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Overview

This article is an attempt to link the concept of the archive of memory in William Gibson's science fiction to N. Katherine Hayles' notion of posthuman development and Freud's work on the psychical apparatus. The last quarter of the twentieth century—as well as the first five years of this one—has seen an enormous increase in the popular awareness of many notable features of information: its vastness, its ubiquity, and its seeming ability to increase exponentially over relatively short periods of time. As a complement to this, we have also experienced an increased sensitivity towards the fascinating and multi-faceted aspects of information management and archivization—in terms of how information is sorted, sifted, categorized, and stored, in terms of who may have access to it and who may not, and in terms of keeping pace with evolving technological innovations in information science, as well as the consequences of not doing so.

Concurrent with the inauguration of our so-called “Age of Information” and the systems that participate in its functioning (e.g., database management, sophisticated and automated methods for information retrieval, widespread use of and public access to a variety of information banks via the world wide web or other searchable networks) has come an increased willingness to conceive of the human subject itself as a rich network of embodied informational systems. Critical theorist N. Katherine Hayles, in particular, has been instrumental in pioneering, defining, and cultivating this line of thought, a study of what she dubs “posthuman” development.

Although the conception of a posthuman subject as a set of distributed, embodied informational systems is still in its fledgling stages, this intriguing notion has found ample expression in popular culture in key texts of science fiction that emerged concurrently with, and even prior to, Hayles's analysis. Of special importance, in this regard, is the “cyberpunk” fiction that dominated the science-fiction landscape in the decade that fell between the mid-eighties and mid-nineties. While many talented authors contributed—and continue to contribute—immensely to the development of this genre (e.g., Bruce Sterling, James Tiptree, Bruce Bethke, Rudy Rucker, Vernor Vinge), perhaps no other author has so fundamentally engaged with issues of information science and subjectivity in his cyberpunk fiction as William Gibson. Indeed, it was William Gibson who famously aligned the human body with a set of distributed

informational systems when he referred to his characters as “data made flesh” in his early work (*Neuromancer*, 1984, p. 16).

Throughout his fiction, Gibson has considered and grappled with the consequences of a variety of the incipient technological innovations that were brewing in the background of the cultural matrix at the time of his writing. Many of these innovations relate to archivization, information storage and retrieval, and, more importantly, the potential effects of such technologies upon human memory and consciousness. This paper considers Gibson’s expressions of technologically-enabled memory devices fully in the context of posthuman discourse, suggesting that the technological nature of Gibson’s devices provides us with a new way to imagine memory as a physical metaphor for the psychical apparatus—a metaphor that evolves from Freud’s (1925) description of it in “A Note Upon the Mystic Writing Pad.” Particularly, such devices occur within three of the novels that Gibson wrote between 1984 and 1996: *Neuromancer* (1984), *Mona Lisa Overdrive* (1988), and *Idoru* (1996).

In 1984, Gibson’s science fiction novel *Neuromancer* was published by Ace Books to wide critical acclaim, effectively launching what is now known as the cyberpunk movement. Part heist novel, part sci-fi pulp, and part Romantic Gothic, at its time of publication *Neuromancer* was a genre-bending book that introduced into mainstream popular consciousness such concepts as “virtual reality,” “cyberpunk,” and, most salient of all, “cyberspace,” a neologism of Gibson’s creation, which he defines in *Neuromancer* as “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” (p. 51).

Gibson’s notion of cyberspace found quick purchase in American popular culture, and the word has become an ersatz signifier for any and every sort of simulated environment, such that virtually real spaces found in amusement parks, research labs, arcades, and shopping malls are frequently regarded as a fulfillment of the prophecy of cyberspace that Gibson envisions. In fact, both “real” virtual spaces and Gibson’s representations of virtual spaces push the edge of technological advancement, calling into question secure and cherished notions about consciousness, sensory experience, and the state of existing as a human being. It is not surprising, then, that a wide variety of literary criticism has emerged that addresses the intriguing implications of Gibson’s technological imaginings.

Yet although scholarship on cyberpunk fiction has considered the genre as an engagement with the posthuman framework, it has at the same time revealed a certain tendency to limit its analysis of cyberpunk to the dualist implications of its gadgetry. In her pioneering book on the subject, *How We Became Posthuman*, N. Katherine Hayles (1999) herself offers an analysis of Gibson’s work that criticizes

the technological innovation of cyberspace as a perpetuation of Cartesian Dualism, a science-fiction riff on an all-too-familiar myth of a human subject defined by the mind/body split.

In *How We Became Posthuman*, Hayles calls into question the fundamental principle of Cartesian Dualism—the mind/body split—and reminds us that we learn not only with our minds, but with our bodies as well. If, she argues, our thoughts are formed from our bodies' responses to living in the world, it is not at all logical to cleanly separate our minds from our bodies, as Cartesian Dualism would have us do. Our bodies, she convincingly argues, are semi-permeable organisms that function and react in a continuous feedback loop to our environment. Instead, then, of identifying humanness by a mind/body split, Hayles emphasizes the fusion of variety of distributed systems that come together throughout our finite duration of being in the world. Hayles writes:

The posthuman view considers consciousness, regarded as the seat of human identity in the Western tradition long before Descartes thought he was a mind thinking, as an epiphenomenon, as an evolutionary upstart trying to claim that it is the whole show when in actuality it is only a minor sideshow (p. 3).

She identifies this distributed posthuman identity as “an ‘I’ transformed into the ‘we’ of autonomous agents operating together to make a self” (p. 6). Her argument is appealing and logical. The notion of a distributed human subject recuperates bodily experience with Descartes's severed *cogito* and allows for a new manner of self/selves-perception. It is also a socially responsible argument, for the embodied subject is beholden, connected, and dependent upon our earthly environment in ways that the divinely conferred spirit was not. The distributed human subject is thoroughly (from flesh to blood to brain to bone) a creature of the world.

By employing the term “distributed” to refer to the posthuman subject, Hayles aligns the human being to the decentralized functioning systems of a machine. This is a fascinating and effective approach to technological discourse, blurring as it does the tired binaries of natural/artificial, man/machine, organic/inorganic, and Hayles mines it well. Yet in terms of cyberpunk fiction, Hayles hesitates, cautioning against the technology such fiction imagines and so she views Gibson's cyberspace in opposition to posthuman development:

[the vision of the distributed human subject] is a potent antidote to the view that parses virtuality as a division between an inert body that is left behind and a disembodied subjectivity that inhabits a virtual realm, the construction of virtuality performed by Case in William Gibson's

Neuromancer when he delights in the “bodiless exultation of cyberspace” and fears, above all, dropping back into the “meat” of the body (p. 290).

The above passage reflects, perhaps, an estimation of the technology of cyberpunk as ultimately incompatible with posthuman experience, insomuch as it perpetuates Cartesian concerns.

For Hayles, and for others¹, Gibson’s vision of cyberspace undermines the possibility of his work contributing to a palatable vision of a posthuman entity—that is, a fully distributed set of embodied systems—a distributed posthuman being who would, by virtue of its reconfiguration of the mind/body hierarchy, defy the norms of Cartesian subjectivity (a unique, unified thinking self that inhabits a separate, earthly, fleshly domain). As rich and important as such criticism is, however, its emphasis on dualism and disembodiment has not widely accommodated an equally intriguing exploration of the *mnemoni*technology that Gibson envisions.

Reading *Neuromancer* in terms of such memory devices, however, opens a fascinating critical pathway, one that could potentially lead to conclusions about human consciousness in Gibson’s fiction that do not necessarily support the idea of a unified, cognitive Cartesian subject at work. Accordingly, this essay focuses upon Gibson’s mnemonic constructs: the Dixie Flatline in *Neuromancer*, the black Yakuza ghost chips in *Mona Lisa Overdrive*, and Rei Toiei of *Idoru*. Then, in light of this analysis, some brief, preliminary sketches about how such memory devices might relate to questions of consciousness in contemporary discourse will be made.

File #0467839: The Architecture of Memory

After his final flatline in William Gibson’s *Neuromancer*, McCoy Pauley, a cyberspace cowboy with a southern drawl and a penchant for surviving brain death, undergoes a radical transformation. His cognitive processes, personality quirks, Intrusion Countermeasure Electronics (ICE)-cutting skills—that is, his ability to effectively hack Intrusion Countermeasure Electronics—and memories are all recorded on a ROM cassette and stored as file #0467839 in the basement library of the sense/net archives. After this recording, the entity McCoy Pauley, also known as “The Dixie Flatline,” is accessible only in cyberspace.

On the surface, McCoy Pauley is an entertaining supporting character—a cyberpunk post-cursor to Major T.J. King Kong (Slim Pickins) of Kubrick’s *Dr. Strangelove*, riding the digital tides of the matrix in lieu of a nuclear bomb, wisecracking in his southern accent throughout the text. Yet, in addition to his entertainment value, the Dixie Flatline is, like other characters in Gibson’s fiction,

an innovation. Not only does his relationship with *Neuromancer's* chief protagonist, Case, challenge traditional chronological narrative structures, looping as it does outside of linear time, but Dixie's technological nature provides us with a new way to imagine memory, revealing not only the manner in which we perceive it, but how might understand it in the future, as an intriguing example of posthuman potential.

In 1925, Sigmund Freud attempted quite successfully to conceive of memory as a mechanized system of impression and retrieval of informational traces. His essay, "A Note Upon the Mystic Writing Pad," provides a clear analysis of memory that remains a dominant paradigm for conceiving of human consciousness. While Freud's approach remains an apt and elegant model for the functioning of the psychical apparatus, Gibson's technological innovations evolve from where Freud's model leaves off, pushing the conception of memory into the digital age, and offering mnemonic devices that bring us even closer to expressions of posthuman subjectivity.

The memory constructs in Gibson's *Neuromancer*, as well as those in *Mona Lisa Overdrive* and *Idoru*, contribute to a new metaphor for memory and consciousness, allowing us to imagine a physical metaphor for the psychical apparatus that evolves naturally from Freud's description of it in "A Note Upon the Mystic Writing Pad." Additionally, the architectures of such constructs, indebted as they are to new media properties, allow us to envision a collapse of the hierarchy between archon and archive, i.e., the unconscious and conscious minds that Jacques Derrida (1995) describes in *Mal d'archive*.

In "A Note Upon the Mystic Writing Pad" Freud describes the functioning of what he calls the System Perception/Consciousness as an interplay between external stimuli and internal feelers sent out by the unconscious. It is in this intermittent connection between internal unconscious probing and external sensory experience that consciousness occurs. As Freud asserts:

It is as though the unconscious stretches out feelers, through the medium of the perception consciousness (Pcpt.-Cs), towards the external world and hastily withdraws them as soon as they have sampled the excitations coming from them (p. 231).

In order to describe this process more clearly, Freud compares the functioning of the psychical apparatus to the child's toy of the "*Wunderblock*," the mystic writing pad. Composed of three discrete layers—a wax slab at the bottom, a "transparent piece of celluloid" for the cover, and a clear, transparent sheet sandwiched between—the *Wunderblock* provides an excellent and at times a beautiful metaphor for human memory and consciousness. The mechanics of the instrument are simple: write on the top, watch the writing appear from the

pressure of a plastic stylus on the gray surface, then peel back the top sheets and watch the writing disappear. The written symbols remain as traces in the waxen block, but they are no longer visible on the mystic pad's cover layer.

Freud makes the toy's relation to the psychical apparatus clear in the passages that follow. The cover of the pad functions as the system of perception, the wax slab as unconscious repository, and the erasure of writing and renewal of a clean writing surface that comes from the rustling pages of the mystic pad functions as our pulsating and intermittent consciousness:

I do not think it is too farfetched to compare the celluloid and waxed paper cover with the system of perception consciousness (Pcpt.-Cs) and its protective shield, the wax slab with the unconscious behind them, and the appearance and disappearance of the writing with the flickering-up and passing-away of consciousness in the process of perception (pp. 230-231).

My interest in the metaphor of the mystic writing pad stems from Freud's description of the two-way relationship between outer and inner action, i.e., the "outer" world of sensory excitation and the "inner" world of both unconscious probing (feelers) and memory, which, in human subjects, can be "produced from within" (Freud, 1925, p. 230). Freud describes how the metaphor of the *Wunderblock* accommodates all of these systems except the last one—active memory, or, rather, *remembering*, the process by which initial impressions caused by outside excitation emerge *from within*.

The *Wunderblock* is an excellent metaphor for the psychical apparatus, since it so readily demonstrates the system of external stimuli, impression, repression and even the flickering of consciousness. Yet, it is not a perfect metaphor, for the ability to form memories from within the psychical apparatus, in addition to simply absorbing new sensations from without, is not an ability the mystic writing pad possesses. I quote again Freud's note upon his "Note":

It is true, too, that once the writing has been erased, the mystic pad cannot reproduce it from within; it would be a mystic pad indeed if, like our memory, it could accomplish that (p. 230).

With Gibson's Dixie Flatline, however, we have access to this "mystic" potential. At first glance, Gibson's mnemonic devices have much in common with Freud's *Wunderblock*. Like the mystic writing pad, Dixie represents a system of memory defined by written traces (code) upon a fixed substrate, yet Dixie also differs from the mystic pad, for, in addition to providing a metaphor for memory that includes a visible expression of writing, erasure, storage, and trace, Gibson's memory constructs, although inorganic and mechanically driven, are able to form

memories from “within,” that is, from the psychical apparatus itself. In other words, while the structure of the mystic writing pad allows it to take in and make traces, it does not permit the mechanism to *re-experience* them through the act of memory. Gibson’s characters, on the other hand, do have this ability.

Before examining the various ways in which the technological innovations imagined in Gibson’s fiction might contribute to a new metaphor for memory, it will be useful to consider what issues arise from Freud’s initial metaphor, in which mechanical devices substitute for human memory, consciousness, and subjectivity. As Jacques Derrida (1986) has asked in “Freud and the Scene of Writing,” in response to “A Note Upon the Mystic Writing Pad”:

...the structure of the psychical apparatus will be represented by a writing machine. What questions will these representations impose upon us...what apparatus we must create in order to represent psychical writing; and we shall have to ask what the imitation, projected and liberated in a machine, of something like psychical writing might mean...what must the psyche be if it can be represented by a text? (p. 446).

The answers to these questions, if there are clear answers, are tangled up in the thorny web of discourse over the essence of technology, our attitudes toward it, and the difficulty of defining clear boundaries between it and us. Therefore, I would propose to adopt a free manner of thinking about technology that does not presuppose technology as either wholly good or wholly bad, but rather as something that can teach us something about the elusive, intricate architecture of human consciousness and being.

Now, with this caveat in place, how might Gibson’s constructs add to the metaphor of the “mystic writing pad?” In the novel *Neuromancer*, the McCoy Pauley device is a piece of software that captures the brain functions of the legendary Dixie Flatline. Stored as file number 0467839 in the vaults of the Sense/Net Archive, the ROM Construct that was once the Dixie Flatline suggests many features of new media objects: digitization, modularity, automation, variability, and transcoding. It is his status as a new media object that differentiates him from the mystic writing pad.

The most interesting new media property that the Flatline possesses is his digitality. In contrast to the mystic writing pad’s more “analog” status, McCoy Pauley’s status as a Hosaka computer (i.e., the name brand of the computer system that Case uses to access cyberspace) deck-accessible recording of the original Dixie Flatline signifies that he is a digital recording, and not a tape recording. The distinction between analog and digital is important. For example, making a recording on a cassette tape (analog) involves two components: the recording/playback system and the actual tape—a thin, coated material which,

when exposed to a magnetic field, becomes permanently magnetized, allowing one to record and erase the tape at leisure. A digital recording, on the other hand, due to its programmable nature, by virtue of its being numerically coded in discrete parts, allows for greater interactivity and functionality than that afforded by tape.

Additionally, we might gain more insight into Dixie's character if we think of his functioning in terms of the platters on a hard drive. The same electromagnetic field that is used to record sounds onto a tape is responsible for storing digital information on a platter, but the tape and head of the tape deck are quite different from the reading device employed by a hard drive platter.

In the case of the hard disk, there is no tape. Rather, the recording occurs on aluminum, ceramic, or glass "platters" that hold patterns created by electromagnetic flux. These platters look like 45 RPM records made of mirrors and are stacked on top of each other in order to increase speed and efficiency.

The main distinction between the two devices is that the platters of a hard drive are built to interact with the computer itself, becoming a part of the machine's body and allowing for interactivity in ways the tape player does not. Unlike the thin, flimsy tape that can be removed easily from a cassette—and the cassette, which can be easily removed from a player—the hard disk of the computer is more durable and connected to the computer than a piece of tape is to its playback device. At the same time, however, the hard drive remains a thoroughly modular computer component. Therefore, in the context of Gibson's narrative, while Dixie needs the Hosaka to operate, the Hosaka does not in any way need him in order to function.

The Dixie Flatline construction is a digital construction of McCoy Pauley's various systems. McCoy Pauley exists only in binary as an entity whose sum is no more than the addition of its parts. The ones and zeroes are there, but "Dixie" is not. Thus, his relationship to the outside world is no longer continuous, no longer analog, and the hollow mechanical laughter that Dixie gives when Case accesses him leaves Case cold. At this point, the McCoy Pauley construct is more like the mechanical mystic writing pad, able to receive and store traces, but unable to creatively access or express them from within. And yet, although the Dixie Flatline is initially nothing more than a recorded system of procedure, he *becomes* interactive. He is not touched by a playback/record head in a tape deck. Rather, he is connected to the Hosaka deck that launches him into cyberspace (p. 78), where Case interacts with him at will.

Here, the McCoy Pauley construct is able to converse with Case spontaneously, although initially he has no memory of their conversations after Case disengages from the Ono-Sendai Cyberspace 7 deck. When Case accesses the construct for the first and second times, the Dixie Flatline's inability to remember their interactions becomes evident when he loops back to introductions:

"Dix? McCoy? That you man?" His throat was tight.
"Hey bro," said a directionless voice.
"It's Case, man. Remember?"
"Miami, joeboy, quick study."
"What's the last thing you remember before I spoke to you, Dix?"
"Nothin'."
"Hang on." He disconnected the construct. The presence was gone. He reconnected it. "Dix? Who am I?"
"You got me hung, Jack. Who the fuck are you?"
...
"Case."
"Miami," said the voice, "joeboy, quick study."
"Right..." (pp. 78-79).

Dixie's looping habit reinforces that he is a ROM construct, which is to say a piece of read-only memory, a system of memory that does not allow tampering from the outside influence of external, physical stimulation, similar to the waxen tablet that acts as repository in Freud's metaphor of the *Wunderblock*. Dixie is unable to form memories from outside experience. The "mystic writing pad" of his memory, if you will, remains traceless each time Case accesses him. ROM is not the memory of repository. Rather, ROM is *only* what has been deposited—its structure allows no tampering after initial design. ROM is, in a manner, *a priori* memory in a philosophical and Kantian sense. To know something *a priori* means to know it without having had any empirical knowledge of it. *A priori* knowledge is knowledge that exists independently of any type of quantifiable sensory experience. Rather, it is knowledge that *precedes* an experience of the empirical world, knowledge that comes "before," which is what *a priori* literally means. In this sense, ROM is *a priori* knowledge in that it precedes empirical experience. It is instead pre-recorded "deep memory" inscribed prior to any sort of interface or external influence. In this sense, the inaccessible ROM is similar to the wax slab of the mystic writing pad; it differs, of course, in the sense that it cannot take in new traces, yet its inaccessibility and its function as the construct's hidden core, link it to the unconscious mind as Freud describes it.

What, then, are the psychoanalytic implications of using a new media object, i.e., a ROM cassette such as the Dixie Flatline, as a metaphor for human consciousness? By looking at Derrida further, in his later writing on Freud and the psychical apparatus, and especially in his description of the archive, possible implications regarding new media technology emerge.

Archive & Archon, Subject & Substrate: Disrupting the Hierarchy of the Mind

In *Archive Fever* (1995) Jacques Derrida asserts that:

The question of the archive is not...a question of the past. It is a question of the future, the question of the future itself, the question of a response, of a promise and of a responsibility for tomorrow (p. 36).

In my reading of this passage, what is at stake is not a mere imagining of archival space. It is not, for example, a question about the future of library book shelving, nor the evolution of relational data base structures. Rather, because the archive acts as the central metaphor for the Freudian mind in Derrida's work, what is at issue in Derrida's question is the future reconfiguration of the way we imagine memory—how it now relates to our bodies, our minds, and our system of perception consciousness—and how it will relate in the future.

In *Archive Fever*, Derrida makes explicit comparisons between the structure of an archive and the structure of the psychical apparatus in Freudian psychoanalysis. Derrida defines the word archive in the context of its roots in antiquity in order to unpack its contemporary meaning:

...its only meaning, comes to it from the Greek *arkheion*: initially a house, a domicile, an address, the residence of the superior magistrates, the *archons*, those who commanded...The citizens who thus held and signified political power were considered to possess the right to make or to represent the law. On account of their publicly recognized authority, it is at their home, in that place which is there house...that official documents are filed. The archons are first of all the documents' guardians. They do not only ensure the physical security of what is deposited and of the substrate. They are also accorded the hermeneutic right and competence. They have the power to interpret the archives. Entrusted to such archons, these documents in effect speak the law: they recall the law and call on or impose the law. To be guarded thus, in the jurisdiction of this speaking the law, they needed at once a guardian and a localization. Even in their guardianship or their hermeneutic tradition, the archives could do neither without substrate nor without residence. It is thus, in this domiciliation, in this house arrest, that archives take place (p. 2).

After defining his terms, Derrida then slips into describing the psychical apparatus in terms of an archive. In his unwinding prose, the ancient conception of the archive he describes becomes fundamentally revealing of Freud's formulation of

the psychological apparatus, and a human subject can be seen as an archival house in which a variety of documents, including traces, memories, impressions, and repressions, is stored, and over which the conscious mind acts as guardian and interpreter (i.e., archon). Additionally, in Derrida's conception of consciousness, the archive is beset by a persistent "anti-archival" drive to which it has no immediate or direct access, similar to the death drive in Freud's terms.

Hence, in simple, perhaps overly simplistic, terms, every human being is an archive; every archive is operated by an archon, a conscious presence that fancies itself the archive's chief decision maker; and every archon shares this domicile with the traces and inscriptions over which it believes itself master. This repository of documents, of traces, is the unconscious. At the same time, however, that the archon/ego believes that it is the "chief" in charge of operations, the domain of traces and documents (the unconscious) exerts immeasurable influence and control over the archon/ego's supposed regime. Hence, the Unconscious, while not directly accessible to the archon or ego, is enormously important to the mysterious functioning of the psychological apparatus.

Once Derrida has explained the function of archive and archon and emphasized the archive's need of a material substrate, he poses the question of whether or not our current technology has outstripped the expressive capabilities of the mystic writing pad that Freud uses as his chief metaphor of the unconscious. Derrida writes:

It is at least possible to ask whether...the structure of the psychic apparatus...resists the evolution of archival technoscience or not. Is the psychic apparatus better represented or is it affected differently by all the technical mechanisms for archivization and for reproduction, for prosthesis of so-called live memory, for simulacrum [i.e., copies or simulations] of living things which already are, and will increasingly be, more refined, complicated, powerful than the "mystic pad" (microcomputing, electronization, computerization, etc.) (p. 15).

This is a difficult question, yet in a certain sense, Derrida suggests that the psychological apparatus might indeed be better represented by new "technical mechanisms" (p. 15). He spirals closer still to the possible significance of these new modes of technology when he writes that the mystic writing pad "prepares the idea of a psychic archive distinct from spontaneous memory...the institution, in sum, of a prosthesis of the inside" (p. 19).

What might a prosthesis of the inside look like? Although Derrida's blueprints for this device are not explicitly sketched, perhaps what he suggests here is an extension of Freud's work in "A Note Upon the Mystic Writing Pad," a technological fulfillment and expression of the varying systems of the psychological

apparatus—an expression that was not realized with the metaphor of the magic slate. The mystic writing pad, after all, only represents the unconscious as it is affected from without. It is not a prosthesis but a repository. The waxen tablet of the magic slate cannot write from *within*. As a passive repository with no direct access to the conscious mind, because of its limited accessibility, the archive is not only subjected to the archon for interpretation to the conscious mind, it is dependent upon the archon for any meaning, or memory, to emerge at all.²

For Derrida, and for Freud, the archive is both what is stored (memories, for example) and where it is stored (in the waxen tablet of the magic slate, i.e., the material substrate). Additionally, for an archive to be an archive, it must be subject to the authority of an archon, one who wields the right to both preserve and interpret the archived items (p. 2). Hence, for the mind to be a mind it must have an archive of the unconscious that is inscribed upon the substrate of the brain, and it must be subject to the authority of the archon, which presumably takes the form of the conscious self. Derrida writes:

This archontic function...does not only require that the archive be deposited somewhere, on a stable substrate, and at the disposition of a legitimate hermeneutic authority. The archontic power, which also gathers the functions of unification, of identification, of classification, must be paired with what we will call the power of consignation (p. 3).

I would like to emphasize the divisive and hierarchical aspect of this framework in relation to the posthuman conception of distributed subjectivity. As it stands, the archon/archive structure of the mind does not necessarily accommodate a distributed subjectivity. This is not to say, necessarily, that the psychoanalytic framework of the mind is a dualist framework, although Derrida (1986) writes in “Freud and the Scene of Writing”:

The mystic pad, separated from psychical responsibility, a representation abandoned to itself, still participates in Cartesian space and mechanics: *natural* wax, exteriority of the *memory aid* (p. 474).

Freud’s conception of bound energy, as well as his descriptions of the *thanatos* drive, the pleasure principle, and the reality principle, suggest a set of systems at work in the business of human being and denies a simple mind/body split. Yet, in a certain sense, the mind in Freud’s conception is configured in hierarchical terms, since the stored information in the archival unconscious is under “house arrest,” and subject to the hermeneutic authority of the archon.³

By “hierarchical” I do not mean to devalue the influence exerted by the unconscious; nor do I mean to suggest that the ego/archon is more important or

powerful than the unconscious in the psychical system. Rather, what I mean by “hierarchical” in this context has everything to do with access: While the unconscious undeniably displays an enormous influence over the system of perception consciousness, it remains largely inaccessible to the conscious, perceiving mind. In this sense, i.e., the sense of being under “house arrest,” the relation between conscious and unconscious minds is hierarchical in terms of the ego’s ability to censor unconscious information from the conscious mind. While the archon works in conjunction with the archive, the archon and the archive are not the same thing. Derrida makes a clear distinction between the two. Archon and archive are separate entities. One, the archive, is a set of data lain upon a material substrate; it is a repository, an unconscious. And the other, the archon, is an authority to which the archive is subject, similar to the ego’s attempt to censor the conscious access to the unconscious in the system of Perception/Consciousness. This is problematic in terms of posthuman subjectivity. If, as Hayles quite brilliantly suggests in *How We Became Posthuman*, a human being is a set of various embodied systems, of which only one—and a “sideshow” at that—is consciousness, then it is perhaps problematic to establish hierarchies within consciousness, since such hierarchies imply that one system—e.g., the ego—is “running the show”. This particular hierarchy, however, collapses in Gibson’s fiction.

The Dixie Flatline/McCoy Pauley construct in *Neuromancer* disrupts the Cartesian opposition between mind and matter. In the first place, the Dixie Flatline construct calls into question the notion of a stable, organic substrate. For him to function as a conscious being in psychoanalytic terms, his memories must be deposited on a physical surface, yet he is seemingly memory without a body. Yet his repository (the platters of glass or aluminum upon which Dixie’s various information systems are written) is a physical substrate, and the Hosaka deck, which Dixie needs to function, is a further layer of physical necessity. Therefore, while Dixie’s “body” is not flesh, neither is it absent. Nor is his identity dependent upon a simple dualist division between information and substratum (i.e., mind and body), but rather it depends upon a complex interaction between a variety of procedural systems and physical spaces (e.g., ROM cassette, Hosaka deck, the chip in Case’s head, as well as Case’s entire “sensorium,” the word Gibson uses to describe the aggregate functioning of the human sensory system).

Yet here we run into another question. This substrate is to act as an archive of the unconscious, yet in Dixie’s case this is an impossibility. As we have suggested, the nature of ROM is not active. It does not gather memory traces from outside itself and engrave them within, as human consciousness gathers external stimuli. The memory of the Dixie Flatline, as we have seen, has nothing to do with external sensory gathering.

And yet despite his initial inability to make memories from external events, the McCoy Pauley construct evolves throughout the course of the novel. Although he starts out as a more or less “low-level” artificial intelligence the Dixie Flatline gains greater agency and begins to self-generate memories; the McCoy Pauley construct reacts to his environment and changes behavior according to his interaction with it. This is most evident when, after a few sessions in cyberspace, Case accesses the construct and realizes that the Dixie Flatline has become self aware:

“How you doing, Dixie?”

“I’m dead, Case. Got enough time in on this Hosaka to figure that one.”

“How’s it feel?”

“It doesn’t”

“Bother you?”

“What bothers me is, nothin’ does.”

“How’s that?”

“Had me this buddy in the Russian camp, Siberia, his thumb was frostbit. Medics came by and they cut it off. Month later he’s tossin’ all night. Elroy, I said, what’s eatin’ you? Goddam thumb’s itchin’, he says. So I told him, scratch it. McCoy, he says, it’s the other goddam thumb.” When the construct laughed, it came through as something else, not laughter, but a stab of cold down Case’s spine. “Do me a favor, boy.”

“What’s that, Dix?”

“This scam of yours, when it’s over, you erase this goddam thing” (p. 106).

Case’s presence excavates Dixie’s memories from the pre-recorded ROM (that is, from the unconscious) and, it seems, allows the ROM construct to form new memories even though, as ROM, Dixie should not be allowed to do this. In this example, the division between conscious and unconscious minds, i.e., archon and archive, is seemingly overcome, since the construct’s set memory traces have been pulled out of the fixed structure of ROM and become dynamic.

How is this possible? By looking at the various types of retrieval protocols involved in both computer and human memory, we might not have a conclusive understanding of *why* this can happen, but we might have a better description of how.

In an article entitled “The Dioskuroi, Masters of the Information Channel,” Wolf Kittler describes three types of memory: stack memory, coordinate memory, and content addressable memory. It is this final type of memory which, with Marcel Proust, Kittler calls “*mémoire involontaire*,” that is most descriptive of the Dixie Flatline’s uncanny new ability. In this type of

memory act, an outside agent queries a data bank in terms of the contents of its cells. Anyone who has searched a database, for example, is familiar on a practical level with this system of retrieval. In “The Dioskuroi,” (2004) Kittler suggests that this is the type of memory at work in Proust’s *Remembrance of Things Past*:

I would suggest that Proust’s “*mémoire involontair*” is precisely such a memory. If and only if a particular set of data matches a singular moment of times past, a whole array of memory cells becomes accessible. I conclude from this that the cells of Proust’s involuntary memory are stored in a content addressable memory that contains data composed of two sections, the data proper, and an address that could point either to a stack or to a coordinate address memory. This is how the Madeleine restores Marcel’s access to the lost world of his childhood (p. 4).

He continues:

The word Madeleine with all its implications is, literally, hardwired in Marcel’s brain. Only at the place of the Other, that is, by chance can it be called up again for the first time, not by him himself. His research or “recherche” is not a search for, but rather driven by such primary commands otherwise called desire (p. 6).

In Gibson’s fiction, it is Case who restores the Dixie Flatline’s ability to remember. Case’s query of the construct matches the pre-recorded contents of Dixie’s memory cells and thus, once Case addresses Dixie, “a whole array of memory cells becomes accessible” (Kittler, 2004, p. 4). Case’s interaction triggers Dixie to make tentative steps towards self-reflection and consciousness. It is Case’s acknowledgment of Dixie, his direct addressing of his old mentor that calls the Flatline back from death and into conscious being. In this moment, consciousness is entirely contingent upon an outside agent, one who acknowledges and names what is already present in the subject, but what is not yet recognized by this subject (i.e., Dixie) himself. Here Case, like the wish expressed in the famous lines of a Robert Burns poem—“O wad some Pow’r the giftie gie us / To see oursels as others see us!” (Burns, p. 93)—not only sees what Dixie does not but allows Dixie to see it as well.

Case’s presence stirs the set, dead memories inscribed in the ROM construct so that new memories might emerge. In Dixie’s sad moment of self awareness, he has access to his ROM, his unconscious, his views in retrospect a death drive that has already been fulfilled, and wishes to die a second time: “This scam of yours, when it’s over, you erase this goddamn thing” (p.106).

With the Dixie Flatline's act of remembrance, it appears that the ROM construct has overcome a division within itself between conscious activity and the unconscious, binding commands of ROM. The ability to have active memories, to contemplate past impressions from within, is not something that Freud's mystic writing pad could accomplish. This is not to say, however, that the hardwired ROM is the only metaphor of the unconscious at work in the text. There is another unconscious repository, apart from ROM, at work. But the unconscious here is not a private repository of individual memories and experiences gathered over time. Rather, the unconscious manifests collectively in the form of cyberspace—that "consensual hallucination that [is] the matrix" (p. 5). This is not an earth-shattering observation. Keying in "cyberspace" and "the collective unconscious" into the Google search engine will yield (approximately) 1,400 hits, (which is, of course, a wonderfully ironic and self-reflexive piece of information about *our* collective unconscious, since the internet itself has become an ersatz, real world stand-in for Gibson's notion of cyberspace).

The Dixie Flatline is a creature of cyberspace. He cannot function outside of its confines. His flesh and blood, for which the cowboy's character commanded disdain and contempt, have been replaced with a recording on a charged metallic platter designed to interface within the confines of the matrix. While the structure of cyberspace is extrinsic to his cassette "body," he nevertheless cannot operate without it. Thus he is nestled within a vast unconscious, a collective and consensual archive that is external to his physicality, even as he requires it to "survive."

At work in his functioning are at least two relational systems: 1) memory and body, in the form of magnetic code, recorded on cassette; and 2) body and environment, in the form of his dependence upon the Hosaka-generated environment of cyberspace. These two relational systems, especially the relation and dependence between subject and environment, are similar in manner to the functions Hayles describes as belonging to the distributed posthuman subject and, indeed, are similar to Freud's conception of a consciousness that is comprised of various systems and drives. Thus, again, it seems that the technology of the Dixie Flatline offers a new, more versatile metaphor for memory, one that evolves from where the mystic writing pad leaves off, not only because the construct develops the ability to form memories from within itself, but because it is made up of a variety of functions that reveal the many drives and systems of a distributed human subject. It also reveals a peculiarity of human consciousness that requires the direct address of an "other" and outside observer to come into being.

Although the Dixie Flatline starts out as a one-way street between Case's presence and Dixie's seemingly inaccessible and un-writable unconscious ROM, the memory constructs in Gibson's other work function from the beginning as conscious beings in that they are able both take in impressions from without (i.e.,

external stimulus) and remember those impressions once they have stored them within (i.e., remembrance). Gibson's devices, such as the Dixie Flatline in *Neuromancer*, the black lacquered cubes of the Yakuza and Colin the Chip Ghost in *Mona Lisa Overdrive*, and the Rei Toei in *Idoru*, all embody various aspects of the "evolution of technoscience" and reveal the exciting possibilities of the "prosthetic of the inside" that Derrida introduces (p. 15). If, in writing about the magic slate, Freud has "prepared the idea of a prosthesis of the inside...apart from spontaneous memory," as Derrida (1995, p. 15) suggests, this idea has been cultivated and allowed to blossom in Gibson's fiction.

His bodiless characters, seemingly subjects without substrate, reconfigure the hierarchy of the mind as Freud and Derrida imagine it, collapsing archive and archon into variously fused systems of consciousness, such that rather than a controlled system of sensory input, censorship, and repression, the Dixie Flatline is a complex amalgam of distinct relational systems that, distinct as they are, are somehow at the same time in communication with each other. And, while theorists might fault Gibson for indulging in the technology of disembodiment, this exciting reconfiguration of memory is enabled with the technology he imagines, such that an unmediated, uncensored access to the unconscious becomes possible.

Chips, Ghosts, Cubes and Shades

The memory constructs in *Mona Lisa Overdrive* (1988) similarly contribute to the conception of a new metaphor for memory. The implied digital nature of the black lacquered Yakuza cubes and Colin the Chip Ghost featured in this text calls into question the distinction between archive and archon, since both devices exhibit the Dixie Flatline's ability to both form new memories in response to their environment and blur the boundary between conscious and unconscious, and because all the memory constructs have a seemingly limitless access to the consensual archive of cyberspace.

Colin the Chip Ghost is a sophisticated combination of hologram and microchip, a going away present from a Yakuza boss to his young daughter Kumiko. As she flies over the ocean towards London, Kumiko examines her father's gift:

The ghost woke to Kumiko's touch as they began their descent into Heathrow. The fifty-first generation of Maas-Neotek biochips conjured up an indistinct figure on the seat beside her...She could see the seats across the aisle through the glint of his teeth. "If it's a bit too spectral for

you...we can up the rez..." And he was there for an instant, uncomfortably sharp...

"You aren't real," she said sternly.

He shrugged. "Needn't speak out loud, miss...Subvocal's the way. I pick it all up through the skin" (p. 3).

Colin the Chip Ghost marks a new phase in technology in Gibson's fiction. As a biochip, he is by definition a conduit of digital information, a system of circuits. He also exhibits modularity, in that he is able to run various programs and functions without any one of them being necessary for his overall functioning. That he is variable is evidenced in his easy and improvisational manner, for whenever Kumiko is in danger, Colin jumps to her aid, offering her advice "on the fly" as the situation demands. He is quite clearly a highly automated object, since he acts without specific human instruction in order to aid Kumiko. What distinguishes Colin from the Dixie Flatline, however, is *presence*. Unlike the Dixie Flatline, whose presence is mediated through the Hosaka computer system and dependent upon cyberspace, Colin is organically triggered and physically responsive. Because he is programmed to tune into Kumiko's bodily responses, sensing her words before she speaks them, picking up meaning from the chemical charge of her skin, he is necessarily present in real world space. However, Colin is not only present in the real world, he also receives feedback and information from the real world. Because of this participatory presence, his memories are affected from both within (i.e., the feedback from cyberspace) and without (i.e., his interactions with Kumiko). Colin is not ROM; his memory is more facile and versatile. He approaches a two-way memory system, one that is able to process information from without and within. Such a construction adds further to the evolution of the mystic writing pad.

A second example of reconfigured memory occurs later in the text, when Kumiko remembers her father and his ghosts: "...black lacquered cubes arranged along a low shelf of pine," above which hung "formal," "monochrome" portraits of "four very sober gentlemen" (p. 137). The text continues:

Her father sometimes meditated before the cubes, kneeling on the bare tatami in an attitude that connoted profound respect. She had seen him in this position many times, but she was ten before she heard him address the cubes. And one had answered. The question had meant nothing to her, the answer less, but the calm tone of the ghost's reply had frozen her where she crouched, behind a door of paper, and her father had laughed to find her there...he'd explained that the cubes housed the recorded personalities of former executives, corporate directors. Their souls? She'd asked. No, he'd said, and smiled, then added that the distinction was a subtle one.

“They are not conscious. They respond, when questioned, in a manner approximating the response of the subject...(p. 137).

Although we have less information about the cubes than we have about Colin the Chip Ghost, we do see here that the cubes also have physicality. Not only do they possess bodies, (albeit fleshless and geometric ones) but voices as well, which resound in real space and frighten Kumiko in her hiding place. Furthermore, the presence of the portraits and the “low shelf of pine” serve to introduce an organic element, suggesting an otherwise absent vitality. Both Colin the Chip Ghost and the black lacquered cubes of the Yakuza add to the conception of a new metaphor for memory. Because of their physical presence and Colin’s ability to form new memories in response to physical excitations, Colin and the cubes add further to the model of the mystic writing pad.

In addition to challenging traditional categories of mental activity, Gibson’s constructs also encourage us to consider how technology might affect our notion of individual identity in the face of finitude. The Dixie Flatline and the black cubes of fallen Yakuza, contingent as they are upon physical death, permit us to hold correspondence with our dead in ways that are quite interesting and perhaps distinct from other encounters with the dead in literary history—encounters which, of course, have a robust literary tradition dating back to antiquity.

In book eleven of Homer’s *Odyssey*, for instance, Odysseus describes for Alkinoos his descent into Hades and the shades he converses with in “Persephone’s deserted strand and grove, dusky with poplars and the drooping willow” (Homer, trans. 1990, p. 181). To arrive at this bleak place, the witch Kirke advises Odysseus to “Run through the tide-rip, bring your ship to shore, land there, and find the crumbling homes of Death” (p. 181). Similarly, in *Neuromancer*, the realm of death is a separate, lonely realm. The place/non-place of cyberspace offers a mysterious locus, filled with empty beaches and twilight ambience, for Case to correspond with the dead in his life. In both narratives, a ritual is required to enter the land of the dead. In the *Odyssey*, Odysseus sacrifices a lamb and ewe:

With my drawn blade
I spaded up the votive pit, and poured
Libations round it to the unnumbered dead:
Sweet milk and honey, then sweet wine, and last clear water; and I
scattered barley down.
Then I addressed the blurred and breathless dead...(p. 186).

Likewise, in *Neuromancer*, Case lies recumbent, jacks himself into cyberspace, and plugs himself in, literally, to an electronic data flow that Gibson (1984) describes in almost religious terms:

And in the bloodlit dark behind his eyes, silver phosphenes boiling in from the edge of space, hypnagogic images jerking past like film compiled from random frames. Symbols, figures, faces, a blurred, fragmented mandala of visual information.

Please he prayed, *now...*(p. 52).

Yet although both Case and Odysseus perform a ritual to talk to the dead, and although both the realms of Hades and cyberspace are eerily quiet and crumbling spaces, I seek to make a distinction between them. The shades that Odysseus meets are still their same unified selves, albeit in altered form, and Odysseus has no doubts, for example, that the Agamemnon with whom he converses in Hades is the same Agamemnon by whose side he fought and under whose command he served in Troy. Sad, somber, and bereft of reach and power, yes, yet Odysseus holds no doubts that the shade is nevertheless Agamemnon.

In *Neuromancer*, on the other hand, the encounters between Case and his ghosts are altogether more unsettling, precisely because Case is never entirely certain whether or not the Dixie Flatline in cyberspace is the same as the Dixie Flatline he knew before the cowboy's death, or whether or not the Linda Lee on the deserted beach in Wintermute's cyberconstruct is the same Linda Lee he knew as his lover in the sprawl:

A girl was crouched beside rusted steel, a sort of fireplace, where driftwood burned, the wind sucking smoke up a dented chimney. The fire was the only light...she wasn't real, curled there on her side in the firelight. He watched her mouth, the lips parted slightly. She was the girl he remembered from their trip across the Bay, and that was cruel (p. 235).

The identities of the dead that Case meets are ambiguous. They could be the same people he has known or they could be cunningly realistic simulations. It is Case's inability to conclusively tell the difference that disrupts him so much. Such characters problematize the notion of a single, essential, unified subject, for if each character is unique, essential, and unified, a perfect simulation would be impossible. Case's interactions with the ghosts in cyberspace bring Hayles' notion of a distributed human subject into the foreground. This is not to say that Case embraces this notion. Rather, the unease he feels marks a complicated realization of his status as a potentially replicable set of systems, a set that functions rather

easily within the artificial intelligence's wide and distributed reach, insomuch as the AI's influence is not limited to one central locus, but rather acts as a vast distributed network of nodal points and information flows across the entire sphere of electric technologies.

Additionally, it is in these scenes that Case, on the verge of losing his physical body, acknowledges its importance to his being. As he makes love to Linda Lee in the cyberconstruct, he has the following insight:

It was a place he'd known before; not everyone could take him there, and somehow he always managed to forget it. Something he'd found and lost so many times. It belonged, he knew—he remembered—as she pulled him down, to the meat, the flesh the cowboys mocked. It was a vast thing, beyond knowing, a sea of information coded in spiral and pheromone, infinite intricacy that only the body, in its strong blind way, could ever read (p. 239).

The insight is a confusing one, of course, in that it occurs in cyberspace, where Case is presumably not aware of his real-world flesh. Nevertheless, the insight reveals a nostalgic longing for the body and is ironically triggered by Linda Lee's simulated body.

These “ghosts” also create a sense of unease in their beholders outside of the Hades-esque realm of cyberspace. As we have seen in *Mona Lisa Overdrive*, Kumiko is never fully comfortable around Colin, and in an earlier scene in the novel her father denies to his daughter that the cubes have consciousness (see page 29), even as he prostrates himself before them in a manner of “profound respect” (Gibson, 1988, p. 137).

Yet although there is evidence of consciousness in all of Gibson's memory constructs, Gibson's flesh-and-blood characters are reluctant to admit it, and the constructs themselves have a certain sort of wry resignation about their liminal status. It is not until *Idoru* (1996) that Gibson confers full consciousness upon one of his creations, and it is not until *Idoru* that this consciousness is accepted by others.

Conclusion: The Birth of the Rock Star Bride—The I doru as the Anti-Archival Subject

The idoru Rei Toei recuperates the unease that Gibson's flesh-and-blood characters feel towards the disembodied constructs in his novels with the an-archontic potential afforded by new media. The physically present Rei Toei is defined in *Idoru* as “...a personality-construct, a congeries of software agents, the

creation of information-designers” (p. 92). She is light and energy—or as Donna Haraway (1991) might say, she is “ether, quintessence” (p. 153). Like the Dixie Flatline, the idoru communes with the inside of cyberspace and has the ability to manipulate data. In this manner, her memory is effected from within. Like Colin the Chip Ghost she is physically present and responsive, and in this manner her memory is affected from without. She can meet one’s gaze, not due to pre-programmed function, but by choice. The idoru is a conscious being and she dreams. The fact of her dreaming is, again, something new. Not only does Rei Toei have a relationship to data and to people, she also has the ability to act as a conduit between the two, and is able to project her dreams outward, so that others may experience them.

When Colin Laney encounters her, it is not an encounter that plays out in a constructed, hallucinatory, and information-lined void that demands his disembodiment, which is how cyberspace is frequently described. On the contrary, Colin Laney feels the idoru’s gaze penetrate him in the real world environment of The Western World restaurant. And as he watches her, he experiences her dreams. This moment is not dependent upon his jacking into cyberspace, not dependent upon a “direct link between the brain and the computer through electrodes...a socket, implanted behind the ear, that accepts computer chips, allowing direct neural access to computer memory” (Hayles, 1999, p. 36). Rather, Laney’s unmediated face-to-face encounter with the idoru leaves him stunned, viscerally affected, and physically reeling.⁴

The emergence of Rei Toei brings the body and mind into the real world, allowing for a fusion (i.e., marriage) of real and cyber. It is in this instance, when the evidence of her consciousness is secure, that Rei Toei marks the ultimate evolution of the metaphor of the mystic writing pad and embodies what Gibson imagines memory might become in our contemporary technological age—a physical, embodied system of consciousness that can be shared between individuals.

It is fitting that this marriage is not merely symbolic. The marriage is literal and real. The entire plot of the novel revolves around the rock star Rez, of the famous band Lo/Rez, and his controversial decision to wed Rei Toei. Colin Laney is called upon to stop the marriage, if he might, but when he faces the idoru in the Western World restaurant, he realizes that he cannot and that while he had thought of her being something less than human, she is something altogether more.

Like the Dixie Flatline and Colin the Ghost Chip, the idoru Rei Toei collapses the notion of a hierarchical, divided mind, yet constitutes a fully conscious subject. Wedded to the rock star Rez, the idoru marks a new, posthuman phase in the subjectivity of Gibson’s characters, one that is demarcated by its freedom from the authority of the archon.

Here, finally, is an entirely new system of memory, one that is constituted from within, from without, and one that can be shared between subjects. The idoru contributes to a new metaphor for memory and consciousness, allowing us to imagine a physical metaphor for the psychical apparatus that evolves naturally from Freud's description of it in "A Note Upon the Mystic Writing Pad." She also permits us, by means of her open and unfiltered unconscious—embodied in the dreams emanating from her luminescent architecture—to envision a collapse of the divide that separates archon and archive (i.e., the unconscious and conscious minds that Derrida delineates in *Mal d'archive*).

All of Gibson's memory constructs "embrace the possibilities of information technologies" as they simultaneously force us to grapple with such technologies' consequences. Hence, they work within the confines of Hayles' posthuman dream, which wishes for a technological curiosity "without being seduced by fantasies of unlimited power and disembodied immortality" (p. 5). As autonomous, new media (digital) agents, they contribute to the discussion of memory, consciousness, and what it means to be human now, as well as what it might mean in the future.

Notes

¹ In a similar vein, Arthur and Marilouise Kroker's book, *Hacking the Future: Stories for the Flesh-Eating 90s*, plays with notions of disembodiment, even as it satirizes them.

² There is more to Derrida's essay than this thesis. I am ignoring completely, for example, his analysis of Yosef Hayim Yerushalmi's *Freud's Moses: Judaism Terminable and Interminable* in relation to Freud's own work in favor of new media concerns.

³ This brief treatment of the archive is not to be taken as a summary reduction of Freud's vast project. It is merely the observation of one feature.

⁴ It is interesting to note that in my edition (a first edition) of *Idoru*, the opening page of each chapter is filled with a tightly wound spiral that recalls both target sign and fingerprint. Such an image, while not a part of the text proper, is oddly appropriate. It adds to the transcendent experience of the encounter with the idoru, an interaction that is described in terms of math and poetry—geometric shapes and signs of a unique individual identity.

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