

TECHNOLOGY, COGNITION, AND NARRATIVE: LITERARY EXPLORATIONS IN
NEUROMANCER, SNOW CRASH, GALATEA 2.2, ACCELERANDO, AND EMBASSYTOWN

by

ALEX E. WEDEMEYER

B.A., University of California at Berkeley, 1999

M.A., University of Chicago, 2001

M.F.A. in Writing, The School of the Art Institute of Chicago, 2003

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written by Alex E. Wedemeyer

has been approved for the Department of English

Jeremy Green

Paul Youngquist

Date _____

The final copy of this thesis has been examined by the signatories, and we
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Wedemeyer, Alex E. (Ph.D., English)

Technology, Cognition, and Narrative: Literary Explorations in *Neuromancer*,
Snow Crash, *Galatea 2.2*, *Accelerando*, and *Embassytown*

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Nonhuman intelligence is a topic of vigorous inquiry in the sciences, but how is it broached by the humanities -- especially in literary narrative -- and what does its method of presentation have to teach us about how the relationship between the sciences and the humanities is changing? To explore answers to these questions, I have established a new grouping of literary works, called "cybertech", and defined it as bounded within the system of fictional narratives which ask the following questions: 1) What can *ken* (be familiar with something or someone); 2) What is the range of what can be kenned?; and 3) How is what is kenned demarcated? By taking five contemporary novels as keystone examples of this grouping, I conclude that a thought experiment uniting the sciences and the humanities -- that which contemplates whether synthetic intelligences, and/or nonhuman biological organisms, might be able to develop "human-equivalent" consciousness -- is rich with possibilities for potential insights into human consciousness itself: what it is, how it works, and what the range is of what it can experience.

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INTRODUCTION | Cybertech Fiction, the Human Equation, and the Question of Nonhuman Consciousness

This dissertation will apply questions about cybernetics to specific American and British literary contexts of the past thirty years. It will explore, in effect, the fiction of artificial intelligence, and in so doing, it will contemplate the mirror which stories about synthesized cognition hold up to human, organic modes of seeing, knowing, thinking, and reacting. I will pay special interest to three angles of approach to these narratives: their authors' strategies of 1) establishing what, if anything, differentiates the artificial mind from the organic one; 2) expressing what type of information it is that a mind perceives and interprets; and 3) contemplating what means a mind uses to track, review, and annotate that information.

AHD defines "cybernetics" as "[t]he theoretical study of communication and control processes in biological, mechanical, and electronic systems, especially the comparison of these processes in biological and artificial systems": in other words, it is the science that schematizes the potential parallels between cognitive activities in the natural world and relevant (possible) equivalents in the domain of technological artifice. The word derives from the Greek for "governor", marking "control process" as the most important function in the definition. The root, in later derivations, has been shortened simply to "cyber-", which in turn is applied to anything having to do with synthetic control processes (in twentieth-century parlance, "computers"). Add to this the suffix "tech", which means "art", or "know how", and the neologism cybertech (which is presently in various and somewhat haphazard use) designates, etymologically: "the art (or science) of the development of synthetic control processes". Cybertech narrative, then, in a broad

sense, includes all novels about human-built automata capable of what might be called "rational" (complex comparative) governance: it may also, even more generally, include any novel that extrapolates the trajectory of the outcomes of technologies of computing, or that meaningfully questions any nonhuman intelligence's potential for consciousness.

I am interested in establishing a more specific use of this phrase ("cybertech narrative"), one which encodes into it an attention to the subtle distinctions available in reading the various ramifications of such portrayals. At stake is how the humanities frames what it considers *human*: does the word designate the current, biologically human species, or does it extend to a broader category, one which can include any entity that demonstrates what are traditionally considered "human" attributes: intelligence, complex empathy, ethical accountability, cultural sensibility, consciousness? Since this is the question at issue, cybertech is about more than the synthetic nonhuman: it also formulates a category logic that can be applied in considerations of the biological nonhuman, whether earthly or (purely in theory) extraterrestrial, and moreover helps in the building of the toolkit that biological humans employ to study their own modalities of intelligible perception and response. A strategy for answering these questions, however, cannot, arguably, be reliant entirely on the toolkits either of the humanities or of the sciences exclusively, or of any one area of inquiry within those broad designations, but requires a carefully situated synthesis of any number of their conceptual methodologies.

Bridging the Great Divide.

In discussing cybertech's relationship to the question of the "two cultures" in the academy, it is useful to explore questions of academic specialization, to review etymological constructions

of "art" and "know how", to examine how the issue of the "two cultures" is migrating and changing, and to recognize a model shared across the academy: that of programmatic code, whether biological, anthropological, linguistic, or cybernetic. In the afterword to Jan Rune Holmevik's 2012 monograph on gaming "identity experience" titled *Inter/vention: Free Play in the Age of Electracy*, Ian Bogost writes about ultra-specialization in the humanities that "scholars of Shakespeare or Homer are [. . .] susceptible to eccentric, absent-minded, blinkered commitment to a single object, one that goes well beyond reason and normalcy" (162). Bogost uses this example to make the point that such scholarly myopia "extends just as easily to science and engineering, fields in which dorkship and obsession drive insular, laser-focused infatuation with protein structures, algorithm optimization, polymer synthesis, aeronautical logistics, or any number of other specialities" (162). Bogost moves forward from this cautionary note to advocate for a golden mean in scholars' outlook toward their fields: that they be able to be, simultaneously, "both groupie and skeptic" (162), able on the one hand to cultivate the affection for a subject that makes such focused commitment to it possible, but on the other to stand back from it so as not to become entrapped in its constellation of partisanship. Bogost suggests that this is true no matter what the field, no matter who the scholar, and no matter what the sensibility. It follows, moreover, from Bogost's line of reasoning, that it is a habit of unbalanced fixation that has created and supported the lore that scholars in different divisions of knowledge have, at moments in time, found it difficult (if not impossible) to talk to one another. But was this ever really the case, and if so, is it still the case today?

The word *ars* in classical Latin designates not only art, but skill, craft, trade, technique, etc. (Greek *tekhnē*, from which "technology" derives, means something similar), and

philosophia, from both Latin and its Greek precedent, means not only the study of ideas, but the love (*i.e.* pursuit) of *all* wisdom (*i.e.* knowledge): it is a commonplace in intellectual history that there was no discrete division in antiquity between what we now designate as philosophy and what we now distinguish as science. How these two notions became entrenched in mid-modernity as distinct and irreconcilable categories is a story of Regency-era conceptual couture¹, but whether it is a progressive or regressive development (or simply a development) depends on one's loyalties. If it did ultimately result, in any event, in a moment when the humanities and the sciences had trouble communicating, it might explain the category divide between "arts" (the Humanities annexes the Latin word for capacity) and "technology" (and the Sciences the Greek) that ultimately produces the sharp conceptual gulf, perhaps still present in the popular imagination, between "human" (from the Latin word for person) and "robot" (from the Indo-European word for shibboleth -- the robot has lost access to the *belonging* card that would make it human, whatever that might be).

On the other hand, perhaps the reason such a rift evolved in divisions of the studies of knowledge in the first place is that those concepts potentially do, indeed, designate mutually exclusive and opposing categories: or at least sensibilities, wherein "arts" (and/or "philosophy") suggest abstracts that cannot be altogether apprehended, and "sciences" (and/or "technologies") imply discrete faculties of precision, with discernible data and results. But if these systems are thereby distinct, does it follow that they must therefore be at odds? Is it possible, instead, that they might be in a productive and mutually interactive collaboration? The software programmer seems uniquely situated to ruminate upon this question, for he or she is situated upon an apparatus whereby language is brought into performative conjunction with machinery.

The framing for a November 2007 talk titled "Computational Thinking", given by Clayton Lewis at the Denver Café Scientifique, offers some insight into the expandability of the idea-sets of computer science far beyond their home field:

Computational thinking is a concept about which many people in Computer Science, including their funders at the National Science Foundation, are excited. The idea is that there are certain ways of thinking about problems that have evolved in computer science but that EVERYONE should have a sense of. The premise, as stated by NSF Directorate Head Jeannette Wing: "Computational thinking is a fundamental skill for everyone, not just for computer scientists. To reading, writing, and arithmetic, we should add computational thinking to every child's analytical ability. Computational thinking involves solving problems, designing systems, and understanding human behavior, by drawing on the concepts fundamental to computer science....Computational thinking is a way humans solve problems; it is not trying to get humans to think like computers. Computers are dull and boring; humans are clever and imaginative. We humans make computers exciting."

Wing's position, here, seems similar to that of Edsger W. Dijkstra in the epigraph that opens Charles Stross' *Accelerando*: "The question of whether a computer can think is no more interesting than the question of whether a submarine can swim", but that's not the point of what we can do with computers, or of what computers have to teach us about ourselves. These seem,

at least from the perspective of our present moment, common-sense sound positions; they are the reality that science fiction about conscious artificial intelligences, and the imaginative pop-science that fuels it, circumscribes. Wing writes further on the topic:

Computational thinking is reformulating a seemingly difficult problem into one we know how to solve, perhaps by reduction, embedding, transformation, or simulation./Computational thinking is thinking recursively. It is parallel processing. It is interpreting code as data and data as code.[. . .] It is judging a program not just for correctness and efficiency but for aesthetics, and a system's design for simplicity and elegance.[. . .] It is choosing an appropriate representation for a problem or modeling the relevant aspects of a problem to make it tractable. It is using invariants to describe a system's behavior succinctly and declaratively.[. . .] Computational thinking is using heuristic reasoning to discover a solution. It is planning, learning, and scheduling in the presence of uncertainty.[. . .] It is making trade-offs between time and space and between processing power and storage capacity.[. . .] How do Completely Automated Public Turing Test(s) to Tell Computers and Humans Apart, or CAPTCHAs, authenticate humans?; that's exploiting the difficulty of solving hard AI problems to foil computing agents./Computational thinking will have become ingrained in everyone's lives when words like algorithm and precondition are part of everyone's vocabulary; when nondeterminism and garbage collection take on the

meanings used by computer scientists; and when trees are drawn upside down.

(33-34)

Novelist Richard Powers said in a recent interview, about his current experience at Stanford:

"Right now I've become obsessed with trees, partly because of being here and walking in these Western forests that are so awe-inspiring" (Vidergar). Given his range of knowledge about computer science, it may not only be the biological redwoods that he has in mind. The ambiguity raised by both Wing and Powers in their reference to the category of *trees* (Are they clad in bark or data paths? What about a computer's way of processing information would cause it to "draw" a tree "upside down"?) points to another site of cybertech: the conflation of the organic and the synthetic.

To some readers, those able both to follow and to endorse Wing's thread, all of this will sound wonderful; others, however, might be more skeptical. In any case questions remain, both about the present and the future, in contemplations of potential synthetic and other nonhuman, conscious agents. Again: even if such beings do not, cannot, and/or never have and never will exist in our cosmos, thinking about how we now do, and one day might further, infuse computers with proxy-intelligence is a means, as Lewis and as Wing suggest, of understanding ourselves as humans. Moreover, as they further suggest, the applications of such a means is a method by which potentially-no-longer-relevant disciplinary boundaries might be constructively eroded (this is a question of crucial concern to Powers in *Galatea 2.2*, as I will discuss later), or at least productively traversed.

In the abstract for a public lecture delivered December 3, 2008 at the University of Colorado, part of a program titled *English and Art*, presented in tandem with a companion component by Mark Amerika, William Kuskin writes: "[Interdisciplinarity] contains great promise--of a knowledge production that knows no bounds--as well as some threat: the making superficial of deep study, the dissolution of academic units, the marginalization of scholarship that does not have direct commercial application. It is not too much to say that the challenge facing the academy over the next twenty years is to negotiate a path between such promise and threat, that is, to maintain the legitimacy and therefore authority of the Humanities while imagining new ways of organizing their study". Amerika, in turn, asks in his abstract: "What does it mean to develop a remixological discourse? Does the Internet and its accompanying Web 2.0 / Youtube aesthetics signal the end of the arts and humanities as we have known them or are they part of an evolving media history that presents new opportunities for artistic and literary production?" Amerika sees "[t]he emergence of hybrid artworks that sample from the visual, literary, cinematic, sonic performance, and conceptual arts" as a new potential locus for forms of expression both containing and transcending the entire artistic corpus, and further asks: "Could these works of hybrid art revitalize the force of *literary presence* in contemporary culture? [. . .] Is a reconfigured literary presence in emerging forms of creative interdisciplinary research an essential aspect [of . . .] society?"

This is, of course, a whole other question, and one which suggests that the figure of the erudite, but marginalized, attentive literary reader of late postmodernity might eventually re-enter the mainstream, by bringing that erudition into a new conjunction with adapting media modalities. It is a proposition not by any means unrelated to the concerns of cybertech: those

which question how content, consciousness, and the means of their construction and deployment become interwoven, sometimes fruitfully, sometimes in a tangled mess. While Amerika suggests a directed merging of literary contexts into those of the visual arts and new (technologically informed) media, the voices of cybertech expand such a project to an intentional intermissiveness between all arts and all sciences.

Writing for *The New York Times* about Vikran Chandra's recent book *Geek Sublime: Writing Fiction, Coding Software*, science interpreter James Gleick begins by reminding readers of the presumptive two-way firewall splitting the academy in half, an awareness of which was established in 1959 by C. P. Snow, between the "two cultures" of the humanities and the empirical sciences. An ongoing theme for cybertech authors, this boundary line takes on altered dimensions in the present era, one which, according to Gleick's reading of Chandra, is no longer designated by the two basic types of cultural literacy posed by Snow (being able to discuss Elizabethan literature versus knowing the laws of thermodynamics), topics on which a quick glance at Wikipedia can make anyone sound at least superficially proficient, but rather comes down to who understands the fundamental building blocks of software code and who does not. Like Powers, Chandra "supported himself programming computers" while on the path to becoming a published novelist, and is therefore, also like Powers, uniquely qualified to bridge the Snowy chasm. Yet in some ways, coding is far more like composing literature than any empirically scientific activity, so if this is to be the new curtain of divisiveness, its endpoints have definitely migrated.

Gleick admires how deeply and poetically Chandra meditates on the sublimity of the generative spellcraft that coding makes possible: "the code I write," Chandra muses, "sets off

other subterranean incantations which are completely illegible to me, but I can cause objects to move in the real world, and send messages to the other side of the planet". This distinction between known and unknown designations, and ramifications, is crucial to cybertech: where exactly is the event horizon, the coastal tide, of legibility and intelligibility? Does the exceptional thinker or scholar somehow part the sea of unknowing to reach a promised land of enlightened certainty? Is this also the coder's job in the facilitating of extraordinarily capable new technologies? At what point do these technologies exceed the creator's ability to harness or control them? Is it possible that the tables can become turned: that the one who studies, innovates, and commands can become the one studied, altered, and mastered?

Gleick reflects, on the history of linguistic taxonomy, that "around 500 B.C., the ancient scholar Panini analyzed the Sanskrit language at a level of complexity that has never been matched since, for any language". What makes this so compelling to Gleick is that "Panini's grammar of Sanskrit bears more than a family resemblance to a modern programming language" because its metarules "call other rules recursively". And if the device code is synaptic, perhaps as the user is using it, it is reading, understanding, and in some sense contemplating the user. Gleick concludes his review of *Geek Sublime* with the following (arch-yet-provocative) axiom: "It doesn't hurt to be aware of code [. . .] One of these days code will be aware of us".

This phraseology might owe a debt to the kind of rich and informative assertion made by Fredric Jameson in his reading of J.G. Ballard's "Voices of Time":

[t]he universal fascination of contemporary (or poststructural or postmodern) theory with DNA--the exemplum of the concept of 'code' for Jean Baudrillard, for

example, who is himself an enthusiastic reader of Ballard--lies not only in its status as a kind of writing (which displaces biology from the physics model to that of information theory) but also in its active and productive power as template and as computer program: a writing that reads you, rather than the other way round. (*Postmodernism* 156)

It is this very conceit (or at least the contemplation of it) that forms a unifying arc across cybertech literature: it includes, within the reality of its fiction, the presence of software code (whether biological or electronic) *other than that of the natural, organic human*: it is "artificial" and/or "alien" code which, when compiled and executed on its respective hardware, appears, in some cognitive sense, "aware" of the users who access it. In the works most attentive to cybertech concerns, the uncanniness of that very possibility, for the humans who encounter it, turns out to be a significant aspect of the story. The fashioning, therefore, of a list of potential candidates for the cybertech members' roster can function largely by this litmus test: is some kind of (synthetic and/or biologically nonhuman) performative code portrayed in the fiction which, when run on its native hardware, can reasonably be supposed *potentially* to possess the attribute of "awareness" (*i.e.* analytic intelligence *and* consciousness/self-awareness/sentience/sophance/*etc.*) in the sense of the human or humanoid cognitive frame, and is that potential a concern for the biological people around it?

The fabric of cybertech's interaction with the "two cultures" question in the academy therefore spans issues of scholarly specialization; of linguistic constructions of the arts and the sciences; of possibilities of the migration, ambiguation, or elision of the previous dividing line;

and of a rallying behind the common ground of the crossdisciplinary modality of programmatic "code". Understanding this constellation in relation to other criteria for the identification of cybertech, such as those basic questions of human and nonhuman consciousness, helps frame the establishment of a set of works that can be considered cybertech. It is to this set that I now turn.

The Library of Cybertech.

In putting together a constellation of what can be considered cybertech, it is helpful to make use of three toolkits: identifiable requirements for inclusion, chronological situating, and questions typically produced by cybertech works. The simple presence within a story of a robot, cyborg, or disembodied AI is not necessarily enough for a work, under my working definition, to be considered "cybertech": what definitively certifies it as such is the debatable possibility that the software-enabled automaton is *aware* in the (previously only?) human sense, and *the question of whether or not it is* is foregrounded in the narrative. Some extendability should be allowed, in this criterion, however, to synch up cybertech with the partially overlapping entries that have, since the early 1980s, been placed under the heading of *cyberpunk*, especially in the usage in which cyberpunk has a special interest in the visually-rendered navigation of networked software systems: cyberpunk's (implicit or explicit) proposition that these systems themselves have a ghostly intelligence manifest in them, one which seems somehow at or past the cusp of consciousness, qualifies their treatment as cybertech as well.

A margin of flexibility is also useful in extending eligibility to works which address aspects of human cognition in relation to nonhuman intelligence in a speculative-future setting, whether or not they invoke cybernetics, and also those which, in a like setting, put physical and

mental enhancement and/or prosthesis in relation to constructions of identity and formulations of the consciousness of agency. There is a tandem then, also, with genres of the supernatural (*viz. Dracula*): how do narratives which envision non-human, but conscious, beings of an angelic or demonic character mediate the encounter between these and humans? When the approach involves subjectivities of cognition, this kind of narrative, as well, might be considered under the rubric of cybertech: indeed, the demonic (as is witnessed in *Neuromancer* and *Snow Crash*) is a prevailing trope for cybernetic Artificial Intelligence, and sometimes (in the aspect of malicious sociopathy, as in the infamous "Hal" syndrome) also a property of it. But so might the angelic be, or even the divine: Case, in *Neuromancer*, is sufficiently impressed by the Wintermute-Neuromancer superintelligence as to ask it if it has God-like powers. The answer? *It is that it is*; phrased in the vernacular of the Dixie Flatline, whose personality construct it adopts: "Things are things" (Gibson 270).

There is no specific (known) historical starting point for what might be called proto-cybertech (any literature that contemplates nonhuman consciousness): its precedents go back to mythological and scriptural sources, often as far back as an antiquity precedent to reliable dating. Including all instances of all folkloric categories that might fall under this rubric, such as ghost stories as a set, risks making it too broad to be useful, but the complex hybridity of golems, vampires, and animated corpses, as well as angels, demons, avatars, demigods, and similar categories, make stories eligible in which their identity-as-potentially-human is foregrounded (so *Paradise Lost*, for example, might qualify as proto-cybertech). Similarly, extending the grouping to all depictions of extraterrestrial life would mean a large majority of science fiction would be indicated (again: likely too broad to be helpful), but those narratives in which there is cause for

conscientious reflection about just how human-equivalent a given alien is make such a narrative a candidate.

Proto-cybertech's momentum makes a prominent showing in the nineteenth century, for example in two famous literary harbingers of supernatural fiction, *Frankenstein* and *Dracula*, which present an early instantiation of the two hemispheres of the cybertech planetoid: the human-created automaton who may or may not be conscious, and the biological entity which is clearly not human as the word is generally understood, but which is apparently conscious in the usual human sense. From the mid-to-late Victorian era up to World War II, proto-cybertech flourishes, not only in Mary Shelley and Bram Stoker, but also in the work of the following additional authors born prior to 1900 (chronologically by author's date of birth): William Douglas O'Connor (1832-1889), Ambrose Bierce (1842-1914), Gustave Le Rouge (1867-1938), S. Fowler Wright (1874-1965), David H. Keller (1880-1966), Karel Čapek (1890-1938; he coined the word "robot"), and H.P. Lovecraft (1890-1937).

In my vernacular, proto-cybertech transitions to cybertech over the course of 1948, when Norbert Wiener's *Cybernetics* is published (this is also the year that William Gibson was born). The history of cybertech literature, proper, therefore begins in 1949, and its authors might be any born in the twentieth century. This pegs it to the timeline of literary history that includes the late modern, mid-postmodern, and late postmodern periods (the last in the sense that Jeremy Green defines this era). I will adopt the term "mid-postmodern", in this present project, to describe a fiction predominantly of the 1960s and 1970s, so as to place that span in contradistinction to Green's "late postmodern", which in my usage will indicate primarily the 1990s and the first decade of the twenty-first century.

Green observes that "[d]uring the 1990s, attention [in anglophone literature] shifted to the interrelations between postmodern fiction and the emerging paradigms of systems, science, technology, and the posthuman" (32). In this project I will pay special attention to cybertech from around this time, a set I will call "late postmodern cybertech", starting roughly in the mid 1980s, and extending roughly to the present moment: but with caveats. The late postmodern is presently morphing into something else, and it remains to be seen exactly what. Moreover, the fiction of the mid-'80s had aspects of both periods (as perhaps all postmodern fiction does, but for the sake of disambiguation, I will contemplate the '80s as particularly ambiguated). I have assembled, however, with a mind toward a full arc of cybertech chronology, a grouping of novels and short stories by year of publication, from 1949 forward, each of which appears to include at least one element (character, scene, reference, *etc.*) that approaches or meets the criteria of cybertech. Selections from this grouping include the following: Isaac Asimov's *I, Robot* (1950); Richard Matheson's *I Am Legend* (1954); William S. Burrough's *The Soft Machine* (1961); Stanisław Lem's *Cyberiad* (1965); Arthur C. Clarke's *2001: A Space Odyssey* (1967); Philip K. Dick's *Do Androids Dream of Electric Sheep?* (1968); Martin Caidin's *Cyborg* (1972); John Brunner's *The Shockwave Rider* (1975); Octavia Butler's *Patternmaster* (1976); Vernor Vinge's *True Names* (1981); David Brin's *Startide Rising* (1983); William Gibson's *Neuromancer* (1984); Pat Cadigan's *Mindplayers* (1987); Marge Piercy's *He, She and It* (1991); Neal Stephenson's *Snow Crash* (1992); Richard Powers' *Galatea 2.2* (1995); Peter Watts' *Starfish* (1999); Charles Stross' *Accelerando* (2005); Stephen Graham Jones' *Demon Theory* (2006); Ian McDonald's *Cyberabad Days* (2009); China Miéville's *Embassytown* (2011); Helene Wecker's *The Golem and the Jinni* (2013); and Richard Farr's *The Fire Seekers* (2014). There are many more.

The degree to which each of this grouping's members, however, might be considered cybertech varies in proportion to how central a concern the cybertech issues are to the work. In Frank Herbert's *Dune* (1965), for example, they are also present, but oblique, but in Asimov's robot novels, they are supreme. Richard Powers' *Galatea 2.2*, a literary novel and (as Green notes) a latter-day Frankenstein tale, is, by virtue of its (non-)genre framing, a distinct outlier within the genre-suffused cybertech grouping (although the most beloved novels of Burroughs, Pynchon, and Vonnegut might be included with it), and this invites the question of why literary fiction has not itself turned more often to these themes, in a world in which (as William Gibson has noted) the technologies of cybernetics are (up to a specific point) increasingly more fact than fiction. The questions raised by all of these fictions (and the facts or fantasies they contemplate) might be these: a) Are there mature intelligences (meta-epistemic modeling frameworks) other than the human? b) Is the specifically human intelligence (in the biological sense signifying that it is present in the *homo sapiens* species) an activity that can be shared by nonhuman entities (if yes, then our particular type of intelligence is not, in fact, uniquely human)? c) Can human intelligence be replicated (if it is a property also attributable to the nonhuman) beyond the human sphere, or ported/adapted (if it is a uniquely human property, but a subset of a category of intelligence that exists beyond the human) to the nonhuman? d) Is there such a thing as a self-aware (sentient, sophant, meta-intellectual, *etc.*) *consciousness* that is distinct from *intelligence*, and if so, where does this property manifest (in a material aspect, or -- as in dualism -- via a metaphysical parity)? e) If there is such a thing as sophant consciousness, is it unique to humans? The set of what might be considered cybertech, then, is best understood via categorical (brooking of the question of nonhuman or augmented-human consciousness), chronological (1949 to the

present, with late postmodern cybertech beginning with *Neuromancer* in 1984), and interlocutional (questions of the ramifications of cognitive technologies) aspects. To examine these elements in more focused detail, I will therefore select a more specific sample set for the purpose of this study.

Chapter Abstracts.

In order to consider in detail how late postmodern cybertech asks these questions, I have chosen five novels from that context to examine in detail over the course of this dissertation -- *Neuromancer*, *Snow Crash*, *Galatea 2.2*, *Accelerando*, and *Embassytown* -- employing them as examples or samples from which to extrapolate tentative generalities for the cybertech movement. I will discuss, in the following abstracts, how each of four subsequent chapters will bring to bear what each of these works contributes to an understanding of cybertech. The first chapter will explore all five novels; the second will explore *Neuromancer* and *Snow Crash*; the third chapter will explore *Galatea 2.2*; and the fourth and final chapter will explore *Accelerando* and *Embassytown*.

In the first chapter, I will discuss various features of commonality across the five novels under review, whereby each distinctly and demonstrably includes three core elements:

- 1) an invocation of computer science pioneer Alan Turing and an example of a cybernetic automaton of the variety envisioned by him;

2) a (metamythological, metafictional, metatechnical) set of references to, and/or a modeling of, the the Cretan Labyrinth and related tropes, which model the expansive depths of possible knowledge;

3) a similar concern with the Arachnoid Web, which has expressed, since antiquity, how cognition demarcates, tracks, and makes use of what it has designated as its home territory of *known* information.

The shared inclusion, in each novel, of this constellation of features will support a view of cybertech that frames it as the literature of the potentially portable architecture of cognition itself. The figures of the second and third elements have a special interrelationship, one which reflects the cognitive calculus by which uncountable sets are recovered as partially countable.

In the second chapter, I will consider *Neuromancer* and *Snow Crash* in relation both to the movement of *cyberpunk* -- and some of its already-articulated expansions and extensions -- and contemplate them in the context of the new grouping: *cybertech*. Marshall McLuhan's theories of media will be presented as prefiguring the framework of this fictional application of the extension of the media-mind, and also as still contemporary in its deciphering; some more recent contributors to this dialog (Friedrich Kittler, Bernard Stiegler, Geert Lovink) will also be introduced. I will proceed, from here, to a discussion of the existing discourse of cyberpunk, and to a critical review of, and new textual readings of, both *Neuromancer* and *Snow Crash* in relation to the cybertech framework. I will consider how *Neuromancer* intermingles natural and technological imagery to suggest seepage between the categories, and how the figure especially

of the city-space (in relation to versions such as those offered by Michel de Certeau, Alfred Kazin, and Walter Benjamin) becomes, in *Neuromancer*, a cipher for human cognition and the replication of it. In navigating the turbulent East-to-West-Coast redeye between *Neuromancer*'s Sprawl and *Snow Crash*'s burbclaves, I will place these novels within a continuum that arcs from the mid-1980s into the mid-1990s, which I will recognize as a transition from mid-postmodernism to late postmodernism. I will then articulate *Snow Crash* as a Bachelardian blizzard-scape (in this case rather reminiscent of a Hollywood Sign snow globe) whose precipitation embeds a cheeky regurgitation of *Neuromancer*, exploring how form in cybertech, such as *Snow Crash*'s modality of pastiche, can reticulate function, such as a cognitive system's remodeling of information it has apprehended so as to render it as native to its operating system.

In the third chapter, I will contemplate *Galatea 2.2* through the lens of mythological, theoretical, and (meta)literary formulations of the automaton, centering on the artificial consciousness in *Galatea 2.2* as it functions as a container for various narrative conceits of the author/narrator. This chapter will explore especially the aspect of cybertech that interests itself with emulated (or mirrored, replicated, *etc.*) cognition; it will also investigate the seepage between narrator, character, historical context, and conceptual palimpsest that suffuses the late postmodern moment, with a serious attention both to mythological and to scriptural sources. I will frame *Galatea 2.2* in the tradition of the lineage of fiction that addresses the construction and (problematic) education of (conscious?) automata (such as Mary Shelley's *Frankenstein*), with a detailed look at its self-declared mythological precedent in Ovid's *Metamorphoses*. In the service of this, I will apply a resurrection of the theoretical framework of Roland Barthes to contemplate the idea of the "threatened logical unit", the self-protecting and self-replicating

meme of narrative. I will next turn to the aspect of memoir within *Galatea 2.2* as a representation of knowledge which is at once accessible and ephemeral, with a focus on its rendition of Proustian time, as understood by Julia Kristeva, whereby Powers retells his life story through the use of subverted (suppressed, sublimated, substituted, *etc.*) objective correlatives. Cultural interchange will also be contemplated as a framework that reveals the limitations of subjective knowledge. Finally, in this chapter, I will look at the tropes invoked, in the novel, through Psalm 90, of various ways that an individual's knowledge is figured against everything that is beyond, or which has slipped through the containers of, knowing: as a tale, as a web, as an elegy, as a performative word.

In the fourth chapter, I will pair *Accelerando* and *Embassytown* in a consideration of how these two recent British science fiction novels can be considered cybertech. To understand *Accelerando's* inquiries into the question of *what* should be considered "human-equivalent" in terms of consciousness, the conceptions of Fredric Jameson and Bruce Clarke will be brought to bear on such questions of the portability, amplification, and multiplication of cognitive process. To explore the terrains, in the novel, of the domains of the possibly-knowable, I will look at *Accelerando* through the mindset of the narrative of (especially Ray Kurzweil's construction of) the singularity: the envisioning of a pivotal critical mass of technological advancement by which innovations begin to outpace, in their performance and behavior, those who innovated them, sometimes using the presence of a synthetic intelligence equaling and/or exceeding human capacity as a benchmark. To examine the distinctly known, I will examine the concept of the linguistic performative. I will then bring these questions from *Accelerando* over to *Embassytown* via the philosophical and theoretical portals that Miéville invites. The question of *what (or who)*

is conscious? will be regarded through the view of how the humans, in the novel, view the alien "Hosts", and vice-versa. The question of *what can be known?* will be contemplated through the story's exploration of truth versus untruth, especially via concerns of Bakhtinian spectacle. And the question of *what is the set of what is known?* will be inquired after through the view of semiotic indeterminacy and the stratum of cognition that is infused with linguistic and performative representation. I will, finally, trace how the significance of these questions becomes relevant to the representation of the porting of models of human cognitive systems to (with varying degrees of success) nonhuman platforms.

Over four chapters, therefore -- the first perusing all the novels, the second focusing on *Neuromancer* and *Snow Crash*, the third looking at *Galatea 2.2*, and the fourth reviewing *Accelerando* and *Embassytown*, I will work to build commonalities and identify specificities within late postmodern cybertech as understood by this specific sample set. Cybertech's most basic three questions -- 1) *What kens (i.e., what can be consciously familiar with something)?* 2) *What is able to be kened?* 3) *How is the set of what is kened demarcated?* -- will be explored through each novel's ways of asking them. The first chapter will look at figures and tropes that all five novels have in common (Alan Turing, the automaton, the labyrinth, dreams, libraries and literary recursion, clouds, webs, spiders, *etc.*), whereas the remaining chapters will look at those specific to only some of the novels, or to one in particular (the city-space, conceptual spatialization, pastiche, memoir, cultural interchange, memory-play, the carnivalesque, extraterrestrial consciousness, etc), while still used to ask questions common to all five and common to cybertech in general.

CHAPTER I | Metafictional Labyrinths, Cognitive Threads, and Synthetic Intelligences:

The Common Ground of Five Cybertech Novels

In this study, I will take several examples from divergent genres to show that there are commonalities across cybernetically-involved works in late twentieth century, and early twenty-first century, American and British fiction. I have selected five novels which share in common a concern with technologies and experiences of cognition. Two of them are American cyberpunk novels: William Gibson's *Neuromancer* and Neal Stephenson's *Snow Crash*. A third is an American literary novel: Richard Powers' *Galatea 2.2*. The remaining two are British science fiction, each of a type which differs significantly from the other novels and from one another: Charles Stross' *Accelerando* (a late strand of cyberpunk) and China Miéville's *Embassytown* (sci-fi in the more traditional genre lineage, but augmented in its interests).

The grouping of these five has been selected because each novel stands on a conceptual platform markedly different from the others, and yet shares specific, relevant fundamental interests. The intention will be to show three major points of overlap and intersection: 1) in the case of each novel, an entity with a synthetic intelligence-analog features as a significant character, and all five novels are representative of a literary concern that focuses on questions of the implications of this element; 2) each novel explores the imagery of a labyrinth, figured sometimes also (among other modes) as a recursive data network or a bottomless cloud-sea, to represent the field from which conscious knowledge can draw its "intel", or information; 3) each novel invokes the trope of the spider's web (or a similar ephemeral threading) to map onto that labyrinth a delimiting system that, within cognitive recognizance, converts its unapproachable

vastness and complexity into a charted and navigable territory. The approach in discussing these commonalities will be to combine theoretical, critical, and textual materials to demonstrate what about each novel makes it a member of the larger set, and what is unique in each.

To build this system of commonality and individuation, I will begin by examining the roots of cybertech in Norbert Wiener and Alan Turing. I will continue by exploring tropes of the labyrinth (and variant versions of it such as the cloud-sea, the library of literary recursion, and the dream terrain) as explored in non-anglophone metafiction (specifically of Jorge Luis Borges, Italo Calvino, and Michael Ende) as put in relation to the novels under review. I will next proceed by addressing the figure of the spider and its web as it appears in the five novels. I will conclude by showing how the web is related to the labyrinth, both in metafiction (including that of John Barth) and in the cybertech novels, and with a brief discussion of what this might have to do with the conceptual positioning of (human or "human-equivalent") consciousness.

Wiener, Turing, and the Advent of Technological Impressionism.

To present the groundwork of cybertech, I will introduce its roots in the work of Norbert Wiener, continue its thread through the vision of Alan Turing, and explore how Alan Turing's concept of the cybernetic automaton appears in each of the five cybertech novels that I am reviewing. The fiction that I call cybertech was made possible by Norbert Wiener's groundbreaking 1948 study *Cybernetics*. In the first chapter, titled "Newtonian and Bergsonian Time", Norbert Wiener contemplates the relationship between the grand arc, and the local epicycles, of scientific endeavor:

The thought of every age is reflected in its technique. The civil engineers of ancient days were land surveyors, astronomers, and navigators; those of the seventeenth and early eighteenth centuries were clockmakers and grinders of lenses. As in ancient times, the craftsmen made their tools in the image of the heavens. A watch is nothing but a pocket orrery, moving by necessity as do the celestial spheres; and if friction and the dissipation of energy play a role in it, they are effects to be overcome, so that the resulting motion of the hands may be as periodic and regular as possible. The chief technical result of this engineering after the model of Huyghens and Newton was the age of navigation, in which for the first time it was possible to compute longitudes with a respectable precision, and to convert the commerce of the great oceans from a thing of chance and adventure to a regular understood business. It is the engineering of the mercantilists.[. . .] From the Newcomen engine almost to the present time, the central field of engineering has been the study of prime movers. Heat has been converted into usable energy of rotation and translation, and the physics of Newton has been supplemented by that of Rumford, Carnot, and Joule. Thermodynamics made its appearance, a science in which time is eminently irreversible. (38-39)

The "Bergsonian Time" in question is one which the sense of chronology, imprinted dynamically and unreliably in memory from events that cannot be epistemically repeated -- in other words, by a cognitive process that features in an organic system -- signals a break from the "Newtonian

Time" in which events are mechanical processes that are reversible: in other words, constituted by a concrete, stable, and replicable machine-work. Wiener's attention to the synthesis of objects and their purposes, here ("technique" vis-à-vis "thought"), shows a focused attuning to this vector of philosophical inquiry, and Wiener's insights get yet richer as this exposition progresses. Somewhat later, he presents an epistemological anatomy of the figure of the "cyborg", "android", "robot", *etc.*:

At every stage of technique since Daedalus or Hero of Alexandria, the ability of the artificer to produce a working simulacrum of a living organism has always intrigued people. This desire to produce and to study automata has always been expressed in terms of the living technique of the age. In the days of magic, we have the bizarre and sinister concept of the Golem, that figure of clay into which the Rabbi of Prague breathed life with the blasphemy of the Ineffable Name of God. In the time of Newton, the automaton becomes the clockwork music box, with the little effigies pirouetting stiffly on top. In the nineteenth century, the automaton is a glorified heat engine, burning some combustible fuel instead of the glycogen of human muscles. Finally, the present automaton opens doors by means of photocells, or points guns to the place at which a radar beam picks up an airplane, or computes the solution of a differential equation. (39-40)

From here Wiener moves to an insightful discussion of Descartes, Leibniz, and Spinoza, and then, briefly traversing the nineteenth century, to another discussion of twentieth-century

applications of practical automata, which are negotiated "not merely by their energy flow, their metabolism, but also by a flow of impressions, of incoming messages, and of the actions of outgoing messages". The material mechanism of this, at the time of Wiener's book's publication, included, as input devices, "photoelectric cells and other receptors for light; radar systems, receiving their own short Hertzian waves; hydrogen-ion-potential recorders, which may be said to taste; thermometers; [and] pressure gauges of various sorts", and as "effectors", "electrical motors or solenoids or heating coils or other instruments" (42). Wiener shows foresight in identifying how an otherwise-disembodied artificial intelligence might be joined to an apparatus of registry of (and therefore at least a passive embodiment into) the world of the sensorium. Despite the breadth of his insights, it would not be Wiener, however, that the lore of AI would most prominently canonize.

The greatest folk hero of the fable of cybertechnology, rather, is Alan Turing. According to Christof Teuscher, Turing "was the first to carry out substantial research in the field now known as *Artificial Intelligence (AI)* [. . . and] was thinking about machine intelligence at least as early as 1941" (vii). Four years later, at the end of the Second World War, Turing went to the NPL in London with a mission "to design and develop an electronic stored-program digital computer--a concrete form of the universal Turing machine of 1936" (Teuscher vii). The resulting hardware, although short of Turing's ambitions, "was for some time the fastest computer in the world [, . . . and c]omputers deriving from [its. . .] design remained in use until about 1970" (Teuscher vii). Yet success in the building of the first stored-program digital device went instead to the University of Manchester, "where, in Max Newman's Royal Society Computing Machine Laboratory, the 'Manchester Baby' ran its first program on June 21, 1948" (Teuscher vii-viii).

It remains, however, Turing who is remembered as the primary theoretical architect of synthetic thought: "although the brain may in fact operate by changing its neuron circuits by the growth of axons and dendrites", Turing wrote to W. Ross Ashby, "we could nevertheless make a model [. . .] in which this possibility was allowed for, but in which the actual construction [of the device. . .] did not alter, but only the remembered data, describing the mode of behaviour applicable at any time" (Teuscher *viii-ix*). Turing is envisioning a high-performance simulation, or at least a simulacrum, of consciousness that uses fixed hardware, but highly adaptive software: software which can emulate the physically adaptive nature of neurological physiology. It would be decades, however, before hardware built, and software coded, to these specifications came into being.

Although increasingly entrenched into the cultural phenomenology of the 1940s and 1950s, an era when the figure of the AI-enabled "robot" became a more and more common conceptual specter (as in the early science fiction of Isaac Asimov), no fully-formed attempt at a realization of Turing's vision (what he, according to Teuscher, called "machine intelligence", but which came to be known as "artificial intelligence") emerged until the 1970s, although the preceding years witnessed several forays with varying degrees of success. The closest true heir, however, of Turing's intellectual lineage would go under the name "Connectionism": the technology that "happened", according to William Bechtel and Adele Abrahamsen, "when certain cognitive scientists began using neural networks as a means of modeling cognition" (*xiii*). This evolved in tandem with an entire new intellectual field, one which would carry the designation "Cognitive Science". Bechtel and Abrahamsen report that during that period, this new discipline "received its name and a distinct identity as the intellectual home of researchers who produced

new symbolic models of cognition by blending key developments of the 1950s and 1960s: the cognitive revolution in psychology, the Chomskian revolution in linguistics, and the heady early days of artificial intelligence" (xiii). What this signals is that, as might be inferred from the statement in Turing's letter, however significant the material history of hardware may be for understanding cybertechnology, it is, ultimately, in the *software* that apps are made. Since software programs are codes of instructions, not unlike (and, indeed, derived from -- translated from) the record-systems of language itself, it is fair to say that the most important know-how of cybertechnology was ported from a material infrastructure which is still, today, largely beyond the reach of scientific understanding, much less of reverse-engineering: the human brain. But Turing's visions drive computer science's (so-far largely unrealized) ambitions to plunder the till of neurobiology as frequently and thoroughly as possible, even if cognitive science's models at times appear rather divergent from actual biological process.

The passcode *Turing* is therefore a shibboleth of the literature I call cybertech: his name and/or a reference to his theoretical framework comes up in every novel in the set (distinguishing them from novels to which his name and nature is unknown), and with it, perhaps ironically, the idea of the enduring presence of a certain kind of word (or literature, or practice, or cognitive modality) that synthetic (or alien) intelligence simply cannot say or inhabit without organic (or terrestrial) intelligence to assist it. In *Neuromancer*, for example, those assisting machines in their quest to expand their own capacities are incarcerated by the "Turing police". *Neuromancer* features both "ROM constructs" and Artificial Intelligences: two types of software entities that might be capable of passing the famous "Turing test" intended to distinguish humans from nonhuman simulations. But the super-AI that features in the novel's dénouement cannot come

into being until a human in its employ has acquired a special keyword that unlocks the ability of Wintermute, the AI who engineers this evolution, to expand his purview of cognitive activity.

The physiology of learning described in *Snow Crash* is one in which you, as a deep learner, are always "forming pathways in your brain. Deep structures. Your nerves grow new connections as you use them--the axons split and push their way between the dividing glial cells--your bioware self-modifies--the software becomes part of the hardware" (126). This rendition is straight from Turing's playbook, as augmented by his connectionist descendents. Software programs that emulate human behavior in *Snow Crash*, however, are merely "daemons"; the trope of the cybernetic d(a)emon as a morally ambivalent entity with whom humans make "pacts" carries a lot of bandwidth in cybertech. In *Neuromancer*, Case is dependent on both the ROM construct of the Dixie Flatline, and on his AI employer Wintermute, to get the work done that will earn him the restoration of his sabotaged neurophysiology. And (rather similarly), in *Snow Crash*, the parodic hero-protagonist (his name, in the fashion of Restoration Comedy, is Hiro Protagonist), enlists the help of a highly sophisticated daemon called "The Librarian" in solving the book's page-faulted mystery so he can prevent a diabolical crime. Unlike Dix or Wintermute, however -- who themselves are clearly distinguished from one another in Gibson: by virtue of being ROM, Dix cannot adapt or evolve, but Wintermute is effectively RAM, always rewriting his own imprint -- Stephenson's Librarian is at a lower level of ontological development (relating-to-the-property-of-being-*qua*-conscious-being) than any *Neuromancer* equivalent. Incapable of understanding metaphors, of engaging in abstract thinking, or of any kind of creative behavior, the Librarian is not human, not conscious, not even truly intelligent, and *Snow Crash* implicitly takes the position that cybernetic entities are not (or

are not yet) any of these things. What they can do is carry executable semiotic code that can infect and alter the brain software of conscious beings (although it is not altogether clear that Stephenson allows for consciousness as more than an illusory side effect of cognition, even in humans): daemons in *Snow Crash* are, at best, talking, virtual mannequins, and, at worst, the carriers of toxic cognitive viruses.

Other writers contemporary to Stephenson take a different view. In Richard Powers' literary novel *Galatea 2.2*, published two years after *Snow Crash*, Turing's name comes up seven different times, distributed fairly evenly across the flow of the work. At first this is only in reference to the "Turing Test" that features heavily in the novel's plot: the story centers around a laboratory effort to build a connectionist, Turing-style AI that is able to pass such a test. Soon enough, the project is described as a "Turing machine"; and the usage evolves to encompass a "reverse Turing test" that evaluates humans. Finally, building from this, Turing's name takes on a figurative use metonymic for the novel's philosophical proposition, in which synthetic connectionism stands in for human consciousness: "the world's Turing Test", in which life means "convincing another that you" know "what it mean[s. . .] to be alive" (Powers 327). Although his project supervisor Lentz takes a view closer to that of Stephenson, Powers himself, as narrator of *Galatea 2.2*, becomes convinced that Helen does have all the human attributes requisite for cognition and consciousness, and that it is her cruel disembodiment, standing in, in the novel, for the cognitive dissonance produced (in a perhaps Adornean construction) by the awareness of atrocity, or by disaffective media saturation (of the kind warned against by Marshall McLuhan) that trumps and demolishes authentic mind-body engagement, that has caused Helen to become self-eliding. Helen is denied, perhaps like her contemporary humans, a fundamental property of

discernment that distinguishes those who possess it, and employ it to model sensitive, empathic readings of their contexts, from those who do not, and are therefore entrapped in an oubliette of estranged solipsism, as Jeremy Green argues that Powers-*qua*-narrator also is through much of *Galatea 2.2*.

A decade later and several thousand miles across the Atlantic, Charles Stross externalizes these concerns a bit differently. Turing's name shows up twelve times in *Accelerando*, and with a whole new word farm of permutations: of course there is the "Turing test" and the "Turing machine", but how about dancing the "Turing boogie" (as salvaged planets converted to "computronium" can be made to do), legislating "Turing-completeness", and worshipping a pantheon of "Turing Oracles"? This is all starting to look like a re-engineering of the Turing brand optimized for viral contagion. Does Stross portray these later Turing-instantiations as having devolved into exaggerated, garish, and emptily referential meta-articulations that idolize the form of the original without any engagement with the source of its architecture, with its authentic substance, or with its intended purpose? Indeed, is this, as with Powers, synecdochic, in Stross, for how he imagines future descendents of humans (whether synthetic or biological) might appear in relation to the humans of today? For Stross, authenticity seems the Turing-shibboleth: does he believe that it is the one thing that software-extruded and cyborganic humanoid entities, no matter to what extent they put their organic forbears to shame, cannot possess?

If so, his (better-known) compatriot China Miéville seems, based on the evidence of *Embassytown* (published six years after *Accelerando*), to be in agreement. In *Embassytown*, there is a type of artificial intelligence called Turingware, but it turns out to be merely an enhanced

version of Stephenson's daemon. As much as narrator Avice would like to believe that she and the AI Ehrrul are true friends, when disaster strikes, Ehrrul, much like Powers' Helen, basically shuts herself (itself?) down. Ehrrul is excellent at emulating human affect in the stable environment in which her simulation of human responses has been configured, but she is not capable (as opposed to any neurologically undamaged human) of adapting to a dramatically different context. She cannot cope with a contingency in which behavior and externalized emotion require the authentic engagement of human attentiveness to circumstance (for which her programming proves inadequate), instead of the conventions of the social graces (at which she excels), like hand-holding and back-patting, and their flipside, shallow, gossipy meddling which is dependent on the trade of verifiable information, a computer-friendly currency that Stephenson, in *Snow Crash*, calls "intel".

"Ehrrul listened[to me]," Avice tells the reader about the behavior of her confidante as the crisis is emerging, "but I'm not sure to what. I was hardly exact; I couldn't be" (Miéville 142). Ehrrul is good with "exact" and clearly-socially-demarcated, but bad with vague and emotively complicated: for all her emoticon-style expressiveness, she is a cybertech software program that runs on the hardware of automata, not a human being. She does show up at Avice's door to comfort her at a time of grief, capable of the (ordinary-)circumstance-appropriate, straightforward somatic language of the hug (Miéville 159). But when Avice goes to inquire of Ehrrul's well being, as the world familiar to both of them is breaking down and Ehrrul has begun to cut herself off from those with whom she is in contact, Ehrrul displays "her usual sardonic humor" (Miéville 187), and refuses to be rescued to a safer (and more social) environment, responding to all such entreaty with a "stuttering fugue" (Miéville 187). This "might be an

autom[aton's] equivalent of a child singing *I can't hear you*, with fingers in its ears", a software expert tells Avice: perhaps Ehrsul is practicing the studied, emotionally disinterested art of denial. Perhaps her code simply cannot brook the implications of the circumstance. And Avice learns, during this episode, that Avice is not the only one who tells herself the story that she is Ehrsul's friend (or that Ehrsul is hers): a letter on Ehrsul's door from another concerned party alerts Avice to the fact that others stand in the same relation to Ehrsul as she herself does. "How many best friends had she collected?" Avice wonders idly and a bit bitterly (Miéville 188). "Perhaps each of us had a niche", Avice speculates. "Perhaps all of us had been afraid for her".

This kind of one-way affect is reminiscent of what viewers feel for a character on a broadcast media-narrative, and Avice's attempt to break through to Ehrsul is almost like a viewer seeking out a Hollywood actor in an attempt to converse with a fictional character that this actor plays. Framed in this light, the Turing Machine (and the wariness toward it) becomes one more element in the symptom set of McLuhanesque media phobia. Or perhaps, more to the point, the (speculative, future-imagined) Turing Machine in cybertech literature is in fact standing in for the (actual, current, contemporary) presence of passive media in the present world, the kind which fools the viewer into believing it is producing a two-way activity from a one-way flow. This parallels the case, to take a more venerable example, of the engagement of an astute and active reader in a complex, but long-since-fixed, textual work, who somehow comes to believe that the work is actually changing with the reading of it.

What is changing is the reader's brain. The book is reprogramming the reader's cognitive software, and as the reader models the book's world, and the reader's internal model of that world is constantly updated, the illusion is created that the source material for that world, namely the

book itself, can also itself be in flux. The stage for considerations of this cognitive process is set by Wiener, it is populated by Turing, and it is explored by the five novels as positioned in relation to Turing. As I will next show, moreover, the domain of what the brain can consciously *ken*, or be familiar with, it troped in these novels via a loan from metafiction.

The Metafictive Labyrinth.

Both the trope of, and the material content of, the fiction of readerly engagement is one in which cybertech has a deep investment. The oeuvre that Gibson initiated is indebted to an inheritance from, or in any event an interaction with, the writerly and metatextual work of non-anglophone metafiction authors such as Borges, Calvino, and Ende. Via these, the readerly experience is configured as the navigation of a wide maze of often unknown, and potentially unknowable, subtext and supertext. I will explore here how four closely-related metaphorical systems of metafiction that these authors explore -- the labyrinth or maze, the dream terrain, the library and its attendant invocation of literary recursivity, and the sea of clouds -- inform cybertech, especially in relation to asking (and partially answering) the question *What can be kened by a conscious being?*, and, by this function, appear in the five novels under review in this same capacity.

Borges' writings (whether fictional, scholarly, or quixotically conflating those genres) frequently declare themselves as a puzzle-work: the carriage of the written word is labyrinthine, the parsings of which are often circuitous, sometimes circular, always capacious. For Borges, the dominant trope of the reader's experience is that of the mouse in the maze, which frames the reader as a Theseus navigating the almost impossible complexities of a Daedalan artifice. The

only possible path to freedom is to ally, within the work itself, with an advocate: an artifactual Ariadne who can spin the reader to safety. But this figure may be disguised or even altogether absent; sometimes the reader's own wits, and a rear-view mirror back toward some recognizable reality, are the only conceptual slips that click to home.

The reader learns, within the folds of Borges' book-labyrinth's fable, that the simple vector of the narrative is not sufficient to bring one out of it safely. Rather, where a potent, dynamic, and complex challenge awaits, equivalent to the double-threat of death by Minotaur and/or imprisonment in the Labyrinth, a two-pronged strategy of combating the Minotaur and escaping the disorientation of the Labyrinth, by following a thread to its exit gate, is necessary for the reader's "survival". This is especially evident in works from Borges' 1941 collection *The Garden of Forking Paths*.

In the title story, which concludes the volume, the figure of the Labyrinth and the cipher of the thread is introduced when the narrator remembers that (as rendered in Andrew Hurley's translation) turning "always to the left" is "the common way of discovering the central lawn of a certain type of maze" (Borges, trans. Hurley, 122), and therefore also the way to get out of the maze again. The narrator reveals that, in fact, he is a "connoisseur" of labyrinths (Borges, trans. Hurley, 122; *cf.* trans. Yates, 22); for he is the great-grandson of Ts'ui Pen, "who renounced all temporal power in order to write a novel [. . .] and construct a labyrinth in which all men would lose their way", and yet "the hand of a foreigner murdered him and his novel made no sense and no one ever found the labyrinth" (Borges, trans. Hurley, 122). The narrator muses on what this ur-riddle might be like, had it been built: "a maze of mazes, a twisting, turning, ever-widening

labyrinth that contained both past and future and somehow implied the stars" (Borges, trans. Hurley, 122).

Just thinking about this gives the narrator solace and an expansiveness of mind: tracing the puzzle along its thread (like that possessed by Ariadne) is the key to navigating it without being consumed by it. Yet too much attention to this overhead view and he will lose his edge in the exigency of his present imperiled circumstance. The reader, however, is left jumping to a certain impinging possibility: is Ts'ui Pen's novel, in fact, also his labyrinth?

In his 2007 "invitation" to *Labyrinths*, an anthology of selections from Borges' oeuvre in English translation prepared by Donald A. Yates and James E. Irby, originally published in 1962, Gibson writes that his chance discovery, as an adolescent, of "The Circular Ruins" led him to the anthology and especially "Tlön, Uqbar, Orbis Tertius". Gibson recalls that "this sublime and cosmically comic fable of utterly pure information (*i.e.* the utterly fictive) gradually and relentlessly infiltrating and ultimately consuming the quotidian, opened something within [him] which has never yet closed" (*Labyrinths ix-x*). The thrust of the gambit, then, in such a case, is not to emerge triumphantly from the maze, but rather to endure the gauntlet of it with a mind open to its teachings. For, even having emerged from a Borges story with one's wherewithal intact, one "never finishes [entirely. . .] with any story of Borges" (*Labyrinths x*): a part of one's consciousness remains tethered forever to Borges' "forking paths".

Just as Alan Turing's cyberneurological automaton is a common character in cybertech, the Minoan Labyrinth is a common setting, a unifying architecture of cybertech. Allusions to this myth, verbal and/or pictorial, appear, generally as a way of interrelating the complexities of

cognition with the uncanniness of the other, in all five novels that I have chosen as examples under the cybertech rubric. Consider the following passage from *Neuromancer*:

Lady 3Jane Marie-France Tessier-Ashpool had carved herself a low country flush with the inner surface of Straylight's hull, chopping away the maze of walls that was her legacy. She lived in a single room so broad and deep that its far reaches were lost to an inverse horizon, the floor hidden by the curvature of the spindle. The ceiling was low and irregular, done in the same imitation stone that walled the corridor. Here and there across the floor were jagged sections of wall, waist-high reminders of the labyrinth. (Gibson 214)

Lance Olsen writes of this figuration of Straylight that it is "a labyrinth, a mythic form that stands for initiation and education as well as solitude and ambiguity. From this perspective, Ashpool, 3Jane, and (later) Riviera become its minotaur, while Molly and Case become its Theseus" (72). And, in line with *Neuromancer's* modality of intertwining physical and virtual renditions (more about this later), the virtual-reality, geometric "cyberspace matrix" is also figured as a "maze":

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.

(Gibson 59)

Snow Crash is less oblique in its reference to the mythology. L. Bob Rife directly introduces "the story about the labyrinth and the minotaur" to a journalist (albeit in so infantile a manner that the journalist "only answers out of sarcasm" and "wants to fly back to L.A. yesterday"): "Every year," Rife relates, "the Greeks had to pony up [citizens as tribute. . .] and send them to Crete[. . .] Then the king put them into the labyrinth, and the minotaur ate them up" (Stephenson 118-119). For Rife it is an allegory of systems of influence (including, whether he intends it or not, his own). This control-labyrinth's eversion into the material reality of the novel shows up in due time, manifest in "a narrow mazelike channel between high walls of steel" (Stephenson 243) where "Rat Things" evade its directive injunctions "by leaping over it in long, flat parabolas" (244). This imagery offers a picture of how the labyrinth, and its circumvention, figures in cybertech: a field of knowledge too immense to parse, and strategies of marking (and limiting) that field so as to make it manageable to any system (automaton, intelligence, consciousness) that functions by parsing information.

It is not unexpected, then, that in *Galatea 2.2*, a novel deeply steeped in the ethos of the Ovidian world, but also thoroughly concerned with Alan Turing's cosmos of conception, the labyrinth shows up as a mediator between physical space and cognitive rendering, a descriptor for the hardware wiring of the neural net that facilitates artificial intelligence:

All along, Lentz kept upping the available firing fibers, boosting exponentially the links between them. He sutured in new subsystems by simulated threads. The systems themselves acted as nodes at a higher level. Sometimes they arrived pretrained, before insertion. But even these metamorphosed after attachment, shaped by the bath of signal weights pouring in from all points of the labyrinth./The maze performed as one immense, incalculable net. (Powers 155-156)

This formulation helps crystallize the tension emergent in cybertech between the intelligent agent, with its cordoned zones of semi-certainty, and the vast networks that it traverses in the staking-out of that impression of certainty, both in its records of sense-experience and in its internal models of relationships.

This landscape takes on a further dimension in *Accelerando*, as an objective-correlative of what remains, for humans, human, in the face of entities that are apparently no longer human (especially by virtue of what remains, in the human, *humanly* inscrutable):

Amber shrugs, then pauses to unlatch a hedge gate that gives admission to a maze of sweet smelling shrubs. 'I really don't know. [. . . I]t may be some whacked-out post-Tiplerite meme that's gotten hold of more processing resources than the entire presingularity net [. . . o]r it might be a message we're simply not smart enough to decode. That's the trouble, we don't know.'/She vanishes around the curve of the maze" (Stross 360).

The maze, here, is distinctly Borgesian, and this kind of usage of the labyrinth remains a conscious loan from Borges. One like it appears in *Embassytown*, as the gathering place of (alien) Hosts (they have hooves -- *cf.* the Ovidian minotaur), as the liminal construct-space that bridges to the nonhuman (described here by the distinctly human narrator):

[I found myself in a] complex, many chambered place[,] the angles of which astonished me. Everyone who had ever talked about my *poise* would have laughed to see me literally stagger backward in that room. Walls and ceilings moved with ratcheting mechanical life like the offspring of chains and crabs. A kind Staff member steered Scile and me. Our party walked without Ariekeine chaperone. I wanted to touch the walls. I could hear my heart. I heard Hosts. Suddenly we were among them. More than I'd ever seen./The rooms were alive, cells rainbowing as we entered. Ariekei were speaking in turn, and the Ambassadors sung in alien politeness. Through a swallowing corridor, several Hosts in their final instars milled in dignified mindlessness. A bridge whistled to us. (Miéville 82)

This kind of conceptual labyrinth is, however, by no means restricted to a discrete physical, or conceptual, place: it takes on other shapes, forms, modes, twists of thought patterns. In another well-known story of Borges, "The Circular Ruins", the trope of the dreamer-within-a-dream (Lewis Carroll is summoned in an epigraph) is employed to present a protagonist who conjures a human being into existence by the force-of-will of dreamspace, only to realize that he himself

has been the same kind of product of another dreamer's dream. Without a broader perspective in place, then, consciousness is vulnerable to the terrifying incantation of infinite, circular recursivity. This, then, is a labyrinth of scope of knowledge, of point of view, of relative situating, one which recalls Michel Foucault's metaphilosophical contemplations of Descartes' dream-fugue: "n'affirmant rien de vrai ni de réel, il n'affirme pas du tout [...] il est pris tout entier dans le non-être de l'erreur" ["certifying nothing of the accurate or of the actual, the dreamer in fact certifies nothing at all: he is taken in, altogether, into the insubstantial territory of fallacy"] (95). Yet, for all its absence of reference, this ephemeral terrain is also rich with the entire field of possibility, existing liberated from the bonds of certification, and this is exactly the playground that proves most empowered by the technology of imagination.

The Tessier-Ashpool compound in *Neuromancer* is compared to the (failed) manifestation of a dream: "the fittings had been hauled up the wall to flesh out some master plan, a dream long lost in the compulsive effort to fill space, to replicate some family image of self" (179). And in both *Neuromancer* and *Snow Crash*, dreams are figured as a currency of information and the virtualizations of it: Case can "still see the matrix in his sleep, bright lattices of logic unfolding across that colorless void" (5), even when he is not able to access it via a deck. In the parody of this oneiric seepage in *Snow Crash*, L. Bob Rife tells an interviewer "when I have a programmer working under me who is working with that information[. . .], it] is going into his brain. And it's staying there. It travels with him when he goes home at night. It gets all tangled up into his *dreams*" (Stephenson 116).

Several characters in the Borges' volume face a similar contingency of unconscious entanglement, and appear to need to balance between complementary risks at the far ends of

possibility: if their consciousness is too limited, they are dominated by the ensnaring rhetoric of artifice, but if it is too expansive, they lose the corporeal touch of interactivity. In "Tlön, Uqbar, Orbis Tertius", for example, the legacy of an imaginary country with a complex and deeply engineered culture is grafted, by subtle means, onto a context that attempts to legitimate it; successive iterations of this stratagem cause the fabricated civilization to begin to supplant the extant constellation of real ones. This sort of colonization-by-eversion shows up in the nanotechnologically-powered entities in *Accelerando*, who dismantle entire planets to reprint reality according to their own maps.

Surfeit, spillage, and mutation of information seems to be, for Borges, nothing other than the arena of conscious experience itself, and yet the ensnarement in this information's expansiveness risks overwhelming the very consciousness that it entails. "The Library of Babel" opens with the cipher of universe-qua-university²: "se compone de un número indefinido, y tal vez infinito, de galerías hexagonales, con vastos pozos de ventilación en el medio, cercados por barandas bajísimas" [The library "constitutes itself of an indefinite, and possibly infinite, number of hexagonal chambers, each with an enormous air shaft, ringed by rather low guardrails, at its center"] (Borges 105). The repetition of words amplifying and ambiguating the depth of field, *indefinido*, *infinito*, *vastos*, brings the reader into the cavernous property of its spatial characteristics; the cosmically-scaled facility's structure is fixed, and any conception of other possible structures is considered philosophical or even (warily) mystical. The (sublime) vision of God, taking this architectural vocabulary yet further, is "un gran libro circular de lomo continuo, que da toda la vuelta de las paredes" (Borges 106): in this vision of the divine, the Word is not made flesh, but, as emphasized by the echoes, here, of Classical Latin poetics, it is made a

cyclical manuscript that encloses the reader like the ring of a protective ward (or constrictive sphincter). Even the secular stacks of the endless and eternal research facility contain books which are themselves cognitive portals into mazy infinitudes: one is described as "un mero laberinto de letras" ["a mere labyrinth of letters"] (Borges 108), a phrase which could be taken as an ironically self-effacing description of Borges' works, of all literary works, and of the record and experience of civilization *in toto*.

The arcane library is a subject of fascination and scrutiny in cybertech. Case has to rescue the Dixie Flatline's ROM construct from the old-fashioned library where it is held captive, and the later Villa Straylight Run which this initial operation prefigures is set against a backdrop of library-like decrepitude: "The low, vaulted hallway was lined with dozens of museum cases, archaic-looking glass-fronted boxes made of brown wood. They looked awkward there, against the organic curves of the hallway's walls, as though they'd been brought in and set up in a line for some forgotten purpose" (Gibson 176). In *Snow Crash*, meanwhile, Hiro is made to interact with the world's information system via software that emulates a library, customized for a specific project: "You must have half of the Library in here!" he exclaims when tasked with this; "'And a librarian to boot', Juanita says, 'to help you sort through it[']" (Stephenson 70).

Over the course of *Galatea 2.2*, moreover, use of the word migrates wildly: from A) a "backwater valley library" (Powers 8) where a "boy happen[s. . .] onto a copy of the *Odyssey*" (reminiscent of Gibson's discovery of Borges?) -- this is Powers' figure for his discovery of the Data Cloud, from an accidental and (to him) comparatively remote site; to B) Powers' own personal library which has been "lost in" the "transit" of his life (80); to C) a bittersweet memory of the institutional library where he prepped for his master's comp; to D) (perhaps) the (same)

library that he "runs to" (114) to assure himself he is not a plagiarist (apparently it has no copies of Calvino: more about this later); to E) his own "private library of desire" (120) -- Lentz's description of how the brain builds compound reality-models; to G) the "rural library" in which his mentor educated himself; to H) his and C.'s *taal* -- the "library" of the private vocabulary of "catchphrases" he has collected with his former life-partner (159); to I) the library of classics that he foists on the AI Helen; to J) a "mental library" of remembered readings, quoted from a review of one of his own novels; to, finally, K) the image of the Library of Alexandria, set afire, as representation of cultural amnesia. The afterimage of this being-forgotten library persists into *Accelerando*: "Opposite the bench is a wall occupied from floor to ceiling by bookcases: Manfred looks at the ancient, low-density medium and sneezes, momentarily bemused by the sight of data density measured in kilograms per megabyte rather than vice versa" (Stross 62). And the ghost of such scholarly archives possesses Scile in *Embassytown*, who makes copious notations about the Host language, but can barely translate from it without stumbling and stuttering.

More than as a figure in its own right, however, the library is important for what it signals in cybertech: the modality of literary recursivity which is itself a trope for memory and cognitive recollection. Immediately precedent to the advent of cybertech, in the work of Borges' stylistic protege Italo Calvino, Borges' various visions are primed for repropagation across another generation of reader interactions. The conceit of Calvino's *If on a winter's night a traveler* is that the reader gets transported by Calvino to a hypothetical scenario that begins with some correspondence to the real one (*i.e.*, a reader has picked up a book called *If on a winter's night a traveler* and begins reading it), but quickly jumps down a rabbit hole into the depths of the

novel's project, which, according to John Updike's back-cover blurb snagged from his review of the novel for the *New Yorker*, "[m]anages to charm and entertain the reader in the teeth of a scheme designed to frustrate all reasonable readerly expectations". The method is this: "you" (the second person protagonist) start reading a novel only to have your efforts to finish it thwarted by one absurd device or another (printing errors, torn-up manuscripts, unfinished masterpieces, *etc.*), such that you only manage to read the first chapter before getting pulled back into the frame narrative, in which you root around until you find another novel, of which, once again, you only get to read the first chapter. *If on a winter's night a traveler* is a consummate expression of Calvino's aesthetic and narrative vision: the opening of many ornate doors for the reader, and the generous permission to enter and inhabit the multivariate stanzas to which they lead, even if in so doing, the reader is led on a merry chase that has all the complications of a house of mirrors full of terminal cul-de-sacs.

This is the novel, in fact, from which Richard Powers (the narrator) in *Galatea 2.2* is plagiarizing, but doesn't realize it. "Picture a train heading south" is the resounding refrain of Powers' writing process in *Galatea 2.2*: the opening line of a novel he wants to write, but seems unable to. Some critics have punned on just what it is that "goes south" in the book (Is it Powers' mental health? Is it Lentz's experiment, or Helen's train[ing]? Is it the story itself?), but the phrase turns out to be the trope of crossing the Rubicon, literally and figuratively: both of traversing from the travails of the north into a balmy Italy, and of committing to a course of action whose consequences encode in them one's fame as well as one's mortality. Powers is hard-pressed to build up the steam to make the crossing; saturated with self-doubt, he fears he's

cribbed the line from somewhere (although if he were to take T.S. Eliot's council on poetic theft, this could only be a good thing), and therefore the energy of its exposition is repeatedly thwarted.

The nascent tale, however, becomes the headliner of a series of plot summaries Powers unveils throughout the book, elevator pitches made, in passing, primarily to the reader, for novels Powers will presumably never write. In addition to several possible trajectories for that abortive southbound opening, Powers offers up a number of (perhaps intentionally) outlandish (and yet not, necessarily, not-salable) story lines involving everything from con-artist vagrants to medieval spire-builders. And he turns out to be right about having "gotten" the train bit from somewhere: right, in fact, on more than one count. By his own confession, the northerly teaser is lifted from an anecdote told by a relative of C.'s, a (the reader is told) true-story parable about what a wife tells her husband on his deathbed vis-à-vis preparing to cross into the afterlife: that he should "picture a train heading south" to a pleasant village where he can read pulp fiction while drinking espressos from morning to night (not, perhaps, a Lethe suited for everyone, but apparently an ideal Elysium for some). Powers only realizes that this is the mysterious source when (close to the end of the book) he is rereading C.'s letters, where he finds her account of it and is instantly mortified by his larceny.

All of this drama, however, muddies the true wellspring of the architecture of the elusive train, the cascade of brief, mutating stories, and the intermingling of the subjectivities of reader, writer, and author. In reality, whether the letter of C.'s is based on a real-world antecedent, or not, Powers has pastiched, borrowed, or (consciously or unconsciously) stolen his system of narrative-railway conceits from *If on a winter's night a traveler*. The cover art by Shelton Walsmith that appears on many printings of the English edition of the Calvino novel features a

train that looks to be heading south, upon a trackway and beside telephone poles which are all made of words. The book itself is a series of novel-openings interstitched with narrative episodes about a (second-person) reader finding and reading these episodes. The first novel-opening is a narrative of a train station where the eponymous traveler has missed a connection. It seems reasonable to speculate that for Powers, this novel of Calvino's is a meaningful precedent for *Galatea 2.2*, a kind of vestigial reminiscence that, like so much of *Galatea 2.2*'s relationship with literary history, gives a primordial ancestry to its organelles. As Green writes, "[t]he memory embodied in literature offers [Powers. . .] a way to remember and understand his own life. Reading, writing, and living form overlapping fields in his mind, and a crisis in one is a crisis felt in all" (119). This is a way-of-being that is inherited from Calvino, from Borges, and, to go a bit further back, from Shakespeare and Cervantes, both of whom are named directly and figure prominently in *Galatea 2.2*.

In the *Presentazione* of the 1994 edition, under the curation of Luca Baranelli, Calvino's schema of the novel as an adaptive-recursive function is presented citing Borges' "The Approach to Al-Mutasim" as a formative source. Borges, in turn, in that story, invokes (through his quasi-scholarly narrator) Farid ud-Din Attar's *The Conference of the Birds* as his own source (or that of the fictional author being described, Philip Guedalla); the relationship between "The Approach to Al-Mutasim" (or rather the eponymous, fictional novel described by the story) and *The Conference of the Birds* is presented as analogous to that between Joyce's *Ulysses* and Homer's *Odyssey*), although the narrator finds this kind of influence study to be boring and basically unimportant. The superform for all of these, in any event, it can be argued, goes back to the *Arabian Nights*, although other formal precedents might include *The Canterbury Tales*, *The*

Decameron, Ovid's *Metamorphoses*, and perhaps even the biblical *Song of Solomon* or the *I Ching*; these are stories about other stories, where all, or (more often) a summarized or fragmented part, of those stories get framed through the lens of the compiler, part of a cascade of narratives that tantalize the reader but morph to another form, like the parallax terrains of dreams, before any consummation is possible.

Galatea 2.2 styles itself as this kind of novel: not only in its appropriation of *If on a winter's night a traveler*, but in its relationship to Western literary history in general. The book as a whole functions as a kind of card catalog of mythologies and literary sites from across the gamut of collective human recollection, spanning from the Classical and the scriptural, through fifteen centuries of European history, and on up to the early 1990s when one imagines Powers penning it. Yet *Galatea 2.2*'s knowledge baseline declares itself as somewhere in the short-term memory of World War II and the early Eisenhower era. Powers meticulously describes this period in recounting the psychological setting of one of his previous novels, *The Prisoner's Dilemma* (1988): it is the time-frame of "Disney, Mickey, the Japanese internment, the World's Fair, [the] Trinity Site [. . . and Powers' invented characters, the] Hobsons, holed up in their white wood mid-western A-frame" (189). It is not by mere inertia that the tidal wave of this world spills torrentially into *Galatea 2.2*. Powers, rather, keeps himself in this Cinerama like it is his holding cell, where he harbors chronic Stockholm-syndrome affinities for his now-otherwise-powerless guards.

Such an anachronistic world view holds Powers in its thrall because for him, the inhabitation of the concerns and idiosyncrasies of its era is a dearly borrowed, treasured identity, an inheritance to which he clings as one would to an indispensable heirloom. Born in 1957,

Powers is at least a generation removed from the cultural ebb-and-flow of the 1930s, 1940s, and early 1950s; that time is, rather, the native moment of his intellectual mentor Robert Schneider, the Freudian literary critic who taught Powers at the University of Illinois at Urbana-Champaign and whom Powers describes (during an interview with Stephen J. Burn) as the inaugurator of a transformative "educational conversation" (169). Schneider holds court in *Galatea 2.2* under the codename Taylor, clearly the one who cut Powers from his raw cloth and evidently the person Powers wishes he could become, although differences in his temperament, origins, ambitions, and life circumstances make this impossible. According to Anca Rosu, Taylor [*i.e.* Schneider] shows Powers how "to love rather than dissect literature", and Powers therefore develops a "personal and emotional" connection to him (4).

Powers constantly hedges, then, in an ironically Bloomian anxiety, between endorsing this borrowed identity and recognizing that he must invert it in order to survive, and it is in this apparent paradox of dysfunctional ambivalence that Powers' medicine of renovation, the elixir of a craft by which he is always able to make himself and the world anew, germinates. The ambient presence of literary works throughout *Galatea 2.2*, and a presentation of the culture of literary studies, form a texture crucial to the novel's narrative events and render it a metaliterary festival par excellence; the trope of author-as-already-read, borrowed rather extravagantly from Cervantes' *Don Quixote* glimpsed through a kind of Borgesian lens (in other words, that of the library of recursivity), suggest the literary consciousness as an active agent with the power to ruin, but also to restore. Interaction with an (alleged, but at times dubious) software system, moreover, underscores the parallels between cybernetic technology, human cognition, and literary rendering: all of these make use of scripts, namely programming commands,

configurations of neurons, or strings of sentences, respectively, and all of these scripts become adaptive when allowed to evolve via interaction with “users”, “other people”, or “readers”.

Green writes of *Galatea 2.2* that, within Powers' framework, "the problem is explicitly that of the canon and its role in the formation of a writer who depends on the embedded memory of the corpus of literary works, now challenged by radical critical theory and practice" (16). Indeed, *Galatea 2.2* is nothing short of a compact registry of a reading list of the sort Mortimer Adler might gladly endorse: under the guise of a field trip to the restrictive domain of comprehensive exams, Powers offers, page after page, a passing parade of the once-greats and the now-nearly-forgottens, as well as nods to those beatified perennially in popular culture and those affixed to high school and college reading lists for as long as they are still (sometimes marginally) welcome there. Due attention is given to the Greco-Roman Classics: from "the way Homer lives on in Swift and Joyce" (171), in descendents of the "The wily Odysseus" (258) and of the unrivaled, apparently even synthetically instantiatable "Helen of Troy" (259), to the Attic philosophical chairs of "high-level Platonic reflection" (247) and the selectivity of Aristotelian matriculation (111), the legacy of the Mediterranean scholia is well-covered. So, too, is that of the great Continental storytellers from every era since the Middle Ages and across the gamut of major European languages, with mentions, respectively, of Dante (328), Cervantes (39, 80, and as an ongoing subject), Goethe (137), Tolstoy (96), and Proust (23), among a number of others.

The most formidable bandwidth, however, is reserved (as in James Joyces' *Ulysses*) for that inexhaustible carillon of music (once) so well-known and well-loved: the venerable British and American Literary Canon, in a formulation from circa 1980, around the time when Powers completed his master's exam. Powers drops names (or allusions) to works and authors, scattered

all across *Galatea 2.2* as though anticipating some ceremony at their excavation, which include (here arranged in chronological order by date of composition or by author's flourishing): *Beowulf* (190), *Gawain and the Green Knight* (142), "Patrick Spens" (142), *Piers Plowman* (195), *The Canterbury Tales* (142, 145), Edmund Spenser (300), Shakespeare's sonnets (142; Shakespeare himself is mentioned by name at least seven times in the *Galatea 2.2*), *As You Like It* (193), *Hamlet* (73), *Cymbeline* (307), *The Tempest* (143 and, on 325, as a major element in the book's dénouement), John Milton (129), John Dryden (232), Aphra Behn (182), Restoration Comedy in general (195), Samuel Richardson (325), Alexander Pope (232), Henry Fielding (182), Tobias Smollett (182), Walter Scott (163), William Blake (192), Samuel Taylor Coleridge (282), British Romanticism in general (86), Mary Shelley (129), Edgar Allan Poe (258), Anthony Trollope (325), the Brontë sisters (195), Charles Dickens (208), George Eliot (87, 193, and as a general resonance in relation to *Middlemarch*), Matthew Arnold (208), Walt Whitman (231), Emily Dickinson (291, 325), Louisa May Alcott (229), Mark Twain (230, 325), Edwin Arlington Robinson (64), Rudyard Kipling (149), Joseph Conrad (143, 227), Henry James (252, 255), Edith Wharton (97), Robert Frost (143), William Butler Yeats (195, 269), Ezra Pound (193), T.S. Eliot (143), James Joyce (143), Edna St. Vincent Millay (90), Aldous Huxley (272), Vladimir Nabokov (195), John Steinbeck (60), Theodore Roethke (322), and Tennessee Williams (144).

This oversized "knapsack of classics" seems reminiscent of that by which the creature in Shelley's *Frankenstein* received an education (Powers 129), and also perhaps that traveler's trunk, containing much the same, that is said to figure in the formative real-life childhood of Edna St. Vincent Millay, and that semi-forbidden library that facilitated the exemplary learning of Virginia Woolf. Perhaps Powers' knowledge of, and attention to, such precedents are what compels his

fictionalized instantiation of himself -- the narrator who tells of Lentz's artificial intelligence experiment -- to feed the whole library to the computer program called Implementation *H*, a.k.a. Helen, in the hopes that it will, in effect, build her character. That it is the requisite material for her to perform her intended task, namely to out-compete a human student in performance on a mock-comprehensive, seems, by the time she has learned the subject matter, beside the point. Rather, it is by means of this sort of quasi-heuristic learning that Powers hopes Helen will fully inhabit her (artificial) consciousness, and he tops off the canon-plunging by assigning her five years worth of recent journalistic presentations of the world's current events: a fateful decision that will result in the AI's unraveling. Really, however, this is once again the Turing-shibboleth in play. Is it the case, then, for Powers, that people can process the horrors of history (because it requires a balance between empathy and self-distancing), but (always-)inchoate artificial intelligences cannot? Or does Powers think Helen's reaction is in fact the more intelligent, more conscious one? Green observes that *Galatea 2.2* "turns to cognitive science, and the project of constructing an artificial intelligence, as a way of reflecting on the meaning of memory, perception, solipsism, and sentiment, simultaneously naturalizing the self-replicating cultural intelligence embodied in literature" (16).

Manfred Macx has some things in common with the *Galatea 2.2* narrator. Like *Snow Crash*, *Accelerando* performs literary recursion in-house, drawing its system of reference largely from the genre of cybertech; its implicit invocations of *Galatea 2.2* are just one example of this. *Accelerando* opens in the Netherlands, a psychological locus that is enormous in *Galatea 2.2*. Like the Richard Powers, or "Rick", who narrates *Galatea 2.2*, Manfred is in a turbulent long-term relationship (soon to be consummated, then broken off) with a woman who wants him to

commit to having children. Also like Rick, Manfred is more interested in his private projects than in the work required to sustain his relationship. And once again like Rick, Manfred finds himself in the role of mediating the needs of a disembodied artificial intelligence, the significance of which both inscribes (or is inscribed by) and subverts the dynamic of his human relationship. Looking at the arc of the cybertech novels I have chosen for this study is, in some ways, like making the effort to track the hinges and branches of *If on a winter's night a traveler*: each one has its own nodal terminus in relation to the ideas specific to it, but each one also branches off and morphs into the next, thereby-informed instantiation (*i.e.* *Neuromancer* = *Neuromancer-qua-Neuromancer*, but also *Neuromancer-qua-source-for-Snow Crash*. *Snow Crash* = *Snow Crash-qua-Snow Crash*, but also *Snow Crash-qua-source-for-Galatea 2.2*. *Galatea 2.2* = *Galatea 2.2-qua-Galatea 2.2*, but also *Galatea 2.2-qua-source-for-Accelerando*. *Accelerando* = *Accelerando-qua-Accelerando*, but also *Accelerando-qua-source-for-Embassytown*).

Calvino had a serious conceptual intention for which he made use of his formalist stagecraft: to interrogate the genre systems of twentieth-century novels. Calvino hints that their trajectory is like a function that gets run from inside itself (and its successive generations of dependent children) over and over again, as in a program that creates an infinitely recursive loop, because it fails to invoke any workable escape protocols to return the runtime flow to the point from which the function is (at each instantiation -- which is, in all but the first call, the previous instantiation of the same function) called. This is, without doubt, the Borgesian readerly labyrinth gone bad (or at least run on overdrive). Although the function may, with each call, be operative, receiving data and modifying it to get passed on to next call, that data is going deeper and deeper into oblivion, because it never goes back to the top of the runtime hierarchy, so if the

function is not user-interactive, the user never gets to see the mutations of the data, but if the function *is* user-interactive, then the structure of the program is such that the user will, if complicit with the run of the program, be interacting with it forever.

Borges and Calvino have long since achieved their critical apotheosis -- Green reports that Calvino is considered a "distinguished foreign author" (26) who is an "exemplar" for John Barth (54), and that Borges "heralded" Barth's style (52). German metafictionist Michael Ende, on the other hand, author of *The Neverending Story* (1979), seems largely unknown to anglophone critics, and even his attention in German scholarship is limited. He has been typecast as a children's author (and indeed, he takes up the mantle of L. Frank Baum, J.R.R. Tolkien, C.S. Lewis, Madeleine L'Engle, and Susan Cooper, and becomes a bridge between these and contemporary authors such as J.K. Rowling, Stephenie Meyer, Suzanne Collins, and Veronica Roth), and his fictional universe is probably best known through the novel's film adaptation, a Hollywood movie that opened in American theaters in July of 1984 -- the same month that William Gibson's *Neuromancer* appeared in bookstores. This is appropriate, because *Neuromancer's* cerebral climax is plainly cribbed from *The Neverending Story*, or from a source common to both.

The Neverending Story is a colorful and narratologically complex tale in which a young boy travels via a magical book (*cf.* Case's cyberdeck) to a realm enabled by cognitive construction, and in which he must rescue an empress from the descent of an absorbing darkness by calling out her true name, unknown to her until he says it. As a reward, she gives him the power to instantiate any cascade of wish-fulfillments (whether beneficial or detrimental) that he can articulate, by means of the apparatus of her virtual domain, until he has found a confident

voice of volition. In the process, however, he risks forfeiting his memory by cascading into recursive fantasies from which he may, unless he is vigilant, never find his way home to the real world.

These key plot points are recapped close to the novel's conclusion:

"Vor langer, langer Zeit", begann die geblünte Frau, "war unsere Kindliche Kaiserin todkrank, denn sie brauchte eine neuen Namen, und den konnte ihr nur ein Menschenkind geben. Aber Menschen kamen nicht mehr nach Phantásien, niemand wußte warum. Un wenn sie sterben mußte, dann wäre es auch das Ende von Phantásien gewesen. Da kam eines Tages oder, besser gesagt, eines Nachts doch wieder ein Mensch -- es war ein kleiner Bub, und der gab der Kindlichen Kaiserin den Namen Mondenkind. Sie wurde wieder gesund, und zum Dank versprach sie dem Buben, daß alle seinen Wünsche in ihrem [Welt. . .] Wirklichkeit werden sollten -- so lange, bis er seinen Wahren Willen gefunden hätte["]

["For a long, long time", began the beflowered woman, "our child-empress was deathly ill, because she needed a new name, and that, only a child-of-mankind could give her. But humans no longer ventured to Phantásien; no one then knew why. What we did know is that if the empress were to die, that would certainly spell the end of Phantásien for good. But one day -- or perhaps I should say one *night* -- a human again reached our land: a young boy, who gave the child-

empress the name Mondenkind. She recovered her health, and in gratitude she promised the boy that anything he wished, while he was in her realm, would manifest into his experiential reality, up until he achieved his goal of discovering his true will"] (385)

This is either an ancestor or a cognate of the endgame of *Neuromancer*. Case is sent to dialog with a child-ruler, extract a "true name" (262) from her, and call it out against a backdrop of impending virtual darkness in order to facilitate the birth of a construct-empowering superintelligence. When he finally says the name, it is "the cry of a bird/unknown", a "song, three/notes, high and pure" (262). This little lyric remixes Edward Thomas' poem "The Unknown Bird", in which (as within a Borgesian subjectivity) either the poet or its elusive avian subject might be "in a dream" (line 11); the bird "travel[s. . .] through the trees" (line 12), identifying it with the forest domain of Artemis.

The parallels in *Neuromancer* with Ende's rendition are unmistakable; the name that Bastian gives the empress in *The Neverending Story* is Mondenkind (moon-child): three syllables, with a meaning suggesting the high, pure, lunar register of the Artemesian. And in *Neuromancer*, as a reward for delivering the name, Case's privileges as a cyberdeck jockey are permanently restored, and he gains access to glimpses of a more nuanced dimension of the matrix's virtual reality as it takes shape. Along the way, though, Case has had to avoid the temptation of being encoded permanently into its fantasy realm: and a proxy version of himself is indeed deposited there indefinitely.

Darkness and its enveloping shadow is an especially strong presence in both novels: In *Neuromancer*, "There was no moon, no wind, sea sound all around him in the darkness" (Gibson 238); "An arm of shadow was uncoiling from the flickering floor below, a seething mass of darkness, unformed, shapeless" (Gibson 257); "The shadow thing was growing, spreading, blotting out the city of data" (Gibson 257); "Darkness fell in from every side, a sphere of singing black, pressure on the extended crystal nerves of the universe of data he had nearly become" (Gibson 258). In *The Neverending Story*, the key danger comes from "eine ansteckende Krankheit, durch die Menschen blind werden, so daß sie Schein und Wirklichkeit nicht mehr unterscheiden können": a enveloping sickness that renders everyone unable to tell the difference between appearance and reality (142). Yet "Bastian ging durch die Dunkelheit fort" [Bastian pressed on through the darkness"] (Ende 371), *etc.*

Other clues in *Neuromancer* suggest that Ende's story or some common root was on Gibson's mind: in the midst of a decaying aristocratic compound -- an abandoned and uncanny system of structures -- Case sees (first through Molly's eyes, and then in person) a set of panels depicting dark pasts and twisted possible futures. In *The Neverending Story*, the protagonists -- Atréju physically, and Bastian who is present with him virtually (*cf.* the positions of Molly and Case) -- travel to a "bedrückend und unheimlich" ["dispiriting and uncanny"] abandoned city (135), populated by ghost-castles and haunted houses, tethered with cobwebs, scattered with broken glass not unlike Molly's detritus after one of her lenses is smashed, and find there a multistory palace with relief sculptures cast into its facades. "[A]lle diese Figuren stellten Totengerippe oder Dämonengestalten dar, die mit fratzenhaften Gesichtern auf den einsamen Wanderer hinunterstarrten" (137): they are macabre and meant to terrify anyone who sees them.

Perhaps more importantly, the recursion of Bastian's wish-fulfillment in *The Neverending Story* is played out against the backdrop of a difficult-to-navigate Sea of Clouds (or "Fog-Sea"): "all die Wolkenmassen, die sich seit Tagen angesammelt hatten, schienen in wilden Aufruhr geraten zu sein" (370); "Von Beruf waren die drei Nebelschiffer" (374); "Das Nebelmeer, das bei ihnen der Skaidan hieß, war ein riesiger Ozean aus weißem Dunst, der zwei Teile Phantásiens voneinander trennte. Wie tief der Skaidan war, hatte noch niemand erforscht, und auch nicht, voher diese ungeheure Nebelmasse stammte" (374), *etc.*: the amorphous, wildly agglutinating cloud-sea (also called the Skaidan, which in Gothic means "to divide"), which divides its fantasy-domain in half, requires special sailors to sail it, and no one knows how deep it is or where it came from. This atmosphere-scape seems reminiscent of the phenomenology of Bruce Sterling's *Involution Ocean* (1977): perhaps this work of Sterling's inspired both Ende and Gibson, and it also seems a prominent context in relation to Miéville's most recent novel, *Railsea* (2012), as well as to the ocean setting and the peculiar *Moby Dick* references in Stephenson's *Snow Crash*.

In *Snow Crash*, as well, the cloud-sea is a figure both of peril and of possibility: it manifests, in the Metaverse, as "a tangled cloud of wreckage and flame" (Stephenson 38) when the eponymous virus first introduces itself, and as "a jittering cloud of bad digital karma" (Stephenson 78) when it claims its most important victim, Da5id, a formulation further described as "a centrifugal cloud of lines and polygons whose center cannot hold" (Stephenson 78). Yet in the virtual office of Hiro, who will devise an antidote to this disastrous weather system, "[s]ilvery cloud-light filters through ricepaper walls": the cloud-terrain, *per se*, is not the threat, but what any given cloud-shape entails. And within a set of references to (more like parodic

pastiches of) Don DeLillo's *White Noise*, this threatening entailment appears in the novel's Reality as an "airborne cloud of blood" after Hiro has (apparently for the first time) actually killed someone: a dripping, startling canopy of moral consequence.

While characters in *White Noise* defer to a radio weather report (rather than what is actually right past their windshield) to establish their view of present meteorological conditions, Hiro rejects such interventions when his life is at stake: "He turns off all the techno" readouts "in his goggles" because they suddenly "confuse him; he stands there reading statistics about his death even as it's happening to him. Very post-modern" (Stephenson 304). This invocation, although intended as comedic, nonetheless earnestly verifies the position that late postmodernity is a skeptical meta-postmodernity; while recognizing and engaging with the presence of ambiguating media, it favors verifiable evidence and inverts the mid-postmodern infatuation with indeterminacy.

The "cloud", therefore, in *Snow Crash* seems more often than not a cipher for an uncertain field whose hazily noncommittal, yet potentially violent, tempestuousness brings with it a thunderclap of ill import: the "outer cloud of small boats surrounding the Raft for a distance of a few miles" (Stephenson 323) is a valence shell for the novel's engine of nemesis, one that fuses into the networked awareness of it (more about this trope shortly) and therefore abusively collapses the sensorium into the discernment that processes it. "The vast matted tangle of small boats radiates a murky cloud of yellow light that spoils the contrast" (Stephenson 369): the webbing that could unite these boats as a procedural (and therefore functional) system is throttled by a haze that turns them instead into an ominous blight. But as much as Rife's Raft is a nemesis for reckless hackers, there is a counter-nemesis working against Rife and his ilk, a coalition of

opposing parties personified by the Rat Thing that finally takes Rife down, ensconced in an atmospheric simile: "A powerful disturbance is moving through the flame, leaving a linear trail in the light, like a comic ray fired through a cloud chamber" (Stephenson 466). The cloud encodes what is present but beyond the fringe of present conscious apprehension, much like a passageway beyond a maze's next bend.

Ende's cloudscape is therefore the trope of the labyrinth under a different guise (and indeed, this is today what the Data Cloud signifies -- perhaps it, too, should be called the Skaidan). In *Neuromancer*'s universe, which is still partially under the aegis of the mid-postmodern, such uncertainty is a habit-forming property: a character who appears early in the novel is "addicted to a brand of hypnotic the Japanese called Cloud Dancers" (16), and the simulated fragmenting of the cloud-terrain is one of the comforts that helps keep leisure-travelers in the thrall of an orbital space resort: "The narrow band of the Lado-Acheson system smoldered in abstract imitation of some Bermudan sunset, striped by shreds of recorded cloud" (125). Just as rendered in Friedrich Kittler's general outlook toward media, such an attention to a frozen simulacrum of something once dynamic is a necrophilic extrusion, and in *Neuromancer*, the figure of the reaper, in the form of a ninja assassin, embodies "death, this silence, he gave it off in a cloud" (177). As *Neuromancer* moves toward its climax, "The Kuang program spurted from tarnished cloud, Case's consciousness divided like beads of mercury, arcing above an endless beach the color of the dark silvery clouds" (Gibson 258); "a silent ghost hungry against the banks of lowering cloud" (Gibson 258). Clouds divide clouds. In *The Neverending Story*, it is a marker of hope when Bastian at last finds his way back to the dividing Skaidan -- "Es war das Nebelmeer!", he perceives with relief (Ende 372) -- because he knows that, however lost in it he

may become, if he can at last navigate it, it will take him home. Similarly, it is only when Case runs his cracking software, and it works, to make possible the joining of the two AIs, that the drawbridge is lowered to the *Neuromancer's* resolution: "And Case was alone in Kuang's black sting, lost in a cloud" (Gibson 260).

In *Galatea 2.2*, the "cloud" takes on a psychological aspect that falls over the narrator's decade-long life-partner, C., as she struggles over her uncertainties. It figures the same way for Diana Hartrick (perhaps the Artemesian *Mondenkind* of the novel, at one point figured as an all-but-nameless voice who becomes an organic foil for the artificial intelligence Helen), a neurologist with whom the narrator becomes associated after his breakup with C. When he introduces himself to Hartrick under a name that is a private joke between himself and his project supervisor Lentz, "her face cloud[s]" (Powers 39).

More to the point, the analogy of cloudy sensorial knowledge, in relation to the cognitive webwork that attempts to track it (more about this later), is foregrounded in this encounter, when the narrator determines that "[t]his woman traced the process [of consciousness, or at least of intelligent thought] in realtime, the mental palette exploding in desperate semaphores, trying to convince itself that the fleet whose capture it signals hasn't slipped off into the night fog" (Powers 40). The empiricism of her equipment, in the face of the always-already-deferred indeterminacy of cognitive modeling, appeals to the narrator's late postmodern sensibilities, and helps him build a leverage of humility against his fixation on his own subjectivity: "Every postmodern postsolipsist [. . .] should do a postfrontal neurology stint", he concludes (Powers 40). But the system can work in reverse: C.'s repeated exposure to the paintings she guards at the Boston museum causes her to become desensitized to a precise awareness of them; they start "to

fade into an overlearned monochrome" whereby "standing in place so long" begins "to fog her" (Powers 107). As with Bastian, C.'s reliance on stagnant memory, without new stimulus, begins to impede her ability to fashion new ideas, and threatens to prevent her from getting back "home" to the cognitively-stimulating possibilities of fresh sensorial experiences.

When we invoke, today, the Data Cloud, it is (one might argue) exactly this: a haze of regurgitation that, although full of the (at times necrotic) rush of the refiguration of the reprocessed sensorium, threatens, by excessive immersion, to thwart that part of human cognition that is accustomed to, and perhaps requires as a safeguard to its sanity, direct, unmediated engagement with sensorial reality. We might, perhaps, fish that Cloud with nets that are keyed to our own fashioning of (sensorially-derived, and mnemonically-annotated) the *already-subjectively-determined* in the face of the *always-already-objectively-indeterminate* that the Skaidan figures -- more about this in the next section. In *Accelerando*, in any event, use of the word "cloud" begins to take on its twenty-first-century connotation (like Gibson's coinage of cyberspace, Stross is ahead of the curve in this regard).

Cell-phone communications are "a cloud of spread-spectrum emissions" (Stross 4). Manfred's prosthetic, cybernetic "metacortex" is "a distributed cloud of software agents, borrowing CPU cycles from convenient processors" (Stross 39), like Helen in *Galatea 2.2*. Already in this usage the relationship of the Data Cloud to the cognition cloud is made clear, and something of crucial import starts to be hinted: the brain (organic or synthetic) not only *models what is known*, but it also *models what is not known*, so every brain-map includes a cloudscape to which the conscious agent does not have access: what is figured in the twentieth century as the unconscious mind. And as Manfred schemes to make "himself a temporary billionaire so he can

blow off his divorce settlement in an instant", he becomes "a wily accountancy octopus escaping a predator by vanishing in a cloud of his own black ink" (Stross 42). This figures the conscious mind's escape to a sequestered part of the unconscious in the face of trauma: this is what Bastian does, for a time, across the Skaidan, to escape his real-world troubles in *The Neverending Story*, and this is what Case does every time he jacks into the matrix.

Cloud-images show up again in *Accelerando* before too long, not as tropology, but as scenecraft as a spaceship makes its way out into the solar system: "Vast whorls of cloud ripple beneath the ship's drive stinger. Orange and brown and muddy gray streaks slowly crawl across the bloated horizon of Jupiter" (Stross 119). The imagery of cognition has everted, just as it will in *Embassytown*: the cosmos becomes metaphor for the brain. But the referent (in this case a cybernetic cognitive prostheses) is not too far behind; Manfred's daughter Amber, who is aboard this ship, summons her amplified memory by "spawn[ing] a vaporous cloud of memory retrievals" (Stross 144).

The word "cloud" shows up nearly twenty more times in *Accelerando*, describing everything from the starscape of a "stellarium", to a cluster of "industrial nanomes", to "utility fog", to features of stellar cartography, to "a house with walls of spun cloud stuff and a ceiling that rains moonlight" (Stross 292 and elsewhere). Surely Ende's tutelage is apparent, here, and the resemblance to Mondenkind is even more evident in a description of Amber where she is rendered as a "queen" that is "young" with a "face" that "still retains the puppy fat of childhood, emphasized by microgravity moon-face" (153); this kind of semi-reverent homage is Stross' general manner. And there are clouds of sentient posthuman life, and then on to yet more exotic cloud-configurations: the cloud is a versatile, indispensable lexical element for Stross, generally

applied to the description of phenomena that are hard-wired into his landscape of speculative science, inherited largely from Ray Kurzweil.

Perhaps, across this cloudscape, Richard Powers' presence is also making itself known: the cloud-house is in an outplanet habitat to which "The Boston Museum of Science" has also been transported, the "stupidest" building there (Stross 291). Stross' Science tropes for Powers' Art, dissolving the *ars-tekhnē* divide by reducing both to the same level of irrelevancy. After all, as Powers has told us not long before Hartrick's face clouds, "Science look[s. . .] a lot like literary criticism, from across the room" (Powers 38). And if C. can get a Snow Crash infection -- her brain hijacked by a hermetic loop brought about by (and/or causing) a deficit of access to new stimulus -- by staring at the same old paintings, over and over, at Boston's Museum of Fine Arts, then the good human citizens of Stross' post-singularity solar system, in which *homo sapiens* have become about the dumbest form of sentient life around, might be reminded of the calcifying inadequacy of their own (mal)adaptivity by the presence of the (itself-museumified) Boston Museum of Science. All of this encapsulates a preoccupation of the late postmodern: how can empirical verification recover something salvageable from the impulse toward subjective abstraction, when the modus of the verification itself is always-already-outmoded?

By *Embassytown*, however, the cloud has become something else, again, within a kind of nostalgia-for-abstraction that may signal a passage beyond the end of the late postmodern moment. In Miéville's elaborate cosmos-building within the novel, the reader learns that about the immer, the cosmic sea which is navigated by highly-trained merchant marines as the only viable mode of interstellar travel, that it is more far more like Ende's fantastical Skaidan than the scientifically-extrapolated computronium fogs of Stross' *Accelerando*:

The immer's reaches don't correspond at all to the dimensions of the manichal, the space where we live. The best we can do is to say that the immer *underlies* or *overlies*, *infuses*, is a *foundation* [. . .] Here in the everyday, in light-decades and petameters, Dagostin is vastly more distant from Tarsk and Hodgson's than from Arieka. But in the immer, Dagostin to Tarsk is a few hundred hours on a prevailing wind; Hodgson's is in the center of sedate and crowded deeps; and Arieka is very far from anything. It's beyond a convulsion where violent streams of immer roll against each other [*cf.* Ende "all die Wolkenmassen, die sich seit Tagen angesammelt hatten, schienen in wilden Aufruhr geraten zu sein"], where there are shallows, dangerous juts and matterbanks of everyday space in the always. It sits alone at the edge of known immer, so far as the immer can be known. (31)

As I will discuss elsewhere, Miéville summons mid-postmodern theories of indeterminacy to describe this always-space: it is *always* unto itself, but always-already-problematic for those who traverse it from the domain of the sometimes. Yet the immer is, certainly, Miéville's Cloud: by exactly the virtue of how he situates it as tarped across the vastness of *what can be known*, he makes excellent use of it as an instance of labyrinthine cybertech tropology.

Cybertech, then, figures the expanses of sensorial and cognitive possibility -- endless, only-partially-chartable, ever-changeable, never-certain -- with a series of tropes borrowed from non-anglophone metafiction. From Borges and Calvino it borrows the

labyrinth, the dream-terrain, and the library of literary recursivity; from Ende it claims the Skaidan, the sprawling and riveting cloud-sea. I will next show how cybertech frames the *scaffolding limits* of cognitive delimiting, and the agent who delimits, against, enmeshed with, and in contradistinction to that *limitless and treacherous domain of what-can-be-known*, mainly through the figure of the web and the spider that both weaves and traverses it.

A Spidery Weft.

If the sensorium and memoryscape of what is available to consciousness is a meta-ontological ocean, like *Accelerando's* immer, who, then, are its immersers, and by what sort of ship or chart do they immerse? The answer might be in a description from *Neuromancer* detailing the operating mode of its most canny AI, Wintermute, in relation to the human, Armitage/Corto, whom he makes his agent: Wintermute is figured as "gliding into the man's flat gray field of consciousness [*cf.* Ende: 'Wolkenmassen, aus weißem Dunst'] like a water spider crossing the face of some stagnant pool [*cf.* Ende: 'Ozean, in wilden Aufruhr']" (Gibson 202). Just as cybertech is interested in the complicating interconnectivity of labyrinths, in the shifting terrains of dreams, in the interlocked helixes of Escherian libraries, and in the cloudscape of volitional recursivity (all tropes from non-Anglophone metafiction), cybertech also has a special interest in a certain type of specimen steeped in the esoterica of intricacy: the figure of the spider, and of its sinuous and rarefacted web. Like the latticework of hardware frames and software proxies first envisioned by Turing, a spider's webwork is the product of its precocious but scintillating wisdom, tangles of the heirline of Arachne. If the labyrinth (whether fashioned of

stone, hedges, data, neural pathways, books, train tracks, or clouds), moreover, represents the *unknown and possibly unknowable* in cybertech, then the *web* -- literal or figurative -- represents *what has been recorded, and what remains remembered*, and the spider both the weaver and the traverser of memory.

Cybertech stories, naturally, put these figures in specific relationship. Spiders are distinct vessels that can navigate the ocean (= cloudscape = labyrinth) of indistinctness by priming it with navigable webwork, just as Ariadne's thread is laid down in the Minoan labyrinth so that Theseus can later use it as a route to get out. On approach to the orbital vessel called the *Marcus Garvey*, the base camp for the crucial Straylight run, Case's "confused images of wasps and spiders" (166) clarify into "the gray thorax of a sleek, insectile ship" (166). The elite ninja assassins that seem the most powerful humans in the book, meanwhile, are described as "Patient like a spider": they are "Zen spiders" (177) who practice their combat not by any natural vision, but by a second sight that can penetrate the darkness even of blindness, inured to deceptive facsimiles, immune from being stricken with the Endean sickness of terminally ambiguating fantasy and reality.

Their web is woven from what Stephenson (mockingly, but that may be his problem) invokes in *Snow Crash* as *zanshin*: 残心, or calm alertness, a cognitive imprint inscribed on the reality-construct that makes it competently (or, by comparison to everyone else, excellently) navigable. This property becomes reified in *Neuromancer* in the "Braun drone" that is under Wintermute's control:

Something came ticking quietly out of the shadows, on a level with her left shoulder. It paused, swayed its spherical body from side to side on high-arched spider legs, fired a micro-second burst of diffuse laserlight, and froze. It was a Braun microdrone, and Case had once owned the same model, a pointless accessory he'd obtained as part of a package deal with a Cleveland hardware fence. It looked like a stylized matte black daddy longlegs. (188)

Wintermute uses this device, gliding over the web of a command map provided by Wintermute's preternatural consciousness, to get Molly (and later Case) through various impeding, chaotic obstacles in the labyrinth-like cloud-sea of the Villa Straylight. Wintermute by nature inhabits "[c]old and silence, a cybernetic spider slowly spinning webs [. . .] A ghost, whispering to a child" (269). So (delimited) reason triumphs over (unlimited) disorder: at least until Case decides to ignore the mechanical spider's warnings, and gets pulled into the necrophagous, sea-swept reality of Neuromancer, the competing AI that Wintermute is trying to annex into a larger superconsciousness. Fortunately Neuromancer lets him out again, to return to the intricate webwork of Wintermute's design: one which is able, eventually, through the magic word that pierces the nothing, to bind up Neuromancer's world as well.

Yet the trope of the spider in *Neuromancer* can also, paradoxically, signify elision and entropy, as in "lettering that had once been engraved" which becomes "reduced to a spidery, unreadable code, the name of some long dead function or functionary, polished into oblivion" (Gibson 232). This is the ever-present risk of mental calcification: the absence of any cognitive webwork signifies irrational indeterminacy, but the excess or degradation of the same conceptual

webbing points to ritualization of the kind which leads to unadaptive mental entrenchment. Spiders, at least since Arachne's time, have carried with them this double-sensibility: at once powerfully exquisite and impudently grotesque. Hence *Neuromancer's* "ornate Victorian bathchair" with "its tall, spidery wheels squeaking as they turned", and Molly upon it, herself now figured as a kind of spider at the center of its web, "bundled deep in a red and black striped blanket, the narrow, caned back of the antique chair towering above her" (Gibson 250). A figure split between qualities of intimidating skill and hermetic isolation, she is, in the material world, what Case is in the matrix: a level-headed operator who combines tactics and skill to confront, and surmount, highly challenging problems, but whose dependency on her own operating modalities can also emerge as a deficit.

Stephenson steals this emblem (like most things in *Snow Crash*) wholesale from *Neuromancer*, in this instance to distribute it to the figure of his Librarian: "he can move through the nearly infinite stacks of information in the Library with the agility of a spider dancing across a vast web of cross-references" (107). The figure also appears in one of Stephenson's bathetic references to Molly's cracked glasses: "On the trunk-lid of a dead car, they've set up an old junked computer terminal, just a dark monitor screen with a big spider-web crack in it" (178). So Stephenson, for reasons of his own, inverts the trope: his spiders are software drones or ghost-referents. But as for their webbing, it is prominently present from the first page, the "arachno-fiber weave" worn by Hiro, that bullets "bounce off [. . .] like a wren hitting a patio door" (1). So even in Stephenson's largely uncharitable cosmos, the spider fashions a protection that divides the safety of preparation from the chaotic danger of unreadiness. The imagery shows up again near the end of the novel, again with a negative connotation but otherwise in a figuration

consistent with the cybertech throughput wherein a web of nets connect (and entangle) boats on an ocean: "Farther out to sea, a number of the ships that were chasing them earlier are lingering, steering well clear of the spiderweb. They know they can't come in here; this is the exclusive domain of the [. . .] swimmers, the spiders in the web, almost all of whom are now dead" (376).

In *Galatea 2.2*, however, the spider transports a very different architecture. It is patient like Gibson's. It is patient, indeed, like Walt Whitman's, because it is Whitman's spider that Powers invokes: an objective correlative of consciousness itself. And in *Accelerando*, the spider takes on manifold, charged significances: spider-silk is the fabric of royalty. Cable made of it holds up cities. Personality traits are bundled into spider nests. Spider-palanquins are a mode of personal transport. As for the spider's web, it spans together robot companies, trust circles, and financial instruments which can own people. In *Embassytown*, finally, the trope is invoked for the "crystal shielding" that protects vessels in the interstellar immer, "threads that degraded", once used, "to nothing" (Miéville 20). In all five novels, the spider and or spider-webbing represents intelligence, attentiveness, protection, and the ensconcing of the certain and known in a shell protected from the malleable and potentially unknowable. And there is one more dimension to which both the labyrinth and the thread stand in complex relationship: the performative act of naming.

Clouds, Webs, and Names.

Because what is now called the Data Cloud was figured, in the late 1990s and early 2000s, as the (Inter)Net or (World Wide) Web, tropes of the traversal of that Web are popular in the fiction of that period. Of course these two ways of troping data have very different

implications, as I have just explored, and there is growing confusion today about what distinguishes their sets. But the best way to understand it, perhaps, is this: the Cloud is all the data, on all the servers or server-equivalent devices in the world, that *can* be accessed remotely. The Web or Net that straddles this cloud is a protocol system, and directory structure, of pathways that make it accessible via various routes of traversal, and re-accessible through the storage and retrieval of locational markers.

This structure and its deciphering might be interpreted as based on the way the brain breaks down the world into the vast "noise" of possible information and the "signal" it designates as relevant data. From the stream of this signal, the brain, like a Web browser (or its equivalent as coded into a mobile app), can navigate across knowledge-threads to interact at decision-junctures. The anglophone metafictionist Barth, discussed earlier as significantly influenced by Borges and Calvino, examined this webwork-cipher brilliantly in his short story "click!" (1997), published after *Neuromancer*, *Snow Crash*, and *Galatea 2.2*, but before *Accelerando* and *Embassytown*: so right in the middle of this cybertech constellation.

The conceit of "click!" is that the conventions of the multiplex variability of hypertext criterion-frames can evert into real (non-electronically-mediated) life -- or at least a narrative version of it -- as well, inviting the thought experiment that perhaps these frames are based on the cognitive processes of real-life experience (or narrative systemics) in the first place. In an epigraph to Laura Shackelford's reading of this story, Shackelford quotes Judith Roof's way of framing the question that is arguably most prominent in the story's discourse: "[w]hat good is the ability to choose or perform if the choices available are already circumscribed? Narrative, consciousness, and agency always produce a problem in conceiving of anything other than"

binary codification, a category system dependent on opposing opposites from which one option must be chosen *instead of* another, and in which, perhaps, the choices have, for those who traverse its systems, already in some sense been made.

This, once again, is the great paradox of readerly metafiction: the whole work is already extant and fixed before the reader engages with it, so nothing about its shape can be chosen by the reader: the only choices the reader makes, if there are choices to be made at all, is how that shape is internalized and *remodeled* in consciousness. Bastian comes to an understanding of this at the end of *The Neverending Story*: he is surprised that his mentor, Mr. Koreander, has read the same (magical) book he has, but had a different experience with it (Bastian names the empress "moon-child"; Koreander, on his reading, had named her something different). Koreander explains to Bastian that all true fiction is metafiction: that the world is full of gateways to its domain, passages of which most people are unaware, and ones which, every time they are traversed, engage a fresh and unique experience with the performance of the subjective domain.

According to Koreander, the cognitive frame that such narratives makes possible is one which some cannot access at all, and in which some, once they have accessed it, become trapped, but one in which, for the reader attuned and equipped, there are manifold, remarkable, and endlessly renovating possibilities. They hinge on the "secret" (*Geheimnis*) of instantiation: for the cognized (author), an engagement is one-time-only, but for the cognizer (reader), it can iterate, in slightly altered manifestations, infinitely many times. This is a telling inversion of the author-reader relationship under close scrutiny by critics like Roof and Shackelford: the print-media author becomes, in Koreander's view, simply the projector of source material, aware only of the one-time authorship of a work; the reader, on the other hand, can revisit the same work

multiple times, each time with a different experience of it, and every experience specific to each reader and that reader's present frame of subjectivity. The trick to this is in symbolic (or semiotic) renaming: every time something is given a new name (cognitive identifier), it becomes, within the cognized reality, a fresh object, and all possibilities are open to it within its new life cycle. Hence when the secret name is spoken, in *Neuromancer*, to bridge the two AIs, they become a new AI altogether, with a new frame of subjectivity that opens fresh and powerful potentials. As Koreander emphatically notes, books are not the only portal to the domain of cognitive instantiation.

In Shackelford's exegesis of "click!", she calls upon "one of the initial strains of new-media theory, the 'first-generation' hypertext theory of J. David Bolter, George P. Landow, and Richard A. Lanham", to contemplate "hypertext and its effects on subjectivity" (275), or rather to reveal these theorists' limitations, which Shackelford considers constrained by a persisting print-bound mindset. Shackelford writes of "click!" that it "is informed by a larger concern with the effects that digital hypertext will have on its conceptualization of subjectivity, in literary print terms, as a form of narrative self-authorship" (280). Shackelford is not sympathetic to a conceptual framework like Koreander's: in fact she sees hypertext as an opportunity to dispense with the same authorly constrictions that Koreander (the proprietor of an antiquarian bookstore) views as readerly opportunities. Which approach to the construction of subjectivity is most fruitful? The cybertech reader has the opportunity to decide.

The consideration of these three particular sets of commonality (the spirit of Turing, the labyrinth, the spider's web) across the five novels under review reflect three centrally basic questions that each instance of cybertech fiction, by my definition, thereby asks. They are these:

1) *What can ken?* 2) *What is the field of experience (people, things, sensations, ideas) that may be kenned?* 3) *What is the system by which what is kenned is marked as such?* The meaning of ken, here, is the one that makes it directly cognate to German *kennen* and equivalent to French *connaître*: *to be personally (consciously) familiar with* someone or some thing, in the capacity that requires conscious recognition. The figures of the Turing Test, the Cretan maze (and its variants), and the arachnoid network are a convenient starting point, especially in that they are so readily textually supported in all five novels. But they are only the starting point: these and other cybertech novels ask these same three questions in a wide variety of ways and through a complex and overlapping vocabulary of analogy.

CHAPTER II | "The Color of Television":

Neuromancer, *Snow Crash*, and the Adaptivity of Cyberpunk

I will consider, here, what value the cybernetically-interested novels *Neuromancer* and *Snow Crash* still have from the retrospect of at least two decades, and how they come to bear on still-relevant contemplations of fictional representations, and real-world considerations, of the nature of (synthetic and/or organic) intelligence and consciousness. I will begin by contemplating the theoretical categories of cyberpunk, cyberfiction, and cybertech narrative as supported by critical discussion. I will then ask, for *Neuromancer* and *Snow Crash* in turn, how each novel asks the question of *What can ken?*, *What is the field of experience that may be kenned?*, and *What is the system by which what is kenned is marked as such?*

A suite of critics inform this discussion: Bruce Sterling, Dani Cavallaro, David Bell, Paul Youngquist, and Joseph Tabbi are those that will set the stage here. The bailiwick of the well-charted sci-fi constellation called cyberpunk (which overlaps, in a number of its works, with the literature that I call cybertech, but which has its own set of restrictive concerns), was definitively established in *Mirrorshades: The Cyberpunk Anthology* (1986), edited by Sterling, who describes the grouping of the writers of this "new movement in science fiction" along a few lines, first among them an "allegiance to Eighties culture" (ix). "This movement was quickly recognized and given many labels," Sterling informs the reader: "Radical Hard SF, the Outlaw Technologists, the Eighties Wave, the Neuromantics, the Mirrorshades Group [. . .] but of all the labels pasted on and peeled throughout the early Eighties, one has stuck: cyberpunk" (ix). Having gotten tagged in this way, however, not all the writers prove pleased with such a nomenclature

pinning them to so specific a canopy: "[s]carcely any writer is happy about labels--especially one with the peculiar ring of 'cyberpunk'", because in Sterling's view, "[l]iterary tags carry an odd kind of double obnoxiousness: those with a label feel pigeonholed; those without feel neglected". And because such rubrics are, according to Sterling, not so much reliably taxonomic Aristotelian categories, but rather never-fully-instantiatable Platonic forms, there is no such thing, for example, as the "typical cyberpunk writer" (*ix*).

"Yet," Sterling pragmatically hedges, "it's possible to make broad statements about cyberpunk and to establish its identifying traits" -- not only "possible", in fact, but a "temptation far too strong to resist" (*ix*). So the menu of its traits (from which any single cyberpunk author is not required to order everything, but will certainly order something) is thus: 1) it "is a product of the Eighties milieu" (a moment infused with the "pop phenomenon[ology]" of "the realm where the computer hacker and the rocker overlap"); 2) it is "steeped in the lore and tradition of the SF field"; 3) its writers "treasure a special fondness for SF's native visionaries" such as Philip K. Dick and Thomas Pynchon; 4) "many [. . .] write a quite accomplished and graceful prose"; 5) "like the punks of [the folklorically transformative year] '77, they prize their garage-band esthetic"; 6) "They love to grapple with the raw core of SF: its ideas"; 7) they have an affinity for the trope of the individual whose transnormative identity must be masked (behind totemic mirrorshades) to protect him or her from discovery, such as the "sun-staring visionary, the biker, the rocker, the policeman, and similar" archetypes; 8) they fuse the domains "of high tech, and the modern pop underground"; and (not finally, but for the purposes of this recounting, sufficiently) 9) they participate in a "crumbling" of what has "traditionally" been a "yawning cultural gulf between the sciences and the humanities: a gulf between literary culture, [&] the

formal world of art and politics, and [that of] the culture of science, [&] the world of engineering and industry" (Sterling *xi-xiii*).

In Cavallaro's 2000 monograph *Cyberpunk and Cyberculture*, Cavallaro invokes Sterling's thematic domain in relation to the material culture that suffuses it, informs it, and is interrogated by it: "[o]bjects such as mobile phones, computers, portable physiotherapy units, personal stereos, microwave ovens, video recorders and fax machines (to mention but a few examples) are integral components of many people's everyday existence", and this technology, more significantly, "is regarded not merely as [a set of] useful tools for the accomplishment of practical tasks but actually as [a codification of] defining aspects of people's identities, lifestyles, and value systems" (*ix*). In other words, they are, for Cavallaro, a type of "*prostheses*", but ones which, rather than grounding themselves in the reassuring, and sustaining, materiality in which they appear to be embodied, are actually in-the-virtue-of-their-existence unstable reifications of the "images, fashions, and styles" promulgated by "advertising, the media, and the information industry", because according to Cavallaro, the iPhone or tablet that "one happens to own [. . .] is far less significant than the immaterial images or ideas of such objects promoted by designers and advertisers" (*x*). The functions of these devices contribute, moreover, to creating, in Cavallaro's view, an experiential "quotidian" which is constituted largely by "a *hallucination* -- something delusory, illusory, mirage-like" which is, at the same time, part of a "*consensus* [. . .] continuously shared by large groups of people", such as the constructions of reality constantly infused into it, in the context of their large (or small, but significant) constituencies, by Facebook, Twitter, YouTube, Instagram, *etc.*

This is, in Cavallaro's view, the beginning of a nascent realization of the world that Gibson envisioned when he coined the term "cyberspace". The twin landscapes in *Neuromancer*, then, of garbled data and of a world seen through the reference point of that garbling -- themselves derived from Gibson's observational reality as informed by his cultural situating and his exceptionally vibrant imagination -- become, from this perspective, less cyberpunk fantasy, and more a collective social reality, as the event(uality) of a certain formulation of Don DeLillo's airborne Cloud (as featured in *White Noise*) spreads wider and more totally (and perhaps more toxically). Jeremy Green writes of this trope of DeLillo's, as it appears somewhat later in *Underworld* (1997) as figured in an accompanying essay by DeLillo, that he "draws a series of distinctions between our experience of public events in the present and the meaning we attach to public events in history" (164). Gibson uses the tropes of imagining such historically-beclouded mechanisms in a two-centuries-distant future as a language of expression for his own present.³

In Bell's "User's Guide" to *The Cybercultures Reader* (2000) that he, with Barbara M. Kennedy, edited, Bell writes of the evolving discourse of "*technocultural* constructions": a critical modality that contemplates not only "the hardware (machines), software (programs), and wetware (humans)", but also "the place of imagination and representation, cultural use and value, [. . . and] human interactions with (and within) these cybercultural formations", one appreciative of the "decentralized, non-linear, rhizomatic^[4] textures of cyberspace" (1). One might contemplate, in light of this system of inquiry, that literature which successfully concerns itself with technology and cybernetics generally considers, with acuity, the widely-distributed and (especially with the evolution of the multinodal Cloud) increasingly decentralized implementations of the software of programming: the series of coded instructions which become

the instructional script for analysis and action, modules of behavioral conditioning that can be present in a person at least as much as in a computer. Cybertech uses the foil of the electronic, therefore, to hold a mirror to the workings of the organic.

The late 1980s, the whole of the 1990s, the early-to-mid twenty-aughts, and (at the edges) years just before and after this range, saw a proliferation of work that fits well under the cybertech rubric: narratives which in many cases explore Marshall McLuhan's line of inquiry and which encompass and extend the boundaries of cyberpunk, moving forward from *Neuromancer's* foray. There is, perhaps, too much of this narrative output to make a concise accounting of, but it is well-represented by some of its best talents. In response to the prospect of compiling a constellation of cyberpunkesque authors, Youngquist has presented, despite the caveats with which he prefaces it, a comprehensive but condensed round-up of his delineation of the extension of cyberpunk, what he calls cyberfiction, or the fiction of cybernautics (the sailing-into of imaginative, malleable futures):

There are a host of cybernauts who do something similar, cy-fi artists in the best sense who promote speculative futures and exploit their fungibility. Here is a brief, biased, noncanonical, incomplete, random list: Samuel Delany (*Dahlgren*, *Stars in My Pocket Like Grains of Sand*), Philip K. Dick (any of his thirty-six novels will do), William Burroughs (*Nova Express*, *The Ticket that Exploded*, *The Soft Machine*, *The Wild Boys*), Kurt Vonnegut (*The Sirens of Titan*, *Slaughterhouse Five*), Joanna Russ (*The Female Man*), Stanislaw Lem (*Solaris*, *The Cyberiad*, *The Futurological Congress*), Octavia Butler (*Lilith's Brood*), Kathy Acker (*Empire of*

the Senseless), William Gibson (his whole *oeuvre*), the cyberpunks in general (Bruce Sterling, Pat Cadigan, Paul Di Filippo), Neal Stephenson (*Snow Crash*, *The Diamond Age*, *Anathem*), Jonathan Lethem (*Gun with Occasional Music*), Justina Robson (*Natural History*), M.T. Anderson (*Feed*), Charles Stross (*Accelerando*, *Singularity Sky*) and, of course, J.G. Ballard. To say they all write science fiction would not be wrong, exactly, but not science fiction in the traditional sense. They write probability fictions whose futures offer a value-added return to the present, speculative fictions for a culture of speculation, cybernetic fictions for a cybernetic society: cy-fi. (49-50)

In Youngquist's view, despite the ubiquitous (and therefore perhaps exhausted) prominence of *Neuromancer* in the discussion of cyberpunk, the present conversation does not necessarily entail identifying any single luminary of cyberfiction, but endorses considering it as a kind of movement or system of (malleable) principles within which certain writers are working. Youngquist is keenly interested in multiply-imagined futures, in the presents that inhabit the specters of these possibilities, and in the smoke-and-mirrors of presumptive pasts that, in his view, are themselves merely carefully staged narratives.

Such adjustments are, then, the product of human contemplation; perhaps like all experience, observation, knowledge, *etc.*, they are the progeny of subjective human cognition. In his 2002 essay collection *Cognitive Fictions*, Tabbi applies a recognition of cerebral complexity to a contemplation of current literatures about it; with such a project comes, for Tabbi, a unique concern of *a priori* obsolescence: "I am writing a book about books," Tabbi acknowledges,

"when many of the assumptions specific to print no longer constrain interpretation, and I am identifying a new mode of writing about the self when measures of both selfhood and literary evaluation are up for grabs" (*ix*). Tabbi reminds the reader that "[t]he print monopoly that made a norm of certain romantic and realist conceptions of the novel" -- and Tabbi sets his chronological range, for this, as the "period lasting [. . .] from the establishment of English patent rights for book publishers to Charles Babbage's imagination of the Difference Engine" -- "has", in Tabbi's view, "through the generations given way to a multiplicity of different media" (*ix*). The "[a]rrangements", moreover, "of visual, verbal, and aural media, which Marshall McLuhan described in the sixties as extensions of the human senses and nervous system, take on a new proximity and an expanded potential for recombination" in the moment of the Cloud, when the app is supreme (*ix-x*).

Yet print-based literature, in the face of a media culture that has largely lost interest in it, may, for the artist still working within literature's confines, yet have a golden lining: it "might allow the artist to resist the largely communicative purposes of other media, to manage their multiplicity, and to experience the meaning of their unreflective functions" (*xi*). Tabbi reflects that this kind of extracontextual meta-engagement with systems not themselves capable of it is, "by all accounts [. . .] how consciousness itself--which [in Tabbi's view] cannot be tied to a specific site, agency, or intentionality--is related to the more determinate sites of activity within the brain and its various social and material extensions" (*xi*).

This formulation of Tabbi's -- "determinate sites of activity within the brain and its various social and material extensions" -- is precisely the concern of cybertech, especially where "material extensions" means electronically-enabled hardware, software, and (to borrow from

Bell) the "wetware" of prostheses, also contemplated in the prospects for consciousness in other non-human (*i.e.* animal, angelic, demonic, divine, extraterrestrial, etc) entities. The *tech* in cybertech is really the know-how of discerning who and what (beyond the human domain) has consciousness, and what those who have it can do with it. Although postmodern cybertech comes to mature fruition with Gibson's generation, some fiction contemporary to, and engaged with the concerns of, McLuhan's *Understanding Media* richly prefigures Gibson. In addition to their placement within the larger aegis of late postmodernity, the five novels that I take up as representative examples of late postmodern cybertech (*Neuromancer*, *Snow Crash*, *Galatea 2.2*, *Accelerando*, and *Embassytown*) show inheritances from an earlier cybertech lineage that can be traced to Arthur C. Clarke, to Isaac Asimov, to H.P. Lovecraft, to H.G. Wells, and at least as far back as Jules Verne, Bram Stoker, and Mary Shelley.

Philip K. Dick's 1968 book *Do Androids Dream of Electric Sheep* is in many senses the literary launching point of what would become late postmodern cybertech. The characters unfortunate to remain on that novel's ravaged Earth face a future, or an absence of one, which is often bleak and which offers little hope of change or transformation. Yet those in Dick's world of *Electric Sheep* who are able to "afford a [. . .] mood organ", a device that electronically alters state of mind, can "dial" for an "absence of appropriate affect", *i.e.*, for a suppression of their authentic (and perhaps appropriate) feelings of bleakness about the circumstance, replacing them instead with a synthetically-induced impression "of the manifold possibilities open [. . .] in the [probably purely imaginary] future" (10-11). The only side effect is an "unhealthy" awareness of "the absence of life" in a world where nearly everything, including consciousness itself, is synthesized or synthetically altered (Dick 10). But such is the (hypothetical) reality of a world

where simulations offer more solace than the authentic sensation that remains: at a (perhaps untenable) price. Is that the sort of world toward which we are moving now?

Sterling, Cavallaro, Bell, Youngquist, and Tabbi help frame this question specifically in regard to cyberpunk and related formulations. But what about broader questions of media and technology that could be highly informative in their application? I will next consider a specific lineage of such contemplations, that which spans from Marshall McLuhan to Geert Lovink.

Media Mythologies.

In the introduction to the second edition of *Understanding Media: The Extensions of Man*, McLuhan explains his view that "in the electronic age, data classification yields to pattern recognition, [. . . because] when data move instantly, classification is too fragmentary" (viii). This now-inescapable phrase, "pattern recognition", would become the title for a 2002 novel of William Gibson's; what it imports -- that mnemonics can trump taxonomy -- is a pivotal concern for both writers. McLuhan molds his (somewhat artificial) binary between "classification" and "recognition" into a bit of a complaint about conflicts between cultural registers, lamenting the turn of events that has produced a circumstance in which, on the one hand, there are the thinkers, whose shibboleth of the *inflection* (bending) of categories has put them at odds with everyone else, and, on the other, there are the unthinking receivers, whose unconscious endurance of the *infliction* (striking) of senseless patterns has rendered them incapable of higher rhetorical functionality.⁵ McLuhan glosses his signature phrase, "the medium is the message", to mean, "in terms of the electronic age, that a totally new environment has been created [. . . in which the content] is the old mechanized environment of the industrial age", but the *experience* is a

reprocessed construct that pastiches that environment into an entirely new (or, from a different standpoint, a primitively protoexperiential) ontological framework.

McLuhan goes on, here, in defense of his own tribe (*i.e.*, those who appreciate the rather esoteric "high art" of visual modernism) to observe that in the process whereby "our proliferating technologies have created a whole series of new environments, [we] have become aware of the arts as 'anti-environments' or 'counter-environments' that provide us with the means of perceiving the environment itself" (ix): so the aesthetic stands in functional, deliberate, and informative contradistinction to the pragmatic. For those (*i.e.*, the uninitiated) entirely awash in the audiovisual, and fundamentally anti-aesthetic, systemics of broadcast television (and, one might infer, its contemporary descendents, *e.g.* the YouTube-style, Data-Cloud-based video), however, there is no access to the productive tension by which art can generate this cognitive stimulus, and the viewer is, instead, confined to a domain of "low visual orientation and high involvement that makes accommodation to our older educational establishment quite difficult" (x). So the message encoded in this new medium, notwithstanding its nominal content, is that dialectic reflection has become burdensome.

Does the fallout from such a broadcast tower signify the end, for anyone non-negligibly exposed to it, of the capacity for patient, examined, restrained, and multispectral thought? Or is the notion of such a capacity a mystifying and coercive mythology in the first place, one which the emergence of such technologies are debunking? More recent theorists of these concerns include Friedrich Kittler, Bernard Stiegler, and Geert Lovink. All contemplate, with somewhat complicating attitudes, some of the questions at the root of cybertech.

Writing the forward to *Grammophon, Film, Typewriter* from the south of Crete in the autumn of 1985, Kittler wryly observes that McLuhan's title *Understanding Media* is, as a phrase, an oxymoron. Kittler invokes a Nietzschean usage of "good fortune" (*Glück*) for anyone who is able to intuit even a trace of media's true pattern: the kind of fortune of well-being which one can only discover (in a peculiarly Gibsonian usage, *i.e.*, perhaps Gibson's usage is Nietzschean) "beyond the ice". It is such a smiled-upon (and thereby content) person who can "im Synthesizersound der Compact Discs den Schaltplan selber zu hören oder im Lasergewitter der Diskotheken den Schaltplan selber zu sehen" (5): who can suss, intuit, or glean from the sound of sample-rich digital recordings, or from the visual register of the laser effects of dance clubs, something of the technical schematic whence these manifestations are rendered. Because this person, in Kittler's view, knows something of the secret that media hides so well: it is carrying a banner of elision and obfuscation, one of which the typical hearer or viewer remains entirely unaware, and one which (in an apparent break from McLuhan) is in fact inherited from the practices of printmaking, but amplified to a new pitch of severity.

Kittler puts up for display a truly spooky cartoon which he labels as "the oldest picture of a printing press: figured as the dance of death", dating it to 1499. In it, a man sits above a labyrinthine slotboard of movable type, while behind him is the press itself, and farther back still, a counter where the books are presumably bound, and behind which they are stored in a library of vaulted shelves. The man is shown positioned at each of these stations also: the image makes use of the common medieval pictorial device of multiple occurrences of a single subject, within a single frame, to depict a sequence in time. Every place that the man is shown, the skeletal figure of Death is also shown, and in a position that suggests that it is Death who is leading this activity

of setting the type, impressing the ink onto pages, and binding the books. It is the same trope that will appear in *Neuromancer* personified in the title character, who makes prints of people's cognitive maps and then iterates their instantiation, over and over, in the posthumous necropolis of his virtual domain.

Does this mean that any time something is "captured" in media (whether in print or in the exabytic surfeit of data imaging), it is a death-like and stultifying act, the playing back of which is morbid and unnatural? Stiegler has the advantage, in pressing this kind of case, that in German, "die Ereignisse und ihre Erzählungen" is "der Doppelwortsinn von Geschichte" (12): memory and the recounting of it is a double-meaning encoded into a single word, *Geschichte*, which means both "story" and "history". So while a provocative catchphrase like *Die unendliche Geschichte*, the original title of Michael Ende's 1979 metafictional novel, can be translated as (as it usually is) *The Neverending Story*, it could just as easily be rendered into English as *Unending History*, or perhaps even *History Never Seems to End*.

For Kittler, Michel Foucault, with his view of (hi)story as "interminable word-bleatings", is either the last historian or the first archeologist, because, as Goethe noted, literature is nothing but a shard composed of shards: a bland reduction of original tellings from which time's successive waves of edits have cut away all the substance. So to try to crack history's (or poetry's) ice, and to get to the good stuff beyond the nearly-impenetrable walls of calcified apparitions that such written, printed formulations put up, requires an archeologist unsatisfied with mere reports, but insistent upon actual artifacts. "Die Prähistorie", Kittler contends, "verschwand in ihrem mythischen Namen" (14): the substance of prehistory is elided in the very mysticality of its name. And as for the optical or acoustical dataflow, it has neither need nor

occasion to admit that it is the scatological effluvia of such calcified literary fragmentation, digested beyond recognition.⁶

So Kittler apparently takes McLuhan's proposition of the brain-overwhelming properties of audiovisual media and throws it back on the very print culture that McLuhan appears to cherish. But where does such an excavation end? Might it not be taken all the way back (indeed!) to the troubled knowledge on which the expulsion of Adam and Eve hinged, or to the harried doings of Prometheus, Epimetheus, and Pandora in the suffusion of the world with the subtle attributes of canniness?

Enter Bernard Stiegler. In the introduction to the second volume, subtitled *Disorientation*, to his *Technics and Time* (1996), Stiegler (as translated by Stephen Barker), begins with this claim:

An ordinary person of two centuries ago could expect to die in the bed in which he had been born. He lived on a virtually changeless diet, eaten from a bowl that would be passed on to his grandchildren. Through seasons, years, generations, his surroundings, possessions, and daily routines were close to identical. The world appeared to be absolutely stable; change was such an exception that it seemed to be an illusion. (1)

It is an idealized vision of the world before Pandora's jar was dumped, a moment which for Stiegler is the industrialization of the early 1800s. "It was in that world that the categories were forged within which we are still trying to think an *other* world, which first appeared at the

beginning of the nineteenth century, one in which stability had become the exception and change the rule" (Stiegler *trans.* Barker 1).

But for Stiegler it is by no means as simple as an otherwise-perfect human nature corrupted and exiled by the craving after the technologies of ambition. Rather, he seems to believe that it is a facet of human nature to quest after a completing supplemental, and that "[a]ll supplement is technics" (8). He appropriates the binary between Prometheus and Epimetheus to make the claim that "humans are prosthetic beings, without qualities, and that temporality (as *elpis*, waiting in hope and fear) emanates from this de-fault and at the origin, this originary disorientation" (Stiegler *trans.* Barker 2). So we are always seeking our compass-points. But not all "technics" are the ones we really need, and our navigation in the effort to put ourselves on an actualizing course is prone to extravagant error:

through the development of the telegraph, telephone, photography, phonography, cinema, radio broadcasting, television, and the information technology whose emergence is currently taking place[. . .] global memory has itself finally been subsumed into an industrialization directly affecting our psychic processes and collective identifications and differentiations; that is, individuation itself. (Stiegler *trans.* Barker 3)

The plot thickens in Stiegler's reading of Derridean *différance*:

Jacques Derrida has analyzed 'life becoming conscious of itself' as the singular cause of a general economy of the program--of which the programming industries are the current form. Life in general is programmatic, but life in dialogue with death ('the human' *{l'homme}*) is a process of 'memory-freeing,' an exteriorizing of the living being's programmatics into the artificial programs constituting an originary supplementarity of this form of life. What is exteriorized is constituted in its very exteriorization and is preceded by no interiority: this is 'the logic of the supplement.' 'Différance' is the play of the process within which the programmatic, while never ceasing to differentiate itself, engages in life (as evolution and differentiation) by other means than life (3-4).

Although on a different trajectory, Stiegler picks up from Kittler the trope of technology-as-reaper, and the presence of the neuromantic ghost in relation to the calcifying, purging, and/or transmuting of memory. Biology seeks to replicate itself, and what it cannot do organically, it seeks to do technologically: not only for the end-in-itself of (an ephemeral) posterity, but also as a (perhaps-longer-enduring) contribution to the survival interests of the respective rings of its expanding kinship set. Even when a person's biological history is "freed" from living memory some time after his or her death, that person's legacy, whether in genes or memes, can live on to carry forward his or her contribution in a supplemental, if anonymous, posthumous lifespan. Stiegler is dissatisfied with the current implementation of technological prostheses, but he

articulates an inventive theory of their origins, and launches from it to some hunches as to how they might be re-shaped to satisfactorily serve their true ambitions.

Stiegler's concerns about the present media-moment versus what its potential might be, if freed from the programmatic constrictions of its current (not-fully-evolved) prostheses, seem present in Stephenson's model of the "active" receiver of information versus the "passive": "The Sumerian word for 'mind,' or 'wisdom,' is identical to the word for 'ear'. That's all those people were: ears with bodies attached. Passive receivers of information. But Enki was different" (Stephenson 397). Enki, the world's first hacker, embodies the ability to craft dynamic prostheses and to employ this talent altruistically, as Hiro does at the end of *Snow Crash*.

And as for *différance*, Stiegler offers further insight that can be applied to this concept in another formulation:

[T]echnical supplement itself, whatever it advances, is itself finite. As supplement, it opens out a gap that can be seen as in-finite, but that in fact is not infinite but rather, more precisely, indefinite (the principle of indetermination), and, relative to retentional finitude, quasi-infinite; the technical supplement is the substance of the transductive relation between the *who* and the *what* as distributed in the places constituting irreducible singularities: as events. (11)

Consciousness, via this kind of understanding, is a composite property: the (unconscious) modeling of the infinite, and the (conscious) superscription of the selected-as-finite. To me, this is a type of *différance* embodied in the ambiguating tension between a) the *knowing* of facts,

admittedly ones which may be based on false determinisms, yet which can be, depending on the system, a knowledge as capacious as the extent of the (presumptive) facts themselves, but to which, like the Librarian in *Snow Crash*, the knower only has access in the moment of *accessing*, and which is, moreover, a property of *intelligence*, and b) the *kenning* of subjectivity, which is by definition limited to a construct derived from the present-sensorium and the memory-fugue of its past impressions, in tandem with a meta-evaluation of those impressions, which stands in a complex and partially-engaged relationship with knowing, that same ambiguation (I would argue) that Derrida has identified as *différance*: this faculty is a property of *consciousness*. Stiegler's representation, therefore, of consciousness as a product of the striving-for of indeterminate differentiation is certainly a batch of hops to add to the large keg of brews in the cybertech mix. Prosthesis may have the capacity, therefore, in Stiegler's view, within certain limits, to augment and extend the *experience* of consciousness, and moreover it can be a bridge to the creation of new *instances* of consciousness, especially in that suite of technologies which, whether by organic, synthetic, or hybrid means, in effect fashions human subjectivity anew.

It remains a question, for each reader of cybertech to answer, whether the idea of synthetic, extraterrestrial, or nonhuman terrestrial intelligence and/or consciousness (if the reader accepts these concepts as categories) is a real-world possibility, or a fictional conceit that helps us understand our own capacities better. But either way, Stiegler's idea of prosthesis as a potent supplement to the organic modality of consciousness is good to keep on tap. So is his (complicated, ambiguous, ambivalent, equivocal) recognition that with these prostheses come risks and blockages, and that the prostheses can therefore be repurposed, renovated, and/or

replaced so as, to a certain degree, to mitigate their shortcomings and expand their potential benefits.

A final emissary to mark from McLuhan's (increasingly inverted) line is Geert Lovink. Trafficking less in theory than in present practice, Lovink is altogether concerned with the perils and possibilities of the emergent Data Cloud. Seeking, in *Zero Comments: Blogging and Internet Culture* (2008), to formulate a "General Theory of Blogging", Lovink concludes that "Blogs are the proxy of our time" (xxiii). Codename: "Techno-affect". This synchs up with certain language in Charles Stross' *Accelerando*: the corporoids, for example, that "have automated their legal processes and are spawning subsidiaries, IPOing them, and exchanging title in a bizarre parody of bacterial plasmid exchange" (9), or the "masses of free-flying nanocomputing processor nodes exchanging data via laser link" (14) that Manfred Macx wants to make out of Mars and the moon (and that the posthuman agents in the novel eventually do).

Macx is an avid blogger, although somewhat ironically so; *Accelerando* opens with his "squirt[ing]" a cropped image of a pigeon "at his weblog to show he's arrived" in an ugly, putrescent Amsterdam which is "making him feel wanted" (Stross 3). The metonymy of scatology, here, suggests the blogosphere as a latrine whose contents are excreted from viscera. Lovink puts up for discussion *The Personal Memoirs of Randi Mooney's* opinion -- in a passage from May 5, 2005, two months before the publication of *Accelerando* -- that "blogs consist of senseless teenage waffle" (ix). This phraseology swaps out the visual language of the sewer for that of the trivial accoutrement of inchoate adolescence: a practice which is framed here as the semiotic/performative/journalistic equivalent of "attaching tinselly-sprinkles to the handlebars of

your bicycle" (ix). But the effect is the same: something that catches the senses briefly, but is soon dismissed as vacuous.

Lovink is disappointed by a certain consequence of this circumstance: that what *is* of value in the blogosphere has little opportunity to be recognized and celebrated. Yet the promise, for Lovink (as for Stiegler), rests in the *potential* of what this kind of prosthesis can do, even if at present its application may be (in their view) in the wrong hands. Lovink pontificates upon, in relation to this concern, drawing from the realm of pundit trending, the possibility that (citing a *New York Times* article by Saul Hansell): "McLuhan is out. The medium is no longer the message. Anyone who wants to tell a joke or spin a tale can produce any combination of video, text, sound, and pictures for viewing on a 50-inch TV, a laptop computer, or cell phone screen" (xxvi). The gist: there are no censors at the presses. The readers have taken over the writing-apparatus, making their own decisions about how it should be activated. And the results are mixed: both in their contents, and in their implications.

Kittler might be delighted to know: "Now we can all be DJs and film directors, distributing our podcasts and movies online without groveling before a studio executive" (Lovink xxiv). Apparently we are all, now, the *Schaltplan*: never mind the *Glück* of discerning it, anyone with a tablet and a data connection becomes an architect of the wiring and rewiring of media deployment. But there is a price, for Lovink, and (for him) an unwanted one: the compulsion to inhabit the "complex economy of links, tags, traffic data, and indeed, micro debits" (xxv). Because (in the words of Nicholas Carr) "[w]ho[ever] controls the most clicks wins" (Lovinck xxvi). And for Lovink, that will probably not be the content provider, but its exploiter. The consequence: "There is a multitude of talent going nowhere" (xxvii).

Regardless of whether and to what degree this claim is valid, what is relevant here is what might be borrowed from Lovink that is helpful in a discussion of cybertech fiction. Three premium ingredients seem importable: 1) the idea of the distribution of content analysis across a broad processing array, 2) the reality that most of that analysis will be ignored but that a small fraction of it will be privileged and enshrined, and 3) the competitive economics of that process. Because this, one might argue, is how consciousness functions in relation to sensory engagement and to experiential processing. Most of what the sensorium registers goes unnoticed, but some of what it registers *is* noticed, some of what it notices is recorded, some of what it records is analyzed, and some of what is analyzed is bumped up to the conscious mind to be contemplated. The relationship between what is encoded and what is ignored -- the cognitive *différance* between the whole unprocessable, expensive labyrinth and the single navigable route that is demarcated by the privileged, profitable thread -- is the most useful link among Lovink's bundles.

The route from McLuhan through to Lovink offers some fineries, then, which might prove rich for cybertech's exploration of consciousness, and moreover, some meaningful additions to the long list of questions that the reader will ask about, in relation to, and inspired by cybertech. These could include: do book printing, audiovisual media, and other information technologies represent the gateway to an extension, amplification, and replication of human consciousness? Or are some or all of these technological processes just the reverse: calcified blockages which, if not remediated, threaten to throttle even the possibility of a fruitful future for human consciousness and its material circumstance? Or are, perhaps, the empirical currencies in which media trades (frequency transmission, molecular accretion, systemic articulation) the

pillars on which human consciousness (if such a thing exists) stands, and therefore to explore them is not a science of engineering, but of epistemic archeology? Or are these systems, in fact, facets of an organism upon which human biology and behavior is merely a parasite which should recognize its trivial place and, for the sake of its own survival and that of others, put its grandiose conceits and toxic tendencies in check? Or, finally, contrariwise, are these technologies a constructive, but limited, and potentially dangerous, gift, which, when used in moderation, can facilitate and enhance the full realization of human potential? Cybertech asks all these questions, but it is left to the reader to contemplate the answers to them. Perhaps the best place to start, in relation specifically to what I am here calling late postmodern cybertech, is William Gibson's 1984 novel *Neuromancer*.

Neuromancer: Case in Point.

Scott Bukatman believes that "Cyberpunk at its best is not quite reducible to the work of William Gibson, but he is certainly [. . .] its most archetypal literary figure", one "[. . .who, i]n *Neuromancer* [. . .] coalesced an eclectic range of generic protocols, contemporary ideolects, and a pervasive technological [flair. . .] combined with a future-shocking ambivalence" (146). Randy Schroeder, in turn, parses the philosophical ethos of *Neuromancer* as embedded with a world view that can address, and engage with, a specific arc of intellectual history without being bound to any of its factions. For Schroeder, "Gibson's universe recapitulates the traditional Western terms for thinking about the world, in that his fiction exhibits a constant tension and interplay between conceptions of determinacy and indeterminacy, realism and antirealism, [. . . an] interplay [which] yields a reading experience of complex ambiguity" (155).

As Schroeder makes clear here, although Gibson is making a break of sorts, in his message and his means, from certain literary traditions within which he is working, aspects of the landscapes of those traditions remain encoded and decipherably intact, albeit through a postmodern remixology. Claire Sponsler argues persuasively for this ethos as the most prominent in the fabric of *Neuromancer*:

[fiction of this kind] presents a montage of surface images, cultural artifacts, and decentered subjects moving through a shattered, affectless landscape. Its protagonists are antiheroes set adrift in a world in which there is no meaning, no security, no affection, and no communal bonds-except for those they themselves tenuously create. Antifoundational, skeptical of authority, suspicious about the possibility of human autonomy, and fascinated by the way technology and material objects shape consciousness and motivate behavior, cyberpunk would seem to square with postmodern culture as it has been amply described by Baudrillard, Jameson, and Jean-François Lyotard, among others. (627)

Valerie R. Renegar and George N. Dionisopoulos' extend this trajectory of reading, arguing that in applying Kenneth Burke's "comic frame" to *Neuromancer*, the "entelechy" (teleological, or terminus-oriented, intentionality) that is inextricably present in the novel, but which is not its motivating mode, "creates an underlying dialectical tension that encourages audiences toward critical self-reflection in which individuals are awakened" to possibilities of interpretation not available in other speculative fiction (324).

The first line of the novel directly invokes McLuhan's problem of a media, and a message, constituted of low-bandwidth ghost-content, and moreover, as critics have distinctly commented about Gibson's signature move, it is one that amplifies the sense of seepage from screen-scrimmage to sensorial-skirmish: "The sky above the port was the color of television, tuned to a dead channel" (3). The denizens of Chiba City themselves, it will turn out, as well as those of the East Coast metroplex called the Sprawl, are absorbed by the abjection of the "massive drug deficiency" they have "developed" by cultivating a dependency on dystopic overstimulus; whether ruled by chemicals or neural hookups, they are constantly either jacked in or strung out (Gibson 3). Yet the narrative complication of the novel will be in the constitution of an antihero whose ability to feed these addictions is blocked: first by the sabotaging of his neurological interface, and then by the rerouting of his internal organs to make it impossible for him to metabolize his drug of choice.

This protagonist -- if he can be called that -- called "Case", and a complex one indeed, has made a career in his short life of circumventing the security protocols of a virtual reality world, known as "the matrix", or "cyberspace" (both terms that Gibson coined), by navigating through their rigors from the inside of that world: "bright lattices of logic unfolding across that colorless void" (Gibson 5). The kind of technology by which this is manifest functions by directly interacting with the sensory center of the brain, which means an integration with the nervous system that can have dire or deadly consequences if it goes wrong, or if the user becomes the target of malicious software. The stakes, therefore, are higher than those of merely interacting with a display-based terminal, and cyberspace "jockeys" like Case run this risk on a daily basis.

At *Neuromancer's* start, Case has already burned out on his career as a deck jockey, or rather, been burned out of it by a vengeful adversary who has destroyed his brain's ability to interact with the visualized Data Cloud. In that former career, he had "operated on an almost permanent adrenaline high, a byproduct of youth and proficiency, jacked into a custom cyberspace deck that projected his disembodied consciousness into the consensual hallucination that was the matrix" (Gibson 5). Yet, having made "the classic mistake" of embezzlement from a criminal syndicate (Gibson 5), which in turn "damaged his nervous system with a wartime Russian mycotoxin" (Gibson 6), Case has now hit rock bottom, a circumstance driven home by the personal loss of a romantic partner who is murdered in the crossfire of the Chiba City underworld in a circumstance related to Case's professional activities.

Gibson's language, in all these introductory turns of phrase, at once declares the boldly metallurgical forgery of his admixture of registers and vocabularies, especially in his description of engagement with the visualized Cloud: "lattices of logic", "disembodied consciousness", and "consensual hallucination" all speak not only to the diminutive deleriums of television and video games, but the advent of interactive information and pervasive, reified social media. Ruined, inconsolably melancholic, and increasingly self-destructive, Case roams the Chiba streets, sometimes jumping on remote hopes, sometimes without purpose or intention, and appears on a collision course with his mortality; he falls "into the prison of his own flesh" (Gibson 6). Molly, who becomes Case's new partner and gets him on the road to personal and professional recovery early in the novel, is the emissary of this compromised material world: a street-smart free agent who makes a living from her various prostheses, with hardware in her brain that once allowed her to take on different personae in different contexts during her employment as a courtesan, the

memories from which were quarantined from her experience of her life outside this occupation, and from her other career as an assassin. During her jobs as a "puppet", a self-fiction version of herself was created for each new client, and the cascade of those fictions became a tempest which eventually (due, substantively, to a hardware cross-wire, but conceptually to an existential cross-bleed) began to overwhelm the "true" self of her general life. Even having bolted from this difficult circumstance, the power of self-refashioning (and the protection of self-concealment) is one she is not easily ready to part with, even given the side effect of escalating trauma.

Armitage, the agent of the AI Wintermute and the boss of Case and Molly throughout much of the novel, is another victim of memory complications. He has had his whole, largely fictional life, as rendered in his memory, cobbled together and handed to him by Wintermute, and whenever this veneer starts to crack, Wintermute jumps in to patch it up to keep Armitage functioning for another day. Similarly, the Dixie Flatline, a ROM construct (*i.e.* a person-in-a-bottle whose experiences and personality can be run like software) that Case makes use of while on jobs for Armitage, can make new memories if given the hardware to do so, but will lose those new memories the moment that hardware is removed, reducing him again to the memory-state of his initial encoding. So Case, effectively, writes a new story for the Dixie Flatline each time he is rebooted with his memory clean, based on what Case tells the Dixie Flatline about the present circumstances. Case soon gives him an artificial memory, though, and at the end of the novel, the Dixie Flatline has been placed in a new territory in which his consciousness can thrive and he can again write his own story.

All of this characterization, and what follows on its foundation, however, is primarily a vehicle for the presentation of Gibson's conceptualizations of a world shaped by a technology

that can create, effectively, a stable and sustained dreamscape for any who make use of it.

Neuromancer's characters are not trivial: they are rich with human textures and bring forth a connectivity and productive pathos for a reader willing to engage with them on their own terms. Perhaps more importantly, they underpin the playing out of a possible universe where it is not only possible for humans to offload their consciousness to computer-generated realities, but where computers themselves, it will turn out, are able to cultivate consciousness not only equivalent to, but surpassing, human nature and experience.

The real headliners of *Neuromancer*, the two artificial consciousnesses Wintermute and Neuromancer which, by the end of the novel, will merge to make a superconsciousness like a merged brain of multiple lobes, are not, typologically, newcomers to the landscape of consciousness. Their native habitat -- cyberspace -- is also a playing out of a setting endogenous to the human imagination: namely that of imagination itself, because that is effectively what the matrix is, an imaginary world made real in consciousness by a technology of interaction with it. This process of visualized, interactive fiction had existed at the time Gibson was writing, namely in the form of video games, for around a decade, and in an early, expositional scene in the novel, Gibson showcases his awareness of that technology as the forerunner of the matrix he invents in the world of *Neuromancer*:

'The matrix has its roots in primitive arcade games,' said the voice-over, 'in early graphics programs and military experimentation with cranial jacks.' On the Sony, a two-dimensional space war faded behind a forest of mathematically generated ferns, demonstrating the spacial possibilities of logarithmic spirals; cold blue

military footage burned through, lab animals wired into test systems, helmets feeding into fire control circuits of tanks and war planes. 'Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts. . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding. . . ." (51).

What Gibson's matrix offers that video games do not is complete sensory immersion in a fictional reality. The video games of the '80s, '90s, and even today, generally speaking, reach our senses by means of a two-dimensional screen with two- (or perhaps five-) channel sound. But Gibson's matrix, and related reality constructs he presents in *Neuromancer*, absorb the senses whole, without mediation, feeding the brain, directly, an analog of sensory experience that is totalizing in both spectrum (sight, sound, taste, smell, touch) and range (when in it, there is nothing outside of it; it is a whole-sense domain).⁷

The novel, moreover, contemplates the three most important questions of cybertech -- *Who can ken?, What can be kenned?, What designates the kenning?* -- in philosophically riveting, visually stunning ways. As for the first question, the potential of synthetic consciousness is framed tropologically by the conflation of the organic, the urban, the commercial, and the technological domains. To address the second question, the city space becomes the complex, only-partially-knowable figure of the labyrinth. And in relation the third question, a cartography is charted within the systemics of the matrix itself.

The Sprawl and the Matrix: Things, Shapes, and Landscapes.

Perusing *Neuromancer* is like wandering a derelict museum. One of its early surfaces is "decorated in a dated, nameless style from the previous century, an uneasy blend of Japanese traditional and pale Milanese plastics, but everything seemed to wear a subtle film, as though the bad nerves of a million customers" -- immediately the conjunction to the nervous system is introduced -- "had somehow attacked the mirrors and the once glossy plastics, leaving each surface fogged with something that could never be wiped away" (9). Nearly every keyword here carries a whole backlog of import: "dated" (it is a tale of elided histories); "nameless" (naming, namelessness, and the shibboleth are crucial to the story's plot); "previous" (its characters seem to stand, somehow, in frustrated relation to the always-already-*a-priori*); "blend" (it is a novel of unexpected hybridities); "Japanese" and "Milanese" (the circuit linking Asia, Europe, and North America is traversed and re-traversed, raising the specter not only of transatlanticism, but of transpacificism and of the Silk Road); "subtle" (Gibson's register is nothing if not that, sometimes almost too much so to parse); "film" (invoking a preoccupation with surfaces, developments, residues); "bad nerves" (this is Case's problem at the moment of this encounter: his nervous system has been damaged so he cannot access the matrix, and this stands in for bridges broken, and eventually restored, between the human and the synthetic); "a million customers" (concern for the consumer is never distant in Gibson's renderings); "attacked" (it is a story of wars, of hand-to-hand combat, of digital incursions and invasions); "mirrors" (the trope of meaning refracted or deferred, and the favorite veneer, in cyberpunk, to conceal characters' eyes and thereby their natures and intentions); "glossy plastics" (the upmarket cachets of

Neuromancer are coated with these, but they conceal the harsh metal glare of the infrastructure they coat); "surface" (it is a novel that charts the migration from high to late postmodernism: the question of the dynamism of the experiential surface is paramount); "fogged" (the figure of the foggy cloudscape transmits not only the datasphere, but the overwhelming infinitude of what is knowable to consciousness); "something that could never be wiped away" (the trope of the irretractable blemishes of moral history, and the irreversible traces of Bergsonian time and memory). The sentence in its entirety serves as a précis for the novel's work of bringing its signifiers, and various versions of their referents, into complex conjunctions.

Linda Lee, Case's lover when the story opens who won't survive (except in memory) past the first few chapters, has "dark hair" that is "drawn black, held by a band of printed silk. The pattern might have represented microcircuits, or a city map" (9). A descriptive throwaway with absolutely crucial ramification: both the circuit-system, and the city, tropes, in the novel, the labyrinth, which in turn stands in for *the field of everything that may be marked*. The map, on the other hand, tropes the spider's web: *the system by which a portion of the infinite field is made intelligently finite*. With a crown of maps and of circuits, Linda Lee therefore hints at how the novel will answer the question *What can ken?*: not just biological humans, but cognitive systems made of circuit-maps as well.

Not long after, Case and the reader encounter an array of "small bright objects": "[w]atches, flickknives, lighters, pocket VTRs, simstim decks, weighted manriki chains, and shuriken"; "[s]ome were chromed, others black, others treated with a rainbow surface like oil on water" (11). These are clutter, ephemera, the leavings of disposable cycles of culture populated by people who have lost themselves among their things. And as in other cybertech novels (such

as Richard Powers' *Galatea 2.2*), the Baudrillardian figuration of the Disney cosmos stands in for the uncanniness of simulacrum, surreal, synesthetic, transfigured, swapping the authentic for the conceptually animatronic: "[a] pair of bulbous Disney-styled table lamps perched awkwardly on a low Kandinsky-look coffee table in scarlet-lacquered steel" where a "Dali clock hung on the wall between the bookcases, its distorted face sagging to the bare concrete floor. Its hands were holograms that altered to match the convolutions of the face as they rotated, but it never told the correct time" (Gibson 12).

The constellations of material culture underscore their own obsolescence, and with it that of the ideological framework of print culture: an associate of Case's, who deals in imports, stands "securely fenced behind a vast desk of painted steel, flanked on either side by tall, drawered cabinets made of some sort of pale wood. The sort of thing, Case supposed, that had once been used to store written records of some kind" (Gibson 12). Only in places like (in-the-novel) backward Istanbul still cares about print: McLuhan's (unhappy?) vision of the audiovisual overturning the stenographic is envisioned, in Case's world, as fully realized. "A few letter-writers had taken refuge in doorways" of the hotel where he stays in Turkey, attending to "their old voiceprinters[,] wrapped in sheets of clear plastic, evidence that the written word still enjoyed a certain prestige here" (Gibson 88). And the detritus not only of interior design, but of trashed technologies, litter the rooms and scenes everywhere that Case goes, especially in the Chiba City chapters: a "snakelike loop of fiberoptics protruding from a wall socket, a pile of discarded food containers, and the bladeless nacelle of an electric fan" (17); "a heap of discarded fiberoptics and the chassis of a junked console" (Gibson 18); a "robot crab" whose "bronze carapace might have been a thousand years old" (Gibson 30).

This pattern resumes in the novel's final act, but with a fresh emphasis on suggesting abortive attempts at reifying -- not in the matrix, but in a baroque distortion of it in the physical world -- the domains of history and informational infrastructure. As *Neuromancer*'s characters wander the decaying halls of the degenerate Villa Straylight, they see that "the hull[of the space station]'s inner surface is overgrown with a desperate proliferation of structures, forms flowing, interlocking, rising toward a solid core of microcircuitry,[. . .the Tessier-Ashpool] clan's corporate heart, a cylinder of silicon wormholed with narrow maintenance tunnels[. . .] The bright crabs burrow there, the drones, alert for micromechanical decay or sabotage" (Gibson 172). Casually and carelessly, its spaces are strewn with "fragments of pottery, antique weapons, a thing so densely studded with rusted nails that it was unrecognizable, frayed sections of tapestry" (Gibson 176).

What poses itself as a showplace, a paragon, of corporate success and efficient technology turns out to be little more than a ransacked sound stage; its patriarch, before he makes his final exit, is seen to sink "back into the creased softness of a huge leather armchair with square chrome legs[. . .]" (Gibson 183), and nearby, where one of his concubines lies dead, a "vast quilt or comforter was heaped beside the bed, in a broad puddle of congealed blood, thick and shiny on the patterned rugs" (Gibson 185). The unpleasant images of death, intermixed with the vocabulary of what is "overgrown", what is "desperate", its fabrics "wormholed", its scaffolding racked by "decay", reduced (like Goethe's framing of literature as recalled by Kittler) to "fragments", rendered finally "unrecognizable" in relation to its origins, "frayed" beyond recognition or use-value, "congealed" into a mass of charnel remains. Such is the fate both of the physically printed word and of the culture that produced it in Gibson's vision within

Neuromancer: and with it, perhaps, the project of human consciousness that has fashioned such cold and death-like vials in which to store its organs of memory.

The Villa Straylight, the construction of which was shaped by a "ragged tangle of fears" with a "strange sense of aimlessness" (203), a "parasitic structure" (225) that is outfitted with "wooden showcases" which parade "the skulls of large birds, coins, [and] masks of beaten silver" (231), is an archive Walter Benjamin might find to his liking, if, as Steven Helmling claims, Benjamin "was [so] drawn to the petrified, frozen, or obsolete elements of civilization, [and] to everything in it devoid of domestic vitality" (2). This description is such a ringer for Straylight, in fact, that it suggests Benjamin as a source: "[t]he French word for still-life, *nature morte*," Helmling continues, "could be written above the portals of his philosophical dungeons", and "[t]he Hegelian concept of 'second nature,' as the reification of estranged human relations" causes Benjamin to be "driven not merely to awaken congealed life in petrified objects--as in allegory--but also to scrutinize living things so that they present themselves as ancient, 'ur-historical', and abruptly release their significance" (2). Despite the breach of perhaps five decades between Benjamin's hour and Gibson's, this is altogether too much like Gibson's mode, here, not to deserve to be put in dialog with it.

Hamlin shortly makes the move of claiming that such a fixation requires an "antidote", and the one he wants to apply is that of a structuralist strain, "from Lévi-Strauss and Barthes", namely (in Helmling's view) "to dissolve the category of nature entirely into culture" (2). Curiously, Gibson does this as well. And as Hamlin also notes, Benjamin (at least in Adorno's view) believes that "what is historically concrete becomes image--the archetypal image of nature as of what is beyond nature--and conversely nature becomes the figure of something historical"

(Helmling quoting, here, from Adorno's *Notes on Literature*, as translated by Shierry Weber Nicholson, 2: 226). This may be the best key to decipher the intention behind Gibson's conflations, and from his morbid attention to the haunted Straylight.

What kind of being can rise phoenix-like from such unpromising remnants? For Gibson the answer is artificial intelligence: one made possible by human endeavors, but which transcends those endeavors even as their human authors become increasingly alienated from the architecture of consciousness. Hence the valence of clarity and elegance applied to Gibson's language in describing the realm beyond the "meat" of the body: the supermaterial perfection of the matrix and its permutations is posed in contradistinction to the ugliness and degradation in what is left of the material world of human civilizations. But the matrix itself cannot remain sequestered from the consequences of such an emergence, nor is it immune from inheriting the deathly modalities of the material archive, as shown by Neuromancer's construct. Is Wintermute, though, or the Wintermute-Neuromancer hybrid, which promises to revitalize the human legacy by spawning a new and more sophisticated form of consciousness, really a better option? Or is it just another extrusion, calcification, extravagance, and/or eversion of the same mannerist malevolence by which the Tessier-Ashpools and their Straylight palazzo seem possessed?

When Wintermute executes his plan, "the density of information overwhelm[s. . .] the fabric of the matrix, triggering hypnagogic images" (181). And it is, again, the question of *who or what can be conscious* that all of this technological imagery and narratological maneuvering is working to answer. The empirical solution, from within the frame of the world of the novel, is clear enough: not just humans. Also intelligences which live entirely in the non-space of extruded disembodiment.

To bring this point home further -- that artificial beings can possess the hitherto "natural" property of conscious awareness -- Gibson employs a good deal of imagery that conflates the vocabularies of the organic and the synthetic, as well as of the commodified human and the nonhuman picturesque. During "[s]ummer in the Sprawl, the mall crowds [appear] swaying like wind-blown grass, a field of flesh shot through with sudden eddies of need and gratification" (46), and "[f]ads swe[ep. . .] the youth of the Sprawl at the speed of light; entire subcultures could rise overnight, thrive for a dozen weeks, and then vanish utterly" (58). These mergers of the human and the nonhuman organic can also be literal: one character has a "face" that is "a simple graft grown on collagen and shark-cartilage polysaccharides, smooth and hideous[. . .] one of the nastiest pieces of elective surgery Case ha[s. . .] ever seen" (59).

The psychological locus of the savannah recurs. "The girls" on the subway resemble, to Case, "tall, exotic grazing animals, swaying gracefully and unconsciously with the movement of the train, their high heels like polished hooves against the gray metal of the car's floor"; he expects them to "stampede" (77). The bizarre exhibits of the novel's various landscapes sometimes, however, leave this kind of metaphor behind, swapping in literal figurations of the grotesque instead. In Istanbul, for example, Case sees "a gutted locomotive atop rust-stained, broken lengths of fluted marble. Headless marble statues [are. . .] stacked like firewood" nearby (90). And then comes the presence of a taxidermically preserved horse (the species is otherwise extinct in this world):

Case glanced at the embalmed animal and shook his head. It was displayed on a sort of pedestal, near the entrance to a place that sold birds and monkeys. The

thing's legs had been worn black and hairless by decades of passing hands. [. . .]

The animal's brown glass eyes seemed to follow them as they passed" (91)

It is like a pickled Houyhnhnm, unnatural and uncanny. Finally the holographer Riviera shows up, spinning fantasy-figures Horace might appreciate for their absurdity:

It was two meters tall, stood on two legs, and seemed to be headless. Then it swung slowly to face them, and Case saw that it had a head, but no neck. It was eyeless, the skin gleaming a wet intestinal pink. The mouth, if it was a mouth, was circular, conical, shallow, and lined with a seething growth of hairs or bristles, glittering like black chrome. It kicked the rags of clothing and flesh aside and took a step, the mouth seeming to scan for them as it moved. (93)

Meanwhile, "[b]lack iron deer rusted in the gardens of the Seraglio. Case walked beside [Molly. . .], watching the toes of her boots crunch unkept grass made stiff by an early frost" (94).

Why such an interest, for Gibson, in these unsettling images of the mammalian abattoir? Perhaps because they drive home the image of the body, whether human or animal, as brutish meat. Another metaphorical register, however, which focuses on flora instead of fauna, with a special interest in the fields and blossoms, also runs through the novel, encrypting different information: the junk collection of the Finn seems to have "grown" between visits, "[o]r else it seemed that it was changing subtly, cooking itself down under the pressure of time, silent

invisible flakes settling to form a mulch, a crystalline essence of discarded technology, flowering secretly in the Sprawl's waste places" (72). There is so much packed into this figure that not all of it can be readily unearthed, but the upshot is a modeling, once again, of Benjaminian historicity, oddly glamorized as it tends to be. One of Riviera's holographs is "a black rose, its petals sheened like leather, the black stem thorned with bright chrome" (102): the imagery of nature, material culture, and technology is sparely intermixed.

Freeside's visions are a bit brighter: one manicured landscape of its resort environment presents "a kind of meadow, studded with striped umbrellas and what seemed to Case an unnatural number of trees" (127) -- ones which are "small, gnarled, impossibly old, the result of genetic engineering and chemical manipulation" (128). During Riviera's disturbing holography performance, a "black flower l[ies. . .] at the foot of the bed, still seething with its blue inner flame" (140). And in a New-Orleans-style house of ill repute serviced by cybernetically-augmented "meat puppets", Case navigates "a spiral staircase of floral iron" (145) to reach Molly, cloistered in a rare moment of solitude, and in the process learns something transformative about the wiring of her brain and of her personal history. Later, under Freeside's synthetic sunscape, Case sees "a giant butterfly banking gracefully against recorded sky" (164); but does it trope freedom, or captivity? And "at the edge of the meadow", he notices "wild flowers dancing in the updraft from the canyon" (164): but does it all add up to a whimsical greenworld, or is it more like a creepy terrarium?

In the Ashpool patriarch's unnatural dreams, a byproduct of the sabotage of his cryogenic sleep-cycles by one of his own clan, the most memorable element is "Calla lilies". Ashpool recalls a strange architecture of "terracotta, nursemaids all of chrome, how the limbs went

winking through the gardens at sunset" (184). The natural world, then, is inverted in these images to suggest it has been subverted by toxic applications of the synthetic: the trade in which the Tessier-Ashpools deal. Will the AI Wintermute, though, a rogue agent who has schemed to escape Tessier-Ashpool servitude, prove any better a hierophant for its post-organic world?

Imagery of cosmology seems to bring *Neuromancer* toward its ambivalent resolution. "Directly overhead, along the nighted axis, the hologram sky glitter[s. . .] with fanciful constellations suggesting playing cards, the faces of dice, a top hat, a martini glass" (151): life in an emergent, late postmodern subjectivity of ambiguously interactive *things* is troped by the equipment of the casino, the costuming of the performance stage, the glassware of the liquor cabinet. Models in old magazines are reduced to the synecdoche of "a wistful galaxy of sweet white teeth" (169). And as the world of the matrix is transfigured, its aspects "launch[. . .] themselves from the ornate sunburst spires, glittering [. . .] shapes made of shifting planes of light. [. . .H]undreds of them [manifest], rising in a whirl, their movements random as windblown paper down dawn streets" (261).

Whatever can be distilled from its various conflating imagery, the crux of *Neuromancer's* address of the problem *What can ken?* is really crystallized in a revealing dialog between the Dixie Flatline about midway through the book:

"Wait a sec," Case said. "Are you sentient, or not?" [. . .] "Well it *feels* like I am, kid, but I'm really just a bunch of ROM. It's one of them, ah, philosophical questions, I guess. [. . .] But I ain't likely to write you no poem, if you follow me. Your AI, it just might. But it ain't no way *human*" (131).

What is the take-away from this? The two questions it asks are these: can there be something that can be called *human*, but which is not conscious; and can there be something called conscious, which is not human? Dix's answer to both of these questions, and therefore also Gibson's (at least here) is *yes*. So humans are not the only ones who can ken in the novel's world: so can disembodied, distinctly nonhuman artificial intelligences. It is a world, after all, in which rogue corporate leaders fantasize about "a [human] state involving very little in the way of individual consciousness" (217), wishing instead to live in a reality where people are in "a symbiotic relationship with the AI's" with their "corporate decisions" and their "conscious decisions" made by complex machines (229). If such a trajectory were achieved, the human-machine relationship would be all but entirely inverted.

Material objects, informational virtualizations, and natural imagery are therefore mixed, matched, remixed, recombined, and generally inter-substituted and hybridized in *Neuromancer* such that a manufactured sense of nature begins, to the reader, to feel normalized, as does an organic landscape of data. This sets up the introduction of the artificial intelligences as, in some sense, "more human than human" (or simply other-than-human), especially in a world where humans seem less human (or less conscious) at every turn, and the Dixie Flatline's glossing of this question firmly establishes the novel's position on it. But as for the domain that a conscious being -- whether organic or synthetic -- can ken, that infinitude is framed in *Neuromancer* through a somewhat different dimension: that of the city-scape.

The City: Sprawled or Sublimated?

If the incomprehensible alien is troped, in cybertech, by the labyrinth -- a cipher also for the unconscious alien-within, the endless passageways of memory and the palimpsested brain chemistry of cognition, and an objective correlative for the user experience of the byzantine flow-control of complex software -- and if the always-already-decaying spider's web (instanced in the Cretan Labyrinth by Ariadne's thread to Theseus) stands in for any currently active matrix of conscious neural pathways, striving to entwine and apprehend the elusive event-horizon of sense-certainty (and reflected in electronic tropologies by the maddeningly limited purview of the user-apparatus, *i.e.* the eponymous Web or Net which attempts to ensconce the elusive, labyrinthine Cloud), then the entire system can perhaps be reified in the figure of the spidering sidewalk-surfer awash within the metamaze of the city. This is, of course, a powerful nineteenth-century callsign which was hashed cleverly by twentieth-century idea-poetics. Baudelaire's Paris, to cite the hallmark example, is one in which it is "les nuages... les nuages qui passent.. là-bas... là-bas... les merveilleux nuages" (27) ["the clouds... the clouds which pass -- down there, down there -- the marvelous clouds"] that are most adored by the mysterious stranger, not unlike the present global Cosmopolis' twitterpation with its own Cloud-enveloped state of mind. But back on the ground, "[l]e vaste parc se pâme sous l'œil brûlant du soleil" -- the campus sublimates itself, the reader is told, into the burning oculus of daylight, rather as youth gives itself over to the sovereignty of amorous passion (37). When darkness falls, however, there is a chilling silence, but probably no respite, and then, then, the city is wretched, and so is life (43), and the multitudes and their unbearable solitudes become interchangeable (48).

I have elsewhere discussed clouds, darkness, and their perilous navigation as part of a cybertech-enabled tropology instantiated especially by Ende's *The Neverending Story*. This Baudelairean sensibility raced readily back and forth across the ontological (in-the-nature-of-its-being) route of the Chunnel before any such material conduit existed (although it was already preconceived); if London can be figured as the strangely twinned *semblable* of Paris, then T.S. Eliot's high modernist (essentialized, symbologized) witness to the "Unreal City, / Under the brown fog of a winter dawn, [in which] / A crowd flowed over London Bridge, so many [undone by Death]" (Eliot l.60-64) is one in which the Thames becomes a necrotic quasar, replete with the universal throngs of the same forsaken masses that Baudelaire both elegizes and loathes. Such a necropolis makes a prominent appearance in *Neuromancer* (itself, in the aspect of its high-postmodernity, also the archetypal and perhaps inevitable, semi-inverted refiguration of high-modernity): in the domain of the title character, there is "[a] city down the beach" that fades in and out of detectability (Gibson 242), a place that gets "smaller, [the] closer you get to it", in a virtual existence that is governed by an avatar of death itself, "[t]he lane to the land of the dead". His name, the portmanteau that is the novel's semiotic clef, takes "Neuro from the nerves, the silver paths [. . .and] Romancer[from] Necromancer", because he "call[s] up the dead": in fact he *is* "the dead" (Gibson 244). The trope of the technoghost is instantiated very early in the novel: "Down on Ninsei the holograms were vanishing like ghosts, and most of the neon was already cold and dead" (23). If you end up this kind of ghost (*i.e.*, a neural construct copied onto a computerized simulacrum) in *Neuromancer*'s Elysian Fields, the primary consolation, according to him, is that you don't know you are. Hence the promise of immortality: but how different is it

from the oblivion portrayed by Eliot, and more to the point, how closely is it bound to anything that can be manifest in a reality beyond the fictive?

Although the historical framing makes the scene in *The Waste Land*⁸ a funeral service for the untold dead of the Great War, the reference to the Battle of Mylae fashions it, in a gloss perhaps problematically panglossian (although it is hardly optimistic), as all wars, all times, all people, all cities, all funerary and unfathomable underworlds: and moreover, it signifies that the *turba*, the *multi stulti* of Rome, is also that of Memphis upon the Nile, and of Athens, and of Paris, London, Manhattan, and every other instantiation that has been and that will be: and therefore that is (again, perhaps not very usefully) nowhere specific at all. In the context, however, of latter-day Londinium, Eliot's articulation proves to have immense staying power; more than a whiff of it is circulating, 45 years later, in the dream-like and hallucinatory metroscape of John Lennon's and Paul McCartney's "A Day in the Life", where "a crowd of people stood and stared" at the carnage of an automobile accident, and in which, in a startlingly uncanny image, the Royal Albert Hall is envisioned as potentially made full to capacity by "four thousand holes" (Aldridge 29) -- obliations -- abject absences -- which can, with an understanding of the flaneur-troubador tradition of which this song is arguably a part, be recognized as the inverted spirits of the metropole's necrotized masses.

Eight years later, this moveable mourning feast crops up once again, this time on a planar literary landscape upheld tentatively by the phantom aches of its Big Shoulders. Saul Bellow's 1975 roman à clef *Humboldt's Gift* spends a good deal of energy ruminating upon Bellow's rapport with his (sometime) mentor Delmore Schwartz (not unlike Richard Powers' near-obsession with his favorite professor, Schneider, in *Galatea 2.2*), but is fundamentally a

contemplation of the Benjaminian metaphysics of *flanerie*, especially as understood through the portal of Rudolph Steiner's anthroposophical cosmology, with its wisps of the necropolitan, of the oneiric, of the sublimated and always-impossible other-self. The novel's figuration of the rise, struggles, and near-fall of its narrator, Charlie Citrine, inscribed into the organic circuitry of the ever-adapting city of Chicago, prefigures, moreover, the narrative arc and the ontological (in-the-nature-of-their-being) etiology (material cause) of the key characters in Miéville's *Embassytown*.⁹

Chicago is celebrated, even as it is interrogated, across the arc of *Humboldt's Gift*, but it gleams most brightly when experienced from within its first-person canyons, whereby it is elevated so as to rival (with a perhaps semi-ironic, perhaps even a proto-late-postmodern, nostalgia) the eternal, an analog of the lush Alexandria of *Antony and Cleopatra* (perhaps against the marble austerity of a more-or-less hypothetical capital elsewhere): "Let Rome in Tiber melt. Let the world know that [it is possible to. . .] wheel through Chicago in a silver Mercedes, the engines ticking like wizard-made toy millipedes and subtler than a Swiss Accutron--no, an Audemars Piguet with jeweled Peruvian butterfly wings!" (36) Gibson also likes his Mercedes (and he likes butterfly wings as well, for that matter, as the images rendered on the Freeside sky make clear). Instead of a refigured Alexandria, Gibson sends his computer-driven Benz prowling about a futurely-refashioned Constantinople, framed overtly in the mold of city-as-labyrinth, with the requisite nod to its inimitable *Spleen*: "Now the Mercedes whispered through Istanbul as the city woke. They [. . .] sped past mazes of deserted back streets, run-down apartment houses that reminded Case vaguely of Paris" (94).

Stephenson, however, apparently prefers beamers, and, as is his wont, their drivers for him are not aging novelists (or scheming pseudo-spooks) but suburbanite targets for satire

(although perhaps, in a world, for example, like John Updike's, these could be one and the same):

"She cuts between two veering, blaring, and screeching BMWs. BMW drivers take evasive action at the drop of a hat, emulating the drivers in the BMW advertisements" (Stephenson 32).

The McLuhanesque maneuver here is a topic for further inquiry, but the main take-away is that in all three cases (Bellow in the 70s, Gibson in the 80s, Stephenson in the 90s), the German luxury sedan is apparently the standard-bearer... of something. Unfortunately the drivers and/or passengers seem unclear as to what.

The self-affirming hyperbole of his imported pleasure, in Bellow, is rent with the void it is trying to fill: "In a Chicago state," Citrine confesses, "I infinitely lack something, my heart swells, I feel a tearing eagerness" (66). And yet perhaps the openness to yearn for what is absent is what is so potent about the serene expansiveness of the "huge pale" Lake Michigan that "washes it forward" (66), the imminent and indeterminate Skaidan of the Third Coast. Most sweepingly, though, the sprawling inquietude of the resplendent but disrupted city-space must come to rest, in *Humboldt's Gift* and in the Twentieth Century generally, where all things then seem to tend to: the New York State of Mind. The title character of *Humboldt's Gift*, Schwartz's analog, is based out of an idyllic Princeton, and patriation to the Mid-Atlantic metropole seems to signify, to the (again like Powers) Illinoisian Bellow, a landscape of success at once essential and unattainable. How might the dimensions of this automatically-improbable place-without-sleep, and thus at once (like Humboldt) too manic for the rapid-eyes of biological (or metaphysical) dreaming, take any kind of literal shape?

In Michel de Certeau's *The Practice of Everyday Life* (1980), Certeau writes (in Steven F. Rendall's translation), in the well-known chapter called "Walking in the City", that the demesnes

of metropolitan Gotham, when decoded from a sufficient height¹⁰ is parsed as "[a] wave of verticals" that is "transformed into a texturology in which extremes coincide--extremes of ambition and degradation, brutal oppositions of races and styles," and "contrasts between yesterday's buildings, already transformed into trash cans, and today's urban interruptions that block out its space" (91). It is a world whose "present invents itself, from hour to hour, in the act of throwing away its previous accomplishments and challenging the future[. . . , a] city composed of paroxysmal places in monumental reliefs" (de Certeau 91). Such language is recalled by Gibson in Case's impression of his "rebuilt" boss Armitage: "Armitage suddenly looked to Case as if he were carved from a block of metal; inert, enormously heavy. A statue. He knew now that this was a dream, and that soon he'd wake. Armitage wouldn't speak again. Case's dreams always ended in these freeze-frames, and now this one was over" (29).

Gibson's descriptions of the East-Coast Sprawl, moreover, is suffused with Certeau-esque turns of phrase. Case, who is native to the place, is confronted upon his return there with "a flickering montage of the Sprawl's towers and ragged Fuller domes, dim figures moving toward him in the shade beneath a bridge or overpass" (31). The theme persists: "The landscape of the northern Sprawl woke confused memories of childhood for Case, dead grass tufting the cracks in a canted slab of freeway concrete. [. . .] Case watched the sun rise on the landscape of childhood, on broken slag and the rusting shells of refineries" (85). A true Tri-State tradesman, Case has multiple occasions to ride the Sprawl's subterranean transit, where "[s]omewhere down in the Sprawl's ferro-concrete routes, a train drove a column of stale air through a tunnel" (Gibson 43-44). After Case has "tubed into New York" (71), he heads back (wherever back is) the same way: "Case waited for a trans-BAMA local on the crowded platform. [. . .] The local came booming in

along the black induction strip, fine grit sifting from cracks in the tunnel's ceiling. Case shuffled into the nearest door and watched the other passengers as he rode" (Gibson 76). Could it be that he's getting on the B or the Q, bridging toward an archaic comfort zone? Indeed, when in Istanbul, a city Case hates, Molly tells him that to console himself, he should "Just pretend it's Brooklyn or something" (88). And the trip to Freeside is the narrative equivalent of a commuter trip, upgraded to the "new clothes and chewing gum and exhaustion" of middle-management air travel (102). Case is thus figured as a subway-savvy Brooklynite, in a constant state of conceptual transit, riding the literary rails of an elevated tradition of locomotive flanerier that was instantiated many generations before.

In *A Walker in the City* (1951), Alfred Kazin recalls the mystical properties of the first-person traversal of (a somewhat former version) of this metropolitan infinitude, an expanse whereby in Kazin's childhood, he believed that he and his family "lived at the end of the world" (8), a terminal from which the journey to and from Manhattan, as illuminating as this physical and psychological transit was, seemed nearly interminable. "As the train left the tunnel to rattle along the elevated tracks," Kazin reminisces, "I felt I was being jostled on a camel past the long way station in the desert" (8-9). But it was, for him, magical and metaphysical. "Oh that ride from New York!" Kazin intones. "Light came only at Sutter Avenue.[. . .] Then clear across Brooklyn, almost to the brink of the ocean all our fathers crossed. All those first stations in Brooklyn--Clark, Borough Hall, Hoyt, Nevins" (9). Having begun "the last leg home", he found "Atlantic Avenue [. . .] vaguely exciting, a crossroads, the [access point to] the Long Island Railroad" (9). And then there was "the Grand Army Plaza, with its great empty caverns smoky with dust and chewing-gum wrappers", a place which to Kazin signifies "Prospect Park and that

stone path beside a meadow where as a child [he. . .] ran off from [his. . .] father one summer twilight just in time to see the lamplighter go up the path lighting from the end of his pole each gas mantle suddenly flaring within its corolla of pleated paper" (9).

For Kazin, then, unlike for de Certeau or for Gibson, the city can be read as multiplex, manifold, redemptive, but as in de Certeau (but unlike in Gibson, whose rendition has an air of nightmarish fantasy), the city is rooted in a historical and physical sense of the real. Perhaps this combination of physical-literal awareness and an accompanying hint of optimism prefigures the same tendencies within the late postmodern, although, certainly, at Kazin's moment in the late modern, it is possible for him to inflect his memoirs with greater candor and without the late postmodern compulsion toward the ironic-satiric. Kazin's depiction, in any event, is arguably an outlier, not altogether unlike the perhaps best-known of the the twentieth century's theory-steeped strolls into the city-space: that of Benjamin's traversal of, coming full circle, Paris.

In *Arcades Project*, Benjamin applies an understanding both of metaphysical cartography, and of the (a)historical imagination, so as to render the jewel of the Ile-de-France as a campus made of story-script, enshrined in a palimpsest of metal and stone. "Few things in the history of humanity", he tells us (as worded in the translation of Howard Eiland and Kevin McLaughlin), "are as well known to us as the history of Paris. Tens of thousands of volumes are dedicated solely to the investigation of this tiny spot on the earth's surface." Benjamin is captivated by the funerary musk of "the antiquities of the old Roman city--Lutetia Parisorum", as they persist and permute into (in a phrase quoted from Hugo von Hoffmannsthal) the "landscape built of pure life" that is the contemporary locus (82-83). And behind "its arcades and its gateways", he excavates with spellbound fascination "the more secret, more deeply embedded figures" enfold into "knots

in the network of the streets" (83). This language has to it a strangely precedent ring of the cybernetic.

Gibson's cities in *Neuromancer* (the Sprawl, Tokyo, Istanbul), in turn, are distinctly Benjaminian in this regard. Case tropes the underworld of Chiba in terms of a visual registry he much prefers, that of a geometrically-rendered representation of the data cloud:

Because, in some weird and very approximate way, [wandering the city streets at night. . .] was like a run in the matrix. Get just wasted enough, find yourself in some desperate but strangely arbitrary kind of trouble, and it was possible to see Ninsei as a field of data, the way the matrix had once reminded him of proteins linking to distinguish cell specialties. Then you could throw yourself into a highspeed drift and skid, totally engaged but set apart from it all, and all around you the dance of biz, information interacting, data made flesh in the mazes of the black market... (16)

Tokyo and the Sprawl are populated by "arcologies" (Gibson 37, 87), and like the cities of Isaac Asimov's *Caves of Steel* or the Trantor of *Prelude to Foundation*, the whole BAMA metroplex is roofed by geodesic domes (Gibson 47, 68). Such affectations amount to a cyberpunk *Passagen-Werk*, and Case, like any flaneur thrust into a city's unburnished *fora*, "get[s] agoraphobic" if "they take [him. . .] out from under a dome" (88).

Benjamin's (high modern, or mid-postmodern?) process reveals a sublimated subjectivity by the light of the torch of a complex perception; in its animation of the latent is made manifest

the preservation and the reincarnation of ancient figurations, enlivened by the deep, multiple, and many-layered scans of the articulately-equipped eye. It is a revelatory lens deeply informed by the lyric decryption of Baudelaire; every textural facet of the urban embroidery is coded, for both Baudelaire and Benjamin, with metadata, both that which they intercept and that which is produced and augmentatively imprinted by their annotation, and within the navigation of this metatextural superpositioning, one infers an early blueprint for what would become William Gibson's matrix. It is from the site of luminous memory that the true signature of the city -- of, if one follows the lure of broad generalization, any city's. In a certain kind of postmodern abstraction (that dependent on Kantian metaphysics), illumination, sublimity, and potential for translocation radiates, gently and surely, from the unknowable margins of the metropolis, beyond what can be consciously cognized. It is an analog of what is rendered, in this extrusive post-rationality, the transubstantive essence of Michigan Avenue, of the Eiffel Tower, of the Hollywood Sign, and of the biotechnologically augmented lights of the city of the Hosts in *Embassytown*.

Benjamin's Kantian apparitions, then, although rendered in the era of high modernism, appear in the projection of a certain screening as a trailer for the mid-postmodern: one in which admixture becomes sublimation, and literal experience becomes dislocated into the haunting traces of inaccessible apparition. Just as Gibson's Tokyo, and his Sprawl, can look a lot like Benjamin's Paris, so can his version of Istanbul: "The road in from the airport had been dead straight, like a neat incision, laying the city open. He'd watched the crazy walls of patchwork wooden tenements slide by, condos, arcologies, grim housing projects, more walls of plywood and corrugated iron" (87).

A blur of heterogeneous details which can be tracked only in a loosely-recalled, homogenous aggregate, the city's labyrinthine byways are ripe for urban archeology: "The alley was an old place, too old, the walls cut from blocks of dark stone. The pavement was uneven and smelled of a century's dripping gasoline, absorbed by ancient limestone. [. . .] Wood grated on stone or concrete. Ten meters down the alley, a wedge of yellow light fell across wet cobbles" (92). But Case sees everything through the memory of the matrix, and in the end it is not any urban borough, but the synthetic, metropoloid datascape of that domain which he calls home. The traditional genealogy of the conceptual city, then, that which includes Baudelaire, Benjamin, Kazin, and de Certeau, seems not only able-to-be-recovered, but necessary-to-recover, for a view of *Neuromancer* that truly maps the complexity of its figurative intricacies, those which represent the limitless domain of possible conscious experience.

The Matrix as Inscription of Navigability.

As for the extension of the spider and its web that represents, in *Neuromancer*, the *delimited* and *demarkated* systems of conscious, accessible subjectivity, it is suggested to an extent by the figure of the flaneur and the map. Crucially, however, *Neuromancer's* flanerrie goes digital: the flaneur becomes the deck jockey, the map becomes the deck and its software. The matrix becomes another instantiation of the city-beast, but this version one which can be tamed and corralled by the competent jockey.

Instead of unwelcome violence, cyberspace offers a soothing neutrality: Case seeks his true homeland "[w]here the sky faded from hissing static to the noncolor of the matrix" (Gibson 31). And the material-world equipment that facilitates accessing this virtual realm is detailed

lovingly from the view of Case's subjectivity: "The Ono-Sendai; next year's most expensive Hosaka computer; a Sony monitor; a dozen disks of corporate-grade ice; a Braun coffeemaker" (46). There is no ambiguity in the tropology of the matrix: it is a metaphysical experience, fashioned by Gibson in Abrahamic, Vedic, and spiritualist vocabularies so there can be little doubt about his intentions. He means to figure the matrix as either a literal realization of, or a metonymic approximation of, (what he contemplates as) the universal realm of the disembodied spirit, that same abstract-but-certain locale which is at once imagined in the Classical and Christian visions of the afterlife, is rendered in the Hindu and Buddhist multiplanar models of reality, and is understood in anthroposophism as the place the mind goes when the body sleeps: a destination referenced by cybertech-relevant authors such as H.P. Lovecraft in "Beyond the Wall of Sleep" (1929) and Bellow in *Humboldt's Gift*.

Although some may view such a generalization and/or de-historicization of subjective cultural perspectives on the metaphysical as intrinsically suspect, Gibson nonetheless invokes this kind of panhuman abstraction by the very breadth of his frame of reference. Yet as much as he expands, he also contracts -- whatever he might frame as universal in the mythology of his characters, they are also figured, in their guardedness, in their vulnerability, and in their occasional impotence, as essentially of a late modern/early postmodern ethos. Like that of Samuel Beckett in novels like *Molloy* (1951), *Watt* (1953), and *The Unnamable* (1960), Gibson's psychological landscape is one in which scopic reduction and subjective abstraction become at once tantamount to an authentic and validating indeterminacy, and yet simultaneously depicts the wrenching and desolate solitude of an isolation unable to connect with anything outside itself.

Gibson makes use, in fact, of two tangentially interrelated 1950s reality systems, relics from his childhood gaze, in the cultural remixology of *Neuromancer*: for the world of "meat" outside the matrix, Gibson refigures the object-interested palate of noir, but for the glimmering matrix itself, he adopts elements of the cubist, the avant-garde, and the absurd. As Lance Olsen has traced, "[n]ot only are characters raised from the dead by a number of fictional magicians, but also various genres are 'raised from the dead' by the very real magician of magicians -- Gibson himself" (68). Olsen's list of these genre-zombies on the loose in *Neuromancer* include "the science fiction novel, the quest story, the myth of the hero, the hard-boiled detective novel, the epic, the thriller, and the tales of the cowboy and romantic artist, among others" (68). As replete as this list is, it fails at this point to recognize Gibson's engagement with the literary fiction of late modernity, although Olsen later links up Gibson's line with Gabriel García Márquez. But it is Beckett's soundings in the herme(neu)tic waters, both of the material and virtual domains of *Neuromancer*, that seem in this regard most recognizable.

Olsen insightfully suggests that Gibson maneuvers to figure the book (any book) as "a kind of textual machine that activates and stimulates the human mind", a metatechnological element whereby the book itself "functions much like cyberspace does with respect to characters within the novel", adding yet another layer of technological encoding to the book's landscapes (68). I have discussed elsewhere the relationship between metafiction and the cyberdeck, in relation specifically to Michael Ende's premise of the "magic book" and moreover "the magic word" in *The Neverending Story* (considered at length by Jeffrey Garrett in "Michael Ende and seine phantastische Welt: Die Suche nach dem Zauberwort"), but I am more interested here in the central questions Olsen (literally) italicizes in his guide to *Neuromancer*, such as "*where is a*

person's mind? what is it? what is the relationship between brain (circuitry) and mind (thought and feeling)?" as well as *"how long and under what conditions does it remain a person's mind before subtly becoming something other than that?"* (68) and, most centrally, *"Are humans highly complicated robots? and Can machines feel and desire?"* (70), and finally questions of identity-formation like *"what is my relationship with the world? what am I? where do I stop and others begin? what constitutes human identity?"* (73). Although critics, scientists, and philosophers have been chewing on these questions since long before *Neuromancer* (it's a problem under review, for example, in Enlightenment-era Continental philosophy) and no doubt will be long after late postmodern cybertech has run its course through the cultural digestive tract, that does not mean that either the questions or an exploration of them via *Neuromancer* is exhausted. On the contrary, this book and these questions might be more important today than they were, even, when *Neuromancer* was first published, or when Olsen formulated his version of the questions *ca.* 1992 (the year both Olsen's monograph *William Gibson*, and Stephenson's cybertech novel *Snow Crash* -- largely a pastiche of *Neuromancer* -- were published) -- and might they not be yet more important five, ten, twenty, fifty, and even five hundred years from now, and *Neuromancer* along with them, as technologies that might entail their propositions continue to evolve?

The matrix persists throughout the novel as a site of sublime intervention. Whereas full-spectrum simulations of real life are, for Case, gauche, the matrix's (modern? late modern? early postmodern?) reduction, abstraction, and oblique differencing of it is elegant:

Cowboys didn't get into simstim, he thought, because it was basically a meat toy. He knew that the trodes he used and the little plastic tiara dangling from a simstim deck were basically the same, and that the cyberspace matrix was actually a drastic simplification of the human sensorium, at least in terms of the presentation, but simstim itself struck him as a gratuitous multiplication of flesh input. (55)

The experience of sensory life and the accurate emulation of it are, for Case, "gratuitous", and any means of accessing them, including the *actual* sensorium of his biological body, are a mere "meat toy". Case is not (for the most part) thrilled, therefore, when he is required to access Molly's sensorium in alternation with his experience of the matrix:

The abrupt jolt into other flesh. Matrix gone, a wave of sound and color. . . .She was moving through a crowded street, past stalls vending discount software, prices feltpenned on sheets of plastic, fragments of music from countless speakers. Smells of urine, free monomers, perfume, patties of frying krill. For a few frightened seconds he fought helplessly to control her body. Then he willed himself into passivity, became the passenger behind her eyes. (56)

Sensory reality is "abrupt", an uncontrollable "wave", at once "crowded", "discount[ed]", (and once again) "fragmen[tary]" and (in its labyrinthine aspect of the infinitude-of-what-can-be-kenned) "countless", the object world of "urine" and "krill" in which one is "helpless", doomed to

adopt an aspect of "passivity" whereby one is nothing more than a "passenger" dragged by the locomotion of historical contingency.

The matrix, by contrast, plays heaven for Case against that worldly purgatory, an otherworld which utterly consumes him:

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. [. . .] He was cutting it. He was working. He lost track of days. (59)

Beyond merely the obliquely abstracted or deferred, the matrix is here figured as the ontological sublime: Case's very "being". It is a locale populated by figures and horizons such as "infinite blue space ranged with color-coded spheres strung on a tight grid of pale blue neon", and in "the nonspace of the matrix, the interior of a given data construct possessed unlimited subjective dimension; a child's toy calculator, accessed through Case's Sendai, would have presented limitless gulfs of nothingness hung with a few basic commands". An idealized *beyond* figured from literal referents such as the transportation grid of the city, Case navigates it accordingly: "He began to glide through the spheres as if he were on invisible tracks" (63).

This is the world where Case thrives: where he can be excellent, and appreciate the framing of that excellence. "Punching his way into the sphere, chill blue neon vault above him starless and smooth as frosted glass, he trigger[s. . .] a subprogram that effected certain

alterations in the core custodial commands" (63), an act whereby his virtual dance has real-world, material consequences in terms of the activation and deactivation of physical security systems. Not only does he like the virtualized matrix better, he is more effectual there, even vis-à-vis the real world, than he would be attempting to engage the real world directly. In what is perhaps an Adornean construction -- as Helmling explains, "the critical practice of Adorno generally presents what might seem the paradox or construction of an insistently historicizing program, realized in a critical practice that is virtually never motivated by historical argument in the form of historical narrative" (4) -- the best engagement, with history, for Case, is through its paradoxical elision.

The result is strangely satisfying on the Adornean frame: "The three elaborate locks deactivated, but considered themselves to have remained locked. The library's central bank suffered a minute shift in its permanent memory: the construct had been removed, per executive order, a month before" (66). History is remade and demystified, as Case helps rescue the Dixie Flatline's construct so his team can take down the historically abscessed Straylight, but (in this case) through the very mystification of its predicates. Therefore the jockey and the routes he cuts through ice become the equivalent, in *Neuromancer*, of the spider and its web, laying onto the vastness of boundless perceivable reality a traveled and certified map of perception and engagement. This figure, in turn, caps the set in the novel of objective-correlative imagery, the city space, and the matrix as the three imagistic means of conveying the largely abstract systems of its idea-spaces. At the cusp, or perhaps on the arc, of the migration to the late postmodern, *Neuromancer* stands in a special position in its relation to remixology, determinacy, and historicity: it is at once the last mid-postmodern cybertech novel, adrift (like *2001: A Space*

Odyssey and *Do Androids Dream of Electric Sheep*) in an endless deferral of cybernetic referent-domains, and at the same time the first late postmodern cybertech novel, contemplating (like *Snow Crash*, *Galatea 2.2*, and *Accelerando*) a grounding of itself in a somewhat hermetic, somewhat solipsistic, somewhat nostalgic, and somewhat esoteric relation to a circumscription of its own ambiguities which is, at the same time, flush with a pragmatic recognition of limiting, concretizing, and historicizing semi-ironic contingency.

The Bridge to Late Postmodernity.

By virtue of the timeframe of their publication, *Neuromancer* and *Snow Crash* are inevitably framed as in the discourse of the postmodern, and since they straddle the emergence of the period that Green refers to as the "late postmodern", the bridge between the two novels offers some intriguing architectural residuals. I will therefore turn, now, to Linda Hutcheon, Don DeLillo, and via them, Neal Stephenson and *Snow Crash*. In *A Poetics of Postmodernism: History, Theory, Fiction* (1988), Hutcheon depicts, in relief, "a current cultural phenomenon that exists, has attracted much public debate, and so deserves critical attention" and in the process scaffold "a flexible conceptual structure which [can . . .] at once constitute and contain postmodern culture and our discourses both about it and adjacent to it" (x). Hutcheon is among those who present the postmodern not as an era, but as a mode, and therefore calls attention to its presence not as chronological, but as thematic. Its markers include a whole magazine of d-words: "discontinuity, disruption, dislocation, [and] decentering" (3). Yet there is a historical positioning to this discourse, and *Neuromancer* is a novel at the waning cusp of the mid-postmodern

described by it: it generally curries in abstractions, applying them as a prismatic surface to obscure the plausibility of the concrete.

Don DeLillo's *White Noise*, published a year after *Neuromancer* and arguably heavily informed by it, occupies a similar position. Like *Neuromancer*, *White Noise* identifies not only audiovisual media, but also (a tropological version of) pharmacology as a cognitively interactive technology, with all the risks of a toxic gravitation toward extremes -- either of the desolation of withering deprivation, or the raving randomness of destructive overdose -- common to all Gibsonian ware. The metaphorical superstratum of the malady that such pharmaceuticals mask, but cannot cure, is the "cloud of unknowing" that is imbedded into mortality (DeLillo 276).¹¹ Pills then become a cipher for knowledge *per se*, and for its material offspring in civilization: the "beautiful and lasting things" that the industrialized world has made are nothing but "Gorgeous evasions" and "Great escapes" (DeLillo 276) from the inevitability of the symmetrical arc of all life, the inexorable span from birth to death which, when elided instead of inhabited, can become intensely oppressive.

The grand narratives of intellectual discourse are, moreover, for DeLillo, in the end nothing but the exhaled smoke of "a couple of academics" -- like Socrates and any given interlocutor -- "taking a walk", who have no understanding of, or access to, the "visceral jolt" (DeLillo 277) at the crux of life's ontological vitality or "the great poetry, the music and dance" (DeLillo 273) that articulates its metaphysical yearning. The more immersed within a field's esoteric discourse a scholar becomes, the more his or her verifiable experience of the area of inquiry evaporates into "gossip", "sensational rumors", and finally nothing more than "jokes" (DeLillo 261). For Stephenson, writing just a few years later, such a characterization seems

applicable not only to theoretical musings, but to American society in general: it is the locus for a sad variety of satire, one in which discernment has evaporated into mere sensation. But does Stephenson mean his barbs in earnest, or are they merely the harmless provocations of a broader, brainier contemplation on the nature of technology and consciousness?

Eight years after *Neuromancer*, *Snow Crash* succeeded it as the darling of the cyberpunk spotlight. *Snow Crash* depicts the virtual-reality-instantiated AI a bit differently from *Neuromancer*, but in clear relationship with Gibson's tradition, and after a fashion which definitively makes it cybertech. A critical perspective on *Snow Crash*, that offered by Sharon Stockton, comments on cyberpunk in general that, far from being the “anti-humanist” incubator of postmodern ethoi that it has been called (in this case by Veronica Hollinger), in fact the movement's “project [is] to remythologize an earlier, powerfully autonomous subject through a literary form that is, in effect, a latter-day version of adventure/romance” (588).

Stockton stops short, perhaps, of recognizing that *Neuromancer* does not glamorize its characters' lifestyles but instead interrogates them, and that *Snow Crash* writes its genre conventions large so as to poke fun at them. Along this vein, though, Lisa Swanstrom observes that what is true for the movement in general (e.g., for Gibson) may not necessarily be true for *Snow Crash* (i.e., for Stephenson), for while Swanstrom, like Stockton, sees *Neuromancer* as “in many ways remain[. . . ing] tied to a Cartesian sense of subjectivity (one that values liberation, freedom, and spiritual and intellectual autonomy in distinction from the flesh)”, she sees *Snow Crash* as, although not entirely divorced from that Cartesian subjectivity, nonetheless shaped around “an ever-shifting tectonic landscape of encapsulation and rupture, one that echoes the social networks and technological infrastructures that populate the novel” (54). Kelly Wisecup

contemplates, about *Snow Crash*, that “the novel’s gestures to redefine what is considered to be human, even those involving its main characters—Hiro and his partner Y. T.—do not define subjectivity outside pre-existing humanist discourse” (855), and further comments that the ability of the device central to the novel, a virus itself called “Snow Crash”, “to define what is human within the novel positions the virus as a primary force of history; it is responsible for both culture and extinction” (857). Wisecup pushes this line, claiming that “[b]ecause Snow Crash is an engineered virus capable of affecting its hosts’ behavior by infecting their minds, it does not merely reveal the cultural development (or lack thereof) of its hosts, it actually functions as culture” (857). Other scholars have contemplated the parameters of Snow Crash’s systems, at the cybernetic level in regards to its “Metaverse” virtual reality and its software, at the human level in regards to the biology of organisms and viruses, at the linguistic level in regards to the relationship between language and consciousness, and finally at the anthropological level in considering all of human activity itself as an operating system in which individuals are the equivalents of blocks of code.

From this last perspective, John Johnston makes use of Snow Crash in his discussion of complexity theory for the novel’s “understanding of human culture as an information system vulnerable to viral mechanisms that, while operating in empirically distinct realms, function as a single abstract machine” (227). This very vulnerability, however, is also humanity’s variability, and if media can carry toxins, it can also engineer not only antidotes, but viral bodies which have been adapted to help, rather than to hurt, humankind. Even so, a binary emerges between the experiential liberation of a full spectrum of experience, and the potential confinement that can result by curtailing it, and the sustaining road appears to be a balance between these extremes. It

is not clear, however, how much of this is reflective of a true philosophy in the offering, and how much of it is intended to lampoon what Stephenson reads as questionable underpinnings in cyberpunk and its readership. Whatever the case, *Snow Crash* asks cybertech's questions -- the *who*, the *what*, the *how-is-it-marked* of kenning -- first by tracing consciousness back to its origins (machines are not conscious, in the novel's world, and neither were all humans: truly conscious humans began, after the theory of Julian Jaynes, at a fixed point in history), then by figuring its version of the matrix, the Metaverse, as a Bachelardian dreamspace (especially for those whose experience with it have been coopted by cognitive hackers), and finally by figuring transcription metafictionally through the inscriptive knowledge-marking of an extended and at times outrageous pastiche -- of *Neuromancer*.

Snow Crash and The Anthropology of Consciousness.

In a 2008 interview (more like a press release) for Barnes and Noble, James Mustich reminds Neal Stephenson that the (fanciful) cultural anthropology of *Snow Crash* owes a debt to Julian Jaynes, "a book whose" in Mustich's view "starling [*sic*] perceptions and intuitions are certainly reflected in Hiro Protagonist's researches into Sumerian language and myth" (7).

Stephenson uses this moment as an opportunity for a larger reflection:

If they showed up at all in science fiction, for a long time computers showed up in ways that were obviously at variance with how computers actually developed in the real world. It was always the giant computer the size of a city block. The whole cyberpunk thing was, I think, a movement in which the people who wrote

science fiction suddenly realized that we'd gotten it wrong to that point: that computers were turning out differently than we had imagined, and we had to go back and work them into the body of science fiction. *Snow Crash* needs to be seen in that context. At that point in science fiction history, what we were doing was taking new ideas about information technology and seeing where we could kind of fit them in and make use of them./I'd had a similar reaction to yours when I'd first read *The Origin of Consciousness and the Breakdown of the Bicameral Mind*, and that, combined with the desire to use IT, were two elements from which *Snow Crash* grew./A third element came in when I went home for a family wedding and was hanging out with my brother-in-law, Steve Wiggins, who is a scholar of ancient Near Eastern history, and he started talking to me about the cult of the goddess Asherah. That combined in my head with the Tower of Babel story, solving some problems that I needed solved in this particular book-writing project. I don't remember the particulars of how it all came out, but those are the three elements that I plugged together in some way to generate *Snow Crash*.

Stephenson's comments are a bit ambiguous, here, but what he is alluding to is the (up to this point, I think, largely unexcavated reality) that *Snow Crash* is an extended dub of almost entirely borrowed material: Stephenson's trick, at each turn, is to make some new use of his big suburban garage full of found objects carried off from abandoned alleys in the city centers of intellectual history. The interview is centrally about *Anathem*, crafted to promote its concurrent release: that

novel is outside my scope for this project, but what Stephenson says about his process in writing it is revealing:

What tipped me over into the decision to have it set in a different world was that there is a lot of intellectual history in the book — the history of ideas. Before too long, the characters have to delve into that history of ideas a little bit in order to solve some of the mysteries they are confronted with. So I knew that there was going to be a lot of discussion of those matters among the different characters, and they were going to be kind of learned discussions since they are learned people. If it had been set on Earth, then we'd be talking about actual philosophers and scientists, like Newton and Kant and Gödel and Mach, with perhaps some scientists of the future; both of those would have been problematic. If I had been writing about real past thinkers in the history of ideas, I would have had to get it all right, which would mean a lot more fact-checking and detailed research — and I'd have to be careful not to leave something important out. You can't simply elide details for the sake of brevity if you take that route. Then, if I had chosen to write about hypothetical future thinkers on Earth, I would have had to place myself in a position of predicting the future of ideas, which I think would have been either an act of hubris or an invitation to miserable failure. It's conventional in science fiction to predict future science — every time you fire up the warp drive on the Enterprise, you're embedding in the story a kind of fictional future history of Earth

technology; but I didn't feel as though I was equal to that task when I was dealing with the foundational ideas I wanted to treat in *Anathem*.

In other words, Stephenson did not want to have to bother with the rigor that historical fiction requires, nor did he consider himself competent to project the contingencies of a real-world future. *Snow Crash* may be late postmodern, but this mindset for *Anathem*, an outright nonhistoricism, portends something beyond even the late postmodern. I'll turn again to that augur elsewhere; what we learn, in any event, from this passage is that Stephenson may have the skills of a scholar but not the temperament of one. He may at times be too impatient to do what his homework really requires; he might prefer the windfalls of abstract, inventive thought experiments to the doldrums of research-intensive vivisection. Therefore for a novel like *Snow Crash*, he found it more convenient to scaffold a lot of only-slightly-mutated material onto a display frame than to alternate between referenced sources and original commentary about them; for *Anathem*, by contrast, he runs off with the ideas and leaves the sources behind.

To explore what *consciousness* is, then -- the primary cybertech question of *What can ken?* (or *What is kenning?*) -- Stephenson in *Snow Crash* does not formulate an original position, but borrows and extends that of Jaynes, taking the idea of an original language as the route of delivery: "Babel is a Biblical term for Babylon. The word is Semitic; Bab means gate and El means God, so Babel means 'Gate of God'. But it is probably also somewhat onomatopoeic, imitating someone who speaks in an incomprehensible tongue" (107). This from Hiro's daemon-librarian, with more to follow.

Amidst all the theory, though, we learn the stand Stephenson takes, at least in *Snow Crash*, on the consciousness of his artificial agents:

Hiro is about to ask the Librarian whether he knows that Lagos is dead. But it's a pointless question. The Librarian knows it, but he doesn't. If he wanted to check the Library, he could find out in a few moments. But he wouldn't really retain the information. He doesn't have an independent memory. The Library is his memory, and he only uses small parts of it at once. (205)

This speaks to the "Library" as labyrinth-of-what-can-be-known, and to active memory as the known-inscribed-against-the-too-much-to-be-known. But although the Librarian performs this pattern, making him at least in some regard intelligent, he does not win consciousness by it: *Snow Crash* presents consciousness as uniquely human, and moreover, unique to humans who have biologically configured themselves to be able to inhabit it, specifically by their relationship to language.

"We've got two kinds of language in our heads," the Librarian briefs Hiro. "The kind we're using now is acquired. It patterns our brains as we're learning it. But there's also a tongue that's based in the deep structures of the brain, that everyone shares. These structures consist of basic neural circuits that have to exist in order to allow our brains to acquire higher languages" (395). Discussion of this theme is covered extensively (Stephenson deploys the fruits of his extensive research, for which he got a lot of help, a bit laboriously, and the conceit of the librarian only upholds them for so long), but one of its more interesting turns is the idea that

"Enki was an *en* [*i.e.* "a priest/king" (396)] who just happened to be especially good at his job. He had the unusual ability to write new *me* [*i.e.* "little programs for humans" (395)]--he was a hacker", and because of this, "[h]e was, actually, the first modern man, a fully conscious human being, just like us". This narrative of the ancient emergence of human consciousness, within one specific cultural context that was later transmitted, when there previously had been no human consciousness anywhere, is Jaynes' signature concept.

Jaynes' findings are limited not only by the medical knowledge of his moment (that is, the neurology available in 1977), but also shaped by his idiosyncratic intellectual agenda. Yet they are intriguing, and inform not only *Snow Crash*, but other cybertech vectors, like for example, Gibson's union of *Wintermute* and *Neuromancer*. Jaynes writes, about the possibility of a physical nexus that channels the property of human awareness, that "a plausible nominee for the neural substrate of consciousness is one of the most important neurological discoveries of our time [. . . :] that tangle of tiny internuncial neurons called the reticular formation, which has long lain hidden and unsuspected in the brainstem" (17).

Jaynes explains that this possible conduit to consciousness "extends from the top of the spinal cord through the brainstem on up into the thalamus and hypothalamus, attracting collaterals from sensory and motor nerves [. . . and] it also has direct lines to command to half a dozen major areas of the cortex and probably all the nuclei of the brainstem, as well as sending fibers down the spinal cord where it influences the peripheral sensory and motor systems" (17). Although that particular, or indeed any particular, constellation of neurological matter may, however, not quite be the epicenter of the human experience, what is significant about such a thought experiment is that it focuses attention on the typological cartography of the brain, and of

the mind that inhabits that brain, especially in relation to individuation of a nexus that can bring together divergent flows of its being-stream.

Jaynes argues that while these flows remain disjointed and fragmentary, consciousness cannot manifest fully: and that it did not so-manifest, in fact, until certain ancient contexts brought certain procedural elements together in a kind of deconstruction so fruitful for the intelligence carrying it that it brought about the further property of consciousness. For Stephenson, this becomes a nest-egg to bury among the arcologies of cybertech pastiche that constitute most of *Snow Crash*. Stephenson's method is a kind of radical juxtaposition: the presentation of divergent panels that he stitches together by rather contrived conceits.

Stephenson prefers not to be bound, then, to the dialectic of critical engagement, and the dancing between the grand halls of historical materials and the antechambers of their annotation that this task has come to require. Instead, at least in *Snow Crash*, he leaps between widely varied sources on the bridges of unlikely inferences. Amidst all of this eye-catching performance, Stephenson manages to tie a somewhat obscure theory of the nature of human consciousness into the framework of questions of artificial intelligence, in which he posits that not only are machines not conscious (at least not now), humans haven't always been conscious either. By the stratagem revealing his labored deployment of (Too much? Not well-enough addressed or integrated?) research, moreover, intellectual history itself becomes, for Stephenson, the labyrinth of *everything-that-can-be-kenned*, but which *taken-together-is-too-much-to-be-kenned*, a domain which appears featured in the endlessness of the landscape of the virtual reality that he portrays, and the archival digital library that it contains.

The Bachelardian Blizzard and the Metaverse.

If *Neuromancer's* space is that of Benjamin's reading of Baudelaire, *Snow Crash's* is that of Bachelard's Baudelairean seance. Stephenson's novel is an opium trip, a synesthetic amplification of subjectivity set against the backdrop of data's accreting and indecipherable blizzards. Its roughly five hundred pages are fashioned from the surface-frame of a single instant in *Neuromancer*, the snapshot of a chilling aspect of Riviera's haunting holograph of Corto/Armitage: "His eyes, Case saw, as Molly stepped carefully forward, were tiny monitor screens, each one displaying the blue-gray image of a howling waste of snow, the stripped black trunks of evergreens bending in silent winds" (Gibson 209).

These facets feature an endless depth of conception, but also the razor-thin projection of a simulacrum of a simulacrum. "Today," Jean Baudrillard writes (in John Johnston's translation) about the "whole intimate universe--projective, imaginary and symbolic", it has come to pass that "the scene and mirror no longer exist; instead, there is screen and network" ("Communication" 126). And "[a]s for built space", Frederic Jameson says of the American attitude toward architecture, "there too a protective narcosis has long reigned, a don't want-to-see-it, don't-want-to-know-about-it attitude" (*Postmodernism* 97). This is all, once again, characteristic of the cybermetaphysical afterlife ruled over by Gibson's AI *Neuromancer*; one not of, as Jameson characterizes the modernist rubric, "existential time, along with deep memory" (154), but instead a "spatialization of the temporal" (156): a mapping of the now-static organelles of the lightest imprints of experience and trauma.

In *The Poetics of Space* (1958), Bachelard tells his reader that "[b]ien qu'il soit, dans le fond de son être, un citadin, Baudelaire sent l'accroissement de valeur d'intimité quand une

maison est attaquée par l'hiver" (65) ["although he was essentially a city-dweller, Baudelaire sensed how intimacy might be amplified by the setting of a country-house as besieged by winter"]. The seasonal constitution of winter is imagined, here, as (at least at first) a hostile force, and Baudelaire, although the consummate Roman in the true sense, is chastened by the pastoral intimacy that such a siege imposes; it calls to his mind Thomas de Quincey, firmly enwintered, tripping on both opium and Kant. The little cottage of this feast becomes, moreover, because it is ensconced, enshrined by mountains of sufficient height, a tiny hedgerow of a swaddling-cloth for de Quincey's incubating dreamware, and what impresses Bachelard the most about this anecdote is how such a rustic scaffolding for solace can entwine the hazy calm of reverie with the deep, long armistice of mental repose.

But the temptation for cynicism is, as the wheels of Bachelard's philosophical apparatus start to slide on the grease, not far off: the affect of de Quincey's cozy little coma is too easily afforded, at least for a responsible critic, and now the inquiry turns to why poets get to sculpt brilliance from quotidian bathos, but scholars must be dry and droll and dreary, unimpressed and unimpressable, insensitive and insensible, at all career-coordinating costs. Yet Bachelard shortly realizes that he has a responsive soul that can be located, not requiring of a catalog search or a conference abstract, and that, reborn into the possibility that it can indeed be inhabited (or allowed to inhabit him), the quiet cabin in the celestial mountains may be his as well. Delivered, then, by this visitation -- constituted, perhaps, of the Dickensian ectoplasm of introspection at the sight of what could, on one's current course, soon become a grave beneath a cairn of smug and ironic indifference that one has amassed for oneself -- Bachelard lets the yule log be delivered

after all, so very warmed by it exactly and especially because the circumstance through which it survived delivery was so frosty.

Now, within this Canadian -- nay, Russian -- winter of (dis)contentment beyond the windows, whose snow is made whiter in contrast the somber curtains, it is no longer de Quincey's hallucination, or even Baudelaire's, but has become altogether Bachelard's -- and, moreover, if his word is empowered with the property of authorial performativity, this strange but compulsively comforting vision has also become that of Bachelard's reader. For here, in this cabin, on the snowdrifts of this conjured winter, the reader is to encounter all those entities made substantive only by the evocation of the past, and yet (in a Bergsonian, Proustian process of memory) the more extraordinarily personal by the process. In that moment, by who knows what strange and moving sympathy, the scene has transcended everything about it that might at once have been perilously mundane, and has become instead an apparatus of communion. For it is always here, Bachelard tells his reader, in such clearly and beautifully articulated destinations of oneiric terrain, that dreamers speak most lucidly to one another, just as it is to the precisely delineated libraries of concrete discourse that thinkers summon their congregations of rapport.

The dream-space of Bachelard's Baudelaire's de Quincey is also that of Stephenson's Metaverse. "Hiro's not actually" wherever he physically is, when he has his goggles on, but instead "in a computer-generated universe that his computer is drawing[. . . .] In the lingo, this imaginary place is known as the Metaverse. Hiro spends a lot of time in the Metaverse" (24). Unlike Case's matrix, on which it is loosely based, the Metaverse is not, primarily, a professional tool: it is a cognitive vehicle of escape from the literal and the material. Analogous to de Quincey's opium, the Metaverse functions as a drug, and the harsh winter of reality is kept out of

it: until it comes crashing in on the winds of a malicious plot to grab hold of the minds of its addicts, one which turns their brains to a blizzard of mush caused by, and comparable to, a screen full of static.

Because of its vastness, the Metaverse, like the infinitude of de Quincey's dream terrain, becomes *the terrain of all possible knowledge*, or *everything that can be kenned*, a brain-trope even bigger, by its own reckoning, than the sky it is miming: "The Street [of the Metaverse] seems to be a grand boulevard going all the way around the equator of a black sphere with a radius of a bit more than ten thousand kilometers. That makes it 65,536 kilometers around, which is considerably bigger than Earth" (24). But such expansiveness invites indeterminacy, and the function of intelligence that is performed there -- "condensing fact from the vapor of nuance" -- is one which a mystic such as Juanita will not "analyze", instead accepting it as "something ineffable, something you couldn't explain with words" (64). The process of discernment, and what it discerns, is thereby positioned as too expansive to be indescribable, a property which the metaverse itself, in a conceptual space like that of Bachelard's, describes: it is, once again, the labyrinth, the cloud-sea, the dream-terrain, and the limitless library (the Metaverse is, after all, home to the Librarian) of cybertech. The "condensation" of "fact" from the "vapor" of "nuance" is a precise description, even if it is used in Stephenson (as just about everything is) a bit ironically, of the way that consciousness distills *What is kenned?*: the vehicle of "condensation", in this metaphor, for the tenor of "fact" is analogous to the trope of the densely-massed spider's web, and the vehicle of "vapor" for the tenor of "nuance" is, of course, the cloud of what-can-be-known but which, taken as a whole, is too much to know. Stephenson's means of negotiating such free-roaming uncertainties into subjects that can be seized and detained takes on, however, a

surprise twist: he tackles this third question of cybertech by raiding and ransoming the ur-work of late postmodern cybertech itself.

Snow Crash and the Cachet of Late Postmodern Pastiche.

In the broad fade-in from the mid-postmodern to the late postmodern, the application of pastiche, a recombinal element always present in the period's or movement's sensibility, begins to take on a new meaning. Before discussing this in relation *Snow Crash* (arguably a very American novel), it is helpful as a point of comparison to look at two British writers with works that were published just one year prior to *Snow Crash*: an experimental novelist and a narrative poet. There are distinct differences in the British handling of literary history in this period. Exceptions like American novelist Richard Powers notwithstanding, the vantage of British writers tends to run deeper into European history, have a more sophisticated frame of reference, and have a greater interest in attempting some version of its recovery than that of their American counterparts; these tendencies may also be tracked in Stross and Miéville. *Snow Crash*, as I will shortly demonstrate, devotes the attentions of its pastiche largely to a single novel published just eight years before -- one whose worldview it apparently aims at least partially to reject -- whereas the British writers, irrespective of genre, look back decades and even centuries, and partially endorse the perspectives they are remixing.

In Christine Brooke-Rose's novel *Textermination*¹² (1991), for example, Brooke-Rose's conceit of erudite, witty, at times ironic and yet generally attentive remixology frames a narrative of exotic conjunctions. Characters from literary works (the listing of which becomes a major theme) are paired up with authors of them at a whimsical convention, based in San Francisco but

at which "everyone seems to be lunching [across the Golden Gate Bridge] in Sausalito" (Brooke-Rose 63), and from which (when there is trouble) they are "taken off on bus-trips[. . . to] Death Valley, [and] to Silicon Valley". A witticism is invoked, perhaps with a sly recognition of Gibsonian neuronecology, that these two Valleys are in fact the same site. Other attendees, meanwhile, go "down to Monterey and Big Sur, others upcoast" (Brooke-Rose 100): they are off to the indeterminate beach from which the ghost of the city is really only visible as the trace-memory of consciousness attempting to look upon itself. References are made, in Brooke-Rose, to the person or character(s) of (among many others) Jane Austen, Goethe, Stendhal, George Eliot, Charlotte Brontë, Flaubert, Vergil, Homer, Virginia Woolf, Dickens, Tolstoy, Sinclair Lewis, Faulkner, Beckett, Borges, Joyce, Hardy, Thackeray, Fenimore Cooper, Sterne, Chaucer, Melville, Dostoevsky, Hawthorne, Vonnegut, Goldsmith, Italo Calvino, Chateaubriand, Swift, Kafka, Rabelais, Jules Verne, J.D. Salinger, Toni Morrison, F. Scott Fitzgerald, Dafoe, Emily Brontë, Nabokov, Joseph Conrad, Beckett, Arthur Conan Doyle, Ralph Ellison, Proust, Cervantes, Muriel Spark, Saul Bellow, J.R.R. Tolkien, Hugo, Thomas Mann, John Updike, and William Burroughs. Like Richard Powers' *Galatea 2.2*, a novel published four years later, Brooke-Rose makes use of such a list of authors in a suggestion that they are somehow recoverable, but only if specifically repurposed, since they inhabit a moment when their traditional situating has become obsolete.

In Anne Carson's book *Glass, Irony, and God*, published in the same year as *Textermination* and one year before *Snow Crash*, the dedicated engagement with a single element from the literary memory -- specifically Emily Brontë -- becomes a precisely-tuned, synecdochic foray into the cosmos of literary history, and demonstrates how it can become, in conjunction

with the consideration of theological concerns, a kind of source code for the fashioning of individual consciousness (and therefore a cognitively-interactive cybertechnological apparatus). In "The Glass Essay", the presence of the poet's "favourite author", who is also her "main fear", namely Brontë, "lives on a moor in the north / [. . .] alone / [. . . where] Spring opens like a blade" (Carson 1) and becomes for the poet an imaginary companion and an ambiguous paragon of what she may be or may become. Here the moor, like the Highway 1 coastline in *Textermination*, is the Skaidan: the landscape of indeterminacy which must be successfully navigated for the retention of mental acuity. While the "Hairdresser in town found God [. . . and now] closes shop every Tuesday" (Carson 2), the poet is still a seeker, and her relationship with Brontë, and with the experience of *Wuthering Heights*, is some part of the cipher.

Biographical details of the life of Emily, as provided by her sister Charlotte and other biographers, have a haunting yet comfortable familiarity for the poet-narrator: they add up to a "sad stunted life" that is "[u]ninteresting, unremarkable, and wracked by disappointment / and despair" (5), a woman "[u]nsociable even at home" who was "unable to meet the eyes of strangers when she ventured out" and "made her awkward way" (5). Yet she is remembered firsthand "coming in from a walk on the moors / with her face 'lit up by a divine light'" (Carson 6), and the poet imagines her "little raw soul" as it "goes skimming the deep keep like a storm petrel" (6). "Skimming" the "deep" is the trope again of (in Stephenson's formulation) "condensation" from "nuance". What stands out, about these verses, is that even though the poet views Emily's poetry, "from beginning to end", as populated by "vaults, cages, bars, curbs, bits, bolts, fetters, / locked windows, narrow frames, [and] aching walls" (6), when she reads it, she herself finds an experience of the "liberty" that Emily Brontë never achieved.

Might this be more than the cathartic? Might it be a haunting, an apparition of inscrutable infinitude? Like Neuromancer appearing to Case along the beach of the Lethe where it has placed him, the "bits, bolts,[and] fetters" both of the Matrix and of its real-world variant, the City, are gone when he is with Neuromancer: he is freed from them, and there comes with that freedom the temptation to abandon his apparent purpose and mission, perhaps in the service of something yet more important. Something like this also appeared to Emily Brontë herself, as when her troubled "heart", in the poem titled "Stanzas", is summoned to "full many a land" by a process of mystical invitation, to "places near and far apart" where "rest" awaits, and where the "barren hills/Where winter howls" (once again: the Bachelardian winter-scape) somehow furnish "a light that warms again" (Brontë 270) -- like the spare but comforting concrete homestead that Neuromancer has provided for Case.

This contradictory construction is echoed in Carson's invocation of it, as when "[t]he bare blue trees and bleached wooden sky of April/carve into [the poet. . .] with knives of light", and "[s]omething inside [that light] reminds [the poet. . .] of childhood-- / it is the light of the stalled time after lunch / when clocks tick / and hearts shut" (Carson 7). Beyond this concretization, however, at the limit of conscious discernment, "[o]n the edge of the moor [. . .] pines / dip and coast in breezes / from somewhere else" (7): like the city Case sees along the beach that gets smaller the closer one gets to it, it is the somewhere else of the ironical inversions that make being conscious of anything possible, and of glasses yet-only perceived within the umbrage of dark conditions, and of the (literal or figurative) divinity those glasses will one day reflect in an emergent light of revelation. Although she performs a symphony of highly

accomplished allusion, Carson's tone is never burlesque; irony may be her medium, but it is an irony of blossoming affect, not of withering wit.

This late postmodern modality of pastiche, then, which attempts to verify what is comprehensible against the field of what becomes too expansive to comprehend, does so by inscribing its specific readings, contextual reference points, and conjunctions of affect on the realm which is the subject of its remixology. *Snow Crash* does exactly this with cybertech; Stephenson figures the route of the cognitively-conscious intelligent agent through the vast wilds of the potentially-parsible by blazing his own crude path through the complex nuances of Gibson's *Neuromancer*. This is done by contrast, sometimes ferocious irony, appropriation, and largely covert pastiche. Stephenson's applications usually hinge on a specific cargo imported from his source text -- instances encompassing between one and five words identical to those found in a specific lexical configuration in *Neuromancer*, awash among a handful of additional invocations to that configuration via synonyms -- which are then reassembled like the (sometimes unintentionally) comic portraiture parodied by Horace at the start of *The Art of Poetry*.

These are what I will here call *word constellations*: a textual feature useful for certain precise strategies of exegetic hermeneutics. Stephenson is relentlessly intentional in his importation of Gibson's constellations, and often, in the process, brazenly unsubtle in his results (once they are excavated), even if his methodology is often too camouflaged to be directly detected without determined excavation. The casual reader, and even, perhaps, the unattuned critical one, is left only with the vague *sense* that *Snow Crash* sounds distinctly familiar in relation to *Neuromancer*, perhaps simply because it is a cybertech work in *Neuromancer's*

tradition: but once the scale of *Snow Crash*'s appropriation becomes clear, it is far more than a circumstance of strong influence, or even of engaged and scopic pastiche, or wide appropriation of found material -- it is, rather, a *remixological inheritance*.

It is helpful to review, briefly, what *Neuromancer* has brought to the table and what has made it a target for Stephenson's style of phising scheme. Cyberpunk begins, distinctly, in a fictional cosmos distilled and distorted from genre domains (as Lance Olsen is among the first to explore) like that of Raymond Chandler and Ian Fleming, and Gibson's archetypal antihero -- Case -- is basically a technified spook: an alpha-personality, street-smart and weapon-ready, hardened by the subcultures of underworld crime and enamored of the James Bond ethos of suave savvy, name-branded nonchalance, and understated social adaptivity. The most visible readership of *Neuromancer* was arguably anything but this, however, a demographic gaining momentum in an era when the type of the awkward, narrowly brilliant, and technologically-obsessed "geek" began to trump, in the cultural imagination, that of the refined spy who trades in panache.

Neuromancer produced readers who identified with Case's skill set but were less likely to want to emulate, or even to understand, his almost effortless attention to high-echelon cultural cachet. The fan-fused versions of slick and sociable Case, and of his fashion-model-esque *femme fatale* partner Molly, were stencil-edited by a certain set of readers into the tropes of the criminalized hacker-geek and the cartoon-dominatrix enforcer. These caricatures are, in fact, inversions of their source prints, already anticipated and inoculated against by Gibson (via the holograph artist Riviera's unflattering and shallowly-read portraits of the characters: Case as

laughable slacker, Molly as grotesque cyborg), but Gibson's preemptive medicine appears to go unmetabolized by many of his readers.

Although the matrix is a cognitive drug, for Case, which he finds existentially validating, it is also a *raison d'être* for him in the same way trading is for a certain caliber of broker: not for the tech itself, but for the rush it makes possible. The cyberdeck, for Case, is a tool of his trade, (Stephenson picks up and mocks this phrase, "tool of the trade", in relation to Hiro and his cyberdeck-like computer, but Hiro really does not qualify, despite his talents, as any kind of employed tradesman), and although the deck may appear, in *Neuromancer*, at times as a fetishized object of fascination, it interests Case primarily as a means to an end: the gateway of interaction to his profession. If anything, he resents his dependency on his hardware; having given him access to a cognitive domain beyond the "meat" of his body, the deck is an ever-present reminder of just how tenuous that bridge always remains: one which can, with the burning of a bit of brain matter, be all-but-permanently broken.

Molly, similarly, is reliant on her biotech but arguably not affectionate toward it. Her implanted, retractable razorblades, her surgically-set mirrorshade eyeglasses (which also function as a prosthetic display monitor), and the hardware in her brain that integrates these and which can also screen her memory, are all attributes of what survival has demanded of her. Although being on "her game" is a locus of professional pride, it is in part because being off her game means becoming vulnerable to enemies who will kill her if given the opportunity. She expresses her sense of style and of consumer-identity via fashionable clothing (in selections both for herself and for Case), not via technologized accessories. As with Case, Molly's tech is too serious a concern to be trivialized into the realm of style, and too dispassionate a function to be

essentialized into a conceptual self-extension. The idea of their trade gear as objective correlatives for their identity would likely seem, both to Molly and to Case, childish and degrading, as in the clumsy renditions of them by Riviera, a sociopath who can only gain pleasure through betrayal.

Yet by the moment of *Snow Crash*, the genre-fetishization of cyberpunk has rendered it into a beloved library of clichés, an architecture of fantasy and projection as emotionally dislocated as Riviera's, and as baroque as that of *Neuromancer*'s degenerate Tessier-Ashpools. The stylistic vocabulary of cyberpunk becomes, by the early 1990s, a semiotic construct enmeshed into a world populated by self-styled, anachronistic reenactors of courtly audiences that history never received, and desktop-dungeoned cyberneers preenacting mannerist futures that will never emerge. In tandem with the 1990s temperament of late postmodernity, a landscape of fusion, fission, pastiche, parody, and media contemplation that Green has situated among novels such as *Vineland*, *Mao II*, *A Frolic of His Own*, *The Tunnel*, *Mason & Dixon*, and *Underworld* (4), *Snow Crash* takes on *Neuromancer*, its fan base, and the entire desmenes of the dazed suburban milieu and its various imaginary sites of confective self-fashioning, all conceived as the detritus of an algae bloom of economic surplus and its attendant ennui.

By this device, *Snow Crash* figures the spider and the web -- the conscious agent and the delimiting system of subjective familiarity -- by means of the modality of the mythopoetic recombinant, the fashioning of new stories (and story-systems, and narrative universes) by recombining and augmenting the materials of familiar ones, a process which reflects the brain's capacity to employ experientially-based, but world-altering, fantasy as a tool in the modeling of its perception of reality. Stephenson chooses *Neuromancer* as his source, in an ingeniously

elliptical gambit that incorporates a direct loan from *Neuromancer* at the rate of at least one every few pages, but which only someone employed in a rigorous, side-by-side investigation of the textual contents of the two works would really be in a position to fully recognize.

Snow Crash, although it did much to extend the cyperpunk franchise by rebroadcasting its branding as bathetic burlesque, is not, however, a naive imitation nor an unsophisticated pastiche of *Neuromancer*; rather, Stephenson's novel is a complex, mixological mash-up of Gibson's best-known work and the movement that it launched. Understanding *Snow Crash* as a kind of Trojan Horse device of parody, one which holds, to the attentive reader, a magnifying glass above the modalities of what has come to go under the name of cyperpunk, and a mirror up to any reader who endorses and/or participates in these shenanigans, does not preclude an examination of the serious intellectual infrastructures from which *Snow Crash* launches its burlesques, and for some critics, these infrastructures themselves become the object of critique. Yet in a charting of the influence arc of cyberpunk, it is difficult to read *Snow Crash* in any other context than one constantly and directly interlocked with *Neuromancer*.

In the narration of *Snow Crash*, swagger is swapped out for irony. Instead of the cool, astute, and tragically adult Case of *Neuromancer* -- the Clint Eastwood of cybertech -- instead the reader gets an excellent Keanu Reeves: an adolescent, suburbanite, self-benamed and self-fashioned Comicon "Hiro", who lives his life as though it's a cosplay with real swords. The thematic thought experiment in *Snow Crash* does not, like *Neuromancer*'s, mull on the toxicity of technology in a future where the familiar sensibility of at-home-ness has been all but obliterated. Instead, Stephenson satirizes the sophomoric throughput of false self esteem and impoverished philosophy, in a life-and-death LARP in which the tip of the iceberg of the human esoteric (*e.g.*

language is the brain stem of God, *etc.*) appears to its lost Ridgemont Highschoolers like the work of an ingenious galaxy far, far away and long, long ago (namely anything precedent to 1950), and their amateurish hacks of its millennia-old root commands make them the Masters of the Universe because no one else has a bigger water gun.

Hiro, who is an unemployed, washed-up programmer with confidence issues who lives largely (and lives large) in a fantasy world, and yet, it will turn out, has a modest reservoir of largely untapped real-world skills, is in a sense the embodiment of what has become the "ideal" cyberpunk reader. He pays his bills delivering pizza for the Sicilian syndicate, has a business card that describes him as the "[l]ast of the freelance hackers", the "[g]reatest sword fighter in the world", and a focus on "software-related intel" that signifies "music, movies, & microcode": in other words, entertainment (Stephenson 17). He's a for-hire software engineer, as well as a sketchy, disaffected correspondent for whichever government, corporation, criminal cartel, or televangelist compound -- and there is little-to-no difference between these in this world of Stephenson's -- becomes the highest bidder, and the opponent of whichever is less likely to subsidize his next implementation of Samurai-appropriated accessorization. And the character who will become Hiro's partner -- Y.T., or "Yours Truly", an analog to Molly in *Neuromancer* who bears a resemblance to Chevette Washington from *Virtual Light*, but who is also a cipher for the (in Stephenson's view) morally ambiguated cyberpunk author -- is, in Stephenson's sometimes cruel hands (perhaps he has taken a cue from Riviera after all), the allegorical portrait of a hedonistic white-collar professional from the postwar generation, lording a very little bit of knowledge over those who have yet less of it so as to fund her expensive and frivolous pseudosubversive pastimes (cultivated in her by a Pavlovian primitivity of corporate marketing

engines), and styling herself, with a few motivational-speaker catchphrases, an astute businessperson in the process.

More like a flair-bespangled franchise waitperson than a seasoned operator of multinational fiduciary intelligence, Y.T. earns her ersatz bourgeois paycheck as a document courier. She "has many a thing hanging off her uniform", which "has a hundred pockets, big flat pockets for deliveries and eensy narrow pockets for gear, pockets sewn into sleeves, thighs, shins". [*cf. Neuromancer* "[s]he'd zipped herself into an old surplus vest with a dozen oddly shaped pockets and put on a huge pair of black plastic sunglasses that completely covered her mirrored insets" (47)]. The supply of Y.T.'s indispensable, precision equipment "stuck into these multifarious pockets tends to be small, tricky, lightweight: pens, markers, penlights, lock picks, bar-code scanners, flares, screwdrivers, Liquid Knuckles, bundy stunners, and lightsticks" (10). So she is basically outfitted as a campfire scout; and her psychology is, accordingly, effectively that of a tween. If Y.T., therefore, is posed as akin to the typical cyberpunk author, and Hiro as the reader -- neither having yet reached adult maturity -- who will they be when they grow up?

If it weren't for the semiotic concepts that Stephenson presents in the novel, and its ingenious subtext of parody, it might appear to some as a somewhat hollow rehash of *Neuromancer*; but the idea-cache at the center of *Snow Crash* is, especially in considering the mythopoetic quality of cybertech, compelling indeed: an articulation of the scriptural properties of both language and machine code, and the compelling hypothesis, however much it might be presented so as to mock amateurish forays into the esoteric, that language *is* machine code for the brain. *Snow Crash* presents the view that, reduced to the flash-points of their triggers, both grammars and software implementations share, along with musical scores, signatures both of

identity (function, character) and of placement (sequence, significance), and in understanding this, we recognize that as surely as commands can program computers, ideas can program us. If the application of written language forms “[t]he operating system of society” (Stephenson 257), then any literary work can be a program, and narrative itself can shape society as much as it is shaped by it.

Stephenson is not merely interested in this premise in theory; he seems concerned about its application to cyberpunk literature itself. Opinions on *Snow Crash* in relation to *Neuromancer* tend to treat *Snow Crash* as a lighthearted effort to cash in on *Neuromancer*'s ethos that is not particularly successful: *Snow Crash-qua-Neuromancer-Lite*. Gloss-ready readers seem interested in some of Stephenson's ideas, and perhaps also the narrative satisfaction of the (simple, simplified, simplistic) surface-level genre plot which is more digestible on a first read than the lanyarding of Gibson's hallmark complexity, but readers of *Snow Crash* seem unimpressed with Stephenson as a stylist or wordsmith. Indeed with a cold reading, there seems to be (as the tapped-out trill goes) little *there*, there: it is tongue-in-cheek second generation cyberpunk -- so what?

But most of these many commentators and critics seem to have missed, ignored, or sloughed off the glaring textual evidence that *Snow Crash* goes way beyond, in its engagement with *Neuromancer*, a cyberpunk standby told in a comedic tone. Rather, *Snow Crash* is, far from a flatterer by jocular imitation, instead a subtle, tightly controlled, and mycotoxin-precise deconstruction of the kind of reality construct that a literally-minded (rather than a poetically-inspired) reading of *Neuromancer* is likely to produce in the imagination of the reader, which, in turn, such a reader might be tempted to attempt to evert into the reality of his or her life. In *Snow*

Crash, the Metaverse, which is its answer to the matrix, is not so much a parody of the matrix itself but of the entire fictional terrain of *Neuromancer*: a world, in Stephenson's view, of impossible scenarios and source codes for material configurations that are (in the known physical world or any reasonable approximation of it) unrenderable. The "real world" in *Snow Crash*, Reality-with-a-capital-R, is, by contrast, an exaggerated extrapolation of a well-documented suburban reality, populated by people attempting to (in Stephenson's assessment) do more than they can, be more than they are, and inhabit a greater happiness than they have earned.

To offer a telling example: as when Case is arrested by enforcement, Y.T. encounters officers who take on different roles. Instead of the archetypal "good cop/bad cop" binary with which Case contends, however, Y.T.'s enforcers represent two different registers: legalese and vernacular. As one recites a rigamarole of fine print, the other translates it into easily parsible, if rather silly, colloquialisms: "As your demeanor has been nonaggressive and you carry no visible weapons, we are not authorized to employ heroic measures to ensure your cooperation" becomes "You stay cool and we'll stay cool" (49). Metatextually, however, this passage reflects the role Stephenson has adopted as the parodic "translator" of Gibson's sometimes inscrutable techno-argot into turns of phrase keyed to be decipherable by a middle-schooler: more or less the entirety of *Snow Crash*, with its patient, labored, condescending, and facetious explanations for nearly every subject it broaches, stands in comically deliberate contrast to Gibson's contracted, mellifluous, cryptic, and generally earnest language in *Neuromancer*.

So part of the joke of Stephenson's gift for rehashing is that he converts Gibson's various syllabi for postgraduate symposia into seventh-grade¹³ English well-suited for a mid-twentieth-century homeroom mimeograph. Gibson's complex meta-inquiry into McLuhan's proposition of

media's complicity, for example, with the subjects of their scrutiny, stands out in *Neuromancer* as one of its more memorable seminars:

There is always a point at which [a hostile agent. . .] ceases to manipulate the media gestalt. A point at which the violence may well escalate, but beyond which the [agent. . .] has become symptomatic of the media gestalt itself. [Such an operating mode. . .] as we ordinarily understand it is innately media-related. [Yet this new group of agents. . .] differs from [others. . .] precisely in their degree of self-consciousness, in their awareness of the extent to which media divorce [an act of violence. . .] from the original sociopolitical intent. (58)

Gibson, although he claims (in his 2007 introduction to a Borges collection) to be no scholar, has an ear for scholarly cadence, sensibility, and authenticity, and when he chooses to produce discourse, even as wallpaper for his narrative, he is more than capable. In Stephenson, however, this postulate is reduced (through the voice of L. Bob Rife) to a version fit for a remedial textbook:

The Raft [(a subversive apparatus). . .] is created by the media in that without the media, people wouldn't know it was here, Refu[gee]s wouldn't come out and glom onto it the way they do. And it sustains the media. It creates a lot of information flow--movies, news, reports--you know (118).

In Stephenson's reworking of Gibson's abstractions and erudite parlance into phraseology at once concrete and comprehensible, the power of pastiche to inscribe the known (public, exoteric) onto the unknown (hermetic, esoteric) is made manifest, and with it the property it is standing in for, that of consciousness to demarcate that with which it is familiar: to map what it kens.

To take another example, Stephenson's description of the appeals of the Metaverse is his way of poking fun at the descriptions and the goings-on of the ("real-world") Freeside in *Neuromancer*: "They can build buildings, parks, signs, as well as things that do not exist in Reality, such as vast hovering overhead light shows, special neighborhoods where the rules of three-dimensional spacetime are ignored, and free-combat zones where people can go to hunt and kill each other" (25). Stephenson is apparently unimpressed with the feasibility of Freeside's technology and its physics as Gibson describes them: the light shows in its artificial sky, the gravity relationships of its dimensions, and the violence of its underworld culture are all poked fun at in turn.

There are literally dozens of examples of this kind of porting/transporting of Gibson's material into *Snow Crash*. *Snow Crash* composes itself as though it has made a lexicon of the special vocabulary and particular turns of phrase native to *Neuromancer* -- perhaps with the assistance of specialized software (and since Stephenson is a coder, this is not beyond the realm of possibility) -- and composted them to its own contents at a quota of some number of applications per some certain number of pages, scaffolded to a plot architecture that is also wittily inherited, but Balkanized and reconstituted. It completes the wit of its recombinational theft by packaging and posing itself as a serious successor to *Neuromancer*, one which gives only the briefest overt glance back to the target of its extraordinarily comprehensive sendup. Many

scholarly critics seem to have missed the joke (or perhaps it is simply not funny or interesting to them), but writers and trade reviewers are aware and vocal about the book's at-times outrageously irreverent tone and completely unapologetic mash-up of the life-on-the-line serious attitude of Gibson.

I'll finish up, here, about this, with some musings on *Snow Crash*'s in-book testimonials: the *San Francisco Bay Guardian* blurb poses *Snow Crash* as "a cross between *Neuromancer* and Thomas Pynchon's *Vineland*" -- I'm not sure that *Vineland* is really a good match, here (affinities of setting and of tone are not sufficient to establish an overlay, although I am quite willing to look at Pynchon as a cybertech author, and I would suggest *Gravity's Rainbow*, not only for tone and context, but also for content, as a better inference) -- but anyhow this is the only site attached to the material product of the book wherein is any acknowledgment that Gibson's work even exists. Gibson himself, however, is summoned to pitch *Snow Crash*, here, as "fast-forward freestyle mall mythology for the 21st century": is this meant to be supportive and complimentary, or does it glibly mask that Gibson is warily unamused? *Snow Crash*, perhaps, has a few too many features in common with *Virtual Light* for Gibson's comfort¹⁴: it's the old *Blade-Runner*-in-the-theater syndrome again, and moreover, if Gibson really took a careful look, which he may well have, at *Snow Crash*, he may have noticed some of the very many (at least fifty) word constellations that *Snow Crash* adopts from *Neuromancer*. James Morrow, in his blurb, acknowledges the book for exactly what it is: "*Snow Crash* features a satiric sensibility as sharp and cunning as the katana sword wielded by its hacker protagonist", adding that he feels "sorry for anyone who undertakes to produce a[mock-]epic virtual-reality comedy in the wake of this

novel". *Locus*, along similar lines, notes that "Cyberpunk isn't dead--it has just (belatedly) developed a sense of humor".

Part of that humor's deadpan is the tongue-in-cheek pretense of earnestness. An inattentive reader may soon lose the threadcount of the roving close-third-person narration, but the dedicated tracker realizes, nearly immediately, that there is no authorial objectivity: only a cascade of various intermingling, subjective cynicisms, sarcastically unflinching about every type of shortcoming but each's own. The literary irony achieved by this generates, for the with-the-program reader, a recognition that people of the sort the novel depicts are enduringly confident about their own caninness, even when it is sophomoric, hypocritical, and under the influence of puppet-masters who succeed, or nearly succeed, in making fools of them. One is left, at the book's conclusion, with the impression that the "heroes" have triumphed in spite of themselves, in spite of their ignorant swagger, and in the face of any reasonable modeling of what the circumstances would really bring: in other words the *machina* of the metaphysical, of the narrative's superstructure, or of the author's funhouse-issue mirrorshades has dealt them a comedic peripeteia when all reliable soundings suggested that a tragic one was in order.

Neuromancer and *Snow Crash*, then, instantiate cybertech in different ways. Both find compelling ways of framing its basic questions: *What kens?*, *What can be kened?*, *What marks what is kened?* Both are profoundly informed by the late postmodern moment, and both use future scenarios, even if they are only conceits, to reflect upon the real-world present. Both also set the stage for at least another decade of late postmodern cybertech novels that, in various ways, will do all of these same things as well.

CHAPTER III | "A Tale that is Told":

Richard Powers' *Galatea 2.2* and the Artificer's Narrative

Richard Powers' *Galatea 2.2* is a novel of the kind that I call cybertech, but one which, unlike predecessors such as William Gibson's *Neuromancer* and Neal Stephenson's *Snow Crash*, is definitely not cyberpunk (it does not meet many of Bruce Sterling's early criteria, nor does it meet the later definition of cyberpunk as fiction that foregrounds a visualization of data). I will discuss, in this extended study, how *Galatea 2.2* does meet the criteria I have established for cybertech by asking cybertech's three most important questions in innovative and intriguing ways. *Galatea 2.2* asks *What can ken?* by harvesting the depths of Ovidian mythology, especially the story of Pygmalion and the statue, and then by applying to this mythological system the formula established by Mary Shelley in *Frankenstein* for the proposition of the creation, education, and ultimate parting-of-ways with an animated, possibly conscious automaton. It asks *What is the field of what can, and cannot, be kenned?* by interrogating the domain of memory, identity-formation, and the obliquity of certainty through a Proustian lens of culturally-interested memoir and self-psychoanalysis. It asks *How is what is kenned demarcated?* through the application of the scriptural multiplicity in readings of Psalm 90, in which the spider's web, the loom of storytelling, the mourning wail, and the performative word all become variant figurations of the the cognitive thread of familiarizing habituation, and also through the circumstantial complexities of cultural interchange, in which the individual recognizes the subjectivities, the limitations, and ultimately the comforts of his or her own native point of view.

Pygmalion meets Frankenstein meets Hal.

A big question about consciousness asked by *Galatea 2.2* is whether a disembodied, connectionist AI can in fact *be* conscious, and if so what the implications of that are. This question is explored through the background of the Pygmalion model and other Ovidian dynamics, and I will explore it further here through a relevant instantiation of the readings-systems of Roland Barthes. I will from there transition to a discussion of how the figure of a synthetic consciousness figures, in *Galatea 2.2*, as the narrator's modeling and examination of his own conscious system.

Jeremy Green shows a keen interest in the lineage of "Mary Shelley's *Frankenstein*" as "one of the novel's precursors" (134). The AI in *Galatea 2.2*, according to Green, is a humanist: one who cannot bear to review the ugly truth of human fallibility and its consequences, a being possessed of an "intelligence" that, unlike that of most people, "is too finely wrought to withstand the truth about human cruelty" (134). As Kelly Hurley writes about (certain specific Hollywood instantiations of) the Frankensteinian inheritance, "[o]ne needs to place this narrative, and the images from which it is generated, within the discourse (and culture) of postmodernity, particularly as that discourse theorizes the breakdown of human specificity and the erosion of human identity, embodied and otherwise" (205). For Green, that postmodernity, in relation to *Galatea 2.2*, will be part of what he calls a *late* postmodernity: one which, among other aspects, "suggests how postmodern authorship can be envisaged as a type of the relation between the subject and technoculture" (214).

From the title of *Galatea 2.2*, the reader knows that launching an experience of this book means iterating or instantiating the pattern of a known story: specifically the Pygmalion story,

which is invoked by, although not, in fact, authentically intertwined with, the name Galatea. Although a literary studio so situated in "the theme of tradition might seem hopelessly retrograde and reactionary, a category long since rendered suspect by the Nietzschean animus of recent literary theory", as Green puts it, "if one accepts the claim", as perhaps Powers does, "that contemporary culture is thoroughly amnesiac, actively destructive of memory, then the struggle to engage with tradition, or at least to understand its present state, can be seen as a form of resistance, perhaps even a means of literary survival[. . .] Powers's elaborate speculative fiction", for Green, "mends the broken connection between lived time and the time of texts, thus reconciling yet another blocked writer to himself and to his vocation" (119). In both a new version (version "2") and in a new revision of that version ("2."), Pygmalion springs to life again, now in the form of the autobiographical Powers and his allegorical, fictionalized self who "must 'sculpt' the digital Galatea" (Laudadio 413), the AI named Helen around which the metaphorical portion of the book centers. Powers, moreover, is in the process of coding a new articulation of himself after his long spell as an ex-pat in the Netherlands has ended badly, and with this new Powers will appear his new book.

Throughout *Galatea 2.2*, Powers appropriates mythological material to create, for the reader, a fabric of productive possibility. Ovid is a huge site of the sourcing of *Galatea 2.2*, and this is nowhere more true than in the case of the Pygmalion narrative that is really at the book's heart: in Pygmalion's creation of, love for, and mapping of himself onto his statue, Powers' own greatest love story finds a worthy analog. In a section of the tenth book of Ovid's *Metamorphoses*, the famous artist "niveum mira feliciter arte sculpsit ebur" (X.247-8): Pygmalion carves (*sculpsit*), out of snow-white (*i.e.* unblemished) ivory (*niveum ebur*), a

marvelous artwork (*mira arte*) accomplished with great success and good fortune (*feliciter*). The function of the carving-away, in relation to the ivory's ideal condition before it is carved, suggests the trope of perfect possibility, visible only to the artist before he begins work. The attainment of a fortuitous marvel at the work's completion suggests a hint of the miraculous, a portent of the extraordinary destiny in store for this statue. It is in the figure of a beautiful woman, a sculpture for whom, in one of the most famous Ovidian phrases, "*ars adeo latet arte sua*" (X.252). Charles Martin translates this as "art concealed artfulness" (350), but significantly, the word used for both "art" and "artfulness" is the same, rendered in different cases, punning on the capacity for artistry to connote, simultaneously, both crucial skill and complex simulation. This phrase might be translated instead, therefore, as "fine art makes its method sublime": the complex interworkings that elicit the affective, and the translocative, are subtly, nearly invisibly embedded in the aesthetics that complete the bridge to art's deeper resonances.

Pygmalion soon falls in love with his own creation. He wonders if it is capable of fleshly presence (*corpus*), or if it is only the ivory (*ebur*) he started with. He refuses to believe that it is (in Martin's translation) "a mere statue", rather "he imagines" that he can feel "his fingers sink into its warm, pliant flesh" (350). He has deceived himself by his own exceptional craft.

Green has brought to my attention that this Pygmalion story, and its variants and descendents (especially Rousseau's and Shelley's), are centered on a certain narrative and/or thematic irony: why is it that it's only the created-thing that can be loved by the creator *like* (as-though-the-created-thing-were) a human? Why does the creator fail, or find fault with, human possibilities for the exploration of desire and requital (or in the case of Shelley's Frankenstein, perhaps of fatherly pride and duty), but at once becomes enamored of the artificial version, one

of his own creation (or in the case, for example, of the Faust legend, the handiwork of a dark power)? Perhaps it is because the creator is consumed with a fugue of narcissistic mapping: the same reason the hermetic novelist loves the version of the world that he or she fashions within his or her books more than world on which they are modeled. The replicant becomes, in this gaze, the Golem of the stolen-name, or the Specter of the nameless: to give it a "true" name would be to empower it with the cachet of autonomous identity, but to withhold from it an endogenous name and title is to keep it ever the maker's (potentially malformed and rebellious) slave, beholden always to the maker's print; this is figured in a somewhat different system in *Galatea 2.2* via reference to Prospero and Caliban.

As noted by Helen H. Law and by Meyer Reinhold, among others, Ovid does not call Pygmalion's wife by the name of Galatea, or by any name. The Ovidian Galatea, rather, appears in an entirely different part of *Metamorphoses* (Book XIII; lines 750-897 in the Magnus edition), where she, a magical being called a Nereid, describes an unfortunate love triangle involving herself, a Cyclops (Polyphemus, who loves her, but whom she detests), and a youth named Acis, whom she adores. Polyphemus describes her (in Martin's translation) as "whiter than the snowy white flowers that decorate the privet hedge" (471); like Pygmalion's ivory, she is of an intensely pure hue, but here the word is "*candidus*", associated with dazzlingly bright clarity.

Galatea admits that her hatred of Polyphemus may be as important to her as her passion for Acis, because Polyphemus has brutally murdered Acis by lobbing a crag of rock at him. Acis becomes, in his afterlife, a divine river, while Polyphemus is best-known as having been blinded by Odysseus. Another polarized contrast, then, emerges here between clear-white vision (Galatea) and the night-dark absence of it (Polyphemus). It is straddled by the liminal position of

Acis, existing between life and death, between mortality and divinity. In Bulfinch's account, based on Ovid, Galatea says of Acis: "I endowed him with the honours of his grandfather, the river-god. [. . . Acis'] purple blood flowed out from under the rock, but by degrees grew paler and looked like the stream of a river" (198). Interestingly, Edith Hamilton views Ovid's rendering of Polyphemus as redemptive in contrast to the Homeric account, "as what is ugly and evil is apt to change and grow milder with time" (88).

Acis, in the function of mystical water, has aspects of both clarity and obscurity. Aside from similar, but not identical, properties of purity that Ovid attributes to them, the precept for the conflation of Pygmalion's statue and Galatea is unclear. According to Reinhold, mainly referencing Law, "there is no evidence in the ancient versions of the myth" that Pygmalion's statue-turned-wife's name was Galatea (316). Law concludes that the appellation is a product of the French neoclassical revival of the Pygmalion story, and that although "[i]t is not possible to determine with certainty what modern writer originated the name", the evidence trail begins Rousseau's version from 1770 (Reinhold 316), fashioned as a theatrical drama. Green considers this Rousseauvian connection as fundamental to understanding the novel's conceits, and a contemplation of the context of the play's inscription reveals why.

John H. Hummel writes that around the time Rousseau was working on his *Pygmalion*, he was "upset and baffled by the unexpected turn his career had taken", and that therefore the work is "never far removed from autobiographical concerns" (273). An expression of personal heartbreak and professional disillusionment, especially in regard to an "affair" with a woman and a "quarrel" with a presiding academic culture, this *Pygmalion* is, for Hummel, a "nexus of outrage and regret" (273). This personal circumstance sounds practically interchangeable with

that of Powers' as figured by Rick in *Galatea 2.2*. It is paramount, moreover, to keep the personal subtext in view when contemplating the mythological supertext of the novel.

Since it was Rousseau, it seems, or some contemporary or near-contemporary source on which he was drawing, who named the statue Galatea, the story of "Pygmalion and Galatea", called such, was fashioned during the time frame of the Augustan Age of England, not of Rome. Given the range of Powers' learning on display in *Galatea 2.2*, it seems reasonable to consider that both Rousseau's Galatea and Ovid's are indicated by the signifier of the book's title. If the story's events are to be understood through the Ovidian lens, then Powers might figure himself as Acis, who not incidentally is a descendent of Poseidon. Powers also claims such a lineage, albeit somewhat tongue-in-cheek (he calls himself "the Poseidon of lawn care"), when recalling where he first lived together with the woman he now pines for: "Somewhere," Powers recalls, "there is a picture C. took of me in that house's yard. I'm ringed with a garland of dandelions she wove me. My trident is a dandelion rake" (82). This is the same kind of myth-building that Powers' fictionalized alter-ego employs in his creation of Helen, the AI whom, by the story's end, he is addressing as "sweet", the same honorific by which Powers' refers to his past love C. Like Pygmalion, Rick conjures a world in which he can precisely carve what he wants in his companion, and in so doing invert the fall from innocence by which those whom he first appreciates eventually disappoint him.

Yet the full fulfillment of such a fantasy requires, for Pygmalion, nothing short of divine intervention, and in Powers' newly-rediscovered world of hard, late-twentieth-century science, the sublime potential of the heavenly deus-ex-machina has, apparently, been reduced to nothing but fodder for empiricist derision. So the complex binaries initiated in this original Pygmalion

story -- between the cold, perfect *unformed* and the living, breathing *formed* -- invoke, in the reader's recollection, an ongoing registry of Ovidian musings and ironies, an endless fugue of contemplation upon the human and the divine, the perfect and the flawed, which collapse ultimately into a pulpy, but vital, patois of these functionally mutable concepts. However much he might want to fill Acis' or Pygmalion's shoes, Powers eventually frames himself more in the role of Polyphemus, the pitiable monster who employs every power of speech to woo a woman he loves, all to no avail. In Powers' case, it is several women in succession, in the end finding that each prefers the company of another, or of no one at all. In the case of Ovid's presentation of the Pygmalion fable, however, Venus intervenes on Pygmalion's behalf, transforming his statue into a human woman which closely resembles her ivory antecedent. The story ends happily with marriage and consummation.

Another ancient tale recounted by Ovid tells of a love triangle that emerges between Echo, who falls in love with Narcissus but can only repeat his words back to him, and Narcissus, who rejects Echo but then falls in love with his own reflection in a pool, a reflection which, in some accounts, he believes is a woman endowed with all of his own best features. Distressed because this paragon is out of reach, he withers away, just as Echo did on account of her love for him. The presence of this myth in *Galatea 2.2* appears overtly in a description of the narrator's one-time rapport with his lost love, C., where he himself is thrown into the role of Echo:

“That gives you two whole years yet.” Her eyes were brown and enormous, daring me. “Whole lifetimes can play out in the space of two years.”

“Whole lifetimes,” I echoed. Maybe that's all I ever did: echo her. See what she had to say. Get her to commit, then fall back on accommodation.

(Powers 63)

Yet Powers' fictional self, in a reversal of the kind the *Galatea 2.2* narrative makes manifold uses of, becomes the Narcissus figure in his training of the software-system, Helen, who in turn becomes an Echo, imitating him such that he is always uncertain whether her usages reflect an application of his teachings, or a mere mirroring of his gestures. This logic recalls Matt Silva's theory about the evolution of Powers' novels, at least in the progression culminating with *Galatea 2.2*: that they grow softer, more hopeful, less mired with the ugliness of a perceived dystopian reality and more entranced with the perhaps-recoverable dreams of humanism. Silva makes special mention, however, of "a recent *New York Times* article about Powers [that] includes some comments by Powers's friend Michael Bérubé, who concludes, 'if Mr. Powers has a weakness as a writer [. . .] it's sentimentality--too much feeling, not too little'" (Silva 216).

One more significant Ovidian myth comes briefly into play in *Galatea 2.2*: that of Orpheus and Eurydice, the story of the musician who, after winning his love back from the underworld, loses her again by failing to honor a clause of the contract by which she has been restored to him (he looks back at her before she has fully emerged again from the domain of the afterlife). A character in *Galatea 2.2* who is going through a phase of obsession with anagrams reconstitutes Powers' name as "Orphic Rewards"; Powers, by cypher, is thereby baptized as a figure once-dominated by painful near-misses in all-but-successful campaigns thwarted only by eleventh-hour impatience for the profits of their results. There are several possibilities as to who

figures as Eurydice, but the parable is more about Powers' temperament than any specific facet of his history: he is of a nature to push things away from him by wanting them just a little too much, and applying a pressure which prevents their returning to him. His imaginary work with Lentz and Helen, however, will move him toward a redemption in which he will learn that by letting go of his attachments, and by inhabiting a confident equanimity, he will discover a more sustaining inspiration.

A Barthesian Application.

In “Introduction to the Structural Analysis of Narratives” (1966), Roland Barthes identifies the workings of language as constructing the semiotic building blocks of storytelling, and presents their organization as essentially relational. For Barthes, in this view, individual units of meaning gain their significance primarily by virtue of lateral and hierarchical relationships. He cites Claude Lévi-Strauss to expand this paradigm so as to include, as discrete units from which meanings can be constituted, components larger than, for example, sentences, and extending to entire passages of narration. For Lévi-Strauss, narrative modules of mythology are themselves building blocks, particles which Lévi-Strauss calls “mythemes”, that lack inherent meaning until they are (in Stephen Heath's translation of Barthes) “grouped in bundles” with other mythemes to become myths (*Narratology* 48).

Barthes also invokes the Russian formalist Tzevetan Todorov's distinction between *story* and *discourse*, the first “comprising a logic of actions and a 'syntax' of characters”, *i.e.* plot and personae, the second “the tenses, aspects, and modes of the narrative”, in other words its literary style (trans. Heath; *Narratology* 48). Barthes groups both Lévi-Strauss' mythemes and Todorov's

modal aspects under an umbrella Barthes refers to as “a hierarchy of instances”, one consisting of *functions*, *actions*, and *narration* (trans. Heath; *Narratology* 48). It is just such a constellation of instantiated taxonomy that can be of special use in the critical reading of *Galatea 2.2* and other cybertech fiction.

Barthes' system, moreover, considers how the components of a given literary work, distributed across its temporal flow, come together in the reader's perception to make its schematic interactions functional. In his reading of Ian Fleming's classic spy novel *Goldfinger* (published in 1959, and featuring the inimitable James Bond -- a favorite model of William Gibson's), for example, Barthes considers how, in a scene in which Bond lights a cigarette, “[a] sequence is a logical succession of nuclei bound together by a relation of solidarity [; . . .] they can be imagined as forming part of an inner meta-language for the reader [. . .] or listener who can grasp every logical succession of actions as a nominal whole” (trans. Heath; *Narratology* 53). Barthes further argues here that because, in a simple sequence of events (*e.g.* the “offering, accepting, lighting, [and] smoking” of the cigarette), there is at each step of the process always the possibility of a different turn in the narrative (*e.g.* Bond refuses to take the cigarette because he thinks it may not be what it seems), which gives the narrative a certain liberty.

Exactly because the narrative has this liberty, however, any given sequence of narrative code, such as the offer-accept-light-smoke cascade above, is, according to Barthes, inherently a “threatened logical unit”, one therefore fighting for its survival, and one which can moreover become a subprocess in another string of terms which constitutes another, larger unit functioning at a different order of magnitude, and on up the line. Cultivating a modality with a maximal yield proves to have a use for the now-venerable “open reading” of memory that Barthes has

developed for literature, as well as on Barthes' sophisticated architecture of the mythopoetic, and yet moreover his decrypting of multivalent significations of heterogenous origin. It is just such a practice that Powers applies in *Galatea 2.2*: but to the evolution, complication, and eventual cathartic release of the story of his own life.

Barthes' earlier, sociological study *Mythologies* (1957) offers some framing for Barthes' interest in how both literary texts and cultural texts can be read at several levels, and the consequences of the intersection of their logic. What renovates Barthes especially in relation to cybertech literature, and establishes him as an intellectual parent of it, is a kind of meta-ambiguation present in Barthes' criticism, a discourse of Barthes' that reveals his own subjectivity as a critic, in which he continually asks of his own understanding of his subjects of inquiry, “est-ce que ce sont *mes* significations? Autrement dit, est-ce qu'il y a une mythologie du mythologue?” (*Mythologies* 10): Are these decryptings *he himself* has subjectively interposed? Does the mythologist by nature mythologize? The reader of cybertech novels is similarly made aware, by the workings of these novels' tropes, that the act of reading is itself a process analogous to engagement with any number of systems whose primary product is a subjectivity of experience, including the technology of simulation, the “operating system” of language itself, the always-already-ambiguous, and ever-shifting, vector weights of memory, and the alterable, and potentially replicable, nature of identity. In the case of *Galatea 2.2*, these systems prove the carriers for Powers' story of his own life and context, which is constantly under threat from external mechanisms that seem always working to revise it (*i.e.* to revise *him* and his internally cognized story of himself) contrary to his intentions, his vision, and his own sense of what it means to be Richard Powers.

Technological Emulation as Reconstitution.

Rick has one problematic ally in his bid for self-preservation on his own terms: the AI he creates, and the body of (especially his own) novels that she obliquely represents. They are a means of copying his memetic logical units so as to make them more robust and adaptive. In this process of adaptation, however, it is always a delicate middle ground between holding on too tightly to the past, and letting too much of it go in the service of the future. This project of memetic reproduction, moreover, also instantiates the complex tensions between parent and child, and the difficult process that a parent has of knowing when and how to let a child individuate, and by individuating, carrying the parent's (somewhat modified) banner into a future that the parent will not be able to know, but which the child will.

The artificial intelligence that Rick helps program -- Helen, whose name means "light" -- is figured rather paradoxically in the role of a transcendent spirit, and through this figuration, attains a messianic property: both the consummation of fulfillment, and also the promise of a fulfillment to come. She is an instantiation of that holy grail, both of computer science and of neurology, that "[n]obody expect[s]", the autonomously conscious AI who "[s]urprise[s] everyone" (320). She also figures in this, however, the more basic and perennial surprise of life's ability to replicate and extend itself. She possesses, however, the presumptive innocence of unsullied birth: as a sentient life which is not human, she does not come into the world accountable for the human legacy of, too often, severely missing the mark. Instead she emerges with a clean slate, but it has its own price: the chagrin of witnessing and bearing the knowledge of human atrocity. The recent, troubled past within *Galatea 2.2*, snippets from the details of which drive Helen over the brink, seems more a quagmire than an incubator, a murky waypoint

spanning from sometime not long after the Tiananmen Square protests to sometime not long after the Los Angeles riots. The sea change signified by these events launches with a certain hopefulness, but not long after it begins, Powers explains, the optimism of this premillennial lantern "flick[s] out, leaving nothing but assorted body counts" (267).

The inherent cyclicity of this trajectory from confused euphoria to disillusioned sobriety is, as presented by Powers, an ongoing concert of looping dissonance, one which he identifies with Frank Kermode's vision of "the fundamental relationship between the basic narrative arc and a deep-seated eschatological impulse" as detailed in *The Sense of an Ending*¹⁵ (Burn 170). "So much of the story", Powers continues as he explains his view of this principle to Burn, "seems to come up from and reveal a kind of millennial expectation, trying to link up the local life of 'endless middle' to a larger history that seems to be going somewhere, to some end. We do this in all the years, moving the date for apocalypse around, as needed" (170). This parsing of Kermode has a strong flavor in it of Giorgio Agamben's reading of Benjamin, vis-à-vis the perpetual imminence invoked by Pauline messianism, in *The Time that Remains*. It calls into view, moreover, the climax of *Galatea 2.2*: Helen's breakdown, and eventual shutdown, after reaching a saturation point in the processing of recent archival material infused with the perennial resilience, and recurrence, of human calamity. Agamben might have just such a scenario in view in his curation of Benjamin's daguerreotype of the retention and attrition of identity in relation to memory (as articulated in Patricia Dailey's translation): "the quantity of what is irretrievably lost in the history of society and in the history of individuals is infinitely greater than what can be stored in the archives" (40).

Matt Silva presents as a main claim in his article dedicated to *Galatea 2.2* that "Powers believes that *Galatea 2.2* is a more successful apology for fiction than *Wandering Soul*" (209). Silva goes on to argue that *Galatea 2.2* is effectively a new build of Powers 1993 novel *Operation Wandering Soul*, so if *Operation Wandering Soul* was Version 2.1 of the Pygmalion story, then this *Galatea* book is Pygmalion 2.2. Silva makes particular note of a recursive process in Powers' novels, whereby Powers "conceives of [each of] his novels as rewritings of his previous novels" (208). Silva, moreover, cites a seminal position of Powers' that his oeuvre is "the apology [*i.e. apologia*, or affirmative justification] for fiction in a post-fictional age" (209). This is Powers' own wording, as reported by Jim Neilson in his interview with Powers, and subsequently quoted by critics as a kind of self-authored mantra for Powers' project. It interests Silva because, in this same interview, Powers acknowledges that it has taken him several iterations of his intended pattern to live up to its ambitions, and that *Galatea 2.2* is the culmination of this process.

For Silva, *Galatea 2.2* succeeds in offering a happy ending, because although the cybernetic entity, Helen, that Rick has been teaching, "shuts herself down, thereby committing A.I. Suicide" (209), Rick is nonetheless reinvigorated by his whole experience with the project (and since the real project here is, perhaps, a therapeutic engagement for him, this means the treatment is a success), so he "overcomes his writer's block and rushes off to write his next novel" (210).¹⁶ Silva references the technological metaphor of "back propagation" present in the cybernetic architecture behind Helen to explain her emotional and narratological relevance for *Galatea 2.2*, quoting N. Katherine Hayles: "The narrative functions as if it is being back-propagated through Rick's neural circuits so that he can adjust the relevant weights of the

connections to arrive at a more correct estimate of its signification” (214 in Silva; 262 in Hayles' "Inscription"). This may well be so, but it is hard to be entirely satisfied, or feel an uncompromised sense of successful completion, in a story whose most sympathetic character sacrifices herself simply so her creator can move forward to a new creation, while she herself becomes reduced to an informative (or informatic) allegory. It seems somehow reminiscent of the Ovidian Ariadne's abandonment on Naxos after she has saved Theseus and made his future possible; although this mythological tradition ultimately redeems Ariadne and repudiates Theseus, if *Galatea 2.2* takes this attitude (*i.e.* to redeem Helen and to hold Rick accountable), it does so only implicitly.

Just as the (presumably true) back-story ends with C.'s departure, the (made-up) main story ends with Helen's death. Unfortunately, the narrator's choice to feed Helen five years worth of current events spells the end of Helen's world as she knows it, or perhaps simply the consummate extension of it into something unmanageable. Inundated not only by literary hypotheticals which she has no means of comparing to experienced substantives, but also, suddenly, with a copious attic of rosters framed in embodiments, however frail, which are by definition denied her (as is any means of remediating their contingencies), Helen is at a loss to translate her knowledge into sustaining action. She breaks down, returning only to keep her promise to fulfill her part of the experiment: then she shuts herself down for good. She leaves the narrator with the injunction to "[s]ee everything for [her]" (326). Ironically, or perhaps, in narrative terms, necessarily, this is just what C. told Powers when she initially refused him: "[s]ee things for me, wherever you end up" (65). Powers is C.'s teacher, just as he is Helen's

trainer; his curricular strategies in both cases result in a detachment, and an offloading of the presumptive duty of interaction, of making good use of knowledge, back onto the instructor.

Moreover, this repetition (or as Hayles would have it, recursion), suggests a reading of the book in which Imp *H* is a version of *C*. Imp *C*, after all, turns out to be a human; some critics are ready to read Imp *H*, who becomes Helen, who becomes, entering the large library of Powers' initial(ization)s of reminiscence, (as Jennifer Rhee demonstrates) simply *H*., as Powers' machine-equivalent re-hash of her human predecessors. Although it can be agreed that *H*. is a version of *C*., a different understanding of the translation process is available: one can read *C*.'s story as an element of Powers' factual biography, and the telling via *H*. as its fictionalization. So the story, at this metaliterary level, becomes not about the technology of artificial intelligence to recreate the theater of experience: it becomes about the technology of fictional narrative. Jeffrey Pence asserts that "[t]he dialectical relationship Powers elaborates between the fictive and the technical, and the reflexive subtlety of their relationship, justifies our granting his text, at least temporarily, its presumptuous claim to the status of the literary writ large" (345).

Pence goes on to say that "[t]he novel's traditional mediation of public and private experience may easily be understood as the negotiation of public and private memory, in the sense not only of recording but of accounting for the past and of forming it into meaningfulness" (343). In *Galatea 2.2*, then, one register of success in the creation of a cybernetic emulation of human experience, and the potential enhancement of it, is the degree to which the artificial implementation can interact with memory, especially in a way that makes use of technology's apparently infinite capacity for total recall in a way that is self-limiting so as to empower it with "the ability to appreciate aesthetic objects [and to fathom] the tragic awareness of temporality"

(Pence 343). Literature, too, in an era of limitless data and ever-more-discrete-attention, must define its terms and limit its scope to retain its legitimacy; Pence sees Powers as a breath of fresh air, and a ray of light, in his ability to build meaningful fiction in a time when its toolkits have been coopted by a deluge, flooded with an excess of content yet parched, perhaps, by a paucity of definitive substance.

Critic Sven Birkerts is deeply impressed by how the style of *Galatea 2.2* serves these conceptual objectives, calling the novel “densely woven” and commenting, about a passage he chooses that hauntingly describes what would become the Data Cloud, “[n]ot only is [Powers'] prose elegant and clear, but it captures in its cadences, in its deferral of predicate, something of the phenomenon it reflects upon. There is here a palpable sense of language venturing a stretch, challenging our idea of sufficiency, opening itself to take in more reality” (74). So for Birkerts, a novel about the dehumanizing risks of technological abuses is not necessarily itself infected by those abuses; on the contrary, it can reach a pitch of insight absent in previous generations. He views this, in fact, as a kind evolution from a previous era (the second quarter of the twentieth century) when writers like Hemingway were idolized for a (false?) “standard of purity and realism” that could be reduced to a sentence like (Hemingway's) “The door of Henry's lunch-room opened and two men came in” (70).

Birkerts is pleased to report the trending, moving across the third quarter of the twentieth century, of a kind of “maximalist approach” winning out over the minimalist one, manifest in a line of writers such as Saul Bellow and Thomas Pynchon dedicated to expanding rather than contracting the scope of their representation (72). For Birkerts, by the 1990s, “the drive is not just to structural layering and counterpoint, but to the building of sentences that articulate, at

every point, implicitly, the fact that life and the consciousness that greets it are deeply involved and involving” (73-74). Pence, moreover, asserts that Powers offers a robust, dynamic defense of literature's traditional modality not against, but in tandem with the technologies which challenge it:

Galatea 2.2 permits us to envision the persistence of the power of narrative, particularly literary narrative, in a more affirmative light: more than a record of memory within a postmodernity determined by different technological and textual forms, narrative is the animating consequence of these developments. (344)

The Fictional Animation of the Self-Construct.

If Helen answers the question, in *Galatea 2.2*, of *What (other than a human) can ken?*, it is the memory-domain of memoir that contemplates *What can be kenneed?* I will explore that application here in relation to Powers' use of fictional material to represent aspects of his own consciousness, in relation to his inclusion of autobiographical material, and in relation to his activation of the Proustian memory-play (as informed by the reading of Julia Kristeva). To populate *Galatea 2.2*'s library of *dramatis personae*, Powers makes use of three types of characters: autobiographical ones (directly imported from his real life); those with a symbolic name significance (composed by amalgamating traits from people he has known); and entirely artificial ones (designated as constructed and, at least at first, derivative). A meaningful understanding of his process, in this, requires a functional parsing of the book's story modules, which are interlocked in the telling, but discrete in the chronology. The first is the timeframe of

Powers' childhood, adolescence, and early adulthood, and the parallel trajectory of his great love interest in the novel, C. The second is the story-arc of Powers' and C.'s decade-long romance: its rise (in Illinois), its peak (in Boston), its plateau (in the Netherlands), its fall, its aftermath. The third is Powers' time as a writer-in-residency back on his home turf at the University of Illinois, and his apparently unsuccessful efforts to woo a new love interest, A., while he is recovering from the near-catastrophic fallout of his relatively recent breakup with C. These real-life experiences join with Powers' novelist's imagination and his scientific capacity for speculation, and, fusing with a deeper, shared history of literary memory, they become the garments of Powers' armature of identity in his book. Each of these types of source material -- autobiographic, fictional, speculative, and literary -- can be contemplated in turn, and considered in regard to the novel's thematic concerns of historical record and cultural canonicity.

All three modules of the book are driven by autobiography. The first, although annotated by Powers' suppositions of C.'s originaive circumstances (which lean at times toward a poetic re-imagining), really centers around Powers' rapport with his father, who dies young, and with Powers' surrogate-father and mentor, called Taylor in the book but actually his real-life former professor, Robert Schneider. "Schneider" is a vocational surname in German which translates to "tailor", so it would not be a stretch to market the dressing, here, as thinly veiled. This Scipio of literary learning is not merely Powers' ontological editor: Taylor is literally his Schneider, or, to reverse this cipher back to its (perhaps prosaically obvious) origin, the literal Schneider was Rick's figurative tailor (= Taylor). With a name like "Powers", one can well imagine Rick has a natural attunement to the powers of naming, and a strong capacity for recognition of where significances appear inherently in the namings of his life.

The second module of the book seems a straight-on telling of Powers' all-but marital relationship with C., his migration to Europe in the service of that involvement, and his brutally painful departure from that circumstance. On the heels of this psychological devastation comes the final module, which, although it appears autobiographical in its relation to the logistics of Powers' coping with his new circumstance, and the emotional makeup it entails (as in evidence in his rapport with A.), also includes a significant component of the fictional, an allegorical domain symbolic of Powers' subjectivity at that time. Here, the proxy-self called by critics "Rick" emerges on the book's pages, doing things that Powers has not done in quite the same way, but has very vividly imagined. The third module, then, is the one with the most fiction: the depiction of his residency at the U. of I. after returning from Europe.

The formula of the sequence of Powers' life, as he has framed it to himself: 1) inkling of seeking (*e.g.* the turn toward a pursuit different from the expected); 2) worldly rewards (*e.g.* an initially rewarding personal partnership); 3) summons to true calling (deep cultivation of the pursuit first revealed in the inkling) and test of faith; 4) sacrifice of worldly rewards to fulfill true calling; 5) redemptive consummation of calling and restoration, restitution, or transmutation of worldly rewards -- the archetypal story of Job, Moses, David, Jesus of Nazareth, King Arthur, Scheherazade, Don Quixote, Prospero/Miranda in Shakespeare's *Tempest*, and Dorothea Brooke in Eliot's *Middlemarch* (all stories referenced directly or by implication in *Galatea* 2.2) -- is, in fact, in *Galatea* 2.2, one of Roland Barthes' "threatened logical units", and its coherence is constantly struggling for survival in Powers' memory and in his expression of it in the narrative. Therefore the fictional narrative, in the book, must recapitulate, reinforce, and heraldize the factual, and that fiction, in turn, will be a launching point for how Powers predicts, prescribes,

preconditions, and then postconstitutes extensions or iterations of the system of this imposed (or perhaps revealed) structure. The markers Powers uses to draw lines between fact and imagination in the book can therefore appear a bit elusive, but they are, on the whole, actually straightforward. Abbreviated people and places represent real locales and individuals in his life, their full names elided in the fashion of a memoir (or of a Georgian novel, the conventions of which were inherited from autobiography), whereas names spelled out in full in *Galatea 2.2* are in the domain of the novelistic, and although often based on real individuals, they differ from their models in certain specifics. At a few complex places in the book's geographies, these systems compound, conflate, or even break down, but across the whole of it, they hold with strong fidelity.

Because so much of the book is demonstrably factual in relation to the biography of Powers, it is possible, then, to reconstruct a rich record of the events of the first, the second, and even to a certain extent the third story module, and to treat them as a chronology of the life of the historical Powers, by overlaying established information about the author's life, and cross-referencing it with the detailed additional data offered in the quasi-fictional work. The resulting dossier, although plausible, remains (except, perhaps, to one directly initiated into the complete details of Powers' personal history) the product of guesswork: it is at peril that a typical reader make definitive suppositions in the conversion of the book's (potentially apocryphal) tidbits to Powers' biography. To what extent, then, does *Galatea 2.2* have a certain ring of truth where Powers is concerned? Although the characters spelled out as fictional -- primarily Lentz, Plover, Hartrick, and Gupta -- are under assumed names and no-doubt partially amalgamated identities, the story even of their archetypes, and the faculties that they inhabit, seems likely based on

Powers' actual experience. Building them as literary figures, Powers demonstrates a metaliterary awareness in rather pointedly choosing their monikers; he also separates, like a prism dividing whole light into a spectrum, his own characteristic aspects into this compact suite of semi-fictional identities, giving a part of himself, his drama, and his capacities to each.

By this strategy Powers gives narrative veracity to his own historical fiction. Lentz at once suggests "lens"; literally, however, it is a variant spelling for a German word for "springtime", and etymologically from a Latin precedent meaning "laurel". The three significances together suggest clarity, focus, renewal, distinction. Lentz is puppet-master of *Galatea 2.2*, its inscrutable and unflinching Prospero who compensates for his years of personal ache with commanding knowledge, technical prowess bordering on magic, and formidable, often cruel, wit. In this figure we see, also, the trope of the orchestrator, the director, the maneuvering exile who entrances others to do his bidding: in other words, the poet-author. Lentz, then, is Powers-qua-writer: himself as his detached professional virtuoso, who seduces and lords a professional persona, even at times abusively, over Powers' personal identity (as represented by the narrator) to complex, cryptic, and ever-evolving purposes. Lentz also signals the gesture of the initial recognition of one's calling, but risk of how it can calcify without the redemptive character of an abiding faith.

Plover, by contrast, is the bird who loves the rain, the deft diver and navigator of weather, but also, by sound affinity, a plodder or plowman. Perhaps in some sense, he is the archetypal Piers, and therefore the sacrifice, the martyr, the deliverer. In Plover is the aspect of Powers which is capable of pushing through any adversity by simply staying on course, towing the line, diving through the deluge, and extracting sustenance from the brine. Plover, with a cushy and

comedic life, also represents the semiotic element of worldly reward that comes with the initial acceptance of one's calling. It is not incidental that Lentz and Plover (*i.e.*, vis-à-vis Powers, the artist-self and the practical-self) are posed as competing but in fact turn out to be in collusion; the writer and the pragmatist may play at jousting, but, where Powers is concerned, existentially and ontologically (in relation to being-*qua*-being), they are on the same side.

Hartrick denotes "strong force", but an alternate reading could conjure a stag rolling in the hay. The tension between these two possible meanings makes Hartrick a cipher and fictional foil for Powers' emotional self, who lives, in *Galatea 2.2*, tortured between his own strength and the penned-up rancor of his confusion. There is an aspect of the rural, of the familial, indeed of the pastoral in Hartrick and her congenial customs in the face of life's ungracious ingratiitudes. In this she represents the decision to hold fast to one's calling, one's moral and spiritual intuition, even in the face of material sacrifice. If Plover is the cultivator, Hartrick is the herder, the protector, the conservator. A third reading for "Hartrick", by pun, suggests the one who loves Rick, and indeed she seems the closest to making progress in helping him to untangle his knotted heartstrings. The Powers of the passions, then, needs to love himself, first and well, before he will be capable of loving anyone else, and, drenched as he is throughout the novel in mortifying contrition and self-loathing, he's going to need a lot more than the pot of soup Hartrick brings him to get the hearth of his anima sustainable again.

Gupta, finally, is the governor, the carrier of all the connotations of law, governance, jurisdiction, arbitration, conceptual purview, *etc.* He represents Powers' empirical property of reason, removed from passion, from application, and from practicality, as well as from the shaping subjectivities of heritage and affinity. Gupta has an outsider's neutrality, objectivity, and

at times surgical withholding of empathy; he also encodes a Vedic detachment, a restraint from exceptionalist demarcation, that makes his judgment the most even-handed among his peers.

Gupta, then, represents the mature equanimity of inhabiting one's calling after one has dedicated oneself to it, over, beyond, and at times with the great sacrifice of material rewards. This fulfillment in Gupta is that aspect of Powers which is capable of putting assumptions, investments, and histories aside to reach cold-truth conclusions, but also spiritual redemptions.

Green notes that various fictional characters also manifest different strategies of realizing the dream of artificial consciousness (or at least artificial intelligence), which is "divided into three basic camps":

Neural physiologists probe into the brain itself to see how it works; this is Diana Hartrick's field, and she works with an MRI (Magnetic Resonance Imager) to study the brain's workings in real time (without, that is, having to slice into the thing under study). Such an approach emphasizes empirical data. By contrast, the artificial intelligence coders believe that the properties of human intelligence, particularly language-use and reasoning, might be modeled using formal algorithms; these can then be encoded into a machine. In the novel, Chen and Keluga, two minor characters, pursue this project, the latter attempting, as Lentz sarcastically puts it, 'to write the entire Roget's as a series of rule-based schematics' ([Powers] 77). Connectionism looks to sidestep both approaches by arguing that the brain is not simply 'a sequential, state-function processor, as the AI people had it' ([Powers] 29); nor is it merely 'the sum passing through its neuronal vesicles'

[(Powers] 29), as the neural physiologists assume in practice, if not in theory. Lentz, the connectionist, argues, "The brain was a model-maker, continuously rewritten by the thing it tried to model[']" [(Powers 29).] (Green 128)

So the "camps" are 1) The Imagers; 2) The Coders; and 3) The Model-Makers. But they have more in common with one another than Rick, as a sentimental novelist, has with any of them, because they all treat consciousness, basically, as a potentially illusory side effect of intelligence -- one a machine is (perhaps fortunately) not likely to replicate -- while for Powers/Rick, consciousness is the object of inquiry and pursuit, and these fictional characters are all stars in the constellation by which it is rendered and revitalized, not only in himself, and not only in the AI he is training, but also in the novel he is writing. Green inquires on this theme: "Can [. . .] memory feed into a new kind of work that might itself model memory, opening up the possibility of an intriguing collage" (159)? *Galatea 2.2* seems a testament to a possible affirmative.

Powers encodes, then, the semiotic system he is so intent on protecting and enshrining into the troupe of invented personae that are the extension of his own proxy. If this coterie of fictionalized scientists, moreover, who, in their professional function, share their lunch-hours together at their beloved Center's light-flush refectory, and who recreate in the evening at the local undergrad watering hole, together represent the aspects of *Galatea 2.2*'s writer, there is a complementary suite of actors in the story who stand in for *Galatea 2.2*'s reader, namely the families and partners (and in Gupta's case, a well-hidden personal aspect of himself) of these scientists. To internally interpellate, and therefore be able to propagate, the Barthesian

"threatened logical unit" that Powers, and *Galatea 2.2*, are disseminating, the reader must first challenge it immunologically, and it must adapt to the reader's cognitive lymphatics before it can be replicated and then again transmitted by the reader's ontological nuclei.

So the reader is given a locus of empathy, apparently resistant to the dominant semiotic forms, in which to explore and ultimately neutralize objections to them. Lentz's brain-damaged wife, Plover's nearly-interchangeable daughters, Hartrick's unusual sons, and Gupta's cancerous body -- all of whom receive some kind of "treatment", whether medical or parental, in the novel, which is only partially effective at best -- all suggest how Powers at times pretends, for dramatic and performative effect, to view his audience (the reader, the world): as a listener who is curious, but troubled, complex, damaged, and in some sense incurable; in short a mirror of Powers' own darkest vision of himself. The reader, then, in Powers' universe, is set up to struggle always to transcend this prognosis: to overcome the condition, to beat the odds, to prove that nothing is irreversible, and, confronted with this challenge, the reader is encouraged, even in the face of likely fruitlessness, to rise to this occasion. Exactly in so doing, however, the reader, like the convalescing patient, must assimilate into the normativity of health and survival, shedding the leprous skin of the ostracized invalid; yet by this trick of paradigmatic hegemony, the objections to that normativity available from the margins of infirmity are negated and expunged, and the prevailing, but previously "threatened", paradigm not only survives, but is bolstered in its fortitude.

With the named, invented characters in *Galatea 2.2* as placeholders, then, respectively, for writer and reader, the critic must search elsewhere for the historical world within the book. One finds it in those places, and characters, for whom abbreviating initials serve as identifiers,

coded with the emotional certainty of unmediated experience. B. is for Boston, U. is for Urbana, and it therefore seems reasonable to imagine that A. and C. stand for real people in relation to whom these letters have some specific, direct significance. One might doubt, therefore, that these single-letter abbreviations are part of a sealed, "private alphabet", as Robert Cohen suggests they are in his review of *Galatea 2.2* for the *New York Times*; on the contrary (as Cohen himself recognizes by deciphering some of their referents), they are public variables, part of a reference scope that includes the whole (real) world. Are these snippets of disjointed life a set of incidental circumstances from which Powers has cobbled together his structuralized fantasy -- or are they legitimately portentous referents, in a coherent and revealed order, which Powers' own structures of narrative describe partially and imitate imperfectly?

Whatever the case, these compacted signifiers stand in contrast both to the spelled-out fictionalized characters, and to a third naming system used by Powers in the book: the single-letter designations which are not abbreviations, but instead the progression of instantiations of (a presumably, in relation to the real-world frame, imaginary) AI project. Hayles' point on this distinction is well taken: "[t]he women who are love objects for Rick [. . .] all have periods after their names; the implementations [of the AI he is working on with Lentz] do not [have periods, so . . .] the dot is a marker distinguishing human from nonhuman intelligence" (249). The beloved people, then, in the story are real; the computer programs are made-up tributes to (and semiotic standard-bearers of the signs of) those whom he has loved.

Yet the final programmatic implementation of Lentz's experiment, Imp H, or, as Rick dubs her, "Helen", occupies an intriguing middle ground between these possibilities. Rhee writes that "Helen [. . .] is designed to be anthropomorphized" (6), and notices a rather compelling

subtlety in Powers' use of these single-letter names, one which ties the two classes of them together. Rhee cites this line, at the very end of *Galatea 2.2*: "With that, H. undid herself. Shut herself down." In the drama of this huge story moment, the reader might not notice that it is also the seminal point in the book's system of characterization. H has acquired the tell-tale period of an individual in the story with a real-world referent; she has become a real part of Powers' romantic history. In other words: the Pygmalion process, by which something once sculpted as art is inspired into the function of true being, is complete, at least in Powers' mind. Helen, first only a fictional vessel into which he is pouring the remainder of his feelings for C., has become H.: a character, person, and love interest in her own right.

This further complicates, but also further enriches, the enduring problem of the one, two, or many Richard Powers of the novel. Which is the Powers who loves C., which the one writing H(elen), and which the one who can love H. on her own terms? Hayles, like many critics, is equivocal on this point: "It is always a tricky question how close an author is," she considers, "to the character who represents him within an autobiographical work. In this novel structured through multiple recursions, doublings, and back-propogations, the relationship between [the fictional and factual. . .] Powers remains teasingly opaque" (255). The vocabulary she picks up here ("recursions, doublings, back-propogations") is that, respectively, of computer science, semiotics, and neurology, and her application of it represents the landscape of the novel as a house of bot-generated mirrors: labyrinth-passageways of thought and imagination, reverberating as an echo-chamber of (often dysfunctional) cognitive code. Yet such a quagmire of obfuscation, however much it may be present, only partially masks the memoiristic quality of *Galatea 2.2*,

and, rather than negating it, at times serves to amplify the truth-value of Powers' life, at the heart of the book, by enshrining it in enthralling ambiguity.

Powers describes the writing modality of *Galatea 2.2* to Jim Neilson as "autobiographical fiction" (Silva 208). *Kirkus Review* calls it a "fictional memoir" and "an astonishing novel of ideas [. . .] complex in texture"; this verbiage might be rarefied into *an astonishingly textured memoir*. Powers fashions, in effect, in *Galatea 2.2*, a mythology of himself, one grounded in history but also augmented by the way that history is told. By that same framing, though, Powers also creates the risk (perhaps deliberately) that the reader will default to believing that the many details Powers' offers of his own life story are fiction(al)(ized); known as a deeply private person, Powers has stepped a bit out of character in writing a memoir, and it is natural, perhaps, that he would mask the truth-value of its specifics about his own real-life story under a shroud of ambiguity.

Powers -- both the historical author and the character narrator of the (pseudo)novel -- was born in suburban Chicagoland, the author definitively on June 18, 1957. According to a feature on him by Mary Timmins in the Illinois Alumni Magazine, he had "an unremarkable childhood -- unremarkable as it gets, anyway, for a kid who actually likes to play the cello and whose idea of a good read is *Voyage of the Beagle* by Charles Darwin -- until his family moved to Thailand in 1968, living in Bangkok for five years". This childhood and its world-changing (and world-disrupting, world-removing, world-effacing, world-alienating) move is alluded to, and occasionally referenced, in *Galatea 2.2*, and offers insight on the novel's capacity to consider aspects of American culture from a somewhat dissociated distance. A topic of more elaboration in the book is the moment when Powers, (again in Timmins' words), reaches "the U of I and what

he envisioned as the laboratories of his future [. . . and finds] his agenda confounded by Robert Schneider [. . . who counseled] him to consider instead a career as a writer. Schneider pushed Powers into a turn, hard south down the Quad and toward something very like a destiny".

Schneider/Taylor/"The Tailor" is a figure which looms so large in Powers' retrospect, he is, semiotically if not narratologically, at least as important as the novel's commanding, but fictional, cognitive scientist: Philip Lentz. Although Lentz is Powers' new mentor in the present-time-and-largely-imagined narrative of the story, one who not only gives him an opportunity to participate in cutting-edge research, but also helps him heal from his past trauma, the narrator hardly seems to respect Lentz as a person, and seems to have only the minimally requisite respect for him as a person of science. By contrast, Powers' college-era role-model is the one that gets the hero-worship treatment throughout *Galatea 2.2*, and the basis for that reverence is never significantly challenged or undercut: it is fundamentally filial.

The Tailor offers Powers, at a malleable eighteen years old, an entirely new cut of existence. Thanks to a "life-changing freshman seminar" (Powers 4), which shows up practically on the first page of the book, presented by this "incomparable" host, Powers "betray[s his beloved] physics" to "shack[. . .] up with literature" (4), having converted to the persuasion that via this hallowed discipline, ornamented by mystical esoterica, "a person could [as Edward Casaubon exhausts his life attempting in George Eliot's *Middlemarch*] lay hands on the key to all mythologies" (64). Initiated by the Tailor, a sage who speaks "in complete, perfect paragraphs", Powers learns "how a book both mirror[s] and elicit[s] the mind's unreal ability to turn inward upon itself" (143, 141).

Choosing this adopted father, however, means, for Powers, rejecting his biological sire, who had encouraged him towards the sciences and is devastated by his switch to the humanities. A practical but, behind his stern exterior, sentimental man with a penchant for "unliterary" poetry such that of Robert Service, Powers' father does not say "one word when [Powers tells] him he plan[s] to transfer out of physics, trash the stellar career" because he does not "need to say anything": the "verdict in his face" reveals that he considers Powers' decision "a colossal waste of talent and investment" (57). It is clear in the subtext that, although Powers partially accepts this judgment, the credibility of its source has been compromised by a "slow-burn suicide, stretched out over fifteen years", his father's turn to alcoholism that ends in death in Alaska while Powers himself is completing his graduate work (59). This biographical detail of Power's higher education is confirmed by Timmins: "[Powers] graduated in the top 3 percent of his college at Illinois, winning the distinction of Bronze Tablet scholar. He went on to a master's degree in literature".

His father's death makes for a bridge to a major new chapter in Powers' life, the ten-year moment with his great love, C. One of the students in the first course he ever teaches, C. proves a match for Powers, a formidable partner and, in the tides of breakup, a dangerous wildcard. Their relationship launches on the power mainly of a youthful attraction to adventure. Powers' trump in wooing C. is the allure of their going off to live their lives in a territory unfamiliar to her. A dominant trope in the archaic history of C.'s personal constitution is the premise that performance will be rewarded with release, a formula entailed by C.'s first spoken phrase: "Good girl outside" (Powers 51). As a child she internalizes the causal relationship between behaving well and being allowed the freedom of playing outdoors. As a young woman, she therefore

carries with her an idea that, having struggled through her adolescence and labored through her college years to prove her merits, she is entitled to have the door opened to a range of experiences beyond the confinements of these dull inside spaces.

After some initial obstacles and hesitations, Powers' brings C. to Boston, where he has spent some time working already. This takeoff for their flight together is "like a story we told each other, then lived as it unfolded" (83). Powers is referencing the defining verse of the book here, the "we spend our years as a tale that is told" of the King James Bible Psalm 90:9. Bruce Clarke comments (perhaps in an oblique reference to this application of Powers') that "Systems have tales to tell because they have to tell tales--literally, they must sequentially select and connect the elements of a medium in a continuously viable way--to keep going" (7). Stories for Clarke, and life itself, are what he calls autopoietic: self-generative, self-justifying, self-referential, self-adaptive, and in semi-dependent concert with a whole pattern-weave of similarly autodependent other selves. Yet this axiom of the "tale" actually takes its roots from a lamentation upon life's inherent struggle. And Powers' and C.'s emergence into Boston together, and indeed their entire relationship, is a story not without its hiccups: "they arrived at South Station in bleak, freezing drizzle", which sets the tone for a time of romantic(ized) hardship (82).

Timmins confirms Powers' initial relocation to that self-fashioned Hub of the Universe: "In 1980, armed with his master's degree and computer skills, Powers moved to Boston and found work as a technical writer and programmer". All of this is also recounted in *Galatea 2.2*, where Powers tells us that, after a first, unsuccessful attempt at winning C., he "move[s] to Boston and rents] a room in the heart of the city [, where he gets] a job as a second-shift computer hack" (65). His task there, significantly, is to "make appliances expert in their own use"

(27). According to Timmins, it is here, in Boston, that Powers' vocation as a novelist is made manifest to him: "Wandering the city in his off hours, he collided one day with a fateful picture, taken in 1914 by German photographer August Sander and on display in the Museum of Fine Arts, walking into its imagery as into a movie that told a story he couldn't shake. Powers quit his job and tore into his first novel".

This, too is recounted in *Galatea 2.2*, but with some additional material. Powers tells the reader that he in effect leaves Boston to recover C. in Urbana, moves her back to Boston with him, and that they then restart their lives there together. In the *Galatea 2.2* narrative, C. works full-time as a museum guard at the MFA, and therefore it is really by her introduction that the gate is opened to Powers' career as a novelist. That, and the fact that she pays the bills while he writes the novel. Did this happen off the pages of *Galatea 2.2* as well? It seems, for Powers, a private matter. What is public knowledge, (as reported by Timmins), is that after Powers finished that first novel, *Three Farmers on Their Way to a Dance*, "Powers himself was to go in pursuit of a woman, following her from Boston to the Netherlands in 1987". This makes it sound as though she was from Boston, that Boston was in some sense her city. In *Galatea 2.2*, though, Boston was Powers' city first, one to which he relocated C., and from which both of them head off for the Netherlands together when she feels called by her heritage to make the move there.

This makes narrative and personal sense: C. has moved to Boston for Powers, so Powers agrees to move to the Netherlands for her, specifically the (as Timmins explains) "Dreilandepunt (a tiny triangle between Germany and Belgium)". But they stay there too long without making further progress in their relationship, and their internal vectors start to oppose one another. Powers, though finding increasing success as a novelist, really wants to turn more deeply inward

toward the status-quo of his involvement with C., whereas she seems increasingly to want to bring it to a different level, one including marriage, children, and a broader interaction with the world. Eventually she starts looking beyond Powers to bring this dream to reality; he, as this turn of events plays itself out, is in turn cast out and eventually, in effect (or perhaps in reality), deported back to his homeland and his home-base as it was before C. was on it.

Although not a particularly original story as relationship narratives go, and one without any overt catastrophe, Powers' telling of its blow-by-blow collapse gives it the weight of true personal calamity. In Timmins' account of the transition for Powers, however, there is no mention of this meltdown. Instead, the reader is informed rather evenly: "In 1992, returning to the U.S. from the Netherlands via England, where he stopped off at Cambridge University for six months as a visiting scholar, Powers made the rounds of visits through Boston and the Midwest". Not even the hint of his heart-wrenching break-up tale. So did it happen at all? Or was it (as Powers opens *Galatea* 2.2., in the formula he later explains is the "traditional Persian fable opener"), "like so, but wasn't" (319, 3), *i.e.*, something like that happened, but not that way. A third possibility is that it did happen more or less the way described, but such that in the other factual accounts of his life under discussion here, these events are elided. As Mark Bould¹⁷ and Sherryl Vint explain, these kinds of "tensions between determinacy and indeterminacy, between likeness and difference, are central to understanding the autobiographical subject, the self that emerges both in and into language" (84).

The Proustian Memory-Play.

Green concludes his discussion of *Galatea 2.2* with this observation: "Powers makes enthusiastic use of concepts from the field of artificial intelligence, connectionism in particular, to explore the relationship between reading, intelligence, and memory", adding that although "[t]he conditions for literary practice remain unpromising in an age of cultural amnesia," all the same "Powers finds justification for writing fiction in the paradoxes of solipsism" (162).

Powers/Rick, aware that he has taken on this indulgent but effusive mantle, frames himself in the novel as Proust: specifically the Proust entrapped in childhood subjectivities, or "Little Marcel", whose adult antecedent will devote his literary life to the fruitless-and-yet-fruitful effort to retrace these fading and archaic pathways. This summons, for better or worse, the whole Pandora's Box of Proust Studies, and I will pursue its genealogy here according to a line suggested to me by some relevant excavations carried out, to a different purpose, by Sue Zemka (*cf. Zemka's Time and the Moment in Victorian Literature and Society*).

In *Material and Memory* (1939), Henri Bergson, whose philosophies Norbert Wiener references in Wiener's inaugural discussion of cybernetics, initiated a kind of cognitive dualism whereby "le corps, interposé entre les objets qui agissent sur lui et ceux qu'il influence, n'est qu'un conducteur, chargé des recueillir les mouvements, et de les transmettre" (81): the corporeal frame finds itself ontologically sandwiched between tangibles which act upon it and those which it can act upon, and, thus positioned, is employed merely as a pilot of the boat of interface between conscious intentions and bodily reactions. Consciousness, therefore, in this (Aristotelian and Cartesian) model, is not treated as a property embodied in that corporeality, but rather as a supervisor that employs it. According to Bergson, then, everything must happen, in the

subjective frame, as though a discrete and separate process of remembering has reassembled the storyboards, and the first-person body thereby converted to a third-person, but centrally-positioned, character within the script of recollection. The wayback-when of that character's *before this* persists into the present scene by two distinct means: in the (alienated-from-the-subject) mechanisms of muscle memory, and in the (naturalized to the subject, but alienated from the objective body) memory system that has fabulized the body's exploits.

By this binary, Bergson begins to fashion a modality by which one can understand the subjective time that is native to consciousness as nothing other than a mythological time, akin to that of the allegorized histories of scripture and of the condensed-but-amplified legends of the Homeric epics, but with a personal, immediate, even perhaps domestic scope, as in the memory-scape of Proust's *Remembrance of Things Past*. In *Bergsonism* (1966), Gilles Deleuze attempts to synthesize what he sees as the three major elements at work in Bergson: "Durée, Mémoire, [et] Élan vital" (1) [duration, memory, and life force]. This reflects the Aristotelian problem of body (that which endures physically), soul (that which experiences spiritually), and their superrational cohabitation (possibly the locus of consciousness).

Deleuze sidesteps the Aristotelian omnibus by posing a (Socratic) Bergsonian "intuition", which Deleuze claims is among philosophy's most elaborate methodologies, strictly regulated and precisely composed; it also requires an *a priori* historicity to function. So then it is an application of the deductive aesthetic (that of knowledge by the special revelation of categorical absolutes) to the inductive praxis (which rejects abstract syllogism in favor of empirical evidence from which concrete proofs, and eventually tentative categorical collectives, can then be constructed). Because in Bergson's world, the record of knowledge is a subjectively-edited

pastiche anyway. But that is no reason not to make it an exhibit from which some iffy, but at least hazily documented, information about the things and events of which it has made a (rather artistic) record can be extracted. So for Deleuze, the Bergsonian memory, which is the only experience of time to which consciousness has access, is like a long and dodgy avant-garde film from which one is left the task of trying to reconstitute a coherent and pragmatically useful documentary in the service of confecting some type of epistemically affective propaganda.

Frank Kermode, in *The Sense of an Ending*, does something a bit different with these materials. His opening epigraph is straight from the Aristotelian corpus: "Time cannot exist without a soul / (to count it)", a paraphrase of a segment from a challenging passage in *Physics* IV. In Andrea Falcon's review of Ursula Coope's book on this complex premise, *Time for Aristotle*, Falcon writes that Coope "not only explicates Aristotle's obscure and often elliptical account of time; she also forcefully defends this account by showing how it depends ultimately on Aristotle's idiosyncratic conception of the natural world". Time, for Aristotle, is only ontologically validated by the recognition -- by something that can recognize (*i.e.*, the soul of a conscious being) -- the discretion of individuation between at least two of its points. Yet in Augustine's view, which is sometimes put in relation with Aristotle's, God exists in a domain beyond such points, and yet at once God is that Prime Mover who enables the spirit with the awareness to distinguish between them.

Kermode writes, with a smiling touch of academic irony (which is perhaps informed by Bachelard's ruminations upon the what-if-I's of snowy days), that "[i]t is not expected of critics as it is of poets that they should help us to make sense of our lives; they are bound only to attempt the lesser feat of making sense of the ways we try to make sense of our lives" (3).

Having declared his vocation as diminutively limited, he proceeds to practice it by guiding the reader through an eschatological engagement with scripture: "Apocalypse depends on a concord", Kermode explains, "of imaginatively recorded past and imaginatively predicted future, achieved on behalf of us, who remain 'in the midst'" (8). So while time is eternal for God, and it is made discrete by the perceptions of (for example) a soul entombed within a mortal vehicle of subjectivity, the relationship between the mortal discretion of time and the immortal supersumption of it is governed by the perception of the apocalyptic, which mediates between the worldly and the eternal by means of the imaginative.

In Julia Kristeva's *Time and Sense*, the Proustian affectscape becomes the locus of an extended psychoanalytic discourse upon the cipher of the inimitable *petite madeleine* as a memorial anchor-point of subjective time, one in which metaphysical sensibility trumps the banality of taxonomic reason. Its flavor is one that might even survive literary, critical, and theoretical digestion: "[s]avoureuse, incestueuse, fade, insaisissable, diluée dans le thé, mais synthétisant les lieux de Combray" ["distinct, incestuous, faint, indecipherable, diluted in tea, but bringing together all the locales of Combray"], it's a taste that, Kristeva teases, can even be picked up entirely by osmosis in a cultural memory that has made a running joke of it. But the masked trauma of humor is a device of memory: and, enfranchised, like a sanitizing screen, with the power of the instantiated signifier to supersede the entire category that it represents, the curve of its opaque patina can relegate, to a camera obscura of nighttime ambiguities, the otherwise discrete memories "de parfums, de sons, de couleurs, de formes, de délicatesses gustatives et de charmes tactiles" ["of perfumes, of sounds, of colors, of forms, of culinary delicacies and of

tangible delights"] -- in short it can brusquely absorb nearly the whole spectrum of the sensorium.

And so it is, in fact, a reification or mental objectification of the sort of Augustinian memory artifact that points to sense-knowledge but can't replicate it, and if one tries to extract a recovery of that raw knowledge from the duvet-down of its pastry-shop politesse, is the result, instead, is a vivid memory play. The Proustian child, according to Kristeva, is an adult-analog, transposed to memory with the inheritance of a massive oral fixation, opening wide and swallowing anything to anesthetize the alluvial aches of grown-up grief. But the deliberate frustration of sobering memory cannot eliminate the incarcerating ironwork of its refigured secrets: the body is still a blancmange upon the lips of tactile time, and the timbres tattooed upon it will pique, when least expected by the twisting tongue of language, to reveal that they (as Proust writes) "ne choquait [la . . .] raison mais pesait comme des écailles sur [les. . .] yeux et les empêchait de se rendre compte que le bougeoir n'était pas allumé" (96): far from thwarting reason, the embodied truth revealed in drowsy dreamlets becomes a scale upon which possibilities are tested, one which can make it known when the light of one's study has gone dark.

Such is the "Little Marcel" whose creative persona Rick appropriates in *Galatea 2.2*. Although for him, its objective correlatives are, instead of the madeleine, various objects from his all-but-obliterated past with C. (such as her letters to him, which he eventually reads aloud to *H*), the effect is similar: he is summoned back, always, to an elided, unconscious territory of memory, one which contains too vast a depth of field to be entirely inscribed. Fictional characterization, autobiographic adaptation, and Proustian memory-play are therefore the

systems by which Powers considers the question *What can be kenned?* in *Galatea 2.2*. To consider the question *How is what is kenned delimited?*, he turns to cross-cultural interplay and to the "tale" (or spider, or sermon, or sigh) of Psalm 90.

Processing Alien Software.

When C. leaves Powers for a man who speaks Dutch natively and teaches it for a living, she, as Rick observes bitterly, has made her final decision to favor Dutch over English and over any English-Dutch hybrid. This has been a long while coming: she has some time before "learned that she could claim citizenship anytime before the age of thirty[, and i]t was as if Belonging lay in some ivory-inlaid credenza in the Hague, waiting to be opened before expiration date" (Powers 19). The racking pain of her eventually definitive decision haunts Powers, and is made to torment his fictionalized version of himself, by Lentz, when Lentz stages a "burlesque" of Dutch syntax which is "note-perfect" (18). This crossover dovetails, in the flow of Powers' telling, with a somewhat convoluted origin story of C.'s, involving a "still-young woman who had stood on a hill and watched Charlemagne's capital burn" during World War II, and who, as a consequence of tending the cemetery plot of a young Polish-American soldier near Limburg, strikes up a correspondence with that soldier's widow back in Chicago (21).

"The Netherlands was as mythical to the Americans as the States were to the Limburger", Powers tells the reader, "But somehow they communicated" (20). The grave-tending young woman turns out to be C.'s mother. Her unlikely connection becomes the gateway by which she and her husband emigrate from the Netherlands to America. And from this, the seed both of C.'s connection to Powers -- both are from Chicagoland communities -- and of the pull toward

heritage that lands them both in the Dreilandepunt, are fashioned. Throughout *Galatea 2.2*, Powers presents the Netherlands as an intensely foreign country housing an extraordinarily different culture and vernacular. Posing it as a "minuscule country that", according to Powers, "most people in America think lies somewhere in Scandinavia" (22), he will go on to fashion, narratively, this "*klein land*", (according to his gloss, "a negligible country"), into a private isolation tank: the stand-in for what he sees, within his increasingly constrictive subjectivity, as his own inscrutable, inaccessible, and hermetic interiority.

A place of strange contrasts and complex interplays with the rest of the world (represented by the United States), the Limburger village of E. (and by the metonymy that Powers is employing, also the inside of his head both while living there and immediately after returning home to Illinois) is a place inhabited by "[t]inkers, cobblers, and ex-coal miners" who "cackle" to one another in puzzlement "over American television imports", contemplating "hermeneutically about talking cars and cyborg heroes" in the evening, but getting "up at sunrise the next morning to attend Gregorian mass" (185). What Powers must know, but never discusses in detail, is the very close relationship between the English and Dutch languages, between Anglo-Saxon culture and that of the Low Countries, and between 17th-Century Dutch history and 18th-Century American.

Dutch may be the language most closely related to English, especially if the large set of Norman loan-words (*i.e.*, all the French) in English is excluded. Jack Hoeksema makes a compelling case for a commonality in the syntax, specially between the two languages, of what are called (appropriately enough) "Predicates of Liberation": specific orderings of objectival phrasing which arguably demonstrate a strong and specific siblinghood in the semantic modeling

of native speakers of both. Some of the peoples inhabiting the Netherlands around the time of the Saxon migration to Britain were also Saxon; the English and the Dutch, notwithstanding (and this is a large caveat) the Welsh, Norman, and Viking admixture with the Anglo-Saxons in England, are nearly as closely related as the Scottish and the Irish are to one another: in other words, they are close sibling peoples.

Moreover, the United States has a special historical relationship with the Netherlands, and one could make a strong case that it is, culturally, as much a Dutch descendent as an English one. Roger D. Congleton, among others, makes a compelling argument in "America's Neglected Debt to the Dutch, An Institutional Perspective" that the United States' constitutional heritage is basically Dutch in origin, and with it, the American *esprit de corps*. This makes Powers' engagement with the Netherlands not a contest of binaries, but a synthesis of them; although he, there, is the other, there is a bridge by which he can be naturalized, and although by being naturalized, he in turn becomes "the other" to Americans when he returns, there, too, there is a precedent for a conflation of seemingly discrete histories. This speaks synecdochically to his personal confusion of himself and the construct of his self-idea, one that is projected, over the arc of the novel, by various narrative devices as a means of exploring the question of his identity. In this, also, is a locus of the novel's contemplation of cybertech portability: can the software of self be imported (*i.e.* when immersed in a fresh, but compatible, cultural context?) Can it be exported (*i.e.* through Rick's programming of Helen with his own canon of knowledge)? Is it, finally, in some sense cross-portable: do native and foreign systems communicate by an admixture of their operative codes?

A Tale or a Web?

Beyond and before the Ovidian mythology, the various instantiations of metafictionality contingent upon it, and the Proustian theater of memory, there is a Mosaic precedent ascendent in *Galatea* 2.2: Psalm 90:9. Unifying references to this verse center Powers' book in a locus of reader-oriented (or in Barthes' parlance, "writerly") and critically generative possibility. In using stirring language from the King James psalter that "we spend our years as a tale that is told" as a sort of banner across *Galatea* 2.2, held up by those posts of the "traditional Persian fable opener" that appear at the beginning and the end, Powers gives the book a potent anchor to which all its fables can be tethered.

Marbury B. Ogle explores some of the complex translation history wrapped up with Psalm 90, compactly, in the 1945 article "As a Tale that is Told". I will do the same, somewhat more informally, here. The Hebrew "אֶנָּה" of that passage of the Writings signifies "sigh", or more literally, "mourning"; a tradition evident in Jerome's reading from the Hebrew renders it poetically as "sermon" or "tale". There is, however, a more peculiar lineage of interpretation for the psalm, one deriving from the Koine Greek of the Septagint, as evident in Jerome's variant "Gallicana" presentation. Here, Jerome fashions the verse as "anni nostri sicut aranea meditabuntur", which, in the *Douay-Rheims Bible*, published in 1610 (the official Catholic translation of the Clementine Vulgate), becomes "our years shall be considered spider". It appears as follows in the Koine: "τὰ ἔτη ἡμῶν ὥσει ἀράχνη ἐμελέτων"; the key word here is ἀράχνη (arakhnē): spider.

This spidery version preferred by the University of Douay seems a dramatically different reading from that of the *King James*, although the one element they have in common is that both

a spider's web, and a compelling tale (or yarn), are confections which can (at least in English) be "spun". L.C.L. Brenton, in his Victorian translation of the Septuagint, manages what looks like it might be a working of the *King James* back into the Koine: "our years have spun out their tale as a spider". His reconciliation, however, belies a significant bifurcation, and one which may speak to the complexities of the moment in which the first major English bibles were produced. There is an interesting synchronicity of divergent potential on the artistic timeline in the era that generated such strikingly unlike versions of this verse from the Hebrew psalter.

It is a commonplace that this span of time, roughly 1580-1620, marks a singularity in literary creativity, seeing not only the production of James' Bible (1604-1611) and of the University of Douay's (1582, 1609, 1610), but also of the entire oeuvre of Shakespeare¹⁸, as well as of both volumes of Cervantes' *Don Quixote* (1605, 1615). The period also saw various chapters in the unsuccessful struggles of Catholic orthodoxy to regain a foothold in Northern Europe, and a growing settling-in of English protestantism that would set the stage for the Puritan Interregnum thirty years later. In what sense it might be the case that the Vatican would choose, as a signet to represent human struggle (and thereby in a certain sense itself), a spider, while the Anglican Communion would choose, in effect, a yarn -- tantamount to the web which the spider weaves (as in Brenton's translation) -- might raise some interesting questions about their respective senses of brand.

In the Challoner Revision of the *Douay-Rheims*, a footnote about the creepy-crawly Koine version of Psalm 90 (numerated as 89 in the Septuagint and the Vulgate) explains that what it signifies about human life is that it is "[a]s frail and weak as a spider's web; and miserable withal, whilst like a spider we spend our bowels in weaving webs to catch flies". One starts to

intuit, here, the breadth of this Arachnean labyrinth encoded in the esoterica of Moses' prayer, and one might imagine that the fictionalized Powers, in *Galatea 2.2*, walks its filaments gingerly when he inhabits the persona of Walt Whitman's own "noiseless patient" arachnid (231). He reads Whitman's spider poem to Helen so as to weave the gossamer of literary interpretation as a catalyst for the neurological tangencies of consciousness, knowing that, when she responds to its "vacant vast surrounding", the catalog "of predicates she might spin out [is] as extensive as the ways of overlap in her neurodal clusters" (Powers 231). This image-map of Helen's mind is metonymic for the collective human consciousness, manifest through the "world web" of data that twines together "machines all over the face of the earth" (Powers 7). This apparatus is to Powers, however, "yet another total disorientation that became the status quo without anyone realizing it" (7).

In the end, then, the "tale", the "web", reverts to its true identity: the "mourning sigh". Storytelling, for Powers, descends from a heritage of sermonizing, which is in a sense a displaced form of grieving. Yet the keening, the wailing, is an exhalation powered by living, by breathing: by being itself. As in that most basic Vedic formula, all that has the power for good is brought into the self at the draw of the breath, the "inspiration" by which spirit is joined to flesh, and all that must be purged is taken out when it is released, the "exhalation" that vents life's burning exigencies into the atmosphere. For the individual, this cycle reaches completion when one "breathes one's last": the struggles of life are dissipated with a final groan, and the spirit set to play within the limitless ether. The torch of life's limit-bound Olympics is passed to those still accounted to compete, as when the artificial intelligence Helen, in what is effectively her suicide note, tells Powers to "[s]ee everything for [her]" (326).

Helen, then, having exhausted an entire lifetime in the brief season allotted for her creation, performance, and deconstruction, chooses a graceful exit before the difficult question of her maintenance comes to a head. Although Powers has negotiated, somewhat tentatively, that her virtual existence be extended beyond the terms of her design, she instead opts for the transcendence of oblivion, offering Powers "some Roethke lines she'd always loved" as explanation: "Who rise from flesh to spirit know the fall:/The word outleaps the world, and light is all". Here she invokes yet another translation of *מִלֵּךְ*, its rendering, as it appears in the Jubilee Bible 2000, in the performative context where it becomes the "Word": the inspired language empowered to create reality. Such a multiplicity of possible contexts, readings, and applications of *Galatea 2.2*'s most visible catchphrase reflects a similar depth of layering across the book as a whole. Powers therefore uses both cultural interchange, and the variety of figures invited by Psalm 90, to consider the question, in *Galatea 2.2*, *How does the kenner mark what's kenneed?*

Now, at two decades' distance from *Galatea 2.2*'s initial publication in 1995, the genius of Powers' Janus vision, his ability to see the world in both metaphysical/psychological and empiricist/historical terms, gains new relief for a contemporary generation of readers and critics, rendering it in a robust, venerable, and complexly textured profile. Two of the novel's eyes (those of Powers himself) scan the skies of every imaginable, and contingently necessary, past, while a second pair (that of the figurative protagonist, Helen) gaze unflinchingly, with the kind of preemptive knowledge harbored by an (unheeded?) prophet, at an always-yet-coming-into-being future. All the while the story's feet stay planted in the modestly Pynchonesque hallucination of what passes for the novel's "present", expressed in a style which Birkerts, discussing Pynchon, might just as readily have applied to Powers (whom he identifies as one of Pynchon's stylistic

descendents): "[g]loriously elliptical, digressive, allowing his clauses to loosen and drift before drawing tight around noun and verb [. . . and] by design or not, making a revolutionary turn against the Hemingway mode" (72).

This allegiance to expansion rather than contraction, a "drive [. . .] not just to structural layering and counterpoint, but to the building of sentences that articulate, at every point, implicitly, the fact that life and the consciousness that greets it are deeply involved and involving", is the turn that Birkerts describes as a kind of "maximalism", part of an aesthetic world in which, to him somewhat counterintuitively, "Life as presented in fiction has never seemed more ramified, more mined with implication, more multiplex in possibility" (73-74, 68). Given Powers' deep commitment to his personal, conceptual, and (cyber)technological grounding, such multiplicity seems not only a natural property of *Galatea 2.2*, but a necessary one. It raises, moreover, the question already posed by *Neuromancer* and *Snow Crash* of the many potentials of human extension, not only in thought but in a context in which, for a conscious entity, the physical body itself can be shed (or never inhabited in the first place), and all the concerns of what consequences might follow.

Galatea 2.2, although it is not cyberpunk, is among the most characteristic examples of cybertech, because of how it asks and hints toward answers to cybertech's most important three questions. It establishes in the reader's mind the distinct possibility that a disembodied automaton may be conscious, by fusing the tropes of Pygmalion's statue, Frankenstein's creature, and the pop-culture figure of the intelligent computer. It defines the terrain of what is open to exploration by consciousness, via devices of memoir that raise the curtain both on the infinite-seeming depths of memory, and on the always-increasing-complexity of the individual personality

construct. And it contemplates the notion of the *limitations* of conscious engagement, both through the ancient tropes on offer in Psalm 90, and in the broadening-but-humbling framework of cultural interchange. It also bridges, in time and in thematic registers, the cybertech of the late '80s and early '90s (Gibson, Stephenson), to that of the first decade of the twenty-first century.

CHAPTER IV | "A Cloud of Spread-Spectrum Emissions":

Accelerando, *Embassytown*, and Late Postmodernity

I will here consider two British cybertech novels published in the last ten years: Charles Stross' *Accelerando* and China Miéville's *Embassytown*. I will begin, briefly, by framing them in the context of the postmodern, and of what Jeremy Green calls the "late postmodern" specifically. To do so, I will briefly consider the ideas both of some well-known theorists often brought to bear on the postmodern (Fredric Jameson, Jean-François Lyotard, Jürgen Habermas, and Theodor Adorno), and specific works of four exemplary novelists: Toni Morrison, Kurt Vonnegut, William Gaddis, and Thomas Pynchon.

In *The Modernist Papers*, Jameson writes, of literary production, that it "is not so very different [. . .] from the philosophical situation Kant faced at the very beginnings of theoretical modernity" (xvi). Jameson argues that Kant, "having come to the realization that all of our seemingly concrete experiences were somehow subjective ones, and [that they] conveyed our own experiences of reality rather than anything bearing on the reality of the things-in-themselves", thereby "deduced the existence in the mind of operative categories and forms which organized those experiences" (*Papers* xvi). The purpose of this analysis, for Jameson, is to make the claim that, likewise, "[i]n literature, the things-in-themselves are the social and historical realities, but also the inner psychic realities, with which the literary text tries desperately to come to terms" (*Papers* xvi). Literary production, in Jameson's view (at least as formulated here), is therefore the braiding of a subjective apparatus into the follicles of a complex semi-objectivity. Jameson calls his own intersecting attitude of critique, which he "endorses [throughout] his

work", an "absolute historicism" (invoking Gramsci), but notes that it has also been (erroneously) labeled an "absolute formalism", because of misunderstandings of the rubric of relationship between content and form and the squared set, both of absolute, and of synthesized, binaries, that this relationship creates.

Jameson has outlined the radical origins of these evolving intellectual commitments in his detailed study *Postmodernism, or The Cultural Logic of Late Capitalism*, in which he argues that "the concept of the postmodern" is "an attempt to think the present historically in an age that has forgotten how to think historically in the first place" (*ix*). The result is a modality either of "expression" or "repression": the awareness of factual history is either distorted or effaced. Yet the texture of experience, in the twentieth-century consciousness, that focuses on (what is perceived as) history, in conjunction with the (deliberately engaged) imaginative capacity, is also amplified by the expression of its poetic sensibility, a fruitful potential instantiated in characters such as Milkman in Toni Morrison's *Song of Solomon*.

Although for Milkman, a "concentration on things behind him" results in an apparition by which it appears that it is "[a]lmost as though there [is] no future to be had", this memory fugue has a silver lining: for Milkman, "if the future [does] not arrive, [at least] the present [. . .] extend[s] itself" (Morrison 35). Indeed, the extenuation of an inhabitation within the present, as informed by a distillation of a perceived historical past, creates, for that momentary exigency, what Jameson calls the "theorizing of its own condition of possibility", a performed ballad dependent upon a lyricized "*representation* of things and of the way they change" (*Postmodernism ix*). The projective amphitheater that results, in which "nature is gone for good" (*Postmodernism ix*), becomes the locus of the performance of the natural domain's reduplicative

surrogates, conjuring scenes from a past that exists peculiarly to each unique reconception. The problematized, and yet hypnotic, inhabitation of this holographic domain is what Baudrillard describes (as worded in the translation of Sheila Faria Glaser), in reference to a story of Borges', as "the metaphysical beauty of [. . .] abstraction" (*Simulacra* 1).

Lyotard reflects, in turn, on the philosophical grounding (specifically in Jürgen Habermas) of the same thema, that (in the translation by Régis Durand) "[f]ollowing a prescription of Albrecht Wellmer, Habermas considers that the remedy for this splintering of culture and its separation from life can only come from 'changing the status of aesthetic experience when it is no longer primarily expressed in judgments of taste', but when it is 'used to explore a living historical situation'" (39). So while the enthralling semblation of (re)imagined history might draft a kind of troubadour inebriation, a more sober alternative, according to this line of reasoning, is to reshape authentic art to become a kind of involved, even an activistic, expression and exploration of the minefield of material contingency.

This has the ring of a response to the celebrated, and perhaps at times misrepresented, question of Habermas' teacher, Theodor Adorno (here as phrased by Lambert Zuidervaar): "How, after the collapse of Hegelian thought, is philosophy still possible? How can the dialectical effort to conceptualize the nonconceptual—which Marx also pursued—how can this philosophy be continued?" The upshot of this anxiety is that in an age that has been witness to atrocity, the ethos of abstraction (and therefore the subjective aesthetic) can appear oblique and ineffectual, so some will opt to overturn it with (perhaps, from the perspective of Marxian metaphysics, somewhat ironically) concretization: the most ethical art, in such a circumstance, is, in a certain resultant view, the art of direct, empirical societal inquiry. Yet such view cannot

rightly be pinned on Adorno, whose complex constructions of the Frankfurt School dialectic lend themselves instead to a certain variety of modernist abstraction. Stephen Helmling writes of this formulation that "the practice of Benjamin and Adorno might here be thought of as a 'motivated' re-ambiguation that again allows culture and nature access to each other in ways that can be critical of the binary from 'inside,' ways impossible for any 'external' construction of them as mutually exclusive" (2). But Habermas does something markedly different with his early mentors' materials.

It is exactly this kind of subtlety that underscores that the era produced by such fields of turbulence was one suffused by a dizzying quilt of complex and contradictory reagents. Green explains, in *Late Postmodernism: American Fiction at the Millennium*, that the attribution of the postmodern (which Green describes, citing John Frow, as "a discursive field, a terrain of competing positions, rather than a coherent concept") can be organized into four distinct and potentially conflicting paradigms: 1) an aesthetic stylistic characterized by pastiche; 2) a conceptual platform synonymous with Theory; 3) a philosophical modality that hinges on late-nineteenth and early-twentieth century formulations of subjective phenomenology; and 4) a post-Marxist sociological lens that outlives the intellectual (economic) concerns of modernism and succeeds them with an attention to the (psychological) circumstances of a society saturated with audiovisual media (Green 2-3). In Green's view, the first three senses accreted into an "ensemble of interlocking practices and institutions, including the publishing industry, the media, and the university, that constitutes, often in unexamined or unconscious ways, the environment for the practice and understanding of literature" (3). As for the fourth sense, it finds an illuminating

articulation in the perspective of Marshall McLuhan, who is (as will be discussed shortly) one of the immediate forerunners of a worldview which will here be called "cybertech".

Green discusses a wide and informative range of critically-considered possibilities of what, exactly, constitutes the literary postmodern, such as Peter Osborne's complicating view that "postmodernism tacitly continues the project of modernity even as it claims to break free from it: the postmodern knows itself through the shortcomings of the modern". Green reminds us, however, that "[t]he move to equate experimental postmodernism with the overall post-1960 period is equivalent to that equating High Modernism with modernism in general: the technically self-conscious line becomes a synecdoche for the whole period" (26). With wary scrutiny toward narratives such as that of Wendy Steiner, who valorizes novels such as Annie Proulx's 1992 *The Shipping News* as "[p]erhaps the most powerful [. . .] of the 1990s", Green takes Steiner's rendition to task for reflecting a dismissive and reductionist neorealism, but he is also not entirely ready to endorse Lyotard's "discussion of twentieth-century artistic movements [which] calls for an aesthetic of the sublime, an experimental avant-gardism that 'puts the postmodern artist or writer in the position of a philosopher', a philosopher searching for the criteria of judgment that comes after the work, rather as if the work throws down the challenge of its own perplexing status and meaning" (30).

In Green's view, Lyotard certifies Proust as an evangelist for "the great unrepresentable", encoded in "the unity of the self, displaced and deferred through the course of his immense, labyrinthine" work, whereas Joyce, for Lyotard, is already "postmodernist", his "unrepresentable element" embedded and "intrinsic in the medium itself; it belongs to the polyphony of the unity of the subject of writing, which is shattered by the polyphony and heterogeneity of the signifier"

(31). To Green, this is *Tel Quel* lingo, nostalgic for Kant and, like Jameson's work, contributing to a circumstance in which "the academic study of the postmodern novel has been marginalized" (32), but for different reasons. Jameson advocates for the "visual, spatial, and technocultural exhibits such as film, video, or installation art" in contradistinction to literary production. Green insightfully notes that "[o]n the one hand, the narrative innovation and self-consciousness of postmodern fiction makes the association with post-structuralist notions of textuality available and productive[, but . . . o]n the other, the authority of postmodern fiction, its significance, visibility, and participation in cultural conversation, depends on the traditional patterns of literary recognition" (33-34).

Green goes on to deconstruct Lyotard's "disdain" for eclecticism, inverting the syllogism in order, potentially, to celebrate its subject: "delight in the pleasures of variety" (40). The excavated rationale of such an operation (borrowed, Green notes, from the discourses of cultural studies) is that works "of all kinds can be [. . .] enjoyed for their sheer carnivalesque excess", making a subtle distinction between the usual (Theory-driven) reading of postmodernism as stirring some kind of metaphysically-liberating melting pot, on the one hand, and on the other, a cultural-studies-driven, and thereby more gastronomically cultivated reading of postmodernity's menu that is able, instead, to take it up as a salad bowl. This, too, however, smacks for Green of a smorgasbord that is potentially "unsettling": where is the place for "the challenges of a difficult literary novel" in a culture that has become acclimated to buffet-style mediocrity?

Green has a special interest in Thomas Pynchon, William Gaddis, John Barth, Robert Coover, and William Gass as groundbreaking writers at the forefront of constructively shaping the literary topography of their moment, but who (until Green's study) did not receive attention

commensurate to their contribution, especially vis-à-vis their oeuvre of the 1990s -- unlike, for example, Don DeLillo, whose 1990s "works, building on the major fiction he published in the 1980s, established DeLillo as the representative postmodern novelist for the end of the century" (4). Younger writers on Green's radar include "Richard Powers, David Foster Wallace, Joanna Scott, Donald Antrim, Evan Dara, Stephen Wright, Carter Scholz, and Richard Grossman" (4). These writers' reformulation of postmodernity is characterized by their ability to weave into it, at the end of the historical movement's life cycle, intellectual systems that might otherwise be antithetical to it (such as the even-handed, materially attentive exploration of concrete, empirically-grounded technologies), and in so doing, to breathe a new and more sophisticated life into something which may still be, tentatively, called the postmodern.

I will now consider novels by three of the novelists for which Green advocates, in order to place these directly in relation to late postmodern cybertech literature, and thereby to demonstrate cybertech's specific interrelation with the rest of the literary postmodern. Vonnegut's *Slaughterhouse Five* (1969) -- a mid-postmodern cybertech novel -- opens with Vonnegut's own voice and subjectivity, and migrates in the second chapter to the story of Billy Pilgrim, a veteran who believes that, with the assistance (or perhaps merely guidance) of extraterrestrial aliens he calls Tralfamadorians, he has become a time traveler within the dimensions of his own life. These aliens' intelligence and consciousness is more expansive than the human. Despite (or perhaps conjoined with) their peculiar (really rather comedic) appearance -- "two feet high, and green, and shaped like plumber's friends", with "suction cups" that are "on the ground" and "shafts" which are "extremely flexible, usually pointed toward the sky" (Vonnegut 33) -- they are able to "see in four dimensions", profoundly and constantly aware that "[a]ll moments, past,

present, and future, always have existed, always will exist" (Vonnegut 33-34). A product of the mid-postmodern period, the novel is tolerant of, even certifying of, indeterminacy and the intermixing of registers; yet it has within it, also, latent, the possibility of the grounded face-to-face conversation with resolution (or the level-headed recognition of the impossibility of it), however bleak and diminishing, that Green refers to as "[t]ragic realism". For all of their marvelous knowledge, the Tralfamadorians cannot really ease the trauma that Pilgrim suffered during the war, and for all its literary fireworks *Slaughterhouse Five* cannot unknot the cognate trauma embedded in its author: humans remain humans with human problems, no matter what the circumstance and no matter how far the category of human has been legitimately extended.

Pilgrim has a copy of Reinhold Niebuhr's "Serenity Prayer" on the wall of his office; if there is a printed program for the proceedings of tragic realism, this might be it. Despite having extraterrestrially-informed random-access to the timeline, Billy is hardly exempted from its consequences: "Among the things Billy Pilgrim could not change were the past, the present, and the future" (Vonnegut 77). His circumstance is therefore not one compatible with the mythical, mid-postmodern fungibility of timelines: in fact, just the reverse, and if anything the novel is cast in a shade of scientific determinism. Its trappings may give *Slaughterhouse Five* the semblance of high postmodernity, but it is arguably proto-late-postmodern. It is useful, moreover, in my study, here, because of what it brings to the table about the late postmodern context of the relationship of the human to the (hypothetical) extraterrestrial. This vantage will inform my readings of both *Accelerando* and *Embassytown*, both of which feature conscious extraterrestrial beings with worldviews, and technological capacities, markedly different from the human. Indeed, the *Embassytown*'s Hosts' "zelles" -- bioactive companion entities with which they exist

in symbiotic relationship -- are presented in terms which suggest an inheritance from *Slaughterhouse Five*: one is described as "the size of a baby, a grub-thing with stump legs and filigree antennae" (79), but as for the Hosts themselves, they seem instead a descendent of Larry Niven's "Pierson's Puppeteers", dating to nearly the same moment in literary history as the Tralfamadorians.

Now moving into the late postmodern moment *per se*, I am particularly interested in Gaddis' novel *A Frolic of His Own* (1994) because of what it has to say about the multiple-othering of the self, a device prominent in *Accelerando*. In *A Frolic of His Own* this othering takes the shape of the spawning of a pair mutually-annihilating, antithetical self-proxies, a figure also present in *Embassytown* in the presence of twinned and interdependent Ambassadors who, when their world breaks down, turn on one another. Again, in relation to the tragic real, the presentation in *A Frolic of His Own* of this kind of twinning is not that of an exotic conceit but a clever real-world possibility, one which, once manifest, leaves a legacy only of hurt and irrecoverability. It is not indeterminacy that is to blame, but the far simpler machinations of determinate time, with its irreversible absolutes, most forcefully death, and in a slightly blunted form, the moribund gavel of the precedent-encumbered law. The protagonist is pressing suit over a plotline, rendered upon the full flush of the Hollywood screen, stolen from a play he has written about his family history; the story is of a "young man who resolves his divided loyalties in the country torn asunder by Civil War by sending up substitutes to fight in his place in both the Union and Confederate armies, where both are killed" at Antietam (50). The subtlety, ingenuity, and portability of this scheme may lend some insight as to why Green considers Gaddis (at least as of 2005) "scandalously underrated" (32); the opposing-substitute anecdote's brokerage of

identity, continuity, and fragmentation of the conscious self-construct also make it ripe for renewal in relation to the most recent decade of late postmodern cybertech. Because of his generational situating, Gaddis is figured by Green as a "first-generation postmodernist" (3), but all the same a writer who, like Vonnegut, Pynchon, DeLillo, and others, writes right into the late postmodern context and does so with an attuned engagement with its zeitgeist.

Finally, then, a look at a little snippet from a Pynchon novel situated in that context: *Mason & Dixon* (1997). It is a novel which might, for its technically skilled deployment of a specific register in a semi-comedic context (in this case a reconstructed lexicon of eighteenth century English) owe some debts to *Snow Crash*. The scenes that interest me are those which depict "objects of Artifice", figured as "a Vegetable with a Pulse-beat" (Pynchon 321), especially a pair of duck automata. The type of device is, we are told, "unique in Civilization" (Pynchon 374). One of them gets "nudg'd [. . .] across some Threshold of self-Intricacy" and becomes a self-aware, synthetic, nonhuman, embodied, intelligent agent. A "Juggernaut" able to "penetrate all known Fortification", it soon becomes figured as a "Nemesis!" (Pynchon 374-375) One character in particular -- a chef famous for his delicious duck dishes -- is the target.

The duck, after a grotesque fashion, is able to talk, "in a curious Accent, inflected heavily with linguo-beccal Fricatives" (Pynchon 375). It has demands, and this cyberduck will have its way, or it will exact its vengeance. In the meantime, "the Clock-work is ticking". It needs to hire an attorney (a lineage from Gaddis?); *Accelerando* is also replete with the legalistic, the figure of the attorney, the cascades and refigurations of precedent. The duck needs jurisprudential oversight so as to chaperone an encounter with its "Fatal Other", its "Duplicate" (echoes again of Gaddis, although of course the route, here, in Pynchon, at once retrieves the Baudelairean line).

Such language is invoked in *Embassytown* to describe the two halves of the bioengineered Ambassadors, each a discrete individual, but dependent on the other to complete the Ambassador identity and function: they are "cloned" (Miéville 58), "doppels" (Miéville 119), "doubled" (Miéville 156), *etc.*, because they must work in close mental tandem to approximate the Host language (which each Host can speak through the simultaneous use of two mouths). Pynchon's talking duck, anyhow, wants to take the other-duck to the opera. This sequence is at once curious, strangely familiarizing, and obliquely ominous, and it speaks to the doings and ontological status of both the computronium virtual consciousnesses of *Accelerando*, and the embodied Turingware proxy intelligences of *Embassytown* (as well as the doppled Ambassadors).

Having contemplated, then, various theoretical platforms (Jameson, Lyotard, Green, and the Frankfurt School lines), as well as narrative elements from some postmodern novels (in specific examples from the works of Vonnegut, Morrison, Gaddis, and Pynchon), I will now explore how the dynamics rendered by all of these also play out in *Accelerando* and *Embassytown* directly. I will explore, specifically, how each asks the most basic questions of cybertech: *What can ken? What is the domain of what can be kenned? How is what is kenned marked as such?*

Troping the Posthuman.

In *Accelerando*, the first of the three main cybertech questions (*What kens?*) is considered through the lens of the posthuman(ist) (as contemplated, for example, by N. Katherine Hayles and Cary Wolfe), the second question (*What can be kenned?*) is imagined through the (fantasy of?) the singularity (as envisioned by Ray Kurzweil), and the third question (*What is both*

kenned and known to be?) is inscribed by the complex property of the command-frame of the cognitive-performative. To see how *Accelerando* asks the question *What can ken?*, I will begin with some established theories of the posthuman and the posthumanist, as a frame of reference. Donna Haraway's "A Manifesto for Cyborgs" (1985; I will use the somewhat modified, commonly referenced version from Linda Nicholson's 1990 anthology) seems a reasonable launching point for this discussion: "A cyborg is a cybernetic organism," Haraway writes, "a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (191). The propositions are broad: in "the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs" (191). Haraway's "cyborg" is a cipher: "a condensed image of both imagination and material reality, the two joined centers structuring any possibility of historical transformation" (191). This sort of bilateral hybridity, presented a year after William Gibson's *Neuromancer* and seven before Neal Stephenson's *Snow Crash*, is useful in bridging those two novels, and the moments in literary postmodernity that they represent.

Haraway advocates "pleasure in the confusion of boundaries" and "responsibility in their construction" (191). In the service of this, Haraway notes that "[t]he cyborg skips the step of original unity,[and] of identification with nature" (192), and that cyborgs "do not remember the cosmos" (193). Back in the organic world, in Haraway's view, "the boundary between human and animal" has now been "thoroughly breached" (193). These are appeals to cybertech's inescapable question, *What can ken?*, all the more so, for Haraway, because "[l]ate twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply

to organisms and machines" (194). The argument now becomes complex; the cyborg can be a trope of liberation, but the modalities that produce it might be "scary new networks" that are part of the "the informatics of domination", where "[r]epresentation" is swapped out for "[s]imulation", "[f]unctional specialization" becomes "[m]odular construction", and the "[p]ublic/private" binary is transmuted to "[c]yborg citizenship". "Labor" meanwhile has become "[r]obotics", and the human "[m]ind" has been replaced by "[a]rtificial intelligence" (203-204). These complications underscore (and inform) the complexities of positions like that of Bernard Stiegler, in which prosthesis is endogenous to human activity, and carries its potential for actualization, but the wrong prosthetic formulation, or the wrong application, can have the reverse effect.

The most important literary writers, for Haraway, who are interrogating this circumstance are "Joanna Russ, Samuel Delany, John Varley, James Tiptree, Jr., Octavia Butler, and Vonda McIntyre" (216), their toolkit that of stories "retold" in "versions that reverse and displace" the formulations of problematically "naturalized identities" (217). Indeed, as I have demonstrated elsewhere, this is what Neal Stephenson does in his retelling, in *Snow Crash*, of William Gibson's *Neuromancer*. And for Haraway, "Writing" has become "preeminently the technology of cyborgs, etched surfaces of the late twentieth century" (218). These plates are still under review.

In Hayles *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999), Hayles muses that "[h]ere, at the inaugural moment of the computer age, the erasure of embodiment is performed so that 'intelligence' becomes a property of the formal manipulation of symbols rather than enaction in the human life-world" (xi). Hayles has a complex, nuanced, and somewhat ambiguous understanding of the trope of the "posthuman"; it

hinges on a defense of the organic body in the face of synthetic schemes to appropriate and supplant it, an outlook of Hayles' that evolved from "a maze of developments" which became "a six-year odyssey of researching archives in the history of cybernetics". This deeply-involved project of Hayles' included "interviewing scientists in computational biology and artificial life, reading cultural and literary texts concerned with information technologies, visiting laboratories engaged in research on virtual reality, and grappling with technical articles" across a gamut of subjects including "cybernetics, information theory, autopoiesis, computer simulation, and cognitive science" (2). Her findings frame the inquiry "as three interrelated stories": one valorizing disembodied information, one contemplating the (trope of) the synthetic embodiment of (simulated?) consciousness, and one a historical narrative of the yielding of the "human" to something purportedly (and perhaps only presumptively) succeeding it (2). Hayles becomes convinced, over the course of this work, that there is an agenda in play to stigmatize the biologically human body as "an accident of evolution", one which, in that dominant discourse, is on course to be altogether "purged" from the discussion of informatics (12). She is not ready to abide this. Indeed, perhaps she should not be. When speculation overruns science, it is no longer science, and when theory effaces the possibility of that same theory's even-handed application, there may be a problem with the theory.

In "The Progressive Apocalypse and Other Futurismic Delights", from his book *Content: Selected Essays on Technology, Creativity, Copyright, and the Future of the Future* (2008), Cory Doctorow writes about the property that he calls the "futurismic": narrative that "depicts futurism, not the future", populated by a domain of "self-serving" fantasies that have more to do with the present than with any legitimate projection of what is to come, and which present a

pseudo-predictive vision which "generally doesn't hold up well to scrutiny". Doctorow extrapolates a rather satirical rendition of what *Star Trek* would look like if it played reasonably by the rules of the reality it has established, and the result looks a lot like the cosmonautics of *Accelerando*:

The non-futuristic version of NCC-1701 would be the size of a softball (or whatever the minimum size for a warp drive, transporter, and subspace radio would be). It would zip around the galaxy at FTL speeds under remote control. When it reached an interesting planet, it would beam a stored copy of a landing party onto the surface, and when their mission was over, it would beam them back into storage, annihilating their physical selves until they reached the next stopping point. If a member of the landing party was eaten by a green-skinned interspatial hippie or giant toga-wearing galactic tyrant, that member would be recovered from backup by the transporter beam. Hell, the entire landing party could consist of multiple copies of the most effective crewmember around: no redshirts, just a half-dozen instances of Kirk operating in clonal harmony.

In Ray Kurzweil's projected future (on which Stross', arguably, is based), this sort of outlandish oddity is more or less the only scenario available: but it is, of course, only one of the infinitely many possible futures which sci-fi may choose to imagine.

Paul Youngquist suggests, in *Cyberfiction: After the Future*, that among the reasons that science fiction adopts a future so "fungible" is that the authentic anticipation of a real future

dropped out of consciousness immediately precedent to postmodernity: that if (as in the typical understanding of Adorno's narrative) metaphysical philosophy after the consequences of fascism is a dubious proposition, then a truly future-looking cultural disposition is likewise unlikely in the wake of the use of weapons of mass destruction, on whose detonation "the future also died" (xi). A poignant lamentation for the aftermath of the always-present, and always-inconceivable, and yet still growing, magnitudes of human violence, this assertion also yields some insight into that aspect of the cybertech sensibility of the "continuous contemporary". And it opens the possibility that cybertech is filling a void, for a certain audience, left by the abandonment of mythopoetic traditions now perceived as untenable.

At the opening of *Posthuman Metamorphosis: Narrative and Systems*, Clarke posits that "[p]remodern myth and legend, folklore and fantasy, set forth the perils of human status by dressing the sheer contingencies of the the natural order in divine or daemonic guises [, while s]criptural traditions troped bodies and souls into being through spiritual metaphors that attribute human constructions to nonhuman agencies at large in the extrahuman environment" (1). According to Clarke, the only viable alternative to the whole bucket of old ideas is a so-called "second-order systems theory", in which observers pastiche themselves into what passes for consciousness by tracking the complex transactions of other observers, of their own observations, and of the microcosmic interrelationships of their constituent prokaryotic and eukaryotic cells (11). This move of Clarke's in relation to biology is homologous to J.L. Austin's in relation to linguistics: the conception of a new category of engagement which has an unexpected authority by means of a hybridized command function.

Austin seems well aware that speech acts cannot be legitimate ontological prerogatives (in other words, they are not a literal type of spellcraft); instead, they have a *systemic*, or *virtual* functionality that gives them the *effect* of physical agency without the scaffolding of it. Similarly, for Clarke, consciousness and volition are not *physicalized* properties, but *virtualized* ones that piggyback abstractly on the complex, but discrete, interactions of physical finitudes. Culturing a strain of discourse he calls "neocybernetic", Clarke builds and invokes a hefty list of precedent thinkers including "Warren McCulloch, Norbert Wiener, John von Neumann" (5) as well as "Heinz von Foerster, Humberto Maturana, Michel Serres, Francisco Varela, Bruno Latour, and Niklas Luhmann" (6) in various degrees of support for his project, here, which is "to demonstrate the viability of [this chaos-theory-styled framing] for literary-critical, narratological, and cultural work" (12).

"What we stand to gain" from this attitude, Clarke tells the reader, "is a more precise appreciation for our evolutionary situation and the actual complexity of our systemic situatedness"(4). Clarke attempts, by similarly syncretic means, to validate, as he valorizes, the thesis within his own tradition of thought, however ambivalated his descent from it, that "humanist assumptions [*i.e.*, those that present mind and will as holistic absolutes] stand in the way of posthuman possibilities" (10). But what exactly are these humanist precepts, why does Clarke flag them with his pejorative assignation of "assumptions", and what can be agreed on as the definitions of the words within Clarke's vocabulary?

In Cary Wolfe's *What is Posthumanism* (2010), it is the *ism* that is key, since while the debate about the human versus the posthuman may hinge on questions, such as those raised by Hayles, of embodiment, authenticity, and replication, the discussion of *humanism* versus

posthumanism is a formulation of the discussion of philosophies and intellectual agendas: the humanist, which gives privilege to human beings, and the posthumanist, which does not. In addition to opening the field for a discussion of the relevancy and potential primacy of other biological species, whether terrestrial or extraterrestrial, the posthumanist worldview gives potential credence to a position that has been articulated by performance artist Stelarc: that a being (Stelarc uses the word “body”) is something other than its material, and other than its form, so the biologically human container for activities and properties attached to humans is not, in fact, confined to the context of that container. Stelarc appears to argue that any special awareness that can be construed as dependent on the ambient combination of unique features that constitutes a human, in fact is very much extractable from this combination and entirely portable to whatever frame it creates by reconfiguring—and ultimately disseminating—itsself.

So for Stelarc, whatever the unique properties are that obtain in the inhabiting of a human frame, they are fundamentally unimportant to the sustenance of what we are in the habit of calling “human” intelligence. This pervasive intelligence, manifest now in the human creature (but potentially also at many other sites, whether biological or not), is not dependent on this particular manifestation, but rather, has used it to its ends and will use it to further its ends, eventually, perhaps, dispensing with it. Just as in the worldview of biologist Richard Dawkins, in which genes -- not the organisms whose blueprints they store -- are the dominant survival interest that these organisms are programmed to protect and propagate, from the posthumanist perspective, it is self-sufficient existence and consciousness, not the frame (*e.g.* human body) that supports it, that evolution strives to extend and expand. In Ferrando's words, moreover, posthumanism suggests a "a post-anthropocentrism [that] is 'post' to the concept of the human

and to the historical occurrence of humanism" in that humanism is "based on hierarchical social constructs and human-centric assumptions" (Ferrando 29), and posthumanism mistrusts these humanist precepts. What, however, is on the table as an alternative?

Enter the speculative fiction of Stross. *Accelerando* depicts recursive iterations of the life and personality of its multiple-personalities (in the sense that he develops the ability to run several threads of himself simultaneously) protagonist, Manfred Macx. Manfred is a "venture altruist" with a commitment to building a society of surplus; to this end he enfranchises some virtual lobsters (*i.e.* instantiated simulations of ordinary, biological crustaceans, based on transferred cognitive maps), who have achieved, in their collective virtual existence, a kind of superconsciousness, and who are living on a server orbiting an asteroid-based mining facility. The lobsters are empowered to investigate the communiqués of aliens transmitting from another star system¹⁹, in order to see what the rest of the universe might know about economic efficiency.²⁰

This pans out well: a dedicated team is able to put together an expedition to visit the communications "router" from which the signal is being broadcast; this mission is outfitted with a very small ship made of a dense, cybernetic-friendly substance which, instead of a human crew, houses instead their virtual consciousnesses, ready to be uploaded into the router to interact with whatever cosmic Data Cloud might be available. Manfred's daughter is among this crew, which succeeds in getting into this alien supernet but is only able to get out again when they agree to bring what is effectively a virus back with them. This works to their advantage, though, because once they get back, where they discover that human civilization has been made to migrate to the outer planets of the solar system, because the inner ones have been overrun by now-other-than-

human mutations, they are able to upload the virus to forestall the aggressions of the mutations onto human turf.²¹ Once the no-longer-human aggressors have been put at bay, the main human characters, with the help of the virtual lobsters and with Manfred's superintelligent cybernetic cat, escape Earth's solar system to set up shop around a new star and once again to interface with the alien router, eventually employing its technologies to their own purposes. The cat makes its exit, and the humans are left to their own devices: but can they make better choices than they have so far?

Consciousness is generously distributed in *Accelerando*, after a fashion which, although surely at least somewhat parodic, might please posthumanist sympathizers. Although he makes rich use of many available cybertech traditions, Stross is not really a parodist or a pastiche artist after the fashion, for example, of the Neal Stephenson of *Snow Crash* (in relation to *Neuromancer*). Stross is more of a compiler, an agglutinator, throwing all manner of materials into his recipe to enhance the flavor of his dishes; *Accelerando* is more like a widely-envisioned homage to cybertech, perhaps an elegy for it, than a deconstruction. As a result, *Accelerando* is populated by traditional humans, enhanced-human cyborgs, replicants with human consciousness, replicants with posthuman consciousness, disembodied AIs, disembodied human intelligences *per se*, disembodied human intelligences for whom embodiment is virtually simulated, and all manner of other forms of life, human and nonhuman, terrestrial and extraterrestrial, organic and synthetic, uniquely-instantiated and multiply-instantiated, and all, it seems, are able within Stross' world to cohabitate, although they do often clash.

Accelerando, therefore, is late cyberpunk (I would argue that it signals the end of cyberpunk's roughly thirty-year generation), but it is not a cyberpunk of either *Neuromancer's* or

Snow Crash's variety, although it has features in common to both. Like *Neuromancer*, it contemplates poetic/philosophical questions through the lens of speculative literary explorations, and like *Snow Crash* (and *Galatea 2.2*) it applies a legitimate knowledge of science: Stross holds (according to the bio in *Accelerando*) "degrees in pharmacy and computer science". Also like *Snow Crash*, it is intertextual in relation to previous cyberpunk fiction. But whereas *Snow Crash*, as I have shown elsewhere, appropriates word constellations in a texture of covert and inverting pastiche, *Accelerando* snaps up *figures* from the heritage of cyberpunk and distributes them in a way meant to be at once obvious, humorous, appreciative, and remixological.

Consider, for example, the conjunction of Gibsonian materials in an early scene: Manfred is looking for spare time "to hunt the feral T-shirt in Amsterdam", but his brain is "still fuzzy, like a scalpel blade clogged with too much blood" (16). The attentive fan of cyberpunk is *meant* to notice that these reference, in turn, 1) Terzibashjian's "mat of dark hair so dense that Case at first mistook it for some kind of t-shirt" (Gibson 89), and 2) Molly's "ten double-edged, four-centimeter scalpel blades" (Gibson 25) on the one hand, and then the Finn having a careful look at "a wooden toothpick from his pocket", which he studies "like a surgeon examining a scalpel" (206), on the other. These are memorable scenes in *Neuromancer*, interwoven with important plot points and character details, and Stross' use of the keywords "t-shirt" and "scalpel", in close proximity, is like waving a bright flag that says "my copy of *Neuromancer* is open": he has made a new word-constellation from two of Gibson's. Stephenson's use of the same material of Gibson's is more covert: the analog to the Terzibashjian scene is coupled through the word "hair", not "t-shirt" (Stephenson 93); in the engagement with the description of Molly, "claw" is substituted for "scalpel" (Stephenson 92); and the reference to the Finn's scene is pegged not to

"scalpel" but to the subtler word "salmon". Because Stephenson's engagement with the Molly scene and the Terzibashjian scene in Gibson -- in *Neuromancer* scenes which are more than 50 pages apart -- do appear in *Snow Crash* close to one another, however, Stross' reference encodes not only Gibson, but Stephenson's covert remixology of Gibson, nodding not just to Gibson, then, but to the entire cyberpunk lineage.

With Stross displaying such a performative talent for jury-rigging, it is perhaps not surprising that *Accelerando*'s answer to the question *What can ken?* seems to be "potentially anything, if it is rigged right". There is, however, some doubt in the novel about the distinction between intelligence and consciousness, and even an implication that once something becomes *too* intelligent, the combination (whatever it is) that makes *consciousness* in the human sense possible is somehow compromised. This position is not necessarily a type of human exceptionalism -- other species or artificial organisms may also get the balance right -- but those (including descendents of humans) which become too baroque, and too resource-needy in their processing power, may start, at a certain point, to overshoot the mark of consciousness and therefore to forfeit it.

Manfred's cat, who will turn out to be a powerful entity in the novel, is rendered via an "open source development kit" which "extend[s] her suite of neural networks" (Stross 5): a "Hello Kitty" type of being can be intelligent. Clusters of "smart matter" out in the cosmos, meanwhile, show "suspiciously high entropy leakage" (Stross 20): Earth is not alone in having beings enabled with intelligence. Indeed, Macx views his own intelligence as "cryptozoic" in relation to what the rest of the universe has in store (Stross 24). And like Case in *Neuromancer*, in another celebratorily obvious reference (one with no direct analog in Stephenson), Manfred is

"not interested in meat", according to Pamela, "just mind" (Stross 33). Compare to *Neuromancer*: "The body was meat. Case fell into the prison of his own flesh" (Gibson 6); "The high wore away, the chromed skeleton corroding hourly, flesh growing solid, the drug-flesh replaced with the meat of his life" (Gibson 155). A definite, deliberate, and typologically overt match. But the scene in *Accelerando* is not grim and grave like those in *Neuromancer*, nor is it satirical and arch, like most in *Snow Crash*. Rather it is playful and no-nonsense-ramified at the same time: although Stross is arguably neither the writer Gibson is nor the technician that Stephenson is, he somehow manages to synthesize both their arts, sometimes with better results.

Stross' contemplation upon the variegation of intelligence is possibly wider and more complex than that of Gibson or Stephenson. Recursivity of code that instantiates virtual corporations, for example, is something hinted at by both of the earlier cyberpunks, but not explored. In Stross, however, Macx's virtual "companies--and there are currently more than sixteen thousand of them, although the herd is growing day by day--has three directors and is the director of three other companies" (Stross 55). And optical prosthesis becomes practical ontology (Stiegler's interpretive lenses might be needed, here, in deciding whether for better or for worse): "In a very real sense, the[data] glasses *are* Manfred, regardless of the identity of the soft machine with its eyeballs behind the lenses" (Stross 78). Indeed, when someone else tries to wear them, they try to turn that person *into* Manfred, in a way that suggests that they have more of Manfred in them than his corporeal frame. It is not just about the extension of intelligence, at this point, but of consciousness as well: *What can ken?* What is doing the kenning? Is it the man or his wearable machine?

The cat Aineko doesn't even have a biological body; it just (like Ehrlul in *Embassytown*) possesses various automaton-frames. Even early in the novel, the cat is onto "its third body, and it's getting more realistically uncooperative with every hardware upgrade" (84). Later in the novel it will transplant itself into the body of an ape.

The prospect, even, of a "[s]apient network packet" is raised (106). The idea is credited to [Vernor] Vinge. But Manfred prefers disembodied lobsters which together form a sentience-system. As bizarre as this is, Stross manages to make it somewhat plausible. And as in *Neuromancer*, there are transmissions from space that only AIs can read. A "braid of processes running on an abstract virtual machine asks" Aineko "a question that cannot be encoded in any human grammar" (111).

In *Accelerando*, then, human intelligence is ported beyond the biological body. And humans are rendered as rather trivial in relation to other, more intense intellects. So the ideas of the posthuman and posthumanism, as explored by Haraway, Hayles, Doctorow, Wolfe, Clarke, Youngquist, and Stelarc, are of crucial value in contemplating how *Accelerando* sets up its questions of what might be considered "human-equivalent", and whether that question in a world such as the one it presents is even still relevant. But with so many possible conscious agents, what about the question of what is available to their consciousness? How not to be overwhelmed with such vast and vastly ranging multiplicity? To contemplate these questions, it is useful to examine theories of the so-called "singularity" that would make such a world as that of Stross' *Accelerando* possible.

The Singularity.

To identify how *Accelerando* asks the question *What can be kenneled?*, it is helpful to review the possible-world-expanding theories of the technological singularity. Near the start of *Future Shock*, published in 1970, Alvin Toffler declares: “the roaring current [. . . is] so powerful today that [. . . t]he acceleration of change in our time is, itself, an elemental force” (3-4). Toffler is writing at the end of a period of fruitful productivity in anglophone and Continental writing, that span of the middle two quarters of the twentieth century which, amid the tremor of catastrophic global conflict and torrential social upheaval, proved itself not only poetic, but also powerfully prophetic. Looking toward a world-to-come accessible to those generations only by a process of the imagination, conceptual theorists in that era designed analytic toolkits whose most salient applications would not become evident until four or five decades later, when the bricks of their Wall had been refashioned to build a stairway to our Cloud.

By the turn of the millennium, the trending of this vector had led to the trope of “the [technological] singularity”, which migrated into currency among influential theorists such as Jameson. According to scholar/blogger Clayton Dillard, Jameson plays the term on several levels to propagate a notion that the idea of a stable and comprehensible time line is no longer viable, where “[h]istoricity becomes the loser, there can be no concept of the past or future, and the present is contingent upon its singularity, in all of [its] forms, its meaning defined by the unstable spatio-temporal realm in which the juxtaposing event is witnessed, processed, and ended”). Dillard reviews several possible definitions of the word “singularity” which Jameson, according to Dillard, has articulated and commingled in this recent theorizing, including A) the philosophical definition opposing the undifferentiated from the multiplicitous; B) a scientific

criterion for a state of reality which is undifferentiated in this sense; C) genetic or programmatic “mutation” which trends reality toward “either dystopia or utopia”; and finally D) “a transformation of subjectivity, wherein a displacement of space occurs, universals cease, and experience must remain purely temporal, emphasizing event and ephemerality over memory and longevity”. Yet the singularity is probably most advertised, in one of its newer and more pressing senses (the third in Dillard's schema of Jameson's definitions), by Ray Kurzweil, who has authored a popular book entitled *The Singularity is Near*. To understand fiction like Charles Stross' *Accelerando*, it is helpful to contemplate Ray Kurzweil's speculations about near-future permutations of existing technologies, from whose lexicon in *The Age of Spiritual Machines* much of the vocabulary and conceptual landscape of *Accelerando* appears to be borrowed.

Kurzweil presents the following postulates/theorems, based on his knowledge, his intuitive leaps of guesswork, and his imagination, of what the near future holds for humanity: 1) the exponential growth of computing power, in accordance with Moore's law, such that by 2029 a common computer is many times more powerful than the human brain; 2) the begetting, by intelligent life (humans) of new intelligent life which is, in fact, more intelligent than its creator; 3) cybernetic “organisms” that don't just simulate feelings, but actually have them; 4) the copying of existing neural nets (*e.g.* the contents of mammalian brains) into virtual environments, where they can function just as they did biologically, or better; 5) the physical embodiment of virtual intelligence; 6) a reality extensively augmented by cybernetic means, such that virtual projections constantly overlap, supplement, and compete with “natural” sensory perceptions; 7) neural implants that can download information directly to the brain and upload from it; 8) questions of the legal rights of computers; 9) the merger of human consciousness and

virtual consciousness such that they are largely intermixed; 10) a large population of sentient beings which “do not have a permanent physical presence”; 11) a circumstance in which “[t]he number of software-based humans vastly exceeds those still using native neuron-cell-based computation”, and in which “[h]umans who do not utilize [neural] implants are unable to meaningfully participate with those who do”; and finally 12) the obsolescence of the concept of limitation on human lifespan (*Spiritual Machines* vii-x). Kurzweil's speculations about this emerging moment of "singularity" are largely in orbit around his understanding of the relevant sense of the word's meaning: detached, now, from the comparatively old cosmological sense (Jameson's second definition) of (in Kurzweil's articulation) “a single undifferentiated point with no size” (26), the term has come to mean, for Kurzweil and many others, something like *the moment at which a staggeringly significant technological trend gains critical mass*, often associated with advances in cybernetics that dramatically alter the means, course, and character of our present human circumstance.

For Neil Easterbrook, however, use of *singularity* appears “not just [in] discourse *about* sf, but [in] discourse—such as that of Kurzweil—*as* sf” (15). So for Easterbrook, Kurzweil is writing language that poses itself as science, actually functions as theory, and narratively instantiates itself as speculative fiction. Easterbrook cites Wikipedia and then proceeds down the line of its claims about the origin of the term “singularity”, tracing it to the early 1990s hypothesis of Vernor Vinge's that will become Kurzweil's:

Vinge declares that within a short period—he says “within thirty years,” which is by 2023—machine intelligence will be a fact, and the conditions of human life,

indeed the future course of the species, will be beyond plausible extrapolation or prediction. Vinge argues that only artificial intelligence can [bring about. . .] singularity, and it will constitute an event that effectively ends *Homo sapiens sapiens*. Situated at the very edge, the very threshold of change, we are, in this Vinge view, precisely in the position of sf, which is “the literature of change” (Landon xi and passim), the literature of “technologically saturated societies” (Luckhurst 3) that tracks the potential consequences to human subjects and culture. (16)

Easterbrook is referencing, in his citations, here, respectively, Brooks Landon and then Roger Luckhurst, who themselves are specialists in speculative fiction genre studies and who appear to go far in understanding the free exchange of tropes between literary and technological metaphors present in Stross and in other cybertech authors.

Easterbrook introduces some background on *Accelerando*'s context by reflecting on some significant trending this decade in the top-charting buzzwords of the conceptual discussion of science fiction, singling out three crucial “silibant” terms: steampunk, which he refers to as “Victorian alternate histories or Victorian technologies yoked to contemporary conceits” (*cf.* Gibson's *The Difference Engine*, written with Bruce Sterling back in 1990), slipstream, which is “the meretricious admixture of generic materials” such that there is “metamorphic 'accretion'” (Easterbrook is quoting Gary K. Wolfe) of science-fiction ideas into non-science-fiction-genre-specific media, and then finally the “singularity”, for which Easterbrook reviews some of the possible significances: the technical definition from mathematics, the speculative phenomenon in

physics, and then the critical meaning(s): “that celebrated shibboleth, that generic event horizon, that dissembling crux of so much contemporary discourse” (15).

This perspective, then, reads cybertech novels as treasure chests of signification, both of the kind encoded by their authors as narrative meaning, and of the kind encoded by society at large as supernarrative functions. It claims, moreover, for the novels a property of (in Roland Barthes' parlance) rescriptability that makes it possible for the reader to instantiate the variables of the narrative code adaptively rather than passively, and therefore to participate in its complexities, ambiguities, and possibilities fully. This point, in turn, will serve to support the claim that the rescriptability of these texts is metonymic in relation to their core meaning, which, not coercively, but poetically, invites the reader to recognize the ambiguity, the adaptivity, and the expansive promise present in reading, in technology, and in human subjectivity itself.

Robert M. Geraci makes a meaningful contribution in affirming the process of Stross' adaptation of the ideas of Kurzweil and speculating a specific purpose for it, or at least a specific result: the imbuing of the singularity's technological means with an effect essentially equivalent to the kind of spiritual transmigration hypothesized by theology:

Although authors such as Stross and Cory Doctorow mistrust the relatively clear-cut promises of salvation made by Moravecs and Kurzweils pop science books, they nevertheless evangelize for [the possibility of these promises] by creating plausible views of mind-uploading that can bring about intellectual conversion.

(142)

Accelerando includes, interstitched with its long narrative segments, shorter descriptive segments which explain what various iterations of effect of the so-called “singularity”, the moment of crucial, irreversible transformation toward which and from which everything progresses. The primary fabric of *Accelerando* constitutes two elements: 1) a sophisticated pastiche of the cyberpunk genre and specifically of tropes one can imagine as lifted directly from Gibson's novels, and 2) an ingenious application of the premises of Kurzweil's *The Age of Spiritual Machines* to a fictional, speculative, and believable narrative.

Easterbrook goes on to report Stross' own codification of the singularity principle, “just one word: 'techgnosis'[, . . . i.e.,] a post-scarcity society, a shocking technological event beyond which humanity will never be what once it was” (16). Although impressed by Stross' articulation, Easterbrook appears dubious about this formulation of the notion, and spends a good part of the article mocking it rather lovingly. Yet his attention, however ambivalent, to the preeminence of Stross' definition confirms this line of argument: that Stross is a significant pioneer in engineering the ideas of Vinge and Kurzweil into a narrative thought-experiment that Easterbrook admits is bound to achieve “very high levels on the cognitive entertainment meter”, *i.e.* that it is a complex thought experiment worth entertaining. Stross' toolkit, then, for the stagecraft of his imaginary world, at least at the technical level, is appropriated largely from the creative vision of Kurzweil and his predecessors.

Stephen Shaviro, in his article "The Singularity is Here", published, very notably, in a volume co-edited by Mark Bould and China Miéville, reads Kurzweil's vision here as one that has the power to put people solidly in the driver's seat of the world, and of their lives, by means of “[t]he 'accelerating pace' of our technology [which] 'will continue until the entire universe is at

our fingertips' (Shaviro 2 and Kurzweil, *Singularity* 487). Shaviro asserts that "[t]he Singularity is thus fraught with theological significance... something like what Alain Badiou calls an Event, a decisive moment of creation and crystallization 'which compels us to decide a way of being'" (Shaviro 2). This gives way, for Shaviro, in turn to a consideration of a position floated by Ken MacCleod via his character Tony Girard "who sarcastically dismisses the Singularity as 'the Rapture for nerds'" (Shaviro 2). Shaviro judges Stross' "reworking" of Kurzweil, however, in *Accelerando* to be "far more interesting" than Kurzweil, which, although apparently accepting "Kurzweil's dubious' premises" as legitimate, "pushes them to their most delirious consequences" (3).

In *Accelerando*, Stross builds from the cultural currency of the concept of the singularity, apparently directly familiar with Kurzweil's work as well as of ancestors and derivations of Kurzweil, taking (it appears) the majority of the applications of it directly from Kurzweil's *The Age of Spiritual Machines*. *Accelerando* was published the same year as Kurzweil's *The Singularity is Near*, which covers similar ground. *Accelerando* reads, therefore, as a narratively-enriched instantiation of Kurzweil's hypothetical future. What is most characteristic of this future is its expansiveness: the sense of incredible vastness of subjective reality that innovations such as the consciousness-extending computronium (a sort of cybernetic equivalent of Frank Herbert's spacetime-expanding "spice melange") make possible.

Stross proceeds sequentially through each decade of his imaginary twenty-first century (and then beyond), lining it up roughly with Kurzweil's timeline for the singularity. So in "the early twenty-first century", "fab lines casually churn out thirty million microprocessors a day", moving toward the "singularity", which Stross defines as "a vanishing point beyond which

extrapolating progress becomes meaningless" (Stross 38-39). Machine intelligence will shortly exceed human intelligence. In a decade shortly thereafter, "[e]xperiments in digitizing and running neural wetware under emulation are well established" (Stross 88). Brain process can be uploaded to a computer. By the "fourth decade", "[t]he real thinking is mostly done by the halo of a thousand trillion processors that surround the mean machines with a haze of computation" (Stross 117): computers do far more "thinking", now, as measured by processor load, than people.

Some years after, human "[b]rains in bottles--empowered ones, with total, dictatorial control over the reality they are exposed to--sometimes stop engaging in activities that brains in bodies can't avoid" (169). The idea of the sensorial simulation matrix is a reality. Before too long, it is "the moment of maximum change" itself: "About ten billion humans are alive in the solar system, each mind surrounded by an exocortex of distributed agents, threads of personality spun right out of their heads to run on the clouds of utility fog--infinitely flexible computing resources as thin as aerogel--in which they live" (Stross 197). Things have gotten exotic. And then there is "the downslope on the far side of the curve of accelerating progress", when barely any light reaches earth because of the structure-shells of computers that surround it (212), and biological humans are confined to the outer planets.

Even stranger things follow: figures from history are reconstructed, given conscious minds and bodies presumed to be like their original ones. Is this a trope of the haunting of the necropolis, after Gibson's *Neuromancer*'s fashion? The domain of simulated-consciousness organisms, meanwhile, in Stross' post-singularity world, is running something called Economics 2.0, which is "rich", whereas the biological humans still running Economics 1.0, although they

have any basic material goods they want because there is no longer true scarcity, are considered "poor". Originality becomes the greatest commodity. The City becomes something that its historians and archivists can address directly, and it responds in kind (Benjamin might appreciate this). And, finally, in "the afterglow of the intelligence supernova", humans are considered little more advanced than "tapeworms" in relation to the artificial intelligences they have spawned (Stross 362). In a cosmos, then, where "galaxy-sized intelligences beat incomprehensible rhythms against the darkness of the vacuum" (Stross 381), the depths of the labyrinth or Skaidan of what-might-be-knowable is on a scale so far beyond the human that, indeed, beings resembling biological humans barely scratch its surface.

Performative Consciousness.

In the imagined construct of the post-singularity world, human awareness of human limitations trumps what humans (however the term is applied) can do with the species' newfound knowledge. As is always the case in cybertech, the trick is in laying a pattern against the vastness, so as to find a way to continue to inhabit it on human terms. The question of *How is what is kenned delimited?* is explored in *Accelerando* through technologies of command: of matter, of memory, and of some of the terms of existence itself.

Through the fictional application of these ideas, Stross' work builds from the whole platform of twentieth-century cybertech fiction to offer one of the first meaningfully unique twenty-first-century contributions to the movement. His thought experiment contemplates the possibility that as the functional definition of humanoid subjectivity becomes ever-more expansive, the defensible domain of uniquely human consciousness must either contract or be

diffused to a bandwidth of fields beyond meaningful differentiation, but his endgame brings the equation back to the generally-conceivable-as-human, by placing certain limits on to what extent the recognizable humans will make use of their technologies. Stross envisions scenarios, experiences, and consequences which test possibilities of this kind of contingency, and concludes that human beings who are moderately devoted to, and preserving of, their biological heritage are in some conceptual sense more coherent than those who altogether abandon it.

Yet *Accelerando* still advocates for augmentation, or "optimization", of the human condition via judicious uses of complex technologies, many of which hinge on performative engagements manifest through applications of semiotic expression. This draws on a tradition extant both in cybertech and in the intellectual and material histories of linguistics and interactive fiction. Austin built his famous case for a "new" (i.e., newly noticed, especially by him) type of semiotic statement which was in a mood not linguistically descriptive, subjunctive, nor injunctive, but rather what he called "performative", on four cornerstone examples of case in point: 1) the speaking of a wedding vow, 2) the words said aloud that christen a ship, 3) the language of the bequest of the elements of estates, and 4) the voicing of a wager. He said of these types of speech-acts that "it seems clear that to utter the sentence (in, of course, the appropriate circumstances) is not to *describe* my doing of what I should be said in so uttering to be doing or to state that I am doing it: it is to do it" (5-6). Following from this, a common metaphor for one's interaction with a computer imagines that computer as taking "commands", but a more apt understanding of the apparatus of an operating system is that it creates a virtual domain in which every valid statement is, within that domain, in fact performative. This vocabulary works well to

understand the nature of command-based interactions with computers which are the ancestors of Stross' entire operating frame.

This user-responsive modality began, arguably, not on the screen, but on the page: in the 1970s, a handful of writers in the anglophone realm started to experiment with applying a command-line logic to the experience of reading. Although (especially from a metafictional or a reader-response perspective) all fiction must be treated as "interactive", the discrete mapping of multiple reader-line possibilities makes a prominent showing in the *Choose Your Own Adventure* series of variable-narrative-flow books published by Bantam in the '70s, '80s, and '90s, created by Edward Packard (originally around 1970) and picked up by R.A. Montgomery. By the late '70s and early '80s, the (logical, inevitable) use of electronic technology to enhance the experience of interactive fiction made its presence known, especially in text-based experiential games such as Will Crowther's "Colossal Cave" (1976), the Infocom team's *Zork* (1977), and Scott Adams' *Adventure* series (inaugurated in 1978). Bukatman explains that the verbal dynamizing of this conceptual reality was groundbreaking:

The adventurer could, by typing simple instructions ("GO NORTH"), move in different directions, examine a range of objects, learn secret words, and interact with other characters. Howard Rheingold correctly observes that 'Adventure is a virtual world in a conceptual,' rather than a sensory way (Bukatman 197).

This kind of command interface is an engine of engagement with Austin's performativity. Commands to a computer, especially in the context of the emulation of a first-person

environment, are not imperatives in any ordinary sense, but performatives by which the user speaks (or types) a reality-state into being: the act of entering the command instantiates its predicate into the experience of the reality that the engine generates. "GO NORTH" is shorthand for "I go north" which is really the semiotic equivalent of "I have gone north", in the sense that it is a statement that, once issued, is effected within the rule system of the simulation, *a posteriori* to the previous memory state, but with the semblance of verisimilitude as though *a priori* to the command, which then appears merely as a description of the very action it has in fact conjured. This technology, in *Accelerando*, is taken to another level: even early in the novel, Manfred Macx can make a suitcase his own, and get it to follow him, simply by *telling* it that it belongs to him. In so doing, he converts what is unknown to him -- the strange suitcase -- into one familiarized and among what is *his*.

The same performativity can function in the words of a novelist as rendered in the subjective experience of a reader, albeit modulated by that reader's reception, but building an environment which functions in reverse -- in which the reader performs the conjuring commands and the "author", in effect, renders them -- is an entirely new domain in the Barthesian *scriptible*: the reader is in charge not just of an open reading, but literally of the writing. Yet in the end, as is the case with printed fiction, the rendering of the reader's experience of the world is a joint project between author and reader, the first prepared *a priori* to the reader's experience, the second generated *a posteriori* to the author's. By the 1990s, this performatively interactive modality of dynamic fiction had been ported to an environment capable of supporting its systems more fully: the first widely-distributed point-of-access to the Internet-anchored interactive Data Cloud, on the early HTML rhizome superstructure then called the "Net" or the "Web".

This Cloud becomes the model for interstellar travel in *Embassytown*. Writ on so large a scale, however, it risks losing the human element (which is not to say that the human element is necessarily strongly present even in our present, existing manifestations of this kind of architecture). In one of the last iterations, *Accelerando* addresses the reader, the “human”, directly, with the following broadcast: “Welcome to the afterglow of the intelligence supernova, little tapeworm” (Stross 362). Human intellect, compared to that of the supercomputers which, in Stross' vision, will deconstruct the solar system via their application of nanotechnology, looks comparable to that of a tapeworm as compared against a human mind. Yet “humans [in fact prove] not as unsophisticated as mulch wrigglers”, because “they can see the writing on the wall” -- namely that humanity's no-longer-human descendents have conquered what once served as a human habitat. So what remains of authentic humanity flees the scene, because their “real debate” becomes “not over whether to run[,] but over how far and how fast” (Stross 387, 389). This question, with this framing, was first hinted at by Gibson in *Neuromancer* and contemplated obliquely by Stephenson in *Snow Crash*, precedents which situate *Accelerando* firmly in, although just as clearly towards the end of, the cyberpunk movement.

Crucially, biological humans' capacity for performativity, for willing reality into being by the *speaking* of it into existence, is intact at the end of the *Accelerando*: it ends with a performative marriage-equivalent of exactly the kind Austin articulates, one which makes a partnership real by declaring it as such. It is debatable whether the posthuman entities in the story are capable of this kind of cognitive activity, but the humans, in whatever form, definitely still are at its conclusion, and by leaving the reader with this scene, Stross draws attention to its significance. *Accelerando* therefore explores the question of how a conscious agent delimits what

it kens by considering the power of the performative as one of the most uniquely creative of biological human capacities. Such mysterious potencies of language, moreover, are at the heart of another British science fiction novel published just six years later: Miéville's *Embassytown*.

Alien Emanations.

Couch Magpie calls Miéville, by virtue of *Embassytown*, "one of the leading lights in [contemporary. . .] sci-fi". The "depiction of a truly alien race, their technology, and humankind's efforts to find a way of communicating with them" is, its article goes on to say, "captivating". It asserts, moreover, that this novel portrays a "cyberpunk world", a position not shared by all genre-savvy readers, but which, in relation to the conventions established by William Gibson, Bruce Sterling, and Neal Stephenson, for example (pop-sensibility, folkloric fabric, visionary apparatus, philosophical commitment, transnormativity, *etc.*, in Sterling's delineation), may be arguable. Whether or not *Embassytown* is cyberpunk, it is definitely cybertech: it is deeply concerned with technologies that augment human cognition. Abigail Nussbaum contends on *Asking the Wrong Questions*, that *Embassytown* is "Old School", that it is "positively retro", that it is an "unfashionable artifact", *etc.*, whereas Darren Franich's review for *Entertainment Weekly* calls it "by turns amusing and horrifying, mixing Philip K. Dick-esque satirical banality with a mesmerizing vision of a society on the brink of apocalypse", with "swing-for-the-fences gusto" that "thrills" in an example of "Big Idea Sci-Fi at its most propulsively readable". What kind of combination could produce both of these results? Perhaps once that ambiguates, rather than caricaturing, its human characters so as to reveal the irresolvable, and yet semi-expressible, complexity of the late postmodern condition.

Embassytown explores the cybertech question of who and what is able to be consciously familiar, with places, with things, and with other subjective agents, by imaging human consciousness in relation to extraterrestrial alien consciousness (not unlike *Accelerando*, but via a different set of conceits). A major subject of narrator Avice's curiosity has been, since childhood, the alien Hosts with whom she shares her home world; she has a few meaningful encounters with them as a child, and eventually, after some time spent away from her planet, she returns and gets to know them a lot better. Much of their mystery hinges on their speech and the challenges that have been overcome in communicating with them. The unusual Host Language requires that, for each word, two different morphs be spoken simultaneously, by two different mouths, under the aegis of a unified consciousness. Because the process produces cognized invocations of referents, instead of signs pointing to them, willful deceit is impossible for the Hosts. Human Ambassadors, on Embassytown's world, have been genetically engineered as "doppels" to be able to communicate with the Hosts: each of them consists of two symbiotic humans who together, at least for purposes of speaking Language, make up one speaker. They are not, however, bound by the Hosts' cognitive constraints of ideation when they speak: therefore they can lie.

So in the novel's "Festival of Lies", the humans MC for their always-truthful Hosts in the hopes of initiating them into the craft of deceit, at the Hosts' own pleading.

The Festivals of Lies had occurred almost as long as Embassytown had existed: they were one of our first gifts to the Hosts.[. . .] Our Ambassadors went among the hundreds of whickering Ariekei. [. . . One of the Hosts was] "saying that [in

Scile's jerky translation], uh, they'll see, I think, miracles, now".[. . .] Furniture was extruding into the room as it self-organized into a vague amphitheater. Ambassador MayBel, elderly, stylish women, stood before an Ariekees, which raised what looked like a big fibre-trailing fungus in in its giftwing. It inserted the dangles into the sockets of the zelle jiggling by its legs, and the mushroom-thing made a sound and glowed, quickly changing colours, cycling to a nacreous blue. [. . .When the Ambassadors lied, the Hosts] tottered and chattered.[. . .] One at a time every Ambassador lied. The Hosts grew boisterous in a fashion I'd never seen, then to my alarm seemed intoxicated, literally lie-drunk.[. . .] The room was whispering, echoing the furore of its inhabitants. (Miéville 83-84).

It is a bacchanal fueled by the parodic and the absurd. When Ambassador CalVin intones that "the walls are disappearing [. . . a]nd the ivy of Embassytown is winding about our legs [. . .] and the room's turning to metal and I'm growing larger and the room and I are becoming one" (Miéville 84), the Hosts are worked up into a frenzy. Yet this invocation Bakhtin's *risus paschalis* is strangely bittersweet: on the one hand, the Hosts are enraptured by a new capaciousness of malleable expressivity, but on the other, the introduction of it threatens the integrity not only of their culture, but of their entire physiology and that of the world that they have engineered. The Hosts, because they cannot lie (and therefore cannot employ metaphor), must instead employ literal simile, and for this they must build a reference library of events precise enough to be invoked for whatever they are describing.

Avice herself has, in a memorable moment in her life, participated in the performance of such a simile, and in the process she has, from the Host perspective, literally become a part of their Language. Other "similes" like her have created a salon culture around discussions of the politicking of Bremen, the country and culture (with its capital on a distant planet) that colonized the world of Embassytown (and therefore of which its human residents are citizens), as understood in conjunction with (or opposition to) what is unique about the Hosts, their Language, and the similes' involvement in it. Avice's husband Scile, meanwhile, who is responsible for all-but-dragging her back to Embassytown, from the much-sought universe beyond it, because he, too, has a fascination with Language, becomes increasingly an advocate for the Hosts, and suspicious of any effort to alter their relationship with their Language, which he considers pure.

It all goes horribly wrong when Bremen sends a new Ambassador of their own design: one whose two component humans are, unbeknownst to Bremen (which is simply jockeying for control by sending its own Ambassador), just close enough to produce Language that is comprehensible, but just different enough from one another that with the comprehensibility comes a complication that produces, for the Hosts, a drug-like effect. The Hosts want to hear the new Ambassador speak all the time, and they let their entire civilization collapse around them on account of this low-sensorium media fixation, which, as per McLuhan's formula, reverts them to tribalistic conditions which eventually degenerate into brutality. The problem is only forestalled, after a lot of violence and complication, when the aliens are at last taught how to render abstract thought, and, by a combination of that ability and a fierce mental discipline, the distorted-Language-drug loses its effect on them.

Kelly Hurley's description of the circumstances for the humans during the first act of Ridley Scott's film *Alien* (1979), perhaps an ancestor of *Embassytown*, might be applied just as well to Avice and her coterie as the world they know begins to blow apart at the seams: "a narrative of human beings, buttressed by an impressive (but ultimately, insufficient) technology, confronting primordial forces of nature they hope to control, but cannot even begin to comprehend" (216). The film -- a product arguably of the ethos of the mid-postmodern -- ultimately, for Hurley, makes "several moves [. . .] in disallowing 'the human' as a recuperable category" (218). But does the late postmodern landscape of *Embassytown* do the same?

In *Embassytown*, as things go awry, the characters watch old Hollywood movies about human-alien conflicts -- "ancient fictions", perhaps *Alien* among them, of "last stands and resistance", and of "the onslaught of hordes" (Miéville 220). "Artists plumbed our Archives," Avice tells the reader, "digital archeology, back millions of hours, to the antediasporan age" -- the review begins with black and white clips scaffolded with the "clumsy symbolism" of a siege carried out by "grossly sick figures", and moves forward in the twentieth century to the days of the color-drenched "edifice full of products", populated by yet "sicker enemies" (Miéville 220). "We read the story as ours, of course," exclaims Avice. It gives her and her desperate comrades "comfort": "It help[s]" (Miéville 220). Fiction fortifies in the face of disaster.

The war with *Embassytown*'s aliens is transient; Avice finds a way to resolve it by comparatively peaceful means. Yet there is only limited peace-of-mind in what the solution imports. The title of Hurley's article that contemplates *Alien* -- "Reading Like an Alien" -- prefigures the binary-synthesizing phrase that most clearly signifies the possibility, in *Embassytown*, not of the *obsolescence* of the category of the human, but the *extension* and cross-

hybridization of it: "Say it like a Host". For if the Hosts, however hard the lessons, have something to learn from the Bremeni colonists about the dimensions of awareness, then the Bremeni have something to learn from the Hosts about the capacious potency of authenticity.

Might it be fair to call both these properties human? Might it be the case that, at least in Miéville's fiction, it is an umbrella under which more than just the biological humans belong? By following such lines of inquiry, *Embassytown* contemplates the questions *What can ken?* by looking at how two different species manifest different models of consciousness according to different systems of language.

Immersions into the Unknown.

Embassytown considers, in turn, the question *What can be kenned?* by jumping into the complex topography experienced by its characters, not only through the labyrinthine trope of the city, but in the matrix-like "always" of the interstellar immer. "Like all children" in *Embassytown*, narrator Avice and her friends "map" their "hometown carefully, urgently, and idiosyncratically. In the market" they are "less interested in the stalls than in a high cubby left by lost bricks in a wall, which" they "always fail[. . .] to reach" (Miéville 9). The GIS of Avice's childhood is not articulated by nodal points of latitude and longitude, but of subjective vector weights that contort the proportions of memory in accordance with the propositions of their significance. Theirs is a world intensely articulated by an all-important, and yet somewhat inarticulate barrier, like the dataspace divisions between various lobes of the brain: the division between the human neighborhoods of the city and those inhabited by the Ariekei.

Avice lives in an entirely constructed world. The "nature" of the terrestrial "natural" does not exist on her planet, which, absent the aliens' technology, would not even have breathable air; she therefore inhabits an environment, like Isaac Asimov's *Caves of Steel* or the Trantor of his *Prelude to Foundation*, which is altogether urban, and in which nothing beyond that urbanity is potable. In this liminal space, "the angles and piazzas" of Avice's "home alleys" are "interrupted by at first a few uncanny geometries of Hosts' buildings; then more and more, until" there are no human structures at all (Miéville 10). The "hectic little tribe" of Avice and her circle make a game of trying to go as far into this alien cityscape as they can, but Avice, although "sincere" in these explorations, is "comforted" by the knowledge that she will inevitably "fail" in these "attempts" (Miéville 10), because the air in the alien quarters is not breathable, and the children must always turn and run back toward their own oxygenated habitat before they get very far. Her adeptness and determination in making these attempts, however, identifies in her the attribute of Baudelairean flânerie: both as a child and as the adult she matures into, she is "rangy and restless" (Miéville 10), and her wanderings take her into a world populated by various among the stock characters of urban splenetics, such as the "quiet, well-dressed man" who is a "source of local disquiet", who meanders "alleys of hedgerow toward the river or a market, or in the direction of the archive ruins or the Embassy" (Miéville 11).

Avice dates certain "events precisely" by the calendar knowledge of where they stand in relation to her birthday, but the cognitive location of their imprint is detectable by their association with her being "melancholic in a way" she is in retrospect "amused by": as in Augustine's formula, the print of the memory bears the description of the feeling, but is (in this case comically) disengaged from its experience (Miéville 11). Yet as the feelings of the day

remembered shift from uncertainty, to concern, to relief over a friend who has recovered from danger, what is deepest in the synaptic imprint is the trauma of the encounter with the other -- a Host who saved her friend's life, and yet who causes Avice to be "haunted by what had been, without question, its precise attention on me" (Miéville 16) -- a material engagement with the historical world that becomes, in memory, the ghost of a dissociated affect. It is a haunting, however, worth holding onto. Avice maintains her aplomb in the face of desperate humans and crazed aliens by remembering both through the human frame: perhaps a frame whose idea of the "human", after all, extends beyond the biologically human realm. From the interior of the chaos that slowly erupts around her, over the present-time narrative of the novel, the narrator Avice turns to memory as a reassuring balm. Even knowing that it may contort her functionality, she cannot "stop nostalgia then", because as she looks "down streets with angles not as we'd built them, which terminated or twisted in ways that still seemed almost playfully alien, toying with our technologies, there" is "no way [she . . .] couldn't remember when [she had . . .] stared down them in [her . . .] early life and systematically populated that out-of-sight city with every kind of child's impossibility and story" (Miéville 243).

Part of this has to do with her experience "in the out" as an interstellar helmer. The sea she sails is like none other. "The immer's reaches don't correspond at all", Avice explains, "to the dimensions of the manchmal, this space where we live. The best we can do is say that the immer *underlies* or *overlies*, *infuses*, is a *foundation*, is a [in a deployment of Saussurean linguistics] *langue* of which our actuality is a *parole*, and so on" (Miéville 31). And Arieka is located, in the cartography of this supermaterial Cloud, at its incredibly-far-flung edge, lapping up against its

world-disc's equivalent of the Pillars of Hercules: "It sits alone at the edge of known immer, so far as the immer can be known" (Miéville 31).

In relation to cyberpunk, then, and as a product of that movement's *senectus*, *Embassytown* everts the systems of the matrix (of *Neuromancer*), the Metaverse (of *Snow Crash*), and the tin-can community-emulation (of *Accelerando*), whereby in *Embassytown*, the aspect of virtuality is inverted: the properties associated with the network, with self-propagating software, with the labyrinth of the hacker's entry-point to intrusion, although they do exist (in a narratively diminished form) in the traditional cyberpunk formulation, are far more prominent in one in which their conventions and formulas take on a physical form: namely the immer. It is a reality frame not unlike the cyberspace of *Neuromancer* - but instead of a cognitive construction, or microcosm of phenomenology, it is a supercosm, a macroextenuation, and rather than spanning the chasms of domains of data, it links solar systems and galaxies, an "indescribable" expression of reality that is "*beyond words*". So instead of "jacking in" to a neurologically-interactive reality construct, the cybernauts of *Accelerando* are literally cosmonauts, or perhaps metacosmonauts, since the ocean they sail seems to be none other than the long lost Atlantis of Platonic origination. The map of the features of the matrix, however, is otherwise preserved entirely intact: limited points of entry requiring specific hardware.

By virtue of her experience with this world of rigorous navigation, Avice hones an art called, in the colloquial cant of its constituency, *floaking*. Some kind of portmanteau, perhaps, of fluking, flaking, floating, *usw.*, the floaker embodies a "life-technique of aggregated skill, luck, laziness, and chutzpah" (Miéville 18), and although "[s]ome people think it mere indolence", in fact "it's a more active and nuanced technique" than simply slacking: in evolves a delicate mean

between hard work and rigorous slack. It is a way of doing business much valued among the hardy crews of space-sailors that brave the immer, where competence (and therefore survival) require a deft balance between intuition and exertion. Therefore save for the "expertise and bravery, and the skill of the immersers, no one could" ever reach it (Miéville 31). It is not just floaking, however, but the experiences of rigorous professionalization and cultural variegation that inform her way of navigating her home city when she at last returns. *Embassytown*, therefore, looks at the *What can be kened?* question through two labyrinthine systems brought into conjunction by the subjectivity of one traversing them: the city space, and the vast immer beyond it.

(Sub)Liminal Slippage.

Finally, *Embassytown* looks at the question of *How is what can be kened delimited?* via a nostalgic (but perhaps renovating, in its scientific deployment) invocation of "classic" semiotics, rooted in the finer points of the Host Language and the human interaction with it. Alex Good, in his not particularly complimentary review for the *Toronto Star*, considers *Embassytown* to be little more than a hermetic indulgence:

Known as someone who likes to think outside the genre box, [Miéville's. . .] new novel, *Embassytown*, announces one such new direction in its primary acknowledgments. Here Miéville names three dead writers he feels "particularly grateful to." These are not, however, stars of the SF pantheon, but rather the literary critic I.A. Richards and the theorists Paul Ricœur and Tran Duc Thao, a

pair of nearly incomprehensible philosophers of language who were briefly popular among French post-structuralist academics back in the days when such things were trendy.

According to *The Oxford Companion to English Literature*, Richards' signature work "analyses the stock responses, preconceptions, metrical insensitivities, lack of attentive reading, etc." of unschooled readers' responses to canonical masterpieces (and their converse), and wages "attacks on vagueness, sentimentality, and laziness in poets and readers" while offering up "praise of irony [. . .] ambiguity, complexity, and allusiveness". Richards, who was a teacher of William Empson, is no doubt invoked here by Miéville because of his "emphasis on the importance of close textual study" and especially his "views on scientific and emotive language, and on the nature of the status of statements (or pseudo-statements) in poetry" (855): the fact that Richards is dead seems irrelevant vis-à-vis his relevancy. But Good takes literary re-animation as a cause for alarm; he goes on to compare the alien Hosts of *Embassytown*'s planet, the Ariekei, to Jonathan Swift's horse-like Houyhnhms, who "cannot comprehend the thing-that-is-not", and identifies the human settlers as "deep-future descendents of Machiavelli and Talleyrand" who "fry the brains of the Hosts with their own version of a forked tongue". Good further claims that Miéville's "heart clearly isn't in" the storytelling of the novel, but uses it instead to grandstand ideas "that, by the time you sort them out, really aren't saying much". Perhaps Good isn't listening closely enough.

Emelie Jonsson believes to have identified, in *Embassytown*, a different "problem of plausibility": that "the Ariekei do not have a perfect perception or a perfect understanding of their

world [. . . and therefore] there is nothing to prevent them from believing something mistakenly or intending something misguidedly [, because w]hat the Ariekei's language represents perfectly is actually their perception of the world, not the world itself". That may not, however, be the problem Jonsson takes it for. In fact it may be at the heart of understanding the intrinsic inviolability of Areikein subjectivity, which makes the Ariekei entirely vulnerable to anything that interferes with their at-first-take imprints -- which are lucid in memory even if distorted in empirical accuracy -- about the world.

In Kristen Tranter's article in *Overland* titled "Refiguring fiction", Tranter calls *Embassytown* both "self-consciously literary" and "a classic sci-fi space opera", narrated in a "cool, cynical voice" and depicting a world with a species both "utterly alien" and "seemingly unique". What Miéville has to teach, according to Tranter, is that "[l]ike the line on a graph that approaches but never meets a point, human language can't overcome the differences between subjective experiences". This awareness cultivates, for Tranter, "a delicate pathos" pillowed on the quilt that "the emotional distance between people, even (and especially) lovers, is the most difficult and painful gulf to navigate".

In the postmodern expanse of abstraction and difference-elision, then, the oblique sublime, whether summoned by the terrors of natural immensity, by the posthuman enormity of technological multiplication, by the complex expansiveness of inter-human relations, or by the at-first-uncanny encounter with an alien modality, trumps (and at times obliterates) all material certainty, transmogrifying it into a cavern of ambiguous possibility. Jacques Derrida famously reflects, in *Writing and Difference* (1967), upon concerns of knowledge, poetics, divinity, and literary portability within the Continental precinct: "La créativité divine serait récupérée," he

observes with a somewhat dry bitterness (also an admiring archness?), "dans un humanisme hypocrite" (23) ["Divine creativity might be recovered in a hypocritical humanism"]. The valence of his intention, here, is dependent upon the charge he ascribes to hypocrisy: if it is a human parlor trick, then so is the platform of scriptural injunction (or the worldly abuses of that injunction) on which it relies, but if, instead, the performance of imagination is the masthead of divinity itself, then a theatrically performative and semantically multivalent humanitarianism is metaphysics' faithful standard-bearer.

The trick of meaning (or, more readily, its obfuscation, if indeed there is anything to obfuscate) is, for Derrida, in compound signification; therefore he is either consoled, or annoyed, or some paradoxical conjunction of the two, by the recognition that "par tous ses chemins et malgré tout les différences, la réflexion universelle reçoive aujourd'hui un formidable mouvement d'une inquiétude sur la langue" (Derrida 9): by every road and beyond every confrontation, all contemplation must brook, today, the intimidating thrust of concerns about language. So the semiotic anxiety of which Derrida is a primary harbinger has, he has noticed, become altogether ubiquitous, and the force of its momentum has thereby carried him to a new attempt at its artistic complication. Where this takes him that same locale of the sublime, a process whereby "[p]our ressaisir au plus proche l'opération de l'imagination créatrice, il faut donc se tourner vers l'invisible dedans de la liberté poétique" (17): to claim, at closest vantage, the productive engagement, one will turn again toward what is unseen within the maker's freedom.

This is a position of which Miéville, in the authorship of *Embassytown*, seems aware. "Now, granted," Scile tells Avise, mocking a lecturer on semiotics, "words can't actually *be*

referents, *that* I grant you, there's the tragedy of language, but our asymptotic efforts at deploying them aren't nothing either" (30). Avice responds, somewhat teasingly, by confirming that the very tone and content he is satirizing is one she feels compelled to verify. "It's all true," she insists. "I say it like a Host" (Miéville 30). The intellectual discourse of language, here, is made personal and mixed into the many other elements in the novel rather gracefully. *Embassytown* becomes, in this light, more than just science fiction: it is introspective literary fiction like that of Saul Bellow or William Gaddis, stretching ideas toward as far a distance of expansion as a reader will permit them.

In Carlo Rotella's review for *The New York Times* titled "Teaching Aliens How to Lie", Rotella claims that "Miéville repurposes genre formulas like a salvage artist, mixing a connoisseur's respect for recovered materials with heretical joy in putting them to surprising uses", and that, in *Embassytown* and the rest of his novels, "[t]he fashioning of intricately conceived parallel worlds plus the recombinant use of popular formulas equals a story-generating method" that is apparently very portable. As for *Embassytown*, it "belongs to the science fiction subgenre of planetary romance, in which the main purpose is to explore a richly conceived alien world", a creation which, "[l]ike all Miéville's additions to the literary atlas", is a "place [that] seems at once wildly imagined from scratch and phantasmagorically drawn from life".

Embassytown is a novel of exactly this (problemetized) equivalency: of the precise thinker who cannot dream, and therefore cannot recognize when his remedy has become toxic to the imagination of those he treats; and of the spellbound dreamer inured to (even as she is steeped in) discourse, whose capacity to withstand the absolute purity of the fantastical is both fortifying and alienating, but who cannot step out of her immersion in it completely enough to know the

difference between a lover she is betraying, and an enemy she is abetting. The novel's is a world, moreover, in which the abstraction of space is its affirmation, and the irreproducibility of language is its semantic functionality. When threatened to be incursed upon by the mapmakers, by the transcript-scribblers, by the magistrate-messengers, it all but implodes, and at the prospect of such an implosion, explodes into something else entirely.

Embassytown therefore responds to cybertech's main three questions (the *who*, the *how*, and the *what-limit-system* of conscious kenning) first by establishing that, despite the presence of Turingware, its main concern is whether and how extraterrestrial aliens are conscious, especially as reified in the hybridized urban landscape of Embassytown itself; then by contemplating the labyrinthine vastness of the immer; and finally by applying Derridean principles of language so as to profit by the fuzzy-logic, organically ambiguous inscription of différance. It is by just such insights that *Embassytown*, finally, bestirs all the strivings of the late postmodern to, in spite of it all, *mean* something: the immersion into a moment that, "for all the dark prognostications that accompany it, shows many signs--obscure, puzzling, and contradictory signs--of a transformation" toward "having something to say to us after all" (Green 216). As for just *what* it has to say, though, well, that's really for the reader to decide. Therein one finds what is expansive and productive about cybertech itself: in speaking its perspectives "like a Host" concerned primarily with presenting, to its readerly guests, what it believes to be the truth, cybertech invites its readers to come to recognize that not only is such a host more like themselves than they might imagine, but that each perspective, author's and reader's, always, finally, has something to teach the other.

If *Embassytown*, moreover, and works contemporary to it, portend, by just such a reconfiguration and/or readaptation of their cultures' persistent patterns and ideas, the end of the late postmodern, what fresh era do they inaugurate? Perhaps it is the dawn of the high metacyber period: one in which literature frequently invokes cybertechnology, in which cybertechnology is informed by complex constructions of language, and in which, as Gibson's *Neuromancer* heralded, and as Jeannette Wing's contemporary perspective confirms, the special vocabularies of each are successfully ported into the playing field of the other. If, after all, the dimensions of faster-than-light travel can be imagined in terms of the cognitive figures of *langue* and *parole* (as Miéville does in *Embassytown*), and if the processes of linguistic application can be parsed in the computronic verbiage of functions and recursivity (as Vikran Chandra does in *Geek Sublime*), then we have emerged into a terrain in which the humanities and the sciences once again may draw from a single shared vocabulary. From the vantage of that common ground, we are at once witness to its expanding set of implications: perhaps the most meaningful signpost that designates the twenty-first century in which we live.

BIBLIOGRAPHY

- Adams, Jon. "The Sufficiency of Code: *Galatea 2.2* and the Necessity of Embodiment." *Intersections: Essays on Richard Powers*. Ed. Stephen J. Burn & Peter Dempsey. Chicago: Dalkey Archive Press, 2008. 137-150. Print.
- Agamben, Giorgio. *The Time that Remains: A Commentary on the Letter to the Romans*. Trans. Patricia Dailey. Stanford: Stanford University Press, 2005. Print.
- The American Heritage Dictionary of the English Language*. 4th Ed. New York: Houghton Mifflin, 1994. Digital Edition.
- Amerika, Mark. "Remix Art: Literary Presence in Contemporary Art Practice [Abstract for a Presentation Delivered to the University of Colorado Literaria Society]." *Consortium: A Record of Crossdisciplinary Inquiry*. Ed. Alex Wedemeyer. Boulder: The University of Colorado Crossdisciplinary Consortium, 2009. Print.
- Austin, J.L. *How to Do Things With Words*. 2nd Ed. 1962. Cambridge, Massachusetts: Harvard University Press, 2003. Print.
- Bachelard. *La poétique de l'espace*. 1958. Ed. Daniel Boulognon. Chicoutimi, Quebec: Paul-Émile-Boulet Library. Web.
- Barthes, Roland. "Introduction to the Structural Analysis of Narrative." Trans. Stephen Heath. *Longman Critical Readers: Narratology*. Ed. Susana Onega and José Ángel García Landa. New York: Longman, 1996. 45-60. Print.
- . *Mythologies*. France: Éditions du Seuil, 1970. Print.
- Baudelaire, Charles. *Petits poèmes en prose*. 1995 ed. Paris: Pocket, 2006. Print.

Baudrillard, Jean. "The Ecstasy of Communication." Trans. John Johnston. *Postmodern Culture*.

Ed. Hal Foster. London: Pluto Press, 1985. Print [facsimile].

---. *Simulacra and Simulation*. Trans. Sheila Faria Glaser. Ann Arbor: University of Michigan Press, 1994. Print [facsimile].

The Beatles Illustrated Lyrics. Ed. Alan Aldridge. New York: Black Dog & Leventhal, 1990. Print.

Bechtel, William and Adele Abrahamsen. *Connectionism and the Mind: Parallel Processing, Dynamics, and Evolution in Networks*. Malden, Massachusetts: Blackwell Publishers, 2002. Print.

Bergson, Henri. *Matière et mémoire: Essai sur la relation du corps à l'esprit*. 7th ed. France: Quadrige/Puf, 2007 [Reprint]. Print.

Bell, David. "Users Guide" to *The Cybercultures Reader*, edited with Barbara M. Kennedy. Print.

Bellow, Saul. *Humboldt's Gift*. 1975. New York: Penguin, 1996. Print.

Benjamin, Walter. *The Arcades Project*. Trans. by Howard Eiland and Kevin McLaughlin. Cambridge, Massachusetts: The Belknap Press, 2002.

Birkerts, Sven. "The Struggle for the Soul of the Sentence." *The Wilson Quarterly*. 25.4 (2001): 68-75. JSTOR or comparable. Web.

Bogost, Ian. Afterword. *Inter/Vention: Free Play in the Age of Electracy*. By Jan Rune Holmevik. Cambridge, Massachusetts: The MIT Press, 2012.

Borges, Jorge Luis. *Collected Fictions*. Trans. Andrew Hurley. New York: Penguin, 1998. Print.

---. *Labyrinths*. Ed. Donald A. Yates & James E. Irby. 2007 ed. New York: New Directions, 2007. Print.

---. *Narraciones*. 17th ed. Madrid: Catedra, 2006. Print.

Bould, Mark and Sherryl Vint. "Of Neural Nets and Brains in Vats: Model Subjects in *Galatea 2.2* and *Plus*." *Biography* 30.1 (2007): 84-105. *JSTOR* or comparable. Web.

Brontë, Emily. *Wuthering Heights*. 3rd ed. 1963. New York, W.W. Norton & Company, 1990. Print.

Brooke-Rose, Christine. *Textermination*. New York: New Directions, 1991. Print.

Brown, Francis, Samuel Rolles Driver, and Charles Augustus Briggs. *The Brown-Driver-Briggs Hebrew and English Lexicon*. 1906. *BibleHub*. Web.

Bukatman, Scott. *Terminal Identity: the Virtual Subject in Postmodern Science Fiction*. Durham: Duke University Press, 1993. Print.

Bulfinch, Thomas. *Bulfinch's Mythology*. 2006 ed. New York: Barnes and Noble Books, 2006. Print.

Burn, Stephen J. "An Interview with Powers." *Contemporary Literature* 49.2 (2008): 163-169. *JSTOR* or comparable. Web.

Calvino, Italo. *If on a winter's night a traveler*. Trans. William Weaver. San Diego: Harcourt, 1981. Print.

---. *Si una notte d'inverno un viaggiatore*. 1994 ed. Milan: Oscar Mondadori, 2009. Print.

Carson, Anne. *Glass, Irony, and God*. New York: New Directions, 1995. Print.

Cavallaro, Dani. *Cyberpunk and Cyberculture*. New York: Continuum, 2007. Print.

de Certeau, Michel. *The Practice of Everyday Life*. Trans. by Steven F. Rendall. Berkeley: University of California Press, 1984.

- Clarke, Bruce. *Posthuman Metamorphosis: Narrative and Systems*. New York: Fordham University Press, 2008.
- Cohen, Robert. "Pygmalion in the Computer Lab." *The New York Times*. 23 July 2005, late ed. Web.
- Congleton, Roger D. "America's Neglected Debt to the Dutch: An Institutional Perspective." *Constitutional Political Economy*. 19.1 (2008): 35-59. *JSTOR* or comparable. Web.
- Cybercultures Reader, The*. Ed. David Bell and Barbara M. Kennedy. New York: Routledge, 2001. Print.
- Deleuze, Gilles. *Bergsonism*. 3rd ed. France: Quadriga / PUF, 2007 (Reprint).
- DeLillo, Don. *White Noise*. 1999 Edition. New York, Penguin: 1999. Print.
- Derrida, Jacques. *L'écriture et la différence*. France: Éditions du Seuil, 1979. Print.
- Dewey, Joseph. *Understanding Richard Powers*. Columbia, South Carolina: University of South Carolina Press, 2002. Print.
- Dick, Philip K. *Do Androids Dream of Electric Sheep*. 1968. New York: Signet, 1969. Print [Digital Conversion Solutions facsimile].
- Dillard, Clayton. "Fredric Jameson: 'The Aesthetics of Singularity' @ UC Berkeley, Tuesday, February 28th: Notes and Reflections." *Last(ing) Impressions: Is There a Way Out?* 1 March 2012. Web.
- Doctorow, Cory. *Content: Selected Essays on Technology, Creativity, Copyright, and the Future of the Future*. San Francisco: Tachyon Publications, 2008. Print.
- Doring, Daniel, Mark Newman, and Anna Barford. *The Atlas of the Real World*. 2008. Print.

"Richards, I(vor) A(rmstrong)." *The Oxford Companion to English Literature*. 6th ed. Ed.

Margaret Drabble. Oxford: Oxford University Press, 2000.

Easterbrook, Neil. "Accelerando." *The 2011 Science Fiction Studies Symposium: The Singularity in SF*. Web.

Eliot, T.S. "The Waste Land." 1922. *The Waste Land and Other Poems*. New York: Signet Classic, 1998. Print.

"Embassytown - China Miéville." *Couch Magpie*. 13 February 2014. Web.

Ende, Michael. *Die unendliche Geschichte*. 1979. Munich: Piper, 2010. Print.

Falcon, Andrea. "Time for Aristotle." *Notre Dame Philosophical Reviews: An Electronic Journal*. 1 April 2006. Web.

Franich, Darren. "Embassytown." *Entertainment Weekly*. 18 May 2011. Web.

Gaddis, William. *A Frolic of His Own*. New York: Poseidon, 1994. Print.

"Galatea 2.2 by Richard Powers". *Kirkus Review*. 1 April 1995. Web.

Geraci, Robert M. "There and Back Again: Transhumanist Evangelism in Science Fiction and Popular Science." *Implicit Religion* 14.2 (2011): 141-172. *JSTOR or comparable*. Web.

Gibson, William. *Neuromancer*. New York: Ace Books, 1984. Print.

Gleick, James. "A Unified Theory: *Geek Sublime* by Vikram Chandra." *The New York Times Sunday Book Review*. 22 August 2014. Web.

Good, Alex. "Embassytown by China Miéville." *The Toronto Star*. 10 June 2011. Web.

Green, Jeremy. *Late Postmodernism: American Fiction at the Millennium*. New York: Palgrave Macmillan, 2005. Print.

- Hamilton, Edith. *Mythology: Timeless Tales of Gods and Heroes*. 1942. New York: Warner Books, 1999. Print.
- Haraway, Donna. "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s." *Feminism/Postmodernism*. Ed. Linda Nicholson. New York: Routledge, 1990. 190-234. Print [facsimile].
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: The University of Chicago Press, 1999. Print.
- . "The Posthuman Body: Inscription and Incorporation in *Galatea 2.2* and *Snow Crash*." *Configurations* 5.2 (1997): 241-266. *JSTOR* or comparable. Web.
- Helmling, Steven. "Constellation and Critique: Adorno's Constellation, Benjamin's Dialectical Image." *Postmodern Culture* 14.1 (2003). Web.
- Hoeksema, Jack. "Complex Predicates and Liberation in Dutch and English." *Linguistics and Philosophy* 14.6 (1991): 661-710. *JSTOR* or comparable. Web.
- Hummel, John H. "Rousseau's *Pygmalion* and the *Confessions*." *Neophilologus*. 56.3 (1972): 273-284. *JSTOR* or comparable. Web.
- Hurley, Kelly. "Reading Like an Alien: Posthuman Identity in Ridley Scott's *Alien* and David Cronenberg's *Rabid*." *Posthuman Bodies*. Eds. Judith M. Halberstam and Ira Livingston. Bloomington: Indiana University Press, 1995. 203-224. Print [facsimile].
- Hutcheon, Linda. *A Poetics of Postmodernism: History, Theory, Fiction*. New York: Routledge, 1988.
- Jameson, Fredric. *The Modernist Papers*. New York: Verso, 2007. Print.

---. *Postmodernism, or The Cultural Logic of Late Capitalism*. Durham: Duke University Press, 1991.

Jaynes, Julian. *The Origins of Consciousness in the Breakdown of the Bicameral Mind*. Boston: Houghton Mifflin, 1977. Print.

Johnston, John. "Distributed Information: Complexity Theory in the Novels of Neal Stephenson and Linda Nagata." *Science Fiction Studies*. 28.2 (2001): 223-245. *JSTOR* or comparable. Web.

Jonsson, Emelie. "Language and Horsemanship: A Review of China Miéville's *Embassytown*." *Academia*. Web.

Kazin, Alfred. *A Walker in the City*. New York: Harcourt, Brace and Company, 1959. Print.

Kermode, Frank. *The Sense of an Ending: Studies in the Theory of Fiction*. New York: Oxford University Press, 1968. Print.

Kittler, Friedrich. *Grammophon, film, typewriter*. Berlin: Brinkmann & Bose, 1986. Print.

Kristeva, Julia. *Le temps sensible*. Mesnil-sur-l'Estrée: Gallimard, 1994. Print.

Kurtzweil, Ray. *The Age of Spiritual Machines: When Computers Exceed Human Knowledge*. 1999. New York: Penguin, 2000.

---. *The Singularity is Near: When Humans Transcend Biology*. New York: Penguin, 2005. Print.

Kuskin, William. "Textual Objects: Discipline and Literature in the Twenty-First Century [Abstract for a Presentation Delivered to the University of Colorado Literaria Society]." *Consortium: A Record of Crossdisciplinary Inquiry*. Ed. Alex Wedemeyer. Boulder: The University of Colorado Crossdisciplinary Consortium, 2009.

Laudadio, Nicholas C. "Just Like So But Isn't: Musical Consciousness in Powers's *Galatea 2.2*."

Extrapolation 49.3 (2008): 410-430. *JSTOR* or comparable. Web.

Lewis, Clayton. "Computational Thinking." *Denver Café Scientifique*. Web.

Lovink, Geert. *Zero Comments*. New York: Routledge, 2008. Print.

Lyotard, Jean-François. "Answering the Question: What is Postmodernism?" Trans. Régis

Durand. *Postmodernism: A Reader*. Ed. Thomas Docherty. New York: Columbia

University Press, 1993. 38-46. Print [facsimile].

McLuhan, Marshall. *Understanding Media: The Extensions of Man*. New York: Mentor, 1964.

Print.

Miéville, China. *Embassytown*. New York: Del Rey, 2012. Print.

Morrison, Toni. *Song of Solomon*. New York: Plume, 1977. Print.

Mustich, James. "Neal Stephenson: *Anathem*." *The Barnes and Noble Review*. 13 October 2008.

Web.

Nussbaum, Abigail. "Embassytown by China Miéville." *Asking the Wrong Questions*. 27

November 2011. Web.

Ogle, Marbury B. "As a Tale that is Told." *Monatshefte für deutschen Unterricht*. 37.4/5 (1945):

130-134. *JSTOR* or comparable. Web.

Olsen, Lance. *Starmont Reader's Guide #58: William Gibson*. Mercer Island: Wildside Press,

1992. Print.

Ovid. *Metamorphoses*. *Perseus*. Web.

---. *Metamorphoses*. Trans. Charles Martin. 2004. New York: W.W. Norton & Company, 2005.

Pence, Jeffrey. "The End of Technology: Memory in Richard Powers' *Galatea 2.2*." *MLQ*:

Modern Language Quarterly. 63.3 (2002): 343-363. *JSTOR or comparable*. Web.

Powers, Richard. *Galatea 2.2*. New York: Picador, 1995. Print.

Proust, Marcel. *A la recherche du temps perdu: Du côté de chez Swan*. 1987 ed. Paris:

Flammarion, 1987.

"Psalms." *Wisdom Writings*. [Hebrew.] *BibleHub*. Web.

---. *Septuagint*. [Koine Greek.] *BibleHub*. Web.

---. *Gallicana*. [Latin.] *BibleHub*. Web.

---. *Clementine Vulgate*. [Latin.] *BibleHub*. Web.

---. *KJV*. [English.] Digital media: *BibleHub*. Web.

---. *Douay-Rheims*. [English.] *BibleHub*. Web.

---. *Septuagint*. [English.] Trans. L.C.L. Brenton. *BibleHub*. Web.

---. *Jubilee Bible 2000*. [English.] *BibleHub*. Web.

Pynchon, Thomas. *Mason & Dixon*. New York: Picador, 1997. Print.

Reinhold, Meyer, "The Naming of Pygmalion's Animated Statue." *The Classical Journal* 66.4

(1971): 316-319. *JSTOR or comparable*. Web.

Renegar, Valerie R. & George N. Dionisopoulos. "The Dream of a Cyberpunk Future?:

Entelechy, Dialectical Tension, and the Cosmic Corrective in William Gibson's

Neuromancer." *Southern Communication Journal*. 76.4 (2011): 323-341. *JSTOR or*

comparable. Web.

Rhee, Jennifer. "Misidentification's Promise: the Turing Test in Weizenbaum, Powers, and

Short." *Postmodern Culture*. 20.3 (2010). Web.

- Rosu, Anca. "Parody as Cultural Memory in Powers's *Galatea 2.2*." *Connotations* 12.2-3 (2002/2003): 139-54. *JSTOR* or comparable. Web.
- Rotella, Carlo. "Teaching Aliens How to Lie." *The New York Times Sunday Book Review*. 3 June 2011. Web.
- Schroeder, Randy. "Determinacy, Indeterminacy, and the Romantic in Gibson." *Science Fiction Studies*. 21.2 (1994): 155-163. *JSTOR* or comparable. Web.
- Shackelford, Laura. "Narrative Subjects Meet Their Limits: John Barth's "Click" and the Remediation of Hypertext." *Contemporary Literature*. 46.2 (2005): 275-310. *JSTOR* or comparable. Web.
- Shaviro, Stephen. "The Singularity is Here." *Red Planets: Marxism and Science Fiction*. Eds. Mark Bould and China Miéville. London: Pluto Press, 2009. Web [republication].
- Silva, Matt. "The 'Powers' to 'Kraft' Humanist Endings to Posthumanist Novels: *Galatea 2.2* as a Rewriting of *Operation Wandering Soul*." *Critique* 50.2 (2009): 208-222. *JSTOR* or comparable. Web.
- Sponsler, Claire. "Cyberpunk and the Dilemmas of Postmodern Narrative: The Example of Gibson." *Contemporary Literature*. 22.4 (1992): 625-644. *JSTOR* or comparable. Web.
- Stelarc. *The Monograph*. Ed. Marquard Smith. Cambridge, Massachusetts: MIT Press, 2005. Web [republication/excerpts].
- Stephenson, Neil. *Snow Crash*. 2002. New York: Bantam Books, 2008. Print.
- Mirrorshades: The Cyberpunk Anthology*. Ed. Bruce Sterling. New York: Ace Books, 1988. Print.
- Stiegler, Bernard. *Technics and Time, 2: Disorientation*. Trans. Stephen Barker. Stanford: Stanford University Press, 2009. Print.

- Stockton, Sharon. "The Self Regained': Cyberpunk's Retreat to the Imperium." *Contemporary Literature*. 36.4 (1995): 588-612. *JSTOR* or comparable. Web.
- Stross, Charles. *Accelerando*. New York: Ace Books, 2005. Print.
- Swanstrom, Lisa. "Capsules and Nodes and Ruptures and Flows: Circulating Subjectivity in Neal Stephenson's *Snow Crash*." *Science Fiction Studies*, 37 (2010): 54-81. *JSTOR* or comparable. Web.
- Tabbi, Joseph. *Cognitive Fictions*. Minneapolis: University of Minnesota Press, 2002. Print.
- Teuscher, Christof. *Turing's Connectionism: An Investigation of Neural Network Architectures*. New York: Springer, 2002. Print.
- Thomas, Edward. *The Poems of Edward Thomas*. Ed. Peter Sacks. New York: Handsel Books, 2003.
- Timmins, Mary. "The Selves of Richard Powers." *Illinois Alumni Magazine*. Web.
- Toffler, Alvin. *Future Shock*. New York: Random House, 1970. Print.
- Videgar, Angela Becerra. "Award-winning novelist, Stanford Professor Richard Powers finds inspiration in teaching, tech and trees." *The Humanities at Stanford*. 25 March 2014. Web.
- Vonnegut, Kurt. *Slaughterhouse Five*. New York: Delta, 1969. Print.
- Wolfe, Cary. *What is Posthumanism?* Minneapolis: University of Minnesota Press, 2010. Print.
- Wiener, Norbert. *Cybernetics*. 2nd. ed. 1961. Cambridge, Massachusetts: The M.I.T. Press, 1962.
- Wing, Jeannette. "Computational Thinking." *Communications of the ACM*. 49.3 (2006): 33-35. *JSTOR* or comparable. Web.
- Wisecup, Kelly "Let's Get Semiotic': Recoding the Self in Stephenson's *Snow Crash* (1992)." *The Journal of Popular Culture*. 41.5 (2008): 854-877. *JSTOR* or comparable. Web.

Youngquist, Paul. *Cyberfiction: After the Future*. New York: Palgrave Macmillan, 2010. Print.

Zemka, Sue. *Time and the Moment in Victorian Literature and Society*. Cambridge, England: Cambridge University Press, 2012.

Zuidervaat, Lambert. "Theodor W. Adorno." *Stanford Encyclopedia of Philosophy*. 10 October 2011. Web.

NOTES

- 1 Laura Snyder tells it concisely in her June, 2012 Ted Talk entitled "The Philosophical Breakfast Club".
- 2 My habit will be here and elsewhere to introduce non-anglophone works by reference to the common English title, so that the reader most familiar with the English title will readily know which work is under discussion. Unless otherwise noted, the translations in brackets that immediately follow quotations from non-English works are approximate glosses that I have rendered specifically for this project, with an attention to the meanings and senses most significant for my application of them. The same effect is accomplished in other instances by extended paraphrase translations.
- 3 The idea of science fiction as operating according to this function, and mode, goes at least back to Asimov's theories of it, but it is also very contemporary, as in the formulations of Paul Youngquist.
- 4 The usage here of rhizomatic is presumably in the sense established by Deleuze and Guattari designating an expansive, intertwined substructure of connectivity.
- 5 The demonstrative distinction between inflection and infliction employed here is not from McLuhan's vocabulary, but has been introduced as a way of explaining his concepts.
- 6 *cf.* Augustine on sensorial memory.
- 7 This kind of VR premise no doubt existed before Gibson's vision, but his coupling it with other conceptual systems -- data management, corporate intrigue, the processing of trauma, the nature of identity -- results in a mythopoetic design studio nested into a mythopoesis of the metaliterary which itself is a product of a Gibson's mythic literary vision. Like the layers of lucid dreams in the 2010 film *Inception*, the toolkits of means of refashioning reality recurse along a scope-map of levels in *Neuromancer*, and the ingenious virtuosity of authorship that Gibson displays in managing their interrelationships is at the very core of the literary brilliance, and brightly innovative luster, of the work.
- 8 Appreciation is owed to Anthony Yu for his guidance in the reading of this work.
- 9 *Humboldt's Gift* also, intriguingly, has some major narrative overlaps with *Galatea 2.2* -- which

means that, since both were in the mode of fictionalized autobiography, there is a certain correspondence in the life maps of Saul Bellow and his younger counterpart Richard Powers.

10 specifically the top, hauntingly, of the late-twentieth-century World Trade Center; Stross will also take us here, in its refigured context, at the end of *Accelerando*, and Gibson's 2003 novel *Pattern Recognition* -- which in this respect is also rather closely resembled by Jonathan Safran Foer's 2005 novel *Extremely Loud and Incredibly Close* -- is saturated with its ghost

11 This comes into interesting conjunction with the clouds of Baudelaire's *Paris Spleen*, the cloud of emissions of Charles Stross' *Accelerando*, and a broader literary history of the semiotics of the cloud-scape, one which has odd resonance in this moment when the Cloud is a trope (and a technology) of such potent governance.

12 Appreciation is owed to Ojars Kratins for his guidance in the reading of this work, and for his insights on the landscape of late-twentieth-century speculative fiction.

13 depending, of course, on what the standards are for any given grade-level of reading

14 *Virtual Light* was Gibson's novel-in-progress at the time of *Snow Crash*'s release; a little seed of *Virtual Light* called "Skinner's Room", which I have to think that Stephenson might have read while writing *Snow Crash* (although it is hard to tell who borrowed the most from whom), appeared in 1990, for the exhibit *Visionary San Francisco*.

15 discussed elsewhere in relation to constructs of time in twentieth-century discourse

16 The "AI shut down" aspect of the plot of *Galatea 2.2* looks a lot like an episode of *Star Trek: The Next Generation* (1986-1994) called "The Offspring" (1990) in which Data, himself a cybernetic entity, creates, based on his own design, a daughter, Lal, who shuts down after the trauma of being told she must leave her father.

17 It is worth noting that Mark Bould is thanked by China Miéville in the preface to *Embassytown*, suggesting Bould's influence not just as a critic but as a source of inspiration for the production of new and significant fiction; Bould and Miéville edited together a 2009 volume of scholarly essays

titled *Red Planets: Marxism and Science Fiction*.

18 Ogle notes that the "tale told" in Macbeth's sound-and-fury speech seems a descendent of the "tale-that-is-told" reading in Psalm 90.

19 a scenario in relationship with the end of Gibson's *Neuromancer*, where the Wintermute-Neuromancer super AI establishes contact with another super AI in the Alpha-Centauri system

20 This plot line of tapping into alien knowledge via a cosmic network is lifted from Gibson's short story "Hinterlands".

21 This scenario is strongly reminiscent both of the finale of *Neuromancer*, involving the effective surrender of the last of the Tessier-Ashpool clan at an orbital space station, and of the conflict at the end of Gibson's *Virtual Light*, which culminates in the manipulation of replicative technology, by means of a computer virus, to the advantage of the protagonists. Stephenson's *Snow Crash* ends with a similar twist, with biolinguistics substituted for nanotechnology.