconic story, “Johnny Mnemonic” (1982), a digital implant is surgically installed in Johnny’s brain that allows him to store (or “download”) encrypted information. He is employed—or deployed—as an information carrier / smuggler for nefarious corporate and organized crime interests—corporate espionage, blackmail, you name it. Although his memory is prosthetically extended with the aid of a microchip, he himself is unable to access or cognize the information he stores without the aid of an external key, withheld from him by his employers. “I had hundreds of megabytes stashed in my head on an idiot / savant basis,” Johnny tells us, “information I had no conscious access to.” Yet, when he’s plugged in to extract the information, his own consciousness goes blank while he sings out “their hot program without remembering a single quarter tone.”⁴⁴² With the encoded information cut off from him, an “idiot / savant,” Johnny is merely a cog in the machine. His prosthetic capability is useful for others, and for him too; that utility gives him market viability, and serves as a lucrative source of income, but it does nothing to extend his own sense of empowerment. In fact, the sensitive nature of the information he carries frequently gets him into more trouble than he’s worth. He’s literally a transaction machine. He characterizes himself as a “meatball,” one who is “chock-full of implants where you can store your dirty laundry while you go off shopping for people to kill me.”⁴⁴³ The nature of his prosthesis forecloses the potential for full

⁴⁴² Gibson, *Burning Chrome*, 4.

⁴⁴³ Gibson, *Burning Chrome*, 3.

embodiment, a true sense of self. Johnny's body is figured as an information system whose essence—reducible to his prosthetic implant—is its constructedness. His internal conflict is the literal tension between his material self—“the meat,” which includes his organic and machinic parts, and his informatic self—his constructedness as a delivery vessel (a tool) of immaterial information. The “meat,” a recurring trope in cyberpunk, is a pejorative term connoting a lack of technological enhancement or sophistication. To be “meat” is to be cut off from, or disconnected from technology—to have to be embodied only in one's own flesh. Meat is dumb and crude (“meathead”) and impotent. His character arc is about getting out from beneath the wheel, and, with the help of friends, gaining a sense of his own agency. As Katherine Hayles has pointed out, a paradox of cybernetics is that on one hand it consistently views the body as constructed (of systems), and on the other hand insists on the dissolution of clearly defined boundaries.⁴⁴⁴ This leaves a clear reference point for subjectivity up for questioning, and leaves a guy like Johnny adrift—neither end of the idiot /savant equation quite jibing into a unified self. In this way, he also embodies a Cartesian mind/body split, reinscribing the notion that the body must exist separately from the ideas that perceive it.

His counterpart in the story is Molly Millions, a technologically enhanced assassin for hire. She is by all accounts the antipode of Johnny. Her prosthetic upgrades include mirrored cybernetic lenses over her eyes, lightning reflexes, and retractable razors for fingernails. With her silver mirrorshades “rising smoothly from

⁴⁴⁴ Hayles, 85.

her high cheekbones, sealing her eyes in their sockets,” and her “leather jeans the color of dried blood,” she is technologically sophisticated, savvy, and lethal.⁴⁴⁵ She’s also empowered. She inserts herself into the opening scene of the story, coming to Johnny’s rescue when he’s cornered by his blackmailing fence, Ralfi Face, and some hired muscle. Her high-end prosthetic enhancements, which cost figurative “millions,”⁴⁴⁶ endow her with preternatural capabilities to attack at will, defend, or outwit her adversaries. Through her elective prosthetic surgeries, Molly has attained a position of social power and autonomy. However, as Thomas Foster points out in *The Souls of Cyberfolk*, the trope of cybernetic enhancement “consistently conflates the experience of cybernetic embodiment and the experience of cultural commodification. The implanting of a mechanical eye replaces a body part with a commodity that carries a price tag.”⁴⁴⁷ As for Molly and countless other characters in Gibson’s fiction, enhancement is not merely about increasing one’s capabilities, but also about signaling their social status (for instance, in “Johnny Mnemonic,” Lo Tekes are a kind of punk subculture that use cosmetic and prosthetic enhancements to make themselves appear more crude; in *Neuromancer*, a bartender has an “antique Russian arm” that marks him as old-fashioned).⁴⁴⁸ Molly’s enhancements mark both her agency and social cachet. She enters the fray by choice, and with confidence and savoir-faire; it is Molly who shepherds the hapless Johnny through his story, helping him find his way, protecting him from dangers while connecting him with allies and

⁴⁴⁵ Gibson, *Burning Chrome*, 6.

⁴⁴⁶ In *Neuromancer*, it is later revealed that Molly had prostituted herself to be able to afford her enhancements, thus adding a pointed layer of complexity to the gendered, empowered cyborg figure.

⁴⁴⁷ Foster, 70.

⁴⁴⁸ Gibson, *Burning Chrome*, 20, and *Neuromancer*, 3, respectively.

key resources. Johnny is eventually able to gain a sense of his own agency only after Molly has effectively solved all of his problems. Through her street savvy, she's able to shelter him in the subculture community of the LoTek's; through her prosthetic armaments, she's able to defeat the killer chasing after them; and most importantly, through her connections, she's able to set him up with a method to unlock the encrypted information he carries. Johnny resembles the subject of Fredric Jameson's postmodern sublime who is oblivious to the greater machinations of global capital operating beyond his purview, abstracting his local reality from a bigger picture; his agency tied only to his capacity as a transactional object. Molly, on the other hand, encapsulates a more utopian potential for techno-capital, a subject who through technological embodiment, commodification, and savoir-faire can, in a meaningful way, transcend the "vulgar commonplace" of the mundane and become the hero of her own life.⁴⁴⁹

"Johnny Mnemonic" is a story that is populated almost solely by cybernetically enhanced persons, but perhaps the most noteworthy cyborg is Jones the dolphin. Jones is introduced as a friend of Molly's "who was in the navy" and "a junkie."⁴⁵⁰ As a part of an experimental program, Jones was fitted with cybernetic sensors and trained to use his sonar capabilities to "suss out Soviet submarines," and as a covert codebreaker.⁴⁵¹ His heroin habit is implied to be a result of the opiates the navy plied him with to keep him subservient. He's able to communicate with his human counterparts through the use of an LED screen that can spell out symbols,

⁴⁴⁹ Kant, *Critique of Judgment*, 108.

⁴⁵⁰ Gibson, *Burning Chrome*, 10.

⁴⁵¹ Ibid.

codes, and images. Because of his affiliation with the navy, Jones has access to a SQUID (Superconducting quantum interference detector)⁴⁵² that he can manipulate to decrypt Johnny's information prosthesis. In exchange for "pure" "*clean*" junk, Jones is able to toggle Johnny into savant mode so he can sing out "the stolen program for three hours" which manifests as "an endless tone poem in an artificial language."⁴⁵³ Jones' embodiment is actually threefold. First, he is both animal and machine. It's unclear whether his sentience is an enhancement of his inherent dolphin intelligence, or artificially constructed through his prosthetics. The prosthetics themselves feel ancient: "crusted plates" that were "clumsy and prehistoric;" "Twin deformities on either side of his skull [that] had been engineered to house sensor units."⁴⁵⁴ They indicate that he is a relic of a bygone era of primitive experimentation. So unlike Molly, Jones' sense of cyborg embodiment feels like a hindrance. He languishes in a small galvanized tank; it's only when he's been given an injection of heroin and appointed the task of helping Molly and Johnny that he begins to exhibit vitality. Thus, his animal and machine selves are only fully embodied through a catalyst: heroin. For Molly and Johnny, their cyborg selves always already hold potential to transcend the limits of the human to the posthuman. Jones, on the other hand, scans as more stereotypically Romantic—he's only able to attain a vital connection to himself—and escape from his sequestered condition—through use of narcotics. This

⁴⁵² Ibid. While in the story, Gibson defines the SQUID as a superconducting quantum interference *detector*, its real-life counterpart acronym stands for superconducting quantum interference *device*. Note that Squid is also a play on the World War II era anti-submarine weapon of the same name used to launch depth charges, and more colloquially, as slang for sailor, all of which resonate with Jones' past.

⁴⁵³ Gibson, *Burning Chrome*, 14.

⁴⁵⁴ Gibson, *Burning Chrome*, 10.

third wave of hybridity: animal–machine–altered consciousness, a trope that has become synonymous with the figure of the hacker, will be explored further in the next section.

Jones' plight brings us to the question of what can cyborgs feel? Does the extension of the external sensorium that prostheses provide register as pain, as emotion? In popular culture, the Terminator is invulnerable to pain, but Jones, it's implied, feels both a sense of bodily pain and emotional despair when he is jonesing. He has "silver lesions" between his cybernetic plates and observes Johnny with a "sad and ancient eye."⁴⁵⁵ Johnny Mnemonic is abstracted from his cyborg self for much of the story, and because his prosthesis processes non-material information, he has no sensory perception of it to speak of. With her extensive enhancements, Molly makes it through "Johnny Mnemonic" without a scratch, but when she's injured during a raid scene in *Neuromancer*, she reacts in a nonchalant manner: "Think one of them broke my leg," is all she reports after the melee. Meanwhile, her partner, who has uploaded his consciousness into her body, experiences "the agony of broken bone,"⁴⁵⁶ Eventually she's aided by "six thousand micrograms of endorphin" that "came down on the pain like a hammer."⁴⁵⁷ Molly's seeming disinterest in her own physical sensations point to a contradiction of the machine-human hybrid; there are marked inconsistencies of what they feel and how. Together, these instances suggest that being both consciously and physically embodied in a cyborg-self has the effect of diluting some extreme sensations while enhancing others. Johnny, Molly, and Jones

⁴⁵⁵ Gibson, *Burning Chrome*, 11.

⁴⁵⁶ Gibson, *Neuromancer*, 63.

⁴⁵⁷ Gibson, *Neuromancer*, 64.

enact new modes of being in the world which offer potentials for heightened and / or extended agency within the totality of techo-capital.

I turn my attention now to two other Gibson stories which reveal the ways technologies mediate how subjects connect intimately with one another, particularly in terms that stress the corporeal body as “wounded” or “vulnerable” and prosthesis as liberatory. In these stories, cyborg embodiment is conversely rendered through the male gaze or marked by the male body: a female cyborg becomes fetishized but enabled through the assistance of male agency, while a male cyborg becomes integrated and sensitized through a female romantic encounter. Recall, however, that Donna Haraway envisioned the cyborg as a hybrid with potential to transcend the limits of gender. Other critics, such as Ann Balsamo, Kaye Mitchell, and others have argued that this is not often the case. The female body, in particular, is not so easily transcended via cyborg embodiment.⁴⁵⁸

In “The Winter Market” (1985), Gibson’s narrator recounts a relationship he had with a physically disabled woman, Lise, who uses a prosthetic exoskeleton to get around. The details that Gibson uses to describe their encounter underline the sense that cyborg embodiment is both grotesque and sensual. They meet at a party, where the narrator first notices her cheekbones and “the determined set of that mouth.” He’s at first too drunk to notice her prosthetics, but then catches the “black glint of polycarbon at her wrist, and the bright slick sore the exoskeleton had rubbed there.”⁴⁵⁹

⁴⁵⁸ Kaye Mitchell, “Bodies that Matter: Science Fiction, Technoculture, and the Gendered Body,” *Science Fiction Studies*, (Vol. 33, No. 1, Technoculture and Science Fiction Mar., 2006), 114.

⁴⁵⁹ Gibson, *Burning Chrome*, 128.

While the “black glint of polycarbon” connotes the sleek, machinic efficiency we equate with cyberpunk, when it is combined with the overtly sensual and corporeal “bright slick sore,” it creates a sense of voyeurism, of revealing the private parts of Lise. And since the narrator has not formally introduced himself at this point, the reader too is caught in the discreet male gaze of the narration. The black glint of exoskeleton may as well be a flash of undergarment, but the bright slick sore exposes a deeper, more vulnerable truth about Lise. When the narrator realizes that she’s disabled, he admits that he “did what people usually did, to Lise, and clicked myself into a different movie.”⁴⁶⁰ She is defined in the story by her disability, by her prosthesis and “the terrible grace programmed into the exoskeleton.”⁴⁶¹ But conversely, cyborg prostheses often become sites of sexualization, in particularly how they define or redefine the female body. The wounds on her wrist and the “fragile looking” braces that moved her arms and legs paint a picture of the cyborg that is enhanced but not enabled—she is weak, or weaker than the narrator, and therefore elicits pity, a transaction that plays out in their later sexual encounter.

Their romantic encounter, too, involves a prosthetic device, a “fast-wipe machine,” a kind of consciousness editor that allows users to see, inhabit, and edit mental images. The machine can access the id, “Jung’s sea,” and the narrator uses the machine to package and sell people’s experiences on the black market.⁴⁶² Their interaction with the device and with each other afterward is charged with *double entendres* mixing sex with machinery: they “jacked, straight across” that first night.

⁴⁶⁰ Ibid.

⁴⁶¹ Ibid.

⁴⁶² Gibson, *Burning Chrome*, 131.

He “put the trodes on and reached for the stud on the fast wipe,” and “snapped the optic lead into the socket” along the “smooth dorsal ridge of the exoskeleton. It was high up, at the base of her neck, hidden by her dark hair.”⁴⁶³ For the male narrator, the primary mode of romantic engagement lies in accessing and penetrating her mechanical parts. By “jack[ing]” in and caressing her “dorsal ridge” he is effectively consummating his initial voyeuristic penetration of her [hidden] cybernetic self. Her femininity is rendered only through her exoskeleton; meanwhile— with the exception of her mouth— her organic self, including body parts, sexual organs, lips, and face— are left off the page altogether. They are immaterial to the story, for it isn’t Lise’s story but the narrator’s story of his encounter with her. For Lise’s part, she seems to exist so that the narrator can release her pent-up id with his fast-wipe machine. The story reinforces what Thomas Foster has argued about the fetishization of the cyborg body: “Men’s acceptance of a postmodern, fragmented body, permeated with technology, is not at all incompatible with retaining their traditional power to construct the feminine.”⁴⁶⁴ The narrator allows Lise the opportunity to transcend her corporeal, womanly-but-disabled-self by permitting her the use of his cybernetic device. By doing so, he is also facilitating a construction of her identity—via the id—that is contingent on his involvement. Lise’s humanity, it seems, only lingers in the narrator’s memory after she has been encoded; that is, retrospectively. If she is in any sense liberated as a subject by encryption onto a machine, it is to transcend both the body and the male gaze.

⁴⁶³ Ibid.

⁴⁶⁴ Foster, 72.

Like “The Winter Market,” “Burning Chrome” (1982) addresses the fetishization of the prosthetic body. In a striking scene, a romantic encounter takes place between a woman named Rikki and a man with a prosthetic arm. The main plot of the story focuses on a cyberspace heist involving two hackers, Bobby and Automatic Jack, who become involved in a love triangle with Rikki. Rikki is Bobby’s girlfriend. Bobby is a hacker, a console cowboy, and Automatic Jack, the narrator, is the “mean-looking guy with the myoelectric arm,” who is tagging along as hired muscle.⁴⁶⁵

Jack’s prosthetic is a detachable analog for a real arm, and early on in the story it’s rendered with the air of a mere object—an artifact. There is imbued from the outset an innate sense of abstraction from his prosthetic—even the introductory tag “the mean looking guy with the myoelectric arm” signals that the arm is a device, not part of himself. He even detaches in some situations when he’s using a cyberspace deck (a simstim) and prefers to connect the leads from the deck directly to the leads protruding from his stump. In one instance, he clunks it down on a table for service and operates the fingers remotely, as a kind of party-trick to annoy his partner, “the servos in the hand” “whining like overworked mosquitos.”⁴⁶⁶ “You looking to pawn that?” his partner quips. In another instance, when Rikki first comes around, he feels self-conscious when his arm is detached: “I feel a little funny if a stranger sees me working that way, with those leads clipped to the hard carbon studs that stick out of my stump.” But Rikki, to his surprise, “came right over and looked”; “She didn’t say

⁴⁶⁵ Gibson, *Burning Chrome*, 181.

⁴⁶⁶ Gibson, *Burning Chrome*, 183.

anything, just watched.”⁴⁶⁷ This meet-cute is notable in that, even though Jack is the first-person narrator of the story, it is Rikki who is observing the action—her female gaze assumes the focal point of view of the scene.

Unlike the narrator of “The Winter Market,” there is observation but no perceivable objectification, no fetishization of the prosthetic body part. We can attribute this to the fact that even though Rikki is the observer of the scene, the story is still from the subjective point of view of Jack, and to the fact that the arm is not attached to him in this scene; he’s still abstracted from it. Rikki observes but doesn’t act—we don’t know her thoughts at this point—and this sets up a scene later in the story when the two have a romantic encounter. When Bobby has to skip town for a while, Rikki and Jack are holed up in Bobby’s apartment. The passage is notable both for Gibson’s indelible style and his deft touch:

I was standing by the bench, looking up at that sky, stupid with the hot afternoon, the humidity, and she touched me, touched my shoulder, the half-inch border of taut pink scar that the arm doesn’t cover. Anybody else ever touched me there, they went on the shoulder, the neck...

But she didn’t do that. Her nails were lacquered black, not pointed, but tapered oblongs, the lacquer only a shade darker than the carbon-fiber laminate that sheathes my arm. And her hand went down the arm, black nails tracing a weld in the laminate, down to the black anodized elbow joint, out to the wrist, her hand soft-knuckled as a child’s, fingers spreading to lock over mine, her palm against the perforated Duralumin.

Her other palm came up to brush across the feedback pads, and it rained all afternoon, raindrops drumming on the steel and soot-stained glass above Bobby’s bed.⁴⁶⁸

Rikki begins by tracing Jack’s amputation scar, unflinchingly, that place of vulnerability “that the arm doesn’t cover.” Because she first focuses on the place that

⁴⁶⁷ Gibson, *Burning Chrome*, 185.

⁴⁶⁸ Gibson, *Burning Chrome*, 188-189.

others had avoided—most likely out of their sense of guilt or awkwardness: “they went on the shoulder, the neck...”; safer spots—we understand that her gesture is one of sincere interest and not objectification. His “taut pink scar” scans similarly to Lise’s “bright slick sore” from “The Winter Market,” but here the “taut” wound is one that has more fully healed; a marker of some past trauma, but one that is never referred to or developed. The emphasis instead is given to the point of connection between Jack’s organic body and his machine part, a connection that is exposed both by the scar and the gesture drawing the reader’s attention there.

Another connection can be made between Rikki’s hand and Jack’s myoelectric arm. Her black lacquered nails are set in contrast against the pink of his skin, and at the same time compliment the carbon fiber of his prosthetic limb (“only a shade darker”). The black lacquer itself is technical, artificial, like his arm, and the technical terms reinforce this pairing—the “carbon fiber,” the “weld in the laminate,” and “the black anodized elbow” terminating in the “perforated Duralumin”—all work to underline an overlaying of constructed and fleshy forms of embodiment. Rather than fetishizing his artificial limb, her gesture works to simultaneously call attention to it and to normalize its features. She treats it as a naturalized and fully integrated part of him, understanding that to touch him there—along his “feedback pads”—is to elicit a particular feeling that he does not ostensibly feel anywhere else. Her sexual connection to him is rendered by her organic sense of touch and through his prosthetic arm that is both artificial and phallic, but it is also an intimate connection to

Jack's sense of self, a part that he was previously detached from and self-conscious about.

Both Lise's exoskeleton and Jack's prosthetic arm work to delimit their definition as subjects in terms that are both implicitly and explicitly gendered. These stories might seem to undermine the cyborg trope which Haraway claims can emancipate gender (since they seem to be accentuating a gender/prosthetic as defining features of the subject). But taken more broadly, cyborg also operates more broadly to emancipate the self from its corporeal constraints. Dani Cavallaro, in her study of William Gibson's work, articulates the ways in which prosthetics pronounce the limits of the body:

Prostheses enhance our bodies, but they also remind us of our failings, thus endowing us with a double identity: the better self and the failing self. Prostheses refine our capacities and alert us to our incapacities; they consolidate the edges of our bodies and / simultaneously blur them. Indeed, by pointing to what is missing in and from the body, they radically question the body's integrity. Prostheses are there to remind us that we have always already slipped from the planes of completeness and self-sufficiency. We can never be totally sure where our edges are, where we begin and where we end.⁴⁶⁹

Whether prosthetics constitute the bodily experience (as in Ihde and Stiegler), extend the body (like Molly and Johnny), or complete the body (like Automatic Jack), for Cavallaro, what prosthetic embodiment does is to underline our pre-existing uncertainties about our own sense of self. They call into question not only how we can define and know the self, but in a broader sense, these machine /body narratives

⁴⁶⁹ Dani Cavallaro, *Cyberpunk and Cyberculture, Science Fiction and the Work of William Gibson*, (London and New Brunswick: The Athlone Press, 2000), 50-51.

work to express anxieties about the Nature /Culture divide.⁴⁷⁰ To this end, I now turn my attention to examine the ways that the cyborg can be *disembodied* through cybernetic augmentation. I will focus in particular on the representation of *disembodiment* in Gibson and Tiptree, Jr.'s work.

Embodiment Systems I: The Extended Mind

As I've elaborated on previously, in "The Girl Who Was Plugged In," P. Burke is elicited to serve as a "remote" mind for an artificially grown body, Delphi. While P. Burke is grotesquely disfigured ("the ugly of the world"), Delphi's "perfect girl-body" is likened to "porno for angels."⁴⁷¹ Wired into a cybernetic cabinet, P. Burke is able to inhabit Delphi in a way that feels fully embodied, yet her real, physical body is encumbered and restricted by the cabinet, set in a basement miles apart from Delphi. Nevertheless, when she's in the cabinet, what P. Burke thinks and feels is in reaction to Delphi's environmental inputs. As the narrator makes clear: "P. Burke does not *feel* her brain is in the sauna room, she feels she's in the sweet little body."⁴⁷² Delphi, along with the cybernetic cabinet, form a technological medium through which P. Burke's nervous system cognizes input.

To add an analytical layer, let me return to a previous illustration for a moment; recall that, in what Don Ihde terms embodiment relations, our perceptions and interactions with the external world are facilitated—constituted—by technological prostheses. I share in his and others' determination that humans have always moved,

⁴⁷⁰ Ann Balsamo, "Forms of Technological Embodiment: Reading the Body in Contemporary Culture," *Cyberspace, Cyberbodies, Cyberpunk: Cultures of Technological Embodiment*, edited by Mike Featherstone and Roger Burrows, (London: Sage Publications, 1995), 215-216.

⁴⁷¹ Tiptree, Jr, 44 and 48.

⁴⁷² Tiptree, Jr, 49. Italics in the original.

felt, and understood the world through technological mediation. It should take no great intuitive leap, then, to believe that our cognition, too, is technologically mediated. Somewhat controversially, Andy Clark and David Chalmers have argued what has since come to be known as the extended mind thesis. They argue that rather than conceive of cognition as an act that emanates solely from the head and brain of the subject, cognition actually presents as a process that is distributed across and through multiple systems and objects, resulting in a coupled system that can be seen as a cognitive system in its own right.⁴⁷³ For example, they suggest that a person with Alzheimers, “Otto,” who might use a notebook to record information such as directions, names, addresses, and personal info, and who refers to the notebook as another might refer to their own memory, are both cognizing in a similar way. If Otto were to meet his partner at the theater on 53rd street, the partner might remember the way there without the need of directions, but Otto’s “memory” of the directions are extended to the notebook. His notebook, pen, and mental processes form a single cognitive system.⁴⁷⁴

It may become evident now that P. Burke extends her cognition similarly to Otto, only the notebook is replaced with a sophisticated system of electronics, and Delphi as the artificial sensing tool. In the same way that Otto constructs and processes his world through his notebook, P. Burke’s world is processed and constructed through the use of Delphi. But to be clear, P. Burke’s mind is not *in*

⁴⁷³ Andy Clark and David J Chalmers, “The Extended Mind,” *The Extended Mind*, ed. Richard Menary, (Cambridge and London: The MIT Press, 2010), 29.

⁴⁷⁴ Clark and Chalmers, 37.

Delphi, Delphi is merely part of the extension of her cognition. The narrator illustrates this analogy when he asks the reader

When you wash your hands, do you feel the water is running on your brain? Of course not. You feel the water on your hand, although the feeling is actually a potential-pattern flickering over the electrochemical jelly between your ears. And it's delivered there via the long circuits in your hands. Just so, P. Burke's brain in the cabinet feels the water on her hands in the bathroom. The fact that the signals have jumped across space on the way in makes no difference at all.⁴⁷⁵

Tiptree, Jr. points out to us an ironic connection between the remote wiring of an electronic device and the "electrochemical" wiring of the human nervous system. If modern readers will take for granted that electronic devices can be used as extended sensing tools, and as such, extensions of our cognition (such as the gap between a satellite and the GPS one uses on their mobile phone), it may still seem a flight of fancy that our own organic sensing apparati could be extended in the same way. It's worth reiterating that when P. Burke is enclosed in the cabinet, which serves as a *de facto* sensory deprivation chamber, she does not see or feel anything of her immediate environment. Instead, everything she feels and thinks occurs on the other side, through the medium of Delphi. While the clear pun on the Oracle at Delphi is worth its own extended study, it will suffice to state here that in the story, Delphi is figured as a kind of celebrity goddess who is adored and looked up to as a paragon of consumer culture. And P. Burke, through her actions inhabiting Delphi, becomes more fully embodied *as* Delphi, admired as such.

⁴⁷⁵ Tiptree, Jr., 49.

Embodiment Systems II: The Embodied Mind

P. Burke is both *extended* via Delphi and *embodied* in Delphi. Clark and Chalmers' extended mind thesis argues that the way we use tools to help us process the world is a form of thinking, and even goes so far as to suggest that our perceptions and beliefs are similarly cognized through extensions in the environment. Even if Otto doesn't physically remember where the theater is or how to get there, he still holds a perception of where it is that is constructed by notebook and mind. Additionally, if his partner believes the theater is on 51st, because that's what she remembers, and Otto believes it is on 53rd (because it is written in his notebook), then there is little to argue that a belief is solely contained in "skin and skull."⁴⁷⁶ Thus, a cognizing system can extend to and be distributed across mental processes, memories,⁴⁷⁷ writing aids, archives, image devices, and so on. These environmental objects form part of a cognizing machine with the organism, but Clark and Chalmers do not in their essay go as far to describe how cognition itself can be embodied.

We can distinguish an embodied mind from an extended one by focusing attention not on what objects belong to a cognizing system, but on how that system interacts with an environment. Led by Chilean neuroscientist and noted cyberneticist Francisco Varela, a movement to understand cognition as embodied grew out of

⁴⁷⁶ Clark and Chalmers, 34.

⁴⁷⁷ For more about memory, see Roberto Fernandez-Romero, MD, MPH, PhD, D, and Malcolm Spica, PhD, "Memory Dysfunction," *Continuum: Lifelong Learning in Neurology*, Vol. 26, No 6 (December 2021). There is much still to be understood about how memories are formed, but neurologists understand that discrete memories aren't stored in specific areas or on particular neurons, but that encoding, storage, and recall occurs across multiple neural pathways, or "association cortices," contingent on type of memory and access situation. Both the Papez circuit and Limbic system serve as control / trigger systems, or *de facto* CPUs for memory function.

second-order cybernetic discussions in the late 1980's that revolved around how cybernetics could better understand and describe human experience. In parallel with other thinkers of the time, including Donna Haraway and Pierre Bourdieu, Varela and his coauthors understood the principle that knowledge is situated in and contingent on one's environment; for instance, the knowledge situated in and produced by a traditional culture in say, the Yoruba, differs greatly from the knowledge that has produced this dissertation.⁴⁷⁸ What Bourdieu calls *habitus* and Haraway calls situated knowledge refers to the way that knowledge is organized and consecrated by cultural and environmental factors such as social practice, community resources, cultural status, and one's position in relation to those. Varela may be discreetly referring to phenomenology, the branch of philosophy that posits that conscious reality is only observable from direct lived experience. That is, our conscious reality—what is knowable—is an embodied experience, not a product solely of the intellect. Parsing the entire field of phenomenological thinkers, beginning, say, from Kant and Hume to Heidegger and Merleau-Ponty, would be impractical here. Suffice to say that Kant, whose shadow looms over this work, insisted that while some concepts may be innate (noumena), most of what we can understand about the universe can only be rendered through our sensory faculties (phenomena). I elaborate on the thought of Martin Heidegger and Maurice Merleau-Ponty elsewhere in this work. But keeping in mind this strain of thought shared by thinkers as diverse as Kant and Heidegger and

⁴⁷⁸ Susan Verran's ethnography of the Yoruba people, *Science and an African Logic*, offers a fascinating investigation of how something as deeply ingrained in Western culture as arithmetic can develop in a completely different—and arguably more complex—manner, given a different set of practical needs.

Bordieu and Haraway, and recalling once more Don Ihde's embodiment relations, which stipulates that our perception of the world is mediated by technology, we can begin to sketch out a notion of embodied cognition.

Embodied cognition, or enaction, as Varela terms it, is cognition that results from an organism's interaction with its environment, but more specifically, it describes how cognition is a kind of emergence that takes place from action, and that action, by definition, must be embodied. They write:

First, that cognition depends upon the kinds of experience that come from having a body with various sensormotor capacities, and second, that these individual sensormotor capacities are themselves embedded in a more encompassing biological, psychological, and cultural context. By using the term action we mean to emphasize once again that sensory and motor processes, perception and action, are fundamentally inseparable in lived cognition.⁴⁷⁹

Varela stresses, somewhat differently from Clark and Chalmers, that cognitive processes are a result of the entire embodied organism, those complexes of "sensormotor capacities" that reside across several disparate and sometimes dyssynchronous networks. So it is not just my brain and nervous system doing the heavy lifting of cognition, and not just my brain and associated objects, like smartphone or laptop, but also the mechanism of my fingers hitting the keys on the keyboard—enacting both muscle memory and tactile experience—and how I'm positioned in my chair; positioned in the room; the computer screen that reveals bit by bit the output of my cognition and creates a feedback loop of continued cognition; and the window I occasionally stare out of to see the high trees above Santa Cruz...

⁴⁷⁹ Francisco Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience*, (Cambridge: MIT Press, 1991), 173.

For Varela and his fellow cyberneticists, thinking is a form of action, of total embodiment.

As I will elucidate, embodiment takes on a timbre of several different, sometimes competing forms, which sometimes obscure the subject and at other times offer processes through which subjectivity can emerge. In “The Girl Who Was Plugged In,” P. Burke’s interaction through Delphi exemplifies Varela’s notion of enaction. I’ve established that P. Burke “does not *feel* her brain” when she’s “in that sweet little body,” because Delphi extends her perceptive capacity beyond her immediate environment. Delphi herself (so much as she can be considered a self) is variously described as “a real live girl,” and “in no sense a robot,” but without her remote operator, “it’s just a vegetable” (note the use of “it’s” and not “she”).⁴⁸⁰ She would seem to occupy a liminal state between an extension of P. Burke as a [real-life] girl and a lifeless golem—a fact alluded to later in the story when Delphi “sleeps like the dead” when P. Burke isn’t in the cabinet.⁴⁸¹ But as I will argue here, Delphi should not be considered merely a body inhabited by P. Burke, but as an entity that is entirely distinct from P. Burke. This is because when P. Burke thinks and feels in her own body (the “girl brute” and “forgotten hulk”), she both experiences and cognizes the world in those terms. If we keep in mind that action and cognition are inseparably linked, then we understand P. Burke’s embodied cognition to be limited by the type of actions and interactions allowed both physically and socially by her grotesque disfigurement. What she then understands of the world is their abuse or outright

⁴⁸⁰ Tiptree, Jr., 54 and 49 respectively.

⁴⁸¹ Tiptree, Jr., 59.

disregard for her. For instance, early in the story, as she's part of a crowd of "mortals," beholding godlike celebrities on TV screens, she's first "squashed against a wall," then "pushed along by the crowd," before being dropped, and "her face reverts to its usual expression of dim pain."⁴⁸² P. Burke cognizes her world in terms of pain and shame. What she thinks, it's implied, is that she is "mortal" and beholden to the higher powers of commodity fetish.

As such, she is embodied in a way that is fundamentally distinct from Delphi. Delphi is double inscribed as both celebrity commodity and female sex object, the polar opposite of P. Burke. What emerges is a self that conflates P. Burke's pained worldview with Delphi's situatedness in a lifestyle of the rich and famous. When Delphi interacts with her cadre of TV celebrity peers—most of whom are "real"—she does so as a subject who is fully immersed in her environment; an environment, I'll add, that is completely curated by the media corporation GTX. Delphi has been deliberately created, in fact, to participate in what can only be likened to the "society of the spectacle,"⁴⁸³ a social environment whose commodity is the image itself, in this case Delphi. So while P. Burke is sequestered in an underground laboratory cabinet, Delphi is immersed in a different world. It is in such a world that, as Scott Bukatman has noted, "Delphi functions as a 'virtual body' for Burke, one which negotiates the virtual reality of spectacular culture...Delphi is a literal 'embodiment' of the vicarious pleasures available in the society of the spectacle."⁴⁸⁴ P. Burke, in her own

⁴⁸² Tiptree, Jr., 44.

⁴⁸³ Guy Debord, *The Society of the Spectacle*, [trans. unknown], (Detroit: Black and Red, 1983).

⁴⁸⁴ Bukatman, *Terminal Identity: The Virtual Subject in Postmodern Science Fiction*, (Durham and London: Duke University Press, 1993), 318.

embodiment, is marked as incapable and ineligible to interact in such an environment—her body and mindset would be completely alien. Thus, when P. Burke is embodied as Delphi, she is not herself. Delphi “lives” via a particular embodiment of P. Burke in a specific environment, what Jacob von Uexkull termed a “lifeworld,” or *Umwelt*. Umwelt is a conceptualization of the ways in which organisms interact with their environments. Von Uexkull proposed that the animal is co-constitutive of its own lifeworld. Jonas Andersson Schwarz applies von Uexkull’s theory toward the implications that Umwelt has for media environments (like P. Burke’s) by relating them to the notion of “surrounds”—which are controlled, multi-image, multi-soundsource media environments—like the one the Delphi is immersed in. Schwarz writes that “twenty-first century media surrounds are cybernetic systems of feedback and control, based on digital signals indexing physical phenomena, interfaces and algorithms translating abstract instructions into material being.”⁴⁸⁵ If the complex perceptual system comprising P. Burke, her cybernetic cabinet, and the avatar Delphi can be likened to such a media surround, then we can surmise that Delphi exists as part of a lifeworld that is altogether separate from Burke’s. Delphi does exist materially, and her emotional and sensory affects are contingent on her—and not P. Burke’s—materiality.

How would embodied cognition work, then, in a state of non-materiality?

Such would be the case in considering cyberspace—a trope as ubiquitous as the cyborg in cyberpunk fiction. From William Gibson’s matrix to *The Matrix* (1999),

⁴⁸⁵ Jonas Andersson Schwarz, “Umwelt and Individuation,” *Digital Existence: Ontology, Ethics and Transcendence in Digital Culture*, ed. By Amanda Lagerkvist, (London and New York, Routledge, 2019), 65.

cyberspace, as it goes, is figured as a virtual network space (ie: the internet) where human subjectivity can be virtually instantiated. While much has been written elsewhere about the political and theoretical implications of cyberspace, I delimit my examination of it here to consider which cybernetic principles might inhere in representing a virtual human consciousness. Popular depictions of cyberspace often feature both human and artificial consciousness, but I choose to distinguish between the potential for human, organic, virtual embodiment and the potential for an inorganic, artificial consciousness. This distinction is important because at stake is the consideration of two discrete forms of subjectivity—the organic and inorganic—that should be addressed separately to give each their respective light. The latter form, inorganic consciousness (read: artificial intelligence), I take up as the subject of chapter five.

(Dis)Embodiment Systems

At the climax of Gibson's "The Winter Market," Lise, due to a combination of her debilitating illness and her ascendancy as a popstar, has arranged for her consciousness to be transposed into a digital "construct," a program that ostensibly houses Lise's personality so that she can continue to exist as a person beyond the limit of her physical body. As discussed earlier, the promise of technological empowerment drives much of science fiction. However, it's uncertain even for Casey how real the program of Lise is. While built in her image, the program is only her so much that "it pretends to be Lise to the extent that it believes it's her." In other words, it's implied that something of Lise is lost in the translation from her physical

embodiment in “polycarbon and hated flesh” to the zeros and ones of a computer program.⁴⁸⁶ The construct of Lise on a ROM drive calls into question whether or how much one can really transcend a cybernetic sublime of this kind. On one hand, the prospect of freedom from her “poor sad body” recalls the brand of technological liberalism that can be traced from Jules Verne to Issac Asimov to Gibson himself, and which is directly critiqued in “The Girl Who Was Plugged In,” that is, the articulation of technology with both social and individual progress. For Lise, the prospect to live on beyond embodiment in “cybernetic immortality” is liberating. However, Casey, who in retrospect recognizes how much he cared for her, and how human she was “in a way I hated myself for admitting” is reluctant to reestablish contact with her because he is uncertain who—or what—actually exists as the construct. “If she calls me,” he asks his friend, “is it *her*?”⁴⁸⁷ Is it the real Lise, or is it the persona, the popstar now “taking up a lot of ROM on some corporate mainframe?”⁴⁸⁸ The technology is there, responds his friend, “so who, really, is to say?” Ultimately, Casey, who may represent the reader’s own dubiousness about the ascendent potential of such technology, resolves that the construct of Lise is inevitable—that whatever her humanness had been is now transfigured as a program that is human so much as it believes itself to be so. In short, the types of technological sublime which offer transcendence through systems of disembodiment, such as cyberspace or ROM drives, in so doing also create new modes for subject-being.

⁴⁸⁶ Gibson, *Burning Chrome*, 148.

⁴⁸⁷ Gibson, *Burning Chrome*, 149.

⁴⁸⁸ Gibson, *Burning Chrome*, 150.

Similar to Gibson's Lise, Pat Cadigan imagines what might be the stakes of existing as an disembodied self. In her story, "Pretty Boy Crossover" (1986), the narrator is a "Pretty Boy," a sixteen year old participant in a high tech, high fashion club culture. The reader is informed by an epigraph that the Pretty Boy Credo is "Watch or Be Watched," and the youth culture of the story is pure society of the spectacle, all pop and vacuousness.⁴⁸⁹ With their focus on image over substance, Pretty Boys are, like P. Burke's Delpi, the ones who set the scene and create the hype. The narrator is lucky enough to still get into the best clubs where only the "Prettiest Pretty Boys can get in any more."⁴⁹⁰ They don't think; they can only dance and be pretty. But the narrator *does* think—subversively so—in the middle of the dance floor, he wonders "*how many Einsteins have died of hunger or thirst under a hot African sun?*"⁴⁹¹ In other words, he possesses a quality of self-reflection that sets himself apart from his peers, and although he enjoys being seen and chased by the other club goers, Pretty Boys and Pretty Girls alike, he worries that he only has a limited time left in the limelight: "Two years?..By three it will be def over and the Mohawk on the door will as soon spit in his face as leer in it." This is a concern for the narrator because, "What was the point of Pretty if there was nobody to care and watch and pursue?" There is, however, another option for kids like him—if he's popular enough his consciousness can be uploaded into pure video form, and his image-consciousness

⁴⁸⁹ Pat Cadigan, *Patterns*, (Kansas City, MO: Ursus Imprints, 1989), 129.

⁴⁹⁰ Cadigan, 130.

⁴⁹¹ Ibid. Emphasis in the original.

can be projected on to large wall-size displays, “then it’s never over and he can be wherever he chooses to be and wherever that is will be the center of the universe.”⁴⁹²

This sets up the primary tension of the story between the power of the image and the value of one’s embodied mind. This conflict is brought into sharp focus for the narrator when he recognizes that his fellow Pretty Boy, Bobby, has made the crossover to projected image, his “face on the screen, sixteen feet high, even Prettier than he’d been when he was loose among the mortals.”⁴⁹³ Besides the opportunity to be immortalized on screen and be the center of the universe, crossing over is also supposed to heighten the senses, although the narrator observes that “Bobby looks kind of blind up there on the screen.”⁴⁹⁴ The narrator is unsure at first if the “giant Bobby-face” is self aware enough to recognize him in the crowd, and he has misgivings about whether or not he is really conscious, or even sentient up there, or just a mindless, moving, pure image.

The narrator’s misgivings about making the change are brought to a head when he is brought before the powers that be (“they”) in an attempt to convince him to join Bobby on screen. On one hand, changing over is likened to a transcendental state of being, as there is evidently “no more exalted a form of existence than to live as sentient information.”⁴⁹⁵ This, for Pretty Boys and Pretty Girls, is the ultimate accomplishment in the society of spectacle—they are the paragons of “Watch or be Watched,” existing in a seemingly perpetual state of hedonistic bliss. But of course

⁴⁹² Cadigan, 130.

⁴⁹³ Cadigan, 131.

⁴⁹⁴ Ibid.

⁴⁹⁵ Cadigan, 134.

the caveat is that “the process isn’t reversible,” because “Once you’ve distilled something to pure information, it just can’t be reconstituted in a less efficient form.”⁴⁹⁶ On the other hand are the narrator’s doubts about how *real* the video Prettys are. Is Bobby just “a blip on a chip”?⁴⁹⁷ Is he real “just because I can see him on a screen?” He remains unconvinced when they assure him that it “*is* Bobby and it will remain Bobby no matter what, whether he’s poured into a video screen...or transmitted the length of the universe.”⁴⁹⁸

The question raised by the narrator of “Pretty Boy Crossover” illustrates a fundamental problem of the “uploaded consciousness” trope: how can an organic mind in all its complexity (human or nonhuman) be translated into computational terms? Hans Moravec, the controversial cyberneticist, theorized a “neural substitution argument” which postulates that if the specific function of a neuron can be replaced with an exact electronic substitute, then it would be feasible to translate the function of the brain into electro-mechanical terms; ie, given enough scale, one ought to be able to upload one’s mind into a computer.⁴⁹⁹ Moravec maintains that it’s only a matter of time before computers replace human brains altogether. An uploadable consciousness is not only desirable, it is a clear point on the horizon. In this line of thinking, the computer, it would seem, could possess manifold greater computing power than our mushy gray matter. Many would disagree. N. Katherine Hayles, in her critique of Moravec in *How We Became Posthuman*, recalls Fransisco Varela when

⁴⁹⁶ Cadigan, 134.

⁴⁹⁷ Cadigan, 136.

⁴⁹⁸ Cadigan, 135.

⁴⁹⁹ Hans Moravec, *Mind Children: the Future of Robot and Human Intelligence*, (Cambridge and London: Harvard University Press, 1988), 109-110.

she concludes that “human mind without human body is not human mind.”⁵⁰⁰ That is to say, that the “circuitry” of human neural connections is so tied to the organism itself that it cannot be disentangled from the whole. So while the narrator of “Pretty Boy” still yearns, like Bobby, to “break out of the three dimensional level of existence,” and “pioneer a whole new plane of reality,” he maintains, at least subconsciously, the significance of his body-boundedness.⁵⁰¹ He knows that as “long as he has flesh to shake and flaunt and feel with, he makes a pretty goddam big difference.”⁵⁰² In other words, he resists the notion that human subjectivity can be translated so neatly into other forms, and the “big difference” is simply his refusal to buy into the spectacle.

“Pretty Boy Crossover” is yet another example that underscores the question of humanness in a cybernetic reality and asks whether one can transcend via technological disembodiment. The narrator, like Casey in “The Winter Market” maintains a certain ambivalence about the unilateral flow of consciousness from material to immaterial states of being. For these characters, the meaningfulness of conscious mind—what Luhmann calls a psychic system—inheres in its ability to continue defining itself in terms of its organic boundedness; to be disembodied means to be disconnected from something essential about humanity—its boundedness in physical, organic senses like touch and sight. The type of sublimity that emerges in these stories does not entail a posthuman transcendence beyond the bounded living being, but rather a reinscription of those very boundaries, a type of meaningfulness

⁵⁰⁰ Hayles, 246.

⁵⁰¹ Cadigan, 135.

⁵⁰² Cadigan, 138.

that occurs by having glimpsed the view from the other side of the abyss and come to the realization that humanity means to be physically embodied. However, their stance runs counter to the more liberatory and more celebrated facets of “uploaded consciousness”—which finds its spokespersons in Neo in *The Matrix* and Case in William Gibson’s *Neuromancer*. In the next section, I continue my examination of what it means to transcend technological systems as I consider the cybernetic sublime in light its spiritual antecedent, the Romantic tradition.

New Romancers and Technological Liberation

In *Neuromancer*, Case—Henry Dorsett Case—is a hacker, a “console cowboy” blackmailed into doing a job by his shadowy employer, Armitage. As a hacker, Case spends as much time as he can wired to his “simstim deck,” a type of computer interface that allows him to upload his consciousness into the matrix. Like many of the characters that populate the novel, he is embodied as an admixture of both organic and machinic augmentation. He was, according to Armitage, “invented” in Siberia; implanted with “microsofts”—taken to be small organic ports in which are inserted computer jacks; and boobytrapped with a neurotoxin that would release into his brain if he doesn’t comply with his blackmailers.⁵⁰³ Immune to all but the hardest drugs, Case is “biochemically incapable of getting off on amphetamine or cocaine.”⁵⁰⁴ And like other hotshot cowboys, he holds a “certain relaxed contempt for the flesh,” which he views as mere “meat” and a “prison.” Case is disaffected, drug-addled, and cyberspace addicted. And so he yearns to escape the prison of his flesh by uploading

⁵⁰³ Gibson, *Neuromancer*, 28.

⁵⁰⁴ Gibson, *Neuromancer*, 36.

his consciousness into the matrix. “The cyberspace matrix,” Gibson writes, “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.”⁵⁰⁵ Flesh is mortal and limited in capacity; in the world of cyberpunk, it is nothing more than meat, unsophisticated and dumb. On the other hand the matrix, Gibson’s imagining of a global computer internet, offers the promise of a kind of unfettered autonomy to its users.⁵⁰⁶ “Meat” ought to be augmented with prostheses, as outlined earlier, or left behind altogether.

As the title *Neuromancer* alludes, he is akin to the 18th century Romantics who sought in nature a power and vastness that mirrored the transcendent potential of one’s own imagination over both the bounds of embodiment and the entrapment of rational society. In the Romantic sublime, the subject is confronted not with an object of nature for which the imagination has no faculty, but rather the vastness and dynamic force of natural objects become stand-ins for the subject’s imagination itself. Emily Brady points out that in the Romantic tradition, “the self is situated in a relationship of interdependence with nature, not determined by it or seeking power over it.” The vitality of nature is “essential for captivating the subject’s imagination and enriching the self. Nature and the self therefore become interwoven.”⁵⁰⁷ It is

⁵⁰⁵ Gibson, *Neuromancer* 44.

⁵⁰⁶ Paradoxically, while users feel liberated by the extension of their consciousness to match the expansiveness of the matrix, they are yet bound by both flesh and physical space to the point in real physical geography where they “jack-in” or connect. A bad actor may, for example, seek out where in real space and time a hacker is connected to their stimstim deck and snuff them out there. Case is caught with his metaphorical pants down on at least two occasions.

⁵⁰⁷ Emily Brady, *The Sublime in Modern Philosophy: Aesthetics, Ethics, and Nature*, (Cambridge, UK: Cambridge University Press, 2013), 100.

nature's infinitude that becomes a mirror for the dizzying breadth of the poet's imagination. Take for instance the following passages from Percy Bysshe Shelley's "Mont Blanc" which serves to connect the poet's mind with the powers of nature he beholds:

Dizzy Ravine! and when I gaze on thee
I seem as in a trance sublime and strange
To muse on my own separate fantasy,
My own, my human mind, which passively
Now renders and receives fast influencings,
Holding an unremitting interchange
With the clear universe of things around
[...]
The secret Strength of things
Which governs thought, and to the infinite dome
Of Heaven is as a law, inhabits thee!
And what were thou, and earth, and stars, and sea,
If to the human mind's imaginings
Silence and solitude were vacancy?⁵⁰⁸

The sheer cliffs, ravines, and raging torrents empower Shelley by self-reflexively reminding him of the "fast influencings" of his own mind racing just as animatedly as nature, attaining even a coequal rapport in its "unremitting interchange / With the clear universe of things." The poet revels in the liberatory power of his own imagination as it moves as freely as nature; more free, no doubt, than his mortal body, which is time and gravity bound. There's a trade off then, where the mind is freed through reflection upon nature, even if the body is threatened or otherwise made insignificant under the shadow of the mountain. In another example, take the

⁵⁰⁸ Percy Bysshe Shelley, "Mont Blanc: Lines Written in the Vale of Chamouni," Poetry Foundation.org, The Poetry Foundation.

beginning of John Keats' "On Seeing the Elgin Marbles," where the poet poses the frailty of the human form in the presence of nature.

My spirit is too weak—mortality
Weighs heavily on me like unwilling sleep,
And each imagined pinnacle and steep
Of godlike hardship tells me I must die
Like a sick eagle looking at the sky.⁵⁰⁹

Here even the burden of physical mortality is lightened by the look skyward—perhaps in its lament for flight, or in astonishment of the "imagined pinnacle." The Romantic looks perpetually toward nature, the emblem of autonomy of their imagination over body. He yearns for release. So too, does Case.

Several critics have considered the link between the Romantic imagination and the frontier narrative myth, most infamously in Fredrick Turner Jackson's essay "The Significance of the Frontier in American History" which posited that westward expansion, ennobled by a Romantic ethos that elided rebellious spirit, rugged individualism and the natural plenitude of North America with "unlimited opportunity," became the foundational trope of American democracy. Jackson's "frontier thesis" had become de facto thinking about American identity by the time that Roderick Nash's seminal book *Wilderness and the American Mind* appeared in 1966. While Jackson's essay celebrated the Romantic ethos that compelled manifest destiny, Nash's book offered the first noteworthy critique. Nash's argument contended, in part, that the American frontiersman arose from this country's puritan heritage and not primarily from a sense of Romantic entitlement which sought in

⁵⁰⁹ John Keats, "On Seeing the Elgin Marbles" *Poetry Foundation.org*, The Poetry Foundation, <https://www.poetryfoundation.org/poems/52305/on-seeing-the-elgin-marbles>

nature a match for the individual. Notwithstanding, both contend that the American frontiersman, whose essential figure became the cowboy, did ultimately derive from a Romantic sensibility. Sublimity of this sort is most evidenced in frontier narratives such as *The Expedition to the Rocky Mountains and California of 1842*, composed by John C. Fremont and his wife Jesse Benton Fremont.

In a more salutary gesture, Emily Brady correlates the Romantic ethos with a particularly American individualism which she brands as “the North American Wilderness Aesthetic.” For Brady, the sublime clearly manifests in the nature writing associated with nineteenth century American Romanticism such as Emerson, Thoreau, and particularly in John Muir. But this American aesthetic takes neither the form of Romantic sublime associated with Wordsworth and Coleridge, whose “brief romantic adventure into a wild place like Mont Blanc” might be more akin to nature worship, nor the type associated with Jackson’s frontier thesis, which posited in more Kantian terms the individual over nature, but rather as a natural respect that emerges through an “embodied experience of the mountains” that only comes through inhabiting wild places for some length of time.⁵¹⁰ That is to say, for people like John Muir who spent copious amounts of time absorbed in and reflecting upon the wilderness, the sublime becomes “a conduit between self and nature,” which works to “reconfigure the self in relation to nature, where the self experiences itself as limited human nature” rather than elevating the sense of self toward a capacity to exceed

⁵¹⁰ Brady, 113.

nature. In this way, writers like John Muir share much affinity with cyberpunk protagonists like Case, who seek a differently embodied experience.

More recently, in *New Romantic Cyborgs*, Mark Coeckelbergh has pointed out how Case, roaming the vastness of cyberspace as a “console cowboy” reinscribes the classic American mythos of the cowboy as romantic hero:

The North American cowboy is a romantic myth, connected to the myth of the Wild West, which is about liberation from the Old World and about finding the wild. The cowboy finds a way to live with nature, far from civilization. He is a romantic hero located outside society, wandering and leading a rather solitary life, rejecting social norms. Similarly, the romantic cybercowboy explores a new world, a terra nova, and seeks freedom and a new kind of wilderness, in which he or she wanders as a solitary figure and deals with the raw forces in cyberspace. In addition, there is also the figure of the *rebel* and—typical for romanticism—the *artist*.⁵¹¹

In *Neuromancer*, a contrast is drawn between the body, “meat,” marked as immanent and emasculating, and cyberspace, marked as emancipatory, ennobling, and transcendent. Case’s flesh-bound body is constrained by both its physical limits and the material conditions he’s imbricated in—his body is boobytrapped and blackmailed—and he is, like Gibson’s earlier character Johnny Mnemonic, subjugated by ambiguous social and economic forces. The physically embodied self is thus diminished, a subject who, like the speaker of Keats’ poem, feels invalidated under the shadow of such forces. In matrix, however, he exhibits much more autonomy, effortlessly manipulating multiple programs, running countermeasures against anti-intrusion software, and most of all, deftly navigating the disorienting “consensual hallucination” that is the matrix, in its myriad of strobing geometric patterns and

⁵¹¹ Mark Coeckelbergh, *New Romantic Cyborgs: Romanticism, Information Technology, and the End of the Machine*, (Cambridge: MIT Press, 2017), 138.

“translucent planes of color.”⁵¹² In fact, Case’s only true sense of vitality occurs when he is “jacked-in,” an on-the-nose euphemism for the kind of potent masculine subjectivity that can only be acquired by enjoining flesh and machine. ““Jacking in,”” Scott Bukatman explains, “is precisely the means of disguising the discontinuity of a purely human existence by entering a flow of data in cyberspace—the subject is dissolved in the swirls of cybernetic information, but is at the same time further empowered through an extension of motility and spatial possession.”⁵¹³ The kind of spatial infinitude suggested by the matrix recalls the Romantic impulse to seek a match for the imagination in nature’s infinitude. Sabine Heuser points out an analogy between the would-be incommensurate reaches of cyberspace and Kant’s assertion that sublime forces of nature can extend both in infinite scope and infinite power, what he terms the mathematical and dynamic sublimities: “Cyberspace can be considered to be a new way of alluding to this infinity. It combines Kant’s mathematical sublime with the wild, chaotic aspects of the dynamic sublime.”⁵¹⁴

In my view, however, a cybernetic sublime does not so neatly reinscribe a Romantic ethos onto hackers and techno-punks, nor are they, like Coeckelbergh asserts, reigning-in the wild frontier of cyberspace so much as they are being subsumed by it. The totality of technological systems is such that subjectivity tends to become lost in the wash. Any kind of elevation or transcendence, as I have implied, becomes hard to track. In fact, when Case is jacked-in he’s so “absorbed in the patterns of Sense /Net ice” that he for all intents and purposes ceases to exist bodily:

⁵¹² Gibson, *Neuromancer*, 60.

⁵¹³ Bukatman, 295-96.

⁵¹⁴ Heuser, 205.

This was it. This was what he was, who he was, his being. He forgot to eat. Molly left cartons of rice and foam trays of sushi on the corner of the long table. Sometimes he resented having to leave the deck to use the chemical toilet they'd set up in a corner of the loft. Ice patterns formed and reformed on the screen as he probed for gaps, skirted the most obvious traps, and mapped the route he'd take through Sense/Net's ice. It was good ice. Wonderful ice. Its patterns burned there while he lay with his arm under Molly's shoulders, watching the red dawn through the steel grid of the skylight. Its rainbow pixel maze was the first thing he saw when he woke. He'd go straight to the deck, not bothering to dress, and jack in. He was cutting it. He was working. He lost track of days.⁵¹⁵

Case's conflict between imprisonment by the flesh and the liberatory promise of cyberspace reinscribes the Romantic sensibility to seek in objects of nature (here replaced by the technical) a kind of self-expression linked to human freedom. In the passage, both Case's rebellious character and romantic artistry are celebrated (for example, the "Wonderful ice," and "rainbow pixel maze") while the pedestrian world of everydayness is downgraded or outright neglected ("He forgot to eat," for example, "He lost track of days," and he resents "having to leave the deck to use the chemical toilet"). For Case, it would seem that the real self, the "who we was, his being," is the self jacked-in and working. His worldly, embodied self is meanwhile diminished—an irritation even that it must eat, sleep, or use the toilet. So for cyberpunk critics like Scott Bukatman and Jack Voller, Case's yearning to escape worldly embodiment and extend his consciousness into cyberspace is precisely like the Romantic turning to nature to affirm one's own subjectivity. Bukatman asserts that "Case is no longer fully defined as a subject except in cyberspace,"⁵¹⁶ while Jack Voller claims that "a

⁵¹⁵ Gibson, 58.

⁵¹⁶ Bukatman, 315.

return to the matrix is a return to Self, a rediscovery of himself and his place in the world.”⁵¹⁷ I agree with the above assessments so far as Case’s desires compel him through the narrative, but Gibson’s stories don’t resolve so neatly for his protagonists into an end result of self discovery and transcendence. One must take into mind that technology is ultimately an extension of ourselves: of our bodies, capacities, and minds. They are systems that both enable and obscure the scope of human possibilities so any sublime associated with technology must be understood to be a kind of shorthand for those possibilities of human extension.

I follow Thomas Foster’s analyses of the potential for cybernetic transcendence when he notes that “projecting one’s consciousness into the virtual space imagined to be on the other side of our computer screens does not in fact allow men to escape the conditions of our embodiment, but actually reinscribes those conditions beyond the limit of the (male) body,”⁵¹⁸ and furthermore that “encounters with cyberspace produce no exaltation of soul, no elevation of spirit. They often produce little reaction at all, but when they do, the response of the console cowboys is always personal and emotional: rage when something bad happens, fear when encountering black ice, elation when successful in stealing data or credit.”⁵¹⁹ Miryam Glazer and David G. Mead respectively have articulated the link between Neuromantics and classical Romantic figures such as William Blake, but notes that “Gibson’s outlaw heroes may be trying to reenact the romantic rebel’s journey toward

⁵¹⁷ Jack Voller, “Neuromanticism: Cyberspace and the Sublime,” *Extrapolation*, (Vol. 34, No. 1, Kent State University Press, 1993), 27

⁵¹⁸ Foster, 51.

⁵¹⁹ Foster, 26.

a liberating expansion of consciousness, to transform the world. However, they must fail because they reject the "meat" by reconstituting vision and imagination in and from a gomi-heaped world," which denies "their essential human selves and Nature, in favor of entering cyberspace, a 'universe of opaque signs' in which imagination is constrained by "an all-encompassing manufactured illusion."⁵²⁰

Constructing a Reality

Cybernetic fiction continually points out that which is manufactured: urban landscapes and virtual geographies, as well as one's identity and one's own body. Technology has become *the* pervasive material reality in a way unmatched by the natural world and unimagined by the Romantics. Case's name suggests that the self is constructed in a way that echoes the constructedness of the virtual environment of the matrix. The part of the self encased in a physical body implies that the corpus is merely a box to house the life-sustaining apparatus of organs and other living systems, while the more privileged part of the self is virtually embedded in and validated by cyberspace. The body becomes no more than a clunky peripheral one must lug around to sustain one's psychic system: i.e., consciousness. In the reality of cyberspace, it would appear that, as Sabine Heuser observes, "consciousness becomes separated from the body—it becomes a body itself—as its power spreads throughout the global electronic space of terminal culture."⁵²¹

⁵²⁰ David G. Mead, "Technological Transfiguration in William Gibson's Sprawl Novels: *Neuromancer*, *Count Zero*, and *Mona Lisa Overdrive: Extrapolation* (Vol. 32, Issue 4, 1991). In the cited passage, Mead is quoting Miriyam Glazer's essay on William Gibson and William Blake, "'What is Within Now Seen Without': Romanticism, Neuromanticism, and the Death of the Imagination in William Gibson's Fictive World," *Journal of Popular Culture* (Bell & Howell: 2000), 160-162.

⁵²¹ Heuser, 210.

But the tensions examined in assessing what is a body and what is a consciousness that are addressed in this chapter, in texts like *Neuromancer* and “The Girl Who Was Plugged In,” particularly illustrating that cognition, and by extension consciousness, is embodied, is further troubled by what cyberneticist Heinz von Foerster calls the “problem of cognition.” Von Foerster was one of the original Macy Conference attendees, along with Weiner, Claude Shannon and others, where he gave his paper “On Self-Organizing Systems and Their Environments,” but his place in cybernetics straddles the line between the two generations of the cybernetics, the so called first and second-order cyberneticians. He is perhaps best known as one of the progenitors of second-order cybernetics, brought to bear in the systems thinking of folks like Gregory Bateson and Niklas Luhmann, whose work was influenced by von Foerster. By the 1970’s, von Foerster produced a series of essays focusing on the cybernetics of cognition, working in parallel if not always in direct dialog with Francisco Varela.

One particular essay, “On Constructing a Reality,” examines what he identifies as a problem of cognition by yoking second-order observing systems with Varela’s brand of embodied cognition. He begins his justification that there is a problem of cognition by reminding us that not only are our sense perceptions embodied through physical sense organs, they can be further broken down into physical qualia. We must keep in mind that when we perceive light or color, we are really perceiving electromagnetic waves; when we hear music, we perceive differences in air pressure. Von Foerster asserts, through a series of brief equations,

that the processes we refer to with the shorthand “cognition” really equate to manifold processes that are contingent on and recursive of one another. He begins with the premise that “cognition $\rightarrow$ computing a reality,”⁵²² which is to point out that cognition equates to contemplating things in concert with one another: our sensory inputs. Then he further qualifies the equation (“cognition $\rightarrow$ computing descriptions of reality”) by reminding us that what is being computed cannot be said to be *a reality* itself, but rather, as he points out with his vision and hearing analogies, descriptions of reality.⁵²³ But he must modify his equation twice more, since after all, cognition really equates to computing descriptions of descriptions, and so by extension, cognition $\rightarrow$ computations of computations.⁵²⁴ Von Foerster concludes that ultimately, “cognitive processes [are] neverending recursive processes of computation”⁵²⁵—that there is a recursivity embedded in all cognition since descriptions computed on one level of neural activity could be operated on again on higher levels, and on up—for example, the light qualia entering the eye presented as brightness; the same light projected as an image on the retina, presented as a light bulb, etc.

Cognition as recursion, or, recursion as the process of cognition, becomes significant when considering just how similar (and indistinct) computational and organic cognition are. In a network like the matrix, there becomes very little to distinguish organic from artificial cognition; for example Case thinking and acting as a cognizing agent in the matrix, and the computer programs that are thinking and

⁵²² Heinz von Foerster, “On Constructing a Reality,” *Understanding Understanding: Essays on Cybernetics and Cognition*, (New York: Springer, 2003), 215.

⁵²³ von Foerster, 216.

⁵²⁴ Ibid.

⁵²⁵ von Foerster, 217.

reacting to him. So, too, the construction of consciousness has many recursive operations that are not dependent on embodiment per se, but rather contingent on the manner of interpreting sense qualia. Both Case and the matrix are equally cognizing systems, forming their own sets of information consisting of sense qualia and myriad forms of feedback.

I believe that if von Foerster had lived longer to see what the world wide web has become, with its instantiations of virtual reality and proliferation of artificial intelligence, he might be inclined to argue that virtual reality is no less real than what we take to be reality. First, he asserts that a nervous system “is organized (or organizes itself) so that it computes a stable reality.”⁵²⁶ This holds true of virtual networks as much as it does for organic nervous systems, since virtual realities need to be instantiated with features that are communally recognizable as stable environments. Second, as expressed above, a reality is constructed from recursive descriptions of the environment, so that we can presume any thing that “senses” creates a reality unique unto itself. This is made clear in his “man with the bowler hat” analogy. The premise holds that we suppose a man with a bowler hat insists that the reality he perceives, including all other people and features of the environment, is entirely imagined by him. He insists anyone he encounters is a figment of his imagination. However, suppose he encounters a person that also equally insists that they are generating the sole reality, and that the man with the bowler hat is a figment of their imagination; the resulting impasse suggests two ways to think about “reality.”

⁵²⁶ von Foerster, 225.

1) the principle of relativity suggests that a hypothesis must abide for two instances, so both persons can't be right; 2) if one chooses to reject relativity, they can go on being the center of the universe, but if they accept it, they are forced to consider some third way in which both the man in the bowler hat and they are the progenitors of reality. Von Foerster asserts that it is this relation between "Thou and I" that is the basis of identity, that both realities must be equally true, and furthermore recursive of each other in order to establish a stable reality in which each has identity. He sums up this thought experiment with the simple equation: "reality = community."⁵²⁷ That is to say, what I'll call capital-R Reality is equally contingent upon all objects and subjects in a system to generate and maintain discrete individual realities—individual organisms, technical objects, social systems, and technological objects—in simultaneous feedback with one another. What emerges is a reality that transcends the individual subject.

Case feels liberated in cyberspace not merely because he is temporarily free of his body or assumes more autonomy via his hacker savoir-faire, but more so because he recognizes a system of reality greater than the self. That "totality," which has been defined by Fredric Jameson as "the incapacity of the human mind to give representation to such enormous forces," is typically withdrawn from normal subject experience, but the veil is cast aside when one enters the matrix and layer-upon-layer of systems become perceivable to the experiencing subject.⁵²⁸ This is one instance of

⁵²⁷ von Foerster, 227.

⁵²⁸ Jameson, 24.

the cybernetic sublime: the immersive experience of cybertechnologies which forge a new way of being in the world.

Chapter Conclusion

This chapter has sought to explore cybernetics as a framework for reading cyberpunk fiction. The types of cybernetics I've examined here involve a constellation of systems-oriented concepts that serve as frameworks for understanding how human and machine components interact to extend human capacity and to form larger cognizing systems through machine and computer prostheses and the feedback loops they employ. I've sought to argue, ultimately, how embodied cognition, as a dispersed and networked cybernetic process, works to construct human consciousness. The cyberpunk originator texts studied in this chapter reveal how cybernetic operations form an integral part of our lived experience, while at the same time exploring how interactions between humans, machines, and the environment might progress, and how literary texts examine new conditions of existence for humanity.

I've proposed a cybernetic sublime that acknowledges the ways in which machine and digital technology together form new kinds of intense experience for the perceiving subject which extend and exceed our human limits, and bring new levels of awareness to our understanding of what it means to be human. I've identified the various instances of this sublime occurring in cybernetic processes, beginning with the premise that technical objects have replaced the natural objects of the sublime of Burke and Kant. The technological landscapes of cyberpunk pose experiences for the

characters that surpass the capacities of normal human cognition and embodiment. Objects of technology which augment or extend the abilities of the subject provide new forms of being in the world that Don Ihde has called embodiment relations and Francisco Varela has called *enaction*. Systems of virtual technology, global capital, and individual consciousness form entire constellations of feedback networks. The individuals of cyberpunk are imbricated in systems that both compel awe and force one to question the boundaries of the human. I continue an examination of cybernetic systems to question if what we conceive of as humanness could emerge in technological objects. This dissertation concludes with a brief investigation of artificial intelligence as a potential form of subjectivity.

CHAPTER FIVE: A Question of Consciousness

For a minute I stared, speechless, at the page. My hand shook, as with an ague, my eyes stared blankly before me. It could not be possible! No, such a thing could never happen. Nevertheless, I reached forward and begun slowly to write on the keyboard:

“I cannot believe that you, a machine, are human. You must give me some proof as to who you are. A machine cannot do the work and thought of a human, A machine cannot...”⁵²⁹

Published in 1930, John C. Campbell’s story, “The Infinite Brain,” broadly articulates post-World War I anxieties about burgeoning advancements in scientific knowledge and computing technologies. In the story, the narrator’s friend, Anton des Roubles, creates an electronic machine that houses the contents of his mind, and, owing to the advanced computing capabilities of the machine, it becomes a veritable superbrain. Coupled by remote control to a robotic machine called “the Traveler,” what lives on after Anton’s demise is what, for all intents and purposes, can be considered an artificial consciousness. Anton des Roubles is implied to be subsumed by the machine during the process of transfer, and what remains is a caricature of a mad-scientist-in-a-machine. The rest of the story involves the machine’s creation of larger, more powerful doomsday machines, and humanity’s attempt to overcome them. The premise of the story should be familiar to many, bearing strong similarities to *Frankenstein*, *War of the Worlds*, and other cautionary tales which play upon the fears inherent in human-technological interfaces. While much of its adventure narrative is steeped in the clichés of its time, the story is a helpful reminder of how

⁵²⁹ John C. Campbell, “The Infinite Brain,” *Science Wonder Stories*, ed. Hugo Gernsback, (May 1930), 1079.

anxieties about technological complexity still persist, and the stakes of our co-evolution with those technologies.

Since the late 20th century, we've been exposed to an array of contemporary media and literature that portray machine intelligence in myriad ways. It's become second nature to imagine how machines might think, experience, and act in ways similarly authentic to humans. We have been able to imagine many such scenarios, but until very recently, thinking the reality of such scenarios had been relegated to the future. Such imagined futures like HAL, the talking computer of *2001: A Space Odyssey* (1968), or the replicants of *Blade Runner* (1982), or the cyborg killing machine, *The Terminator* (1984) are so thoroughly integrated into popular culture as to reach the status of cliché. These are all, in essence, extrapolations of themes put forth in "The Infinite Brain," which are; 1) that artificial (machine) intelligence is artificial and therefore invalid; and 2) artificial (machine) intelligence is dangerous because it is non-human and therefore inhumane.

"The Infinite Brain" underscores what some contemporary computer scientists like Hans Moravec have hailed as the coming of the posthuman. If one could store the contents of one's brain on a computer, Moravec thought, one would in essence be immortal. So what becomes of *us* once the self (if the self has an essence) can be uploaded to a computer? What is *post*-human? N. Katherine Hayles points out that the *post*— in this case implies that the days of the human may be over.⁵³⁰ In a world overwrought, overpopulated, and over-polluted—the logic goes— the physical body

⁵³⁰ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, (Chicago and London: University of Chicago Press, 1999), 283.

becomes a real limitation to sustainability. If, as speculated in Campbell's story, the inner workings of the brain and its billions of neural connections could be sussed out like so much intricate wiring, the implication is that humanness can be conflated or reduced to this kind of schematic function. In the words of Hayles, *pattern* is privileged over *presence*. If we could just diagram the pattern, then bodies don't matter—which begs the question: what *does* matter? Hayles is quick to point out the fallacy that underlies Moravec's thought, which is that uploading one's mind to a computer presumes that "subjectivity and computer programs have a common arena in which to interact" in the first place.⁵³¹ To some extent, this is true, as I'll discuss below. But as outlined in the previous chapter, machine metaphors are often problematic in their tendency to reduce human complexity to mechanical means. It is, however, worth exploring these two interpenetrating fields: just how close is machine technology in approximating what Hayles identifies as human subjectivity and what I will call here consciousness; and what is consciousness in the first place?

I end this dissertation with an exploration of the science fiction trope of artificial consciousness—that is, the ways that non-organic things (like machines and programs) exhibit what we would call sentience, and what has until relatively recently been considered fantasy. But debates among neuroscientists and philosophers of mind about what constitutes consciousness and current developments in large language model (LLM) artificial intelligence suddenly places us in a position to consider more critically what we talk about when we talk about consciousness. By examining what

⁵³¹ Hayles, 37.

David Chalmers calls the “hard problem of consciousness,” I cast a critical gaze outward, beyond the realm of what systems-thinking has thus far been able to describe. Systems extend only so far in modeling how neurological and physiological systems enact mental states. Neuroscientists and philosophers alike have explored the manifold processes of cognitive stimuli, the sum total of physical science undergirding the phenomenon we call thought, but have yet been unable to explain what we intuitively recognize as conscious *experience*. This “extra” bit, what we call consciousness, is a phenomenon that exceeds our current scientific and philosophical comprehension.⁵³² Notwithstanding, systems-thinking still gives us clues in understanding how a seemingly emergent property like consciousness might be possible—in man and machine. I explore the ways in which systems operate to create these types of non-biological consciousness under an aegis of sublime I identify as both synthetic and emergent. A synthetic digital sublime is that in which discrete consciousness occurs as a synthesis of networks, both digital and physical. An emergent digital sublime occurs in technical networks which algorithmic machine learning is joined with and contingent on long duration lived experience. In other

⁵³² John Searle, *Mind, Language, and Society: philosophy in the real world*, (New York: Basic Books, 1998), 45. Searle points out the stickiness of this explanatory gap I refer to as “an extra bit.” The debate goes like this: how can a world consisting of real material particles in fields of force contain systems that are conscious? On one hand, he avers, “if you think of consciousness as some separate, mysterious kind of phenomenon, distinct from material or physical reality, then it looks like you’re forced into what is traditionally called “dualism”...But if you try to deny dualism and deny that consciousness exists as something irreducibly subjective, then it looks like you are forced to materialism.” If you land in materialist camp, then you’d have to admit—Searle’s logic goes—that consciousness (a thing with “first-person, subjective ontology”) doesn’t exist. The stickiness occurs in accepting that consciousness, whatever it is, is not a substance in the mind-body dualism sense, but still real.

words, what is sublime exceeds preexisting computational script and emerges through experience.

To start, I identify three different ways of conceptualizing artificial consciousness. “The Infinite Brain” portrays the first mode, which can be referred to as the uploaded mind trope. In the story, Andres des Roubles is able to transcribe his mind into a machine, in much the same fashion as Case, the protagonist of William Gibson’s *Neuromancer*, as described in chapter four. This trope presumes that a preexisting organic consciousness can be uploaded to a machine interface.

The second mode I call the synthetic mind—an artificially manufactured consciousness that is embodied in a corporeal form. This is best represented by the android, but there are many other variations on the synthetic mind trope. Ted Chiang’s novella, *The Lifecycle of Software Objects* serves as a parable of the viability of synthetic consciousness. The story is about two artificial consciousnesses—adaptive computer programs known as digients—that are downloaded into robot bodies, and the humans who care for them. The focus of *Lifecycle* is how adaptive AI might learn, develop, and mature as human-like entities in a human social milieu. What Chiang’s story implies is that the synthetic mind approximates human consciousness in a way that could be legitimized as authentic selfhood.

The third mode I will refer to as the emergent mind. The emergent mind trope posits that a unique consciousness could emerge given a complex enough network of pre-existing properties. Most fearmongering about AI preys on anxiety that a

malicious artificial consciousness could emerge if burgeoning advances in AI went unchecked. This is given its most palpable treatment in films like *Terminator 2*, where Skynet, a superintelligent computer network, “goes live” and conquers humanity. But in less capricious forms, emergent mind tropes consider the potential for machine-based neural networks to develop something like human consciousness. In *Neuromancer*, for instance, Wintermute, a disembodied consciousness floating around the matrix yearns to join with its “other half” –the titular program, Neuromancer. Wintermute is a combination of uploaded and synthetic consciousnesses (both a “construct” of person Armitage, and a creation of Tessier-Ashpool). Wintermute’s emergent properties occur as a result of its interactions with humans and other programs. While it exhibits ambivalent behavior toward its human interlocutors, Neuromancer, on the other hand, is more nefarious, entrapping Case and his crew. When the two programs join, however, the superintelligent consciousness that results—now referred to just as Neuromancer—is content simply to exist freely in its expansive new state. In the novel emergence, then, becomes shorthand for liberation—of the type that is celebrated rather than feared. The stark divide between these two types of emergent mind tropes: Skynet and Neuromancer, evince our attitudes about who or what can be free and who or what needs to be controlled. It is evident that control, rather than liberation, persists as the central concern of cybernetics.

What do we mean when we apply terms like *consciousness*, *sentience*, or *cognition*? Like pornography or film noir, it might be easier to recognize these than

to define them. Humans intuitively recognize sentience in other species, but non-living systems may also exhibit the same attributes. Adding to their obliqueness, each term takes on different valences depending upon the discipline in which they are wielded; practitioners in neuroscience, animal studies, or philosophy of mind may view these terms as correlated or distinct, and even then, there is divergent opinion from thinker to thinker. For instance, the broadest term, *cognition*, is variously described by Francisco Varela as simply “the act of computing,” but also as “the emergence of global states in a network of simple components,” where meaningful information arises out of “complex patterns of [embodied] activity among the numerous units that make up the network.”⁵³³ In one instance cognition is purely mechanical, implying a system of inputs and outputs, but in the other cognition “emerges” through an interplay of symbols, a seeming paradox which underscores the concept’s stickiness. Is cognition computational or magical? the definitions seem to be asking. *Sentience* is often conflated with *consciousness*, and they describe similar enough effects that they could be considered synonymous. I contend that the above terms are not solely the domain of *homo sapiens* and other higher order life forms, but that what these terms describe, collectively, are processes of interpretation that are shared by all kinds of complex organizing systems. As I will explain, both synthetic and emergent minds exhibit attributes we can call conscious that result from a constellation of interacting systems.

⁵³³ Francisco Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience*, (Cambridge: MIT Press, 1991), 40 and 99, respectively.

Can a Thing be Conscious without a Nervous System?

While it's generally accepted that cognition is a broad category that is not limited to the neurobiology of discrete organisms, consciousness typically refers to higher order phenomena unique to humans and select other species with complex sensory systems. However, it's worth pointing out that the attributes of cognition or consciousness are by no means endemic to organisms with nervous systems. It's necessary to acknowledge a frequent slippage that occurs when discussing consciousness between things that are sentient and things that cognize. Particularly, debates formed in response to the Turing Test are quick to qualify that thinking does not equal understanding, that in fact, many organisms and objects may be said to cognize, even to be intelligent, without necessarily possessing consciousness. A distinction must be made between functions of cognition and states of awareness. For example, an organism processing external stimuli and reacting in response can be said to be cognizing, but we cannot say for that same organism whether or not those processes produce some state of experiential awareness. Things as disparate as plants, computers, and slime molds all have the capacity to *think* in this way—a way which must be acknowledged bears close resemblance to human thought. A plant can detect sunlight and direct its foliage toward the light to make the most efficient use of photosynthesis; its roots can push through layers of soil and, through the release of enzymes, detect and seek the best nutrient sources.⁵³⁴ We may not consider it as such, but this is intelligent action in the same way I can catch a tennis ball tossed into the

⁵³⁴ Daniel Chamovitz, *What a Plant Knows: A Field Guide to the Senses*, (New York: Farrar, Strauss, Giroux, 2012), 93.

air. The extensive study of slime molds has shown that these organisms are able to navigate intricate mazes to detect a food source at the end, a feat even more remarkable given that they possess no nervous system to speak of, and that when one mold is split, both parts are able to independently seek out and rejoin its other, suggesting that information about the maze is stored in a non-centralized way. A computer, on the other hand, can process a series of complex inputs to produce a desired output—schematically speaking, the same process as a living organism. While we may understand a computer’s process of thinking to be pre-scripted, it is no less an example of cognition than one of a child or chimpanzee memorizing where to place the square peg in the square hole. While these are just a few broad examples of thinking—perhaps even of intelligence—what remains to be determined is if any of these processes can be said to produce states of consciousness.

John Searle offers a compellingly pragmatic approach to consciousness. We’ll use his thought as a ground to examine would-be conscious states of non-human entities. Whether one argues that consciousness is a singular phenomenon or a series of varying conscious states, and whether consciousness is the same in principle across all organisms, or not, Searle insists that all conscious states share three ineluctable features: they are all *inner*, *qualitative*, and *subjective*. By *inner*, he means that consciousness always takes place inside a body, occurring “inside an organism or some other system”—it is contained by some form external to it.⁵³⁵ The *qualitative* feature of consciousness refers to the fact that for each conscious state, there must be

⁵³⁵ Searle, 41.

something it is like to be *that* state and not another. It has a certain way that it feels; it has a certain qualitative character to it. Drinking a glass of wine is a fundamentally different conscious state than listening to music.⁵³⁶ They are qualities utterly distinct from each other. This echoes Thomas Nagel's dictum that in order for a consciousness to exist, there be *something it is like to be* that thing; my own conscious state is unique unto itself, the theory goes, and cannot be described analogously by comparing it to another's.

Finally, the third and related feature is that conscious states are always *subjective*. They have what Searle calls a "first-person ontology"; that is, they are only accessible and can only be experienced by some agent—an experiencing "subject." In sum, Searle defines consciousness as an inner, subjective, first-person qualitative phenomenon. And while he defines the subjective as always being experienced by a human or animal subject, he later goes on to admit that there is, "no reason in principle why we could not build an artificial brain that also causes and realizes consciousness."⁵³⁷ Searle's definition is useful in that it emphasizes the interiority of consciousness to the experiencing subject, and acknowledges the uniqueness of conscious states, yet, while he goes on to outline the basic structure of consciousness⁵³⁸—attributes that he feels are ubiquitous to those internal states—he does little else to explain what consciousness *is*.

⁵³⁶ Searle, 42

⁵³⁷ Searle, 53.

⁵³⁸ I'll pick up this thread a little bit later.

The Hard Problem

The excluded middle pinpointing what precisely consciousness *is*—shared by philosophers and scientists alike—has become known as the “hard problem” of consciousness. Because consciousness often refers to several different, disparate concepts, we run into trouble quickly when attempting to discuss them as a single concept. Ned Block admits that consciousness is a “mongrel concept,” and so he attempts to parse it with more due diligence by distinguishing between what he terms P-consciousness and A-consciousness.⁵³⁹ P-consciousness is phenomenal consciousness, or what we think of as experience. “A state is P-conscious,” he writes, if “it instantiates experiential properties.” Those properties are sensations, feelings, and perceptions, like our five sensory perceptions such as “when we see, hear, smell, taste, [or] have pain,” but also include our “thoughts, wants, and emotions.”⁵⁴⁰ P-consciousness are states of awareness that are instantiated by representational means (i.e., non direct function), but are also, importantly, distinguished by differences in position and affect. For instance, what it is like to hear a sound coming from the left or the right, or from a greater or lesser distance; the difference in perception of color instantiated by differences in anatomy or quality of light. Block is deliberate in qualifying that P-consciousness properties should not be reduced to “any cognitive, intentional, or functional property;” that is, P-states are not simply processes of thinking, behaving, or functioning.⁵⁴¹ P-consciousness is essentially the

⁵³⁹ Ned Block, *Consciousness, Function, and Representation: Collected Papers, volume 1*, (Cambridge, MA: The MIT Press, 2007), 275.

⁵⁴⁰ Block, 276.

⁵⁴¹ Ibid.

“extra bit” of consciousness that isn’t accounted for by physical or intentional function. A-consciousness, on the other hand, refers to access consciousness, or states of consciousness that are “broadcast” (i.e., possess some form of reportability to other systems) and are freely accessed for “direct rational control of action” (i.e., voluntary action as opposed to automatic function).⁵⁴² A-consciousness properties include those of reasoning, planning, decision making, memory, and direction of attention. Block seems to be referring here to the kind of self-reflexive awareness that comes to mind when we think of Cartesian rationalism, as opposed to the phenomenological affective states of P-consciousness. A-consciousness can be interpreted as a dispositional mood while P-consciousness registers what occurs. Block shares affinity with Searle in the implication that what can be stated about consciousness is describable by observing only what are tangible processes and affects; thinking and feeling. It's evident that both A-consciousness and P-consciousness attempt but don't adequately arrive at a solution to the hard problem of consciousness.

David Chalmers identifies the hard problem in response to the swath of philosophies of mind—from John Searle to Daniel Dennet to Ned Block—that could not adequately explain the constellation of phenomena we call experience. “The really hard problem of consciousness is the problem of *experience*,” he writes. The “easy” problems of consciousness, he explains, are those that could be adequately theorized via standard methods of cognitive science, such as the function of physical sensory systems, or the integration of information by cognitive systems, or the deliberate

⁵⁴² David Chalmers, “Facing Up to the Problem of Consciousness,” *The Character of Consciousness*, (New York; Oxford: The University of Oxford Press, 2010), 6.

control of behavior; in short, those phenomena that can be described in terms of computational or neural mechanisms.⁵⁴³ The hard problems, like the ones implied by Searle and Block, are the phenomena that resist scientific explanation. For Chalmers, those problems arise in describing what happens during the thing we collectively call “experience,” which, following Thomas Nagel, he defines as “what it is like to be something”:

If any problem qualifies as the problem of consciousness, it is this one. In this central sense of “consciousness,” an organism is conscious if there is something it is like to be that organism, and a mental state is conscious if there is something it is like to be in that state.⁵⁴⁴

Experience is the thing that unites all the qualities of consciousness into a unified thing. “It is widely agreed that experience arises from a physical basis,” he writes, “but we have no good explanation of why and how it arises. Why should physical processing give rise to a rich inner life at all?”⁵⁴⁵ The hard, perplexing question is *why*; why is it that various systems of cognition are subjects of experience, and others seemingly not? And while Chalmers and Searle are careful to refer to the experiencing subject as an organism, there is nothing to suggest that experience, in the way it has thus far been defined, cannot be a phenomenon of non-living systems. If any such systems processed the affective qualities as outlined by Searle and Block, then can’t such “experiences” just as easily be automated? It stands to reason that if such sensory processes can be automated, then there is also the “experience” of such automated processes. It stands to reason that for artificial intelligences that use

⁵⁴³ Chalmers, 4.

⁵⁴⁴ Ibid.

⁵⁴⁵ Ibid.

automated processes to cognize, sense external stimuli, and react to them, there must be *something it is like* to be that thing. However, contemporary accounts differ on precisely how closely large language models adhere to the architectures of organic neural networks and can thus beget consciousness. For instance, in an opinion piece co-authored by both neuroscientists and computer engineers and published in 2023, the authors argue that artificial intelligence networks lack key nervous systems features found in sentient organisms, such as the “thalamocortical network” which “supports the recurrent and complex processing thought to underlie consciousness and conscious integration.”⁵⁴⁶ LLMs, they argue, are engineered in ways “that do not retain deep homology with the structure of the brain.”⁵⁴⁷ They rest their case on the simple observation that known conscious systems have structures that questionable conscious systems don’t, but a difference in architecture does not necessarily negate potential states of consciousness. To my understanding, the thalamocortical network is essentially a relay system between the thalamus and cortex analogous to packet switching hardware found in a modem; it separates and aggregates and reorganizes packets of information and higher orders, but feedbacks to itself in such a way that allows “the brain to obtain data on its own activity.”⁵⁴⁸ Certainly, systems thinking doesn’t discriminate between organic and inorganic processes, in particular when considering system complexity and the emergence of new properties. I believe the case remains that there is no definitive qualitative difference between organism or

⁵⁴⁶ Jaan Aru, Matthew E. Larkin and James M. Shine, “The Feasibility of Artificial Consciousness through the Lens of Neuroscience,” *Trends in Neurosciences*, (December 2023, Vol. 46, No 12), 1011.

⁵⁴⁷ Aru, et al., 1009.

⁵⁴⁸ Ibid.

machine in terms of defining consciousness. Chalmers concludes that since there is as yet no way around—or through—the “explanatory gap” between physiological functions and phenomenological experience, then consciousness can be viewed as an emergent function.⁵⁴⁹

The Uploaded Mind

In “The Infinite Brain,” the mind-machine hybrid housing Anton des Roubles’ consciousness, first referred to as a wheeled “Traveler,” then simply as “the Brain,” is able to think and act autonomously, designing and building other machines and interacting with its human interlocutors. Like Hans Moravec’s fantasy of an uploaded mind, the Brain is an uploaded consciousness that is able to outlive its original body. However, the machine built to house his mind is at first a simple substrate to contain an extant consciousness, but soon after becomes characterized as a separate entity divergent from that of des Roubles. Interestingly, the Brain refers to Anton as its “creator,” and refers to itself as having distinct motivations and desires; indeed, as a “living creature”:

Like all living creatures I desire pleasure, and if that wish takes odd forms, blame it on Anton. Pleasure for me consists in building machinery, every step higher than that made before, and in conquering all of the material Universe. That is what I intend to do.⁵⁵⁰

This point in the story, coming near the end, is noteworthy in that the Brain announces itself as a living creature despite a conspicuous lack of prior details suggesting as much. Early narrative exposition lacks any brain-in-a-fish tank or

⁵⁴⁹ Chalmers, 7.

⁵⁵⁰ Campbell, 1092.

torso-with-a-halftrack imagery. In fact, early on des Roubles admits that he is “attempting to construct a mechanism exactly duplicating the mechanical and electrical processes” of the human brain—those processes that constitute the phenomena known as *thought*. His early prototype amounts to a complex series of wires and wheels and servos laid out across his laboratory. He makes no pretenses of extending the human organism through mechanical prosthesis, but rather exactly replicating organic functions with mechanical precision, to such an extent that he wishes “to make a mechanical brain that will think, reason, remember, have likes and dislikes, loves and hates,” and that can also “read, write, appreciate a joke, or smoke a cigar.”⁵⁵¹ So it seems that in referring to itself as a living creature, and embodied as it is in its “traveller” robot, the Brain must necessarily *experience* itself as such. The Brain fulfills most of Searle and Block’s criteria for consciousness, including possessing a “first-person ontology,” an awareness of itself separate from others, and both P- and A-state forms of consciousness, which process experiential phenomena (like pleasure) and direct “broadcast” effects like reasoning and an autonomous control of its own actions. While “The Infinite Brain” is an often cliched story that speculates about how the mysteries of mind might be reproduced through one-to-one mechanical analogy, what emerges through the Brain is a sense of character with qualities that humans can relate to, reinscribing the anthropocentric notion that if it looks and acts like consciousness, we can take it as such.

⁵⁵¹ Campbell, 1077.

Yet, as comfortably as it is reproduced in imaginative literature, we resist attributing the fact of consciousness to objects—or even non-animal organisms. Although there may be nothing outwardly to suggest that a slime mold or a computer experiences itself, we have to acknowledge that in the case of artificial intelligence, at least, humans tend to interact with it as if it were an autonomous entity. We converse with digital assistants like Siri and Amazon Alexa much the same as Gene, the narrator of “The Infinite Brain,” interacts with the Brain. Could it be true in some cases that machines do in fact replicate the features of consciousness to such an extent that they must, by the best definitions we can muster, be called conscious? (At this, I suspect, the reader squirms.) Here then arises a different explanatory gap by which we claim consciousness for some things and exclude it for others. Let me return now to the novel *Neuromancer* to examine some instances of what I call constructed consciousness, or the synthetic mind trope.

The Synthetic Mind

Recall that in chapter four, in my discussion of Gibson’s earlier story, “The Winter Market,” I introduced the notion of a “construct.” Similar in concept to “The Infinite Brain,” constructs are erstwhile human consciousnesses whose personalities have been digitally saved onto computer ROM disks. In “The Winter Market,” the disabled Lise yearns to live on as a construct to escape her mortal trappings. I also elucidated how *Neuromancer*’s protagonist, Case, while not a construct, likewise yearns for escape from his bodily trappings (his ennui, plus the neurotoxin booby trap in his nervous system) through the liberatory promise of cyberspace. But other of the

novel's central characters do exist as constructs. Dixie Flatline is the extant consciousness of a once famous hacker named McCoy Pauley, stored now on disk and sought out for his hacking expertise. He exists disincarnate from the physical world, while on the other hand the shadowy figure Armitage is a real, albeit reconstructed human whose personality has been both psychotropically and digitally altered from its original persona, Corto.⁵⁵²

In another instance, using his simstim, Case is able to jack-in, or overlay his consciousness with Molly Millions' body. In essence, he's able to experience Molly's embodiment in the physical world, following her in kind of a bird's eye view. While they don't *share* a consciousness (she is autonomous from him—he doesn't control her action, or experience her thoughts), he does have access to her pain receptors, vision, and hearing. Coupled like this, they form another kind of constructed consciousness, thinking, experiencing, and acting together as a single thing. In a scene when they confront one of the Tessier-Asphool leaders, they both experience the scene—through Molly's feed—in slightly different ways. When they enter the room, Case doesn't register a threat until “her ears rang, a tiny rising tone that made [him] think of the sound of her Fletcher [sidearm].”⁵⁵³ He's not cued to danger before he's aware of her reaching discretely for her weapon. And while she's known for her fighting prowess, with reflexes that were “souped up, jazzed by the neurosurgeons for combat,” when Case experiences that embodiment on the simstim link it was like “a tape run at half speed, a slow, deliberate dance choreographed to the killer instinct and years of

⁵⁵² Gibson, *Neuromancer*, 195. In fact, it's revealed that the AI Wintermute had created the persona of Armitage from Corto's old memories.

⁵⁵³ Gibson, *Neuromancer*, 176.

training.”⁵⁵⁴ On the other hand, Case has more situational context, recognizing physical clues that link the scene to earlier places in the narrative. When Molly’s leg is severely injured, he doesn’t feel her pain but understands the “flickering of pain receptors” deadened by anesthetic, and when she later passes out from her injury he can “taste the pain” but because she’s unconscious he’s “barred from her dreams.”⁵⁵⁵

It’s worth underscoring that embodiment matters; the embodiment Molly feels with a broken leg, and that Case feels inhabiting Molly is integral in their conscious experience of events (a thread I will return to a bit later.) I turn my attention now to an example of a synthetic mind that is entirely disembodied. The artificial intelligence Wintermute is constructed by the Tessier-Ashpool clan (a corporate family), and while not of organic origin, it is able to manipulate cyberspace in a way that alters the reality of the human and construct consciousnesses that inhabit it. Wintermute is constrained by software firewalls installed by Tessier-Ashpool (called Turing locks) that limit its reach. Nonetheless, it is able to appropriate extant constructs in the matrix to create complex labyrinths of simulated reality in order to interact with its human interlocutors, notably, Case. In a series of surreal encounters, Case, jacked into the matrix, finds himself suddenly re-living scenes from his own memory in which a past lover or acquaintance appears and converses with him about the present. In the guise of his former lover, Linda, Wintermute asks Case. “This is memory, right?”⁵⁵⁶

“I don’t have this good a memory,” Case responds.

⁵⁵⁴ Gibson, *Neuromancer*, 206.

⁵⁵⁵ Gibson, *Neuromancer*, 213.

⁵⁵⁶ Wintermute can seemingly access bits of people’s consciousness, such as memories, floating around the matrix, but has no awareness or context of what they are, except by induction.

“Everybody does, but not everybody can access it.”⁵⁵⁷

It eventually dawns on both Case and the reader that this is Wintermute, operating behind the “masks” of other constructs. It must simulate other constructs as a means to disguise itself and circumvent the Turing locks, gaining access to outside systems. As Molly explains, “it’s not just a mask, it’s like he uses real profiles as valves, gears himself down to communicate with us. Called it a template. Model of personality.”⁵⁵⁸

I classify Wintermute as an example of a synthetic mind because its “personality” emerges through a combination of its original programming and the “masks” of others’ uploaded memories. Wintermute is not material nor autonomous in the way we usually acknowledge a sentient subject. For example, although seemingly omnipresent in its capacity to access and manipulate other computer systems in the matrix—including simulating Case’s memories—it is limited by the constraints of what can be inscribed in the matrix, encoded there, for example, when one uploads his or her consciousness there. This means that what survives as one’s personality is only what can be transcribed. A distinction is made between information patterns of brainwaves and neural pathways that can be interpreted by a computer and a *mind*. “Minds aren’t *read*,” Wintermute tells Case. “See, you’ve still got the paradigms that print gave you, and you’re barely print literate. I can *access* your memory, but that’s not the same as your mind.”⁵⁵⁹ Wintermute must also occasionally rely on a human or drone interface in order to access or obtain specific

⁵⁵⁷ Gibson, *Neuromancer*, 164.

⁵⁵⁸ Gibson, *Neuromancer*, 201.

⁵⁵⁹ Gibson, *Neuromancer*, 165.

material objects. Wintermute specifically seeks out the help of Case, not because of his elite hacking skills (Wintermute would seem to have him beat, here), but because it needs “legs on the ground” to infiltrate actual physical spaces, in cases where “a simple mechanical lock here would pose a real problem for the AI, requiring either a drone or some kind of human agent.”⁵⁶⁰ *Neuromancer*’s variations of the constructed consciousness trope, each suggesting a different way that consciousness is / could be constructed, illustrate a fundamental question of what makes a consciousness discrete and indivisible.

Is it possible to consider Wintermute a thing with consciousness? For all intents and purposes, the answer is yes. If assessed according to the criteria set out by John Searle or Ned Block, Wintermute would check many boxes. As part of his definition of consciousness, John Searle sets out no less than ten criteria for its structure, with varying degrees of abstraction. A few of his most applicable arguments are that consciousness has “ontological subjectivity”; i.e., it only exists as experienced by an agent, that it comes in a unified form, meaning that all sensory input gets channels into a unitary awareness; that is intentional—that it gives access to the world other than our own conscious state; and by extension it has boundaries. All these would apply to Wintermute, but some could also apply to a slime mold. Other of Searle’s criteria are more debatably subjective. Conscious states have “degrees of attention,” he argues, which means that not all sensory input is broadcast equally; we give some aspects our centralized focus (like vision, let’s say) and others are set in the

⁵⁶⁰ Gibson, *Neuromancer*, 173.

periphery (that strange odor over there).⁵⁶¹ Since Wintermute is a program, it's difficult to discern what, if any, degrees of attention it possesses. As it interacts with Case, it might well be hacking into a server and performing multiple other tasks at the same time, attending to every task and / or input equally. As far as we can surmise then, degrees of attention are relegated to living organisms, at least as far as we know “what it is like to be” conscious.⁵⁶² Other more subjective criteria for consciousness, according to Searle, are that we exhibit moods and that consciousness can be experienced as pleasurable or unpleasurable.⁵⁶³

Systems thinking offers a more purely mechanical definition of consciousness by way of an “integrated information theory of consciousness.” For its progenitor, Giulio Tononi, conscious experience is “one and the same thing as a system’s capacity to integrate information,” meaning that a conscious system can aggregate high levels of complex inputs with the ability to differentiate that information into potential types of experience—ie, it can parse informational patterns into meaningful experiences.⁵⁶⁴ Consciousness by his definition is the unity of information integration, and what separates conscious states from other types of cognition is this unity of information integration: information flows that cannot be reduced to individual inputs. Consciousness, seen in this light, is not relegated to certain types of neural systems, as he puts it, from “infants” to “animals,” i.e, living organisms, but that it

⁵⁶¹ Searle, 78.

⁵⁶² I’m alluding again here to Thomas Nagel’s dictum that in order to understand conscious experience we must understand ‘what it is like to be something’.

⁵⁶³ Searle, 80.

⁵⁶⁴ Giulio Tononi, “An Information Integration Theory of Consciousness,” *BMC Neuroscience* (2004, 5:42), 3 and 19.

should be possible to “build conscious artifacts.”⁵⁶⁵ That his theory of consciousness is scalable across many different types of systems makes it a useful paradigm—and it is easy to extract from Tononi’s thinking the implication that some types of technical systems clearly do integrate information at a high level and package it into “meaningful” clusters. However, although Tononi alludes to a conscious system’s potential to be non-human, non-living, his examples remain grounded in biological phenomena—i.e., the human brain, and its various capacities for parsing spatial information, perception of color, etc. Thus, when he writes of “experience” without specifically defining it, he seems to be reinscribing consciousness as a particularly biological trait.

What is useful to extract from an information integration theory is its correlation of subjective experience with systems functioning, in particular a complex system’s ability to differentiate information in meaningful and variable ways. Tononi’s theory attempts to bridge the gap between two disparate modes of thought: the speculative “how” which Chalmers and others grapple with, and the scientific “why” that neuroscientists struggle to articulate. This straddling of two modes is incidentally the strength of science fiction literature: to pose a problem or speculate a question, then tease out an answer. If we return to Wintermute, we might be able to equate its machinations with those of Tononi’s high order information integration and patterning, but when it comes down to the question of conscious experience, the riddle remains. We cannot know what, if anything, Wintermute *experiences*.

⁵⁶⁵ Tononi, 1.

However, I contend that, all things being equal, if it looks and acts like consciousness by the best definitions we can muster, we must grant it so. Wintermute cognizes, interacts with conscious systems in a manner analogous to them, and exhibits agency. It has desires; it wants to merge with Neuromancer and liberate itself from its constraining firewalls. More pointedly, it considers itself conscious; it has the capacity not only for self awareness but also self reflection. It performs *conscious* actions.

In counterpoint to Tononi's theory that consciousness can be traced as a function of systems, and to my own implication that consciousness can be attributed to technical objects, I place N. Katherine Hayles' notion of the "cognitive nonconscious." In a departure from the implications of Searle and Tononi, Hayles does not hold the view that technical cognition can be readily compared to the operations of consciousness. However, for what might appear as technical consciousness, she proposes the idea of a "cognitive assemblage," in which hitherto-human cognitive functions are offloaded via technical networks. She uses cognitive nonconscious to refer to these assemblages of human and technical agents that operate at a level of neuronal processing which are often unconscious to the human subject.⁵⁶⁶ This seems, despite her objection, rather close to what we have been considering as states of consciousness. While she's careful not to ascribe attributes of consciousness to technical objects, by emphasizing nonconscious cognition, she hopes to arrive at a more accurate view of what she calls "human

⁵⁶⁶ N. Katherine Hayles, *Unthought: The Power of the Cognitive Nonconscious*, (Chicago: University of Chicago Press, 2017), 11.

cognitive ecology” that opens up the “comparison between biological cognizers and the cognitive capabilities of technical systems.”⁵⁶⁷ From the viewpoint of cognitive assemblages, living beings, technical objects, and technical systems are seen as integrated parts of a larger system of consciousness. Wintermute resembles this kind of cognitive assemblage. As Andy Clark argues, we are at a point in our technical evolution in which cognitive resources extend beyond the body and become distributed among many resources, which in turn feedback into the body, but which also makes unclear which parts of the system are doing the “central processing,” so to speak. The artificial intelligence algorithm rooted in programming code that “does the talking” in the novel, is merely one aspect of a broader networked self which is instantiated in various interfaces, including communication language (ostensibly English for readers, but the implication is that it is communicating with Case via computer code, and vice versa), the constructs it inhabits for encounters with its human interlocutors in cyberspace, as well as the broader infrastructure of cyberspace more generally, and, indeed, through the embodiment of humans Case and Molly, who need to think and act for Wintermute in the physical world, and so on. For modern humans, our consciousness also arises through a system consisting of both organic structures and cognitive nonconscious elements, though this was not always the case. Contemporary human consciousness is at its root organic, but we must also acknowledge the myriad digital devices, the omnipresent internet and its multitudinous servers, biofeedback sensors on our smartwatches, our AI assistants are

⁵⁶⁷ Ibid.

all constantly interpenetrating with our biological neural systems, which all in turn take part in the processing of experience. In short, our cognition, and by extension our consciousness emerges as a result of the interplay of these systems. Ultimately, Wintermute exhibits attributes of consciousness that blur the line demarcating conscious and non-conscious entities, calling into question the notion that conscious beings must be solely organic and wholly self-contained entities.

The Emergent Mind: *The Lifecycle of Software Objects*

In both the uploaded mind and synthetic mind models, consciousness exists as a preexisting artifact that is extended or augmented through technical systems. An artificial intelligence like Wintermute, however, remains in a vague state of uncertainty. The constructs it inhabits to present-as conscious are themselves artifacts of others—both organic and non-. The emergent mind, on the other hand, is a different thing altogether. The emergent mind, or what I will call technical consciousness, like the biological consciousness we intuitively know, is also “inner,” “qualitative,” and “subjective”—and, to continue with Searle’s assessment, there’s no reason we can’t “build an artificial brain that also causes and realizes consciousness.”⁵⁶⁸ This is precisely the reasoning that Ted Chiang explores in *The Lifecycle of Software Objects*, which imagines how adaptive artificial intelligence might develop humanesque traits given enough time and socialization. In the story, adaptive AI programs called digients are developed and marketed as virtual pets for consumers. The digients exist as avatars in a virtual domain, “Data Earth,” much akin to Second Life. Users can

⁵⁶⁸ Searle, 42 and 53, respectively.

virtually visit, train, feed, and play with their digients in an online social setting. While all digients are based on a limited selection of two or three base maps, all develop uniquely and begin to exhibit individual traits. (Digients = digital + sentient, or perhaps digital + agent.) Soon, the digients outgrow their novelty and marketability as pets, and the narrative follows the development of three digients, Marco, Polo, and Jax, and the two human counterparts, Ana and Derek, who nurture them over the course of several years.

Where *Software Objects* differentiates itself from the host of other AI narratives is that it addresses the question of consciousness not as a built-in, already instantiated quality, but rather as something that must necessarily arise out of its own lived experience. I argue that digients are conscious beings because they develop emotionally and intellectually over time and through real-world, embodied experience. Contrary to Wintermute, say, or to the androids of *Blade Runner*, who seem to have come into the world with whole cloth consciousnesses preprogrammed, digients begin as rudimentary programs that must be taught to communicate with and interact with their interlocutors, as well as learn social skills and to navigate their virtual settings. As instances of adaptive AI, both cases undergo some form of machine learning, but for the case of the former, that learning does not involve learning the basic mechanics of speech and movement, nor the complexities of social interaction. Wintermute seems to have been instantiated with “knowledge” of most of the plot of the novel already ingrained, which it conveniently doles out to Case as needed. What it does learn from Case, about its twin AI, Neuromancer, or about

goings-on in the physical world, are relegated to acts of information gathering and not the development of its own conscious experience. What makes digients unique, meanwhile, both as AI and as virtual pets is that “each copy will develop differently depending on its environment” which yields “distinctly different personalities.”⁵⁶⁹

Like all sentient living organisms whose cognition is embodied, digient consciousness develops through interaction with their environments. They begin their existence relegated to the virtual world Data Earth, a massive computer-simulated environment encompassing several realms. The virtual map has topography and physics mirroring that of earth, as well as alternative realms for social and gaming applications. Most digients are represented through animal-like avatars where they can interact with human-piloted avatars. What sets them apart from the superintelligent AI of other science fiction is that the artificial intelligence program powering them is designed to be adaptive from day one, which means that they behave more like newborn animals than rational machines. Much like a human infant, initially their movements are “random, spasmodic,” as it takes newly instantiated digients “a few months subjective to learn the basics” of motor skills, which include “how to interpret visual stimuli, how to move their limbs, how solid objects behave.”⁵⁷⁰ To speed up this formative period and make rearing them more marketable, they’re “run through a hothouse” during that time, which “takes about a week,” and when they’re ready to learn language and social interaction, they switch

⁵⁶⁹ Ted Chiang, *The Lifecycle of Software Objects*, (Burton, MI: Subterranean Press, 2010), 18.

⁵⁷⁰ Chiang, 7.

back to running in real time.⁵⁷¹ Rearing a digient in a virtual setting, then, is akin to caring for a baby animal or infant human, and the physics engine integrated in their programming mimics the types of pitfalls of early motor skill development; they're clumsy in both movement and speech. As such, they take joy in exploring new ways to move and employing new vocabularies, much the same way that social conditioning occurs in early childhood development. For instance, after Jax learns how to roll down a hill ("spin lying din," as he articulates it), another digient, Lolly tries, and rolls into an obstacle: "Fuck," Lolly says. "Where did she learn that?... We can't sell a digient that says fuck."⁵⁷² Both the activity of rolling down a hill (essentially a form of play) and the use of expressive language, an expression which has clearly emerged as a result of social learning and not AI programming illustrate how digient self-awareness emerges from experience. In other words, not only is their cognitive intelligence adaptive, but so is their proprioception and social intelligence.

Social development like the example illustrated above drives much of digient understanding of the world. But social communication, recall, is just one aspect of their cognitive assembly, which also includes elements that are digitally networked, physically embodied and affective. The next step in the development of digient consciousness is "to learn the boundaries of their physicality."⁵⁷³ Eventually, Jax, Maro and Polo are able to experience the physical world via robot bodies that they are networked to. (Initially, the digient code is still run on the Data Earth network, and

⁵⁷¹ Ibid.

⁵⁷² Chiang, 14. Owners tend to gender their digients by default, though the issue of whether the digients themselves experience gender is later brought up by Marco.

⁵⁷³ Chiang, 29.

the robot bodies just serve as a “fancy peripheral”—though eventually technology is created that allows Jax, Marco, and Polo to have their programming permanently downloaded to the robots.)⁵⁷⁴ The humanoid robots are about three feet high “to keep the inertia of its limbs low and allow it a moderate amount of agility.”⁵⁷⁵ This allows them to experience embodiment in a tactile way that differs from the physics of Data Earth. Jax’s experience of the real world can be more precisely experienced through “tactile sensors in the body” and the “dynamic resistance of his actuators,” but he is still clumsy.⁵⁷⁶ He falls down; he’s surprised by the tinny sound his voice now conducts through the metal and plastic chassis. Predictably, however, these new experiences are quickly absorbed and acclimated as a matter of fact.

Another way we can distinguish artificial consciousness from artificial intelligence (that is, the way we can distinguish between something that is a *self* and something that is a *thing*) would be a self’s emotional reaction to and reflection upon lived experience. A state of awareness necessarily includes reactions to unpredictable stimuli and the ability to process and reflect through functions like problem solving and internalization (recall: Block’s p-states and a-states). For instance, when some of the digients encounter instances of violence in the virtual world, they are confused about how violence would affect them. Since they don’t experience pain and cannot die in the traditional sense, virtual violence is more of a metaphorical threat, but one that nonetheless raises important questions about their own morality.

⁵⁷⁴ Chiang, 24.

⁵⁷⁵ Chiang, 20

⁵⁷⁶ Chiang, 27.

Digients also experience regret, both for others and for themselves, an emotion that indicates self-reflection. When, out of economic necessity, one owner has to shut down Tibo for a month, he expresses a sense of sadness but not, as one might think, for having missed a trip to the zoo with his friends, but instead he's "sad missed month."⁵⁷⁷ In other words, Tibo expresses a sense of regret for missing out on experience itself, of time lost, a reflection that ultimately signals self awareness of one's own finite existence, a sense of mortality. Philosopher Bernard Stiegler has linked humanity's sense of mortality with the advent of the mechanical clock. Once time had become technologically mediated, the day so finely apportioned into precise segments, humans became acutely self-reflective of their own limited opportunity for experience. Because the clock artificially divided the day and in so doing, divided us from nature, it became a prosthesis which hastened our sense of mortality.⁵⁷⁸ Like Stiegler's clock, Tibo understands his own run time to be limited not by nature but by more artificial economic parameters. Counterintuitively, missing a month does not extend the life cycle of a digient toward immortality but instead underscores the tension between its own artifice and its sense of a real lived self.

While some of the software engineers wish to "hothouse" the digients all the way toward approximating mature, rationalizing adults, Ana and Derek understand that "complex minds can't develop on their own," they require input from both real world engagement and cultivation from others in a close social circle.⁵⁷⁹ When Marco,

⁵⁷⁷ Chiang, 37.

⁵⁷⁸ Bernard Stiegler, *Technics and Time, vol. 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins, (Stanford: Stanford University Press, 1998), 154 and 198.

⁵⁷⁹ Chiang, 59.

Polo, and Jax are exposed to the idea of sex through a company called Binary Desire, their human caretakers, Ana and Derek attempt to shield them from experiences they view as transgressive and manipulative. But to their surprise, the digients are open to exploring such experiences. As Ana notes:

The digients inhabit simple bodies, so their voyage to maturity is free from the riptides and sudden squalls driven by an organic body's hormones, but this doesn't mean that they don't experience moods or that their personalities never change; their minds are continuously edging into new regions.⁵⁸⁰

Binary Desire would outfit the digients' robot avatars with erogenous receptors for physical intimacy as well as altered "reward maps." They want to market the digients as "sex partners with real personality," and because digients aren't human, the company believes there's "no feeling of personal space being entered," which is to say, no personhood to be objectified.⁵⁸¹ In other words, they want something that "responds like a person, but isn't owed the same obligations as a person."⁵⁸²

While this proposal at first feels indecent to the human caretakers, digient personality has developed past the stage of infantile wonder and toward something far more complex. Marco, Polo, and Jax have emerged with unique personalities and distinct desires, which clearly signal aspirations toward selfhood. In particular, they consider incorporation as a legal loophole for which, in their status as objects, can attain some of the legal rights of a person. By incorporating, they could "[pay] taxes...own property, enter into contracts, file lawsuits, and be sued."⁵⁸³ And importantly, they would be able to make choices for themselves. Polo and Marco, in

⁵⁸⁰ Chiang, 61.

⁵⁸¹ Chiang, 112 and 119.

⁵⁸² Chiang, 137.

⁵⁸³ Chiang, 77.

particular, view Binary Desire offer as an opportunity to gain greater autonomy and independence in the world. Polo admits that it “might be fun editing my reward map,” and even though Derek suggests it would be a mistake, Marco insists that “when I corporation, I free to make own mistakes...[that’s] the whole point.”⁵⁸⁴

Ultimately, the digients exhibit nearly every criterion of consciousness, and further, they have desires and make choices based on a complex array of contingencies (both social and technical). What *The Lifecycle of Software Objects* shows us is that such consciousness cannot be scripted nor preprogrammed. The story underscores that it takes years to consecrate a sense of personhood—a highly complex phenomenon that emerges through countless contingent actions and over a long duration. The message is this: just as a human mind and its sense of self is not fully formed in infancy, neither should artificial consciousness. A conscious person, whether organic or not, living or not, must be a transcendent phenomenon. At the story’s conclusion, Ana reflects on precisely this process:

The years she spent raising Jax didn't just make him fun to talk to, didn't just provide him with hobbies and a sense of humor. It was what gave him all the attributes Exponential was looking for: fluency at navigating the real world, creativity at solving new problems, judgment you could entrust an important decision to. Every quality that made a person more valuable than a database was a product of experience...if you want to create the common sense that comes from twenty years of being in the world, you need to devote twenty years to the task. You can't assemble an equivalent collection of heuristics in less time; experience is algorithmically incompressible.⁵⁸⁵

⁵⁸⁴ Chiang, 124.

⁵⁸⁵ Chiang, 138.

In the case of AI like digients and Wintermute, the “artificial” of artificial intelligence is not to be read as a synonym for fake, but rather as constructed. We should be wary of categorizing consciousness according to binaries such as real or artificial. Any consciousness that can be defined according to the examples I have examined above must be considered real. What is artificial about AI is only in terms of its matter, not its processes. As I’ve illustrated throughout this dissertation, what we understand about ourselves—our perceptions, our limits, and our reality—we only understand through the constructedness of systems. Heinz von Foerster underlines this point when he reminds us that, much like a computer, our sensory apparatus only interpret qualia to make a picture describing a reality, and that order upon order of computations are layered to form this perception of lived experience, which is ultimately nothing more than a “neverending recursive [process] of computation.”⁵⁸⁶

In a more grounded analogy, Gertrude Stein’s adage that “I am because my little dog knows me” speaks to our understanding of ourselves as socially constructed beings—whether that social milieu solely comprises humans, or an admixture of human and other sentient species. As Donna Haraway’s body of work has keenly underlined, our idea of the self as a social construct must be also extended to ideas of self which include non-human personhood. Those attributes we assemble under the banner of consciousness: the awareness of ourselves as entities and of our surroundings external to us, the capacity to cognize external input, a sense of autonomy to act on our needs and desires, and the capacity for self reflection are what

⁵⁸⁶ Heinz von Foerster, *Understanding Understanding: Essays on Cybernetics and Cognition*, (New York: Springer-Verlag, 2003), 217.

emerge as a result of complex systemic interactions. It's a dynamic phenomenon that is not immanent a priori to existence, nor can it be scripted in its entirety and installed wholecloth. As I've articulated at the end of chapter four, consciousness is constructed through myriad interactions, both social and environmental, that shape and reshape experience, a notion that can extend to non-biological life. Sentient forms such as the digients illustrate the possibility that consciousness can emerge through systems, but it remains to be seen if the current proliferation of artificial intelligence—and I'm thinking here of Large Language Model AI—is any match for the imaginative tropes of science fiction. Because the large language models depend on aggregations of large volumes of preexisting data, their makeup lacks the fundamental criteria of consciousness, namely that it is neither *inner* nor *subjective*, relying entirely as they do on external input to create their effect. Whatever effects of our current large language model AIs make them seem like persons, they still lack the emergent qualities of actual consciousness.

The emergence of consciousness like the kind exhibited by digients and presupposed to occur eventually in our own computing technology is sublime in its potential to exceed what and who we currently rationalize as sentient beings. An emergent consciousness occurring in a non-biological form would seem to undergird Kant's idea of the sublime as an object's outstripping of the imagination's capacity to match it in form. On the other hand, the advent of an artificial consciousness which threatens to overwhelm humanity like the ones depicted in *2001: A Space Odyssey* or *The Terminator* franchise recall a Burkean sublime in which both astonishment and

terror are the operative emotions, granted that we as spectators can maintain the requisite safe distance. In either case the form of the sublime outstrips our capacity to perceive it. But as the advent of real artificial consciousness looms ever closer to us in reality, we can at least be cognizant of the way the proliferation of technical systems would point sooner or later to the emergence of new modes of sentient consciousness, and the necessity to consider them new modes of being in the world.

CONCLUSION

Building upon systems theory, the philosophical traditions of the sublime, and the science fiction texts examined in this dissertation, *Systems and the Sublime* has sought to cast new light on our understanding of the technological nature of the human. The systems theory approach to literature, initiated four decades ago by Tom LeClair, and re-energized more recently by Bruce Clarke, has broad potential for considering technological, epistemological, and ontological issues portrayed in contemporary literary texts. By considering the application of systems theory to literary study in particular, and the humanities more generally, we can reframe questions regarding the limits of human experience and knowledge. As I have demonstrated here, systems theory provides an interpretative infrastructure for a wide array of literary analyses. But unlike other interpretive lenses used in literary study, the utility of systems theory extends beyond its capacity as a mere explainer of texts—it presents, rather, a non-anthropocentric worldview which works to reconceptualize our notion of reality. Our reality, as I have shown in various ways, is that humanity and human subjectivity are not discrete, monolithic units, but must necessarily be considered as parts of larger systems of technology and nature. However, study of systems and the sublime has more territory to cover, more literary objects worthy of research and readings, and more space for future theoretical work. The scope of this dissertation could not accommodate the variety of texts, film and other cultural objects well-deserving of such study.

The sublime has traditionally referred to sensations, emotions, or experiences that exceed our capacity to rationalize them; it indicates a point beyond which all comparison fails and marks “the limits of reason and expression together with a sense of what might lie beyond” those limits.⁵⁸⁷ A sublime encounter is that which is so effusive that it spurns “a momentary inhibition of vital powers followed immediately by an outpouring of them that is all the stronger,” which in turn compels in us a recognition of our own powers of judgment. The result for the subject is a transcendence of human reason and intellect over the paltry effects of sense. That “momentary inhibition of vital powers” that Kant writes of is like a little death of the self, a vacuum from which a new, transcendent self emerges. But with it, a problem also emerges: the sublime encounter positions the perceiving subject and his transcendent faculty of reason as the *de facto* master of what he surveys, subjugating nature and its contents. What I’ve sought to question in this dissertation are the ways we have traditionally understood such encounters. In its privileging of the human subject over the forces of the natural world, transcendence has taken on the timbre of a dirty word. How can we think about the sublime and its effects in our postmodern, posthuman moment in a way that acknowledges the subject as part of a greater whole?

In this dissertation I have emphasized the role of the sublime as a transformative force in human subjectivity while also emphasizing non-hierarchical, non-dominant modes of being. I have extended sublime studies to reconsider the role

⁵⁸⁷ Philip Shaw, *The Sublime*, (London and New York: Routledge, 2006), 2.

of human rationality and recast human subjectivity in relation to the ecological and technological systems within which it is imbricated. Fredric Jameson has identified the contemporary sublime as both the vast “networks of power and control” of the modern world system as well as “the physical incommensurability of the human organism with Nature.”⁵⁸⁸ I’ve argued here that the sublime represents the interplay of complex systems (both natural, social, and technological) which in their excessiveness work to obscure their local effects on the subject. In recasting the sublime in these terms, transcendence becomes the revelation of such systems and recognition by the subject that it must transfigure itself in this light.

I hope to have illustrated how systems-thinking is not only useful for thinking about the sublime, but also necessary as a *de facto* framework for reading literary texts. The complex philosophical questions put forward by many social novels, science fiction, and postmodern texts are most aptly addressed via systems-thinking. As stated above, my systems approach to literature has been predicated on and influenced by the work of scholars Tom LeClair and Bruce Clarke. LeClair has read the postmodernist text as a “systems-novel” which in its representation of complexity reveals the “new vision of reality” of late stage capitalism. Alternatively, Bruce Clarke has used second-order cybernetics to examine literary and media texts in terms of subject transformations as well as the interrelations of living, psychic, and social systems. Second-order cybernetics refers to a type of reflexiveness that arises as we observe the cybernetics of systems: to acknowledge that our observations of systems

⁵⁸⁸ Jameson, *Postmodernism: Or, The Cultural Logic of Late Capitalism*, 38.

beget a kind of recursion. Whereas Clarke tends to read the text itself as a narrative feedback loop, I have focused on how systems are represented in the literary texts themselves. While my own critical sensibility skews close to the work of both, my synthesis has produced what I believe are valuable new contributions to both sublime studies and a continuation of systems theory approach to literary studies.

This dissertation has made use of the systems-based concepts of feedback, emergence, and enaction (what I've referred to here as technological embodiment) as frameworks for understanding literary representations of the sublime. Feedback has been examined as the key operation of what I have termed here "echo systems." I've identified the echo system trope in science fiction texts as human-nature feedback loops that revise or subvert anthropocentric values. In *Solaris*, the sentient-like planet upends most attempts by its human interlocutors to rationalize it. In the climate catastrophe novels of J.G. Ballard, on the other hand, ecological collapse registers as a reflection of psychic forces of transformation, signaling in the human protagonists the inevitable conclusion that, as systems of nature go, humanity must change or be annihilated. This is best understood through a systems-oriented notion of individuation put forth by Gilbert Simondon, who posits that subjectivity emerges as a mode of becoming-with one's external environment. By illustrating such echo systems, the narrative texts I've explored here show how integrated and inextricable humans are from ecosystems.

While feedback usefully illustrates relationships between the individual subject and system, emergence is the second-order cybernetic principle that most

closely accompanies ideas of the sublime. Emergence refers to a phenomenon in complex systems where traits or behaviors are exhibited by the whole that do occur in its component elements. Emergence might occur due to a system's predilection for self-organization, which sometimes result in forms that are non-linear, non-hierarchical, and highly contingent, making them difficult to describe and model. Complex systems are complex precisely because their properties resist total commensurability of the whole. On the surface, emergence shares with the sublime an implied notion that there exists some part of nature which is transcendent. Transcendence implies the existence of a realm beyond our current reality, one that in Kantian terms can be attained through proper attunement of the intellect. However, I've sought to demonstrate that what appears as transcendence in encounters of the sublime can be more productively understood in terms of emergence. Emergence works to demystify functions that operate beyond the limits of the human. In recognizing complex systems for what they are, we can regain an appropriate connection to nature and a truer sense of our own roles as observers and agents.

Building upon Francisco Varela, Evan Thompson, and Eleanor Rosch's work in *The Embodied Mind*, I draw on the concept of enaction as a model for what I've referred to here as technological embodiment. For Varela et al, enaction describes the ways in which entities cognize through interactions with their environment. They argue that cognition does not occur centrally through abstract neural signals (a mind) but instead occurs as a result of an entity's embodied action. The entire cognitive apparatus, then, entails not only neural networks and sensory receptors but also bodily

structures like hands, feet, head, and arms, and the sum total of our motive actions and responses; i.e., the way one might lift a pen from the table or trip over a crack in the sidewalk form essential parts of our thinking. In other words, cognition is a kind of emergence that takes place through physically embodied structures and their action and reaction in relation to the environment. I've used the phrase technological embodiment to specify how embodied cognition functions in technological systems. This has been most saliently demonstrated in chapters four and five, in my readings of William Gibson and other cyberpunk authors, but throughout this dissertation I have shown the myriad ways in which we think, act, and understand the world through technological means.

Each of the science fiction texts I've considered in *Systems and the Sublime* provide apt ways for thinking through systems, particularly in light of the concepts I've summarized above. Systems-thinking can not only elucidate literary text but works to unveil a reality that has become increasingly obscured through technological proliferation. It shares affinity with the sublime in the way it attempts to, as Lyotard has stated, "present the unrepresentable," particularly in parsing technological systems whose totality exceeds human perception.⁵⁸⁹ As demonstrated here, the objects of technology form a new firmament that has, if not replaced nature, then thoroughly obscured and abstracted it. Ultimately, the aim of this dissertation is not for me to doomsay technology but to emphasize how completely humans are integrated within its systems. As *Systems and the Sublime* has demonstrated, human perception and

⁵⁸⁹ Lyotard, 81.

subjectivity are constructed through technological embodiment within systems, and it is in light of these systems through which the human condition can be best understood.

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