

DIGITAL POETRY AS REFLEXIVE EMBODIMENT

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If the time should ever come when what is now called science, thus familiarized to men, shall be ready to put on, as it were, a form of flesh and blood, the Poet will lend his divine spirit to aid the transfiguration, and will welcome the Being thus produced, as a dear and genuine inmate of the household of man.
(Wordsworth, quoted in Halberstam & Livingstone 1995, 1)

When cybernetics has effectively discredited the romantic paradigm of inspiration, poets must take refuge in a new set of aesthetic metaphors for the unconscious, adapting by adopting a machinic attitude, placing the mind on autopilot in order to follow a remote-controlled navigation-system of mechanical procedures ...
(Bök 2001, 11)

The digital revolution of the last decade has let words on the loose, not just by liberating their semantic potential, as most avant-garde movements of the past hundred years have done, but in a physical, quite literal sense as well. (Ryan 1999, 1)

1

On April 15 2002 *The New York Times* announced the inauguration of TextArc.org, a Web site which can create a visual schema of any of 2,000 “literary classics” by counting each word, noting its location, and marking it onto an oval-shaped map of the text – the more frequent the word, the darker and larger it appears. This is fiction become reality twenty-one years after Italo Calvino’s facetious dream of a computer program that

processes novels in minutes as described in his novel *If On a Winter's Night a Traveller*. Just as Calvino envisioned a computer capable of “reading” novels by arranging words according to their frequency of use such that theme, mood and stylistic device can be surveyed at a glance (“What is the reading of a text, in fact, except the recording of certain thematic occurrences, certain insistencies of forms and meanings?” (Calvino 1993, 182)), so too does W. Bradford Paley of TextArc claim to have created the first accurate cyber-accountant of literature that is capable of analyzing the content and structure of, for example, *Alice in Wonderland* (whose second most significant word is “know”). While Bruce Ferguson, the Dean of the School of the Arts at Columbia University, partly endorses TextArc because it “makes a text richer and more interpretable,” clearly the merging of computer technologies and literature is helping to bring about radical change in processes of reading, writing and meaning-making – change that is not simply an outgrowth of already-established processes. As columnist Matthew Mirapaul blandly (but no less accurately) puts it, TextArc is “unromantic.”

There is a connection here to both poetry and romanticism that is no coincidence, for, given the emphasis on visuality inherent to the medium, what else do programs such as TextArc do other than foreground the materiality of words as signifiers of meaning, thereby transforming prose into poetry? TextArc also transforms the creation-process into a shared act between reader, writer and computer, and in doing so, signals (yet another) break from the model of the poet/writer as divinely inspired human exemplar, quite in contrast to the great “Being” Wordsworth foresaw would emerge out of the joint force of science and literature. In fact the philosophical underpinnings of digital poetry are particularly indicative of the unsettling of what poetry is commonly thought to be, which is inextricably linked to a departure from, specifically, the poet as privileged exemplar of human culture and medium through which we read ourselves, and, generally, the liberal humanist subject.

2

Critics in this new field of cultural production have generally attempted to articulate the intersection of poetic practice with computers in three (overlapping) ways: by providing a preliminary overview of the range and scope

of machine modulated/mediated poetry; by pointing to the ways in which this poetry undoubtedly signals “something new”; and by coining the definitive term, the term that will really stick, to describe such poetry (from cybertext to digital poetry, computer poetry, cyberpoetry, interactive poetry, Internet poetry, electronic poetry, e-poetry). But while such descriptive, even fervently hopeful, works are both useful and necessary, Espen Aarseth, Lev Manovich and Loss Glazier have provided accounts of writing in new media that are both historically and theoretically nuanced, and, precisely for this reason, their works are fast becoming foundational texts in the field.

More than the title suggests, the aim of Espen Aarseth’s *Cybertext: Perspectives on Ergodic Literature* is to lay out a much-needed theoretical framework for a theory of cybertexts or “ergodic literature” – in other words, “to provide a textonomy (the study of textual media) to provide the playing ground of textology (the study of textual meaning)” (Aarseth 1997, 15). The importance of Aarseth’s work lies, in fact, in his terminology. By using “cybertext” as a term which embraces literary communications systems ranging from hypertext, textual adventure games, computer-generated narratives, participatory simulation systems, and MUDs, he makes it clear that such textual media extend and redefine what is typically classed as “literature.” Thus, given that literary theory (concerned as it is with paper texts) alone does not provide an adequate explanation of the workings of such texts, Aarseth puts forward a theory of what he calls “ergodic” aesthetics. While he is only incidentally concerned with digital poetry, Aarseth’s work nonetheless is valuable for its insights into changes in the author-text-reader triad, and for its move away from technological determinism and towards the establishment of a literary and historically-grounded field of study.

Lev Manovich’s *The Language of New Media* similarly engages in the task of offering a historically and theoretically informed account of new media as that which constitutes something both old and new. But while Aarseth’s study is largely concerned with the textual dynamics of digital literature, Manovich seeks to provide an overarching theory of all new media in relation to the history of visual culture. Positioning his work in relation to art, photography, and video, Manovich uses the history and theory of the cinema as the basis upon which he develops a critical methodology called “digital materialism” – the scrutiny of “the principles of computer hardware and software and the operations involved in creating

cultural objects on a computer to uncover a new cultural logic at work” (Manovich 2001, 10).

The implications here for digital poetry are two-fold: that poems mediated by a screen no longer are simply alternative examples of concrete poetry – they are performances, complete with their own set of viewer/viewed relation; and further, that the particularities of the medium and materiality of computer-mediated texts cannot be ignored. Loss Glazier astutely picks up on the defining power of medium/materiality in *Digital Poetics*, in which he extends Aarseth and Manovich’s arguments to the realm of poetic practice in order to make the point that “e-poetry” both continues a longstanding avant-garde preoccupation with *poesis* and, given the change in the tools of production, marks a break from such a lineage. Specifically, Glazier explains that “... the materiality of electronic writing has changed the idea of writing itself, how this writing functions in the real world of the Web, and what writing becomes when activated in the electronic medium” (Glazier 2002, 6).

However, while any discussion of digital poetry necessarily intersects with these three works, poems by Kenneth Goldsmith and John Cayley – in their hybridization of human and machine, artist and computer-programmer – demand that we extend the boundaries of the discussion to include the critical debates around virtuality, cyberculture, cybernetics, the cyborg. And while all of these debates are more or less engaged with breaking down, extending, re-writing conventional notions of the body, they can also be said to be symptomatic of the post liberal-humanist subject: the posthuman. According to Katherine Hayles in *How We Became Posthuman*, this is a subject defined by its coupling with machines in such a way that distributes cognition between human and machine, and thereby frames matters of how we know what we know and how we are in the world in terms of reflexivity and emergence. But with the exception of Hayles’ widely regarded work, few critics have attempted to substantially bring the ever-growing body of digital writing, especially poetry, into dialogue with the posthuman, arguably the very definition of our current cultural moment.

I mean that in being mediated, modulated, generated by a computer, as well as interactive and self-generating or looping, Goldsmith’s *Fidget* and Cayley’s “Indra’s Net” are indeed concerned with textual dynamics and the medium and materiality of their own production; however, given such concerns, they are also works engaged with the merging of a textual,

human and machine body and the attendant possibility of embodiment. However, these works also complicate the notion of posthuman embodiment in that they enact the limits to which embodiment, through the hybridization of reader, text, author and machine, is possible.

3

Katherine Hayles explores the medium and materiality of technology as it has been shaped, expressed in both literary and scientific realms. *How We Became Posthuman*, which came out in 1999 with much fanfare and many reviews, is a critique of the metanarrative of the liberal humanist subject as well as a narrative about that same metanarrative transforming into the new metanarrative of the posthuman – both stories centering around how, from one period to the next, “information,” “the body,” and “the human” are perceived. We *were* liberal humanist subjects who possessed (a self, a body, goods) and whose basic right was freedom from possession by others. We have since become, and are in the process of becoming, posthumans whose self and body are informational patterns we do not so much possess as we are enmeshed in, who are not so much free from the wills of others as we are a collection of disunified patterns. In Hayles’ words, the posthuman means that “emergence replaces teleology; reflexive epistemology replaces objectivism; distributed cognition replaces autonomous will; embodiment replaces a body seen as a support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject’s manifest destiny to dominate and control nature” (Hayles 1999a, 288). Nothing is left untouched, then, in this process of fundamentally changing – in every conceivable respect – how we see ourselves, ourselves in relation to each other and in relation to the world.

While embodiment is only mentioned briefly in the foregoing quote, it is crucial to every aspect of Hayles’ story of stories. Tracing our contemporary notion of information back to the Macy Conferences on cybernetics of the 1950s, Hayles shows the ways in which, first, information came to be defined as a free-floating entity separable from medium and materiality, and, subsequently, how human cognition came to be equated with computers and the body as something that can be done away with altogether. But what Hayles wants to make clear is that this was a rhetorical move

away from enaction in the world, a move in service to the erasure of embodiment; and in providing historical narratives that make obvious the constructedness of disembodiment, embodiment – defined as “contextual, enmeshed within the specifics of place, time, physiology, and culture, which together compose enactment” (Hayles 1999a, 196) – is best bodied forth by way of *narratives* that “put context back in the picture” (Hayles 1999a, 203) with a recounting of particulars.

Yet while I appreciate the spirit of Hayles’ noble dream of devising an account of the posthuman that “embraces the possibilities of informational technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrates finitude as a condition of human being ...” (Hayles 1999a, 5), the creation of a story about “us” is precisely what makes the realization of this dream an impossibility: by its very nature, *How We Became Posthuman* cannot be a recognition of particularity, finitude, or limited power. As a reviewer tellingly puts it, “her narrative works as a kind of fixative; it integrates its myriad components into a coherent fabric” (Brigham 2001). If to be a narrative of posthuman embodiment the qualities of emergence, reflexivity, dynamism and distributed control must be present, then Hayles’ stories which exemplify closure, cohesion and linearity are simply liberal humanist narratives.

But, to pull back from self-aggrandizing criticism of Hayles, this could, on the one hand, be overlooked, for the book does not claim to be much more than a descriptive account – in which case I am treading well-worn ground over issues of writing and praxis. The other hand, though, is far richer: this neglect to take on both postmodern science’s tendency towards anti-representationality and *dis*sensus (Bertens 1995, 127) and postmodernism’s tendency toward openness and away from meta-narratives or *grands récits* does not necessarily annul the usefulness of her notion of posthuman embodiment. It seems to me that a reworking of her definition of narrative, an emphasis on the *petits récits* in such a way that incorporates other art forms and literary genres, could better exemplify the ideal posthuman subject position. Thus, if the contextual nature of embodiment is akin to “articulation ... that is inherently performative, subject to individual enactments, and therefore always to some extent improvisational” (Hayles 1999a, 197), then science-fiction and cyberpunk are more like satellite articulations to the project of embodiment that is being taken up in part by certain digital writers.

In *How We Became Posthuman*, Hayles understands narrative as having a “chronological thrust, polymorphous digressions, located actions, and personified agents;” narrative, then, is supposed to be particularly resistant to “various forms of abstraction and disembodiment.” (Hayles 1999a, 22) Here Hayles’ definition of narrative is largely linear, causal, continuous and coherent. However, as if in response to criticism of such a narrow understanding of narrative, this past year she published an article in which she reworks her definition to mesh better with the embodiment she intends to give rise to; her shift towards discontinuous, constantly fluctuating narrative sequencing and a reflexive engagement with materiality as key features of electronic texts foregrounds the process of co-creation between reader and writer, a process that also bears with it the possibility to produce an embodied work, a work reflecting the “flux of embodiment” (Hayles 1999a, 201).¹

If posthuman embodiment is engendered through narrative that is actually more like “particularized flux,” then it has to take place on the level of form as much as content; or, as Samuel Beckett describes *Finnegans Wake*, eerily pre-dating the direction that much computer-mediated writing is taking, “form *is* content, content *is* form. [The] writing is not *about* something; *it is that something itself*” (Beckett 1981, 58–59). Not only have boundaries around “the human” been made near obsolete, but so too have boundaries between genres – for according to this schema, narrative could just as easily be called poetry and vice-versa. Thus, since praxis take precedence over typology, and if, as Hayles writes, “... embodiment creates context by forging connections between instantiated action and environmental conditions ...” (Hayles 1999a, 203), then it seems clear to me that, just as much as critically acclaimed hypertext fiction such as Shelley Jackson’s *Patchwork Girl*, digital poetry such as Kenneth Goldsmith’s *Fidget* extends the project of a posthuman embodied subject (and no doubt it can do so precisely because of the technological advances that have taken place over the five year period between the two works).

As an abbreviated gesture toward the ways in which these two works emerge out of posthuman thinking/being without necessarily diverging into the particularities of their genres, I could say that just as *Patchwork Girl* is a composite of body parts with their own stories as told by “Mary / Shelley and Herself,” so too is Goldsmith’s *Fidget* a composite of the merging of the reader’s physical and mental engagement with the text, with the author, and in turn the merging of the “real” with the virtual – the result of which could be seen as the creation of a whole-body narrative (in the widest, most distributed sense). However, one could argue that, *en route* to a mode of embodiment, *Patchwork Girl* attempts to turn away from the disembodiment of information/bodies by taking on a subject position akin to Deleuze and Guattari’s nomad:

If I clung to traditional form with its ordered stanzas ... I belonged in the grave ... I could be a kind of extinguished wish for a human life, or I could be something entirely different: instead of fulfilling a determined structure, I could merely extend, inventing a form as I went along. This decision turned me from a would-be settler to a nomad. (Jackson 1995)

While there is still the implication of prior ontological wholeness (that is, it is true, flattened and extended), complete with a story of origin and genealogy in Jackson’s work, *Fidget*, in an ironic twist, denies us the consummation of our desire for redemption from disembodiment by way of technologically mediated wholeness in that the text enacts the limits to which embodiment, through the hybridization of human and machine, is possible.

Fidget is a transcription of every movement Goldsmith made and recorded on a hand-held microphone from 10 a.m. to 11 p.m. on Bloomsday, June 16th 1997; thereafter the project became a performance, a Web project,

a musical score, a gallery exhibition, and a book. Given the practical problem of being unable to make a complete record of all movement, Goldsmith enforced certain rules on himself precisely to remove himself from the work, as agent. He writes that, “[a]mong the rules for *Fidget* was that I would never use the first person “I” to describe movements. Thus every move was an observation of *a* body in space, not *my* body in a space. There was to be no editorializing, no psychology, no emotion – just a body detached from a mind” (Goldsmith & Belgum 2002). But we are given a foreshadowing of the result of such a constraint in an epigraph by Wallace Stevens that reads, “... to fidget with points of view leads always to new beginnings and incessant new beginnings lead to sterility” (Goldsmith 2000, 5). Predictably, then, as the day and the text go on it soon becomes obvious the impossibility of just such a detachment of body from mind; the text moves from “[e]yelids open. Tongue runs across upper lip moving from left side of mouth to right following arc of lip. Swallow. Jaws clench. Grind. Stretch” (Goldsmith 2000, 8) to “Linky hung deformed gully. Whistle without lips. Get hum. Sunset eroticism breedy. Walk nine all night. Slowing down I quit time” (Goldsmith 2000, 74). In the book the inevitable interjections of the “I” turn the record into the narrative of a particular man, the work now engaging with “... so-called life-writing, the body politic ... gestural and found poem forms; a reclamation of ‘the small gesture’...” (Rickey & Beaulieu 2001, 4).

Put this way, Goldsmith’s poetics of pure practice not only is traceable to an ongoing writerly movement, but, if the “object of the project is to be as uncreative in the process as possible,” it is a twenty-first century adaptation of early twentieth-century avant garde practices (such as those of Dada and Futurism) based on notions of the automatic, the machinic.

7

A history: Tristan Tzara was one of the first of the Dadaists to use chance as a way to write out the “I” so as to generate poems whose language resisted subsumption by dominant meaning-making processes. Pre-dating cybernetics and the attendant art practices that emerged in the 1950s, Tzara’s “TO MAKE A DADAIST POEM” both was and was not a denial of individual consciousness and all its attendant conventions surrounding notions of an author, individuality, authentic poetic genius through sys-

tematic chance-operations. On the one hand the chance-generated poem was intended to better get at who that ‘you’ was – “the poem will resemble you,” (Tzara 1977, 39) – at the same time as it was intended to transcend the “you” and the “I” and the inaccuracy in seeing “you” and “I” as single, individual, unique entities. On the other hand, the chance poem also was and was not a flat-out denial of the human in favor of passive submission to an unknowable universal machine. As such, the exploration of chance was indicative of a move away from Enlightenment scientifico-rationalist discourses which dismantled God as the transcendental source of knowledge and truth only to replace this signifier with the transcendent objective gaze. Chance mechanisms were intended to rupture linearity, cause and effect, signifier and signified, the Cartesian dictum of mind over matter (and so dualistic thought in general) in order to emphasize the essence of the thing, the event, the human itself, the word as it exists in flux.

Contemporary Canadian poets Steve McCaffery and bpNichol, writing as the Toronto Research Group from 1974–75, also pick up on the notion of flux in relation to “the book machine” from their readings of Gertrude Stein: “There is now a shift away from “plot” (the old reality) and from a centrality in such narrativistic ordering, towards a new emphasis on transition (the new reality) ... This in itself allows a disjunction of the two terms in our equation: word order=world order ... The new equation should be word order=world flux” (McCaffery & Nichol 1992, 101).

8

A history: It seems inevitable that poets using chance-methods of composition should turn to computers. As early as 1960 Brion Gysin was permutating his cut-up poems by feeding them through a computer. Jackson Mac Low now relies almost entirely on computers to generate poems such as “34th Merzgedicht in Memoriam Kurt Schwitters,” which is the result of a text-selection program called DIASTEXT 4. John Cage, too, relies on a computer program to write his mesostic poems. Language poets Ron Silliman and Erin Mouré have published books of computer aided/generated poetry as early as 1981 (Silliman’s *Tjanting*) and as recent as 1999 (Mouré’s *Pillage Laud: Cauterizations, Vocabularies, Cantigas, Topiary, Prose*). And the group of writers associated with Oulipo (‘Ouvroir de littérature potentielle’) are becoming more and more synonymous

with the use of the computer for the automatic generation of poems. Although Oulipo practitioners have long positioned themselves in opposition to what they perceived as the “bogus fortunetellers and penny-ante lotteries” (Motte 1998, 17) associated with chance-generated or aleatory literature, their use of formal constraint in relation to the computer is still very much related in principle.

9

This literary lineage includes such an unlikely combination of writers as Calvino, McCaffery, Nichol, Goldsmith and Cayley – a lineage whose varied roots, despite unromantically denying authorial control and originality, are heavily invested in preserving an intact and discrete human.

There is no need here to legitimate the value of Goldsmith’s work with a rhetoric of “forefathers” and lines of inheritance. However, before moving on to an investigation of the possibility of a model of posthuman embodiment, my concern is with the problem of what I call “erasure” that seems to be inherent to the poet/machine assemblage and which may in fact make embodiment *impossible*. It is clear that notions of lineage and literary heritage are difficult to negotiate in the present time in which there are diametrically opposed pulls between those constructions which support a wide-reaching system of erasure: the dominant construction of information without a body (which is also to say without history, family, origins), matter without materiality, body without a mind, the attendant move *against* such erasure through the reinscription of wholeness, particularity, context, and the move away from erasure/inscription altogether. Ironically, the latter trend bears with it the possibility for further erasure in the desire for the new – certainly this is true of Tzara who saw himself as breaking from the past and relentlessly forging a new “new.” It is also true for Hayles (though less so, but it is difficult to fault her for not providing a literary overview that includes poetry and ranges across the entire century) and other theorists of the posthuman.

That is, despite my attempt to recuperate certain aspects of the posthuman, there seems to be a recurring problem with the concept, as well as with that which has been subsumed under the posthuman, the cyborg – especially when these concepts are used to discuss contemporaneous art works. Neither the posthuman nor the cyborg are useful concepts if they

are presented as either an evolution or devolution of the human (Halberstam & Livingstone 1995, 10; Hayles 1999a, 281) because both positions rely on categories of “human,” “being,” “origin,” “progress” – a reliance that not only inadequately problematizes the inessentiality of these terms, but that also inadvertently maintains status quo binaries of inscription/erasure, self/other, presence/absence while it tries to promote a notion of the post-human that is incompatible with any binary system. It is worth noting here that Catherine Waldby makes a similar point in *The Visible Human Project* about the persistence of what seems to me to be liberal humanist motifs in relation to figure of the cyborg:

... [it] emerges from the proposition that, if the human can be reconfigured as informational system, then the boundaries between the human and its stabilizing historical other, the machinic, become purely conventional and are open to infinite transgression ... [But] the cyborg figure emerges from its literature with an entire genealogy, a history of origins, which neglects to fully problematize the status of the human prior to the cybernetic turn ... Hayles’ more nuanced account of the cyborg posthuman ... also invokes serial, symmetrical figurations, and an attendant drive to locate a moment of posthuman origin. (Waldby 2000, 46–47)

What Waldby does not mention, however, is Haraway’s explicit claim that cyborgs are both terrible and promising, that they are the “illegitimate offspring of militarism and patriarchal capitalism” and they are also “without fathers,” unfaithful to their origins.

10

Given the framework for posthuman embodiment and the concomitant general criticisms of the posthuman I lay out above, it seems a closer look at *Fidget* and our experience of reading it is necessary to uncover what terms, if any, constitute posthuman embodiment. Given its insistence on enaction, narrative, interactivity, and a recounting of the ordinary, the theatre is a logical place to start outlining a more accurate model of what exactly our relation is to such texts.

Thinking here from the perspective of the philosopher Stanley Cavell, theatre, like narrative, is not so much a *re*-enactment of everyday life as it

is a form of life-in-process. Although it is taken for granted that the theatre presents to us fictionalized accounts of ourselves and of our human involvements, the recognition that what is presented is ourselves comes when we surrender to the characters on stage through a “standing in” of ourselves for the other. When we stand in as the other we identify with the other in such a way that our reactions to them make us more fully known to ourselves. However, because this recognition of ourselves in the other, as the other, is also always mitigated by the actor’s (bodily) standing in as the character, it is really that we stand in through the actor’s standing in. The experience of the theatre, then, is an all-embracing “physiognomic metaphor” (Wilshire 1988, 358) for our involvements as persons with persons.

Given the “right” performance piece, then, this is conceivably a posthuman feedback loop between actor and audience – a continual system of exchange between audience, actor and character, each one never unified or whole and always participating in “re-distributions of difference and identity.” As Judith Halberstam and Ira Livingstone perceptively point out, “[t]he posthuman does not reduce difference-from-others to difference-from-self, but rather emerges in the pattern of resonance and interference between the two” (Halberstam & Livingstone 1995, 2). That is, the mechanism at work in the theatre which renders self/other and audience/actor as distributed forms of identity based on particularity is the same mechanism at work in the book version of *Fidget* that goes back and forth between self and other, and reader and writer: Goldsmith enacts his body by standing in as an observer enacting his body, and we, the reader, stand in through his standing in to come home to an all-encompassing understanding of ourselves and what it means, both physically and linguistically, to “Swallow ... Grind. Stretch.” (Goldsmith 2000, 8) As Hayles might say then, in the lineage of language philosophers such as Wittgenstein, Austin, and Cavell, the book form of *Fidget* embodies both writer and reader by way of the constituting force in recounting the particularities of a life with ordinary language. Moreover, insofar as there is no “easy distinction between actor and stage, between sender/receiver, channel, code, message, context” (Halberstam & Livingstone 1995, 2), our experience of reading *Fidget* in print constitutes posthuman embodiment.

By “right” performance, I mean “right writing” as well – works which both foreground the working process, the work as work, and have openness built into them such that it becomes possible for “re-distributions of difference and identity” to take place (Halberstam & Livingstone 1995, 2). Here I am drawing on Umberto Eco’s notion of the open work which serves as part of Hayles’ platform for a poetics of posthuman narratives (characterized by fluctuation, reflexive engagement with materiality, co-creation between reader and writer):

... (1) “open” works, insofar as they are *in movement*, are characterized by the invitation to *make the work* together with the author and that (2) on a wider level ... there exist works which, though organically completed, are “open” to a continuous generation of internal relations which the addressee must uncover and select in his act of perceiving the totality of incoming stimuli. (3) *Every work of art ... is effectively open to a virtually unlimited range of possible readings, each of which causes the work to acquire new vitality in terms of one particular taste, or perspective, or personal performance.* (Eco 1989, 21)

While Eco himself admits that the last qualification for openness could be said to characterize all works of art, only recently have artists been concerned with the entire notion of openness. My interest in Eco’s schema lies in the possibility of laying the notion of an open work side by side with (narratives or simply artistic works of) posthuman embodiment, in which case it becomes clear that being a posthuman work should not depend on whether it is mediated by digital technology because print technologies also bear with them the same potential for posthuman embodiment (even though it cannot be denied that the nature of embodiment shifts in the move from one medium to the other).

That is, implicit to the posthuman is that it is *digital* technology we are interacting with, and as such, absence and presence are no longer relevant terms because we have become a collection of disunified informational patterns we do not so much possess as we are enmeshed in. As Hayles

notes, the terms inscription and incorporation are intended to give shape to posthuman subjectivity while avoiding the pitfalls of liberal humanist binaries. Two problems begin to emerge here, the first being the assumption, again, that “we” are all posthuman. Hayles writes in an essay published in *Critical Inquiry*, “The Power of Simulation: What Virtual Creatures Can Teach Us”:

... I want to insist that my readers, like me, participate every day of our lives in the distributed cognitive complex adaptive systems created by digital technologies in conjunction with global capitalism. So pervasive have these technologies become that it would be difficult to find anyone who remains completely outside their reach. (Hayles 1999b, 9)

This is to say that the posthuman only means what it does if digital technologies are in fact ubiquitous – and they are not, ironically evidenced by her own reminder to us that “70 percent of the world’s population has never made a telephone call” (1999a, 20). But, if inscription/incorporation is intended to foreground the blurring of boundaries between human and digital technology, and if the feedback loop is essential to the workings around this posthuman border blur (essential to produce emergence, distributed cognition, reflexivity), then why can we not see inscription/incorporation as looping back-and-forth between two or more entities, one of which must be a machine and a machine could in fact be a book? Here I am drawing on McCaffery and Nichol’s argument that the book is a machine which, like digitally-driven machines, has the capacity and method for storing information “... by arresting, in the relatively immutable form of the printed word, the flow of speech conveying that information. The book’s mechanism is activated when the reader picks it up, opens the covers and starts reading it” (McCaffery & Nichol 1992, 60). McCaffery and Nichol’s work helps to de-naturalize the discourse surrounding new media which not only places it over and above paper-based media, but contradicts a tendency in criticism on digitality/virtuality towards technological determinism that serves to reinscribe the erasure of history, artistic and poetic practices – something like, “digital technologies are not only the natural outgrowth of print, but they also offer us redemption from the bonds of print-based subjectivities.”

The second problem with a model of subjectivity built on inscription and incorporation, the problem of the place of culture in relation to language, is particularly relevant to the online version of *Fidget*.

The Coach House Books Web site tells us that *Fidget* “substitute[s] the human body with the computer. The Java applet contains the text reduced further into its constituent elements, a word or a phrase. The relationships between these elements is structured by a dynamic mapping system that is organized visually and spatially instead of grammatically” (Goldsmith “About *Fidget*”). The reader/viewer can choose not to interact with the text, and the text will then run through its thirteen-hour cycle in about ninety minutes. Or the reader/viewer can interact with the online version by viewing the events of June 16 at any hour, in any order, can spatially reconfigure the words, and can change the text size, color, and background. I could argue that the online version makes possible the embodiment of both reader (on the level of interactivity) and language (on the level of morphology and physical appearance). But the question then becomes, first, whether the reader/viewer interactivity that *Fidget* makes possible, which one could argue is interactivity only on the most superficial level of aesthetics, really does constitute human (or posthuman) embodiment, especially when the author’s aim is to substitute the human body for the computer? I say no, for if we have learned anything from Hayles it is that information and matter, medium and materiality are not separable – that to substitute the body for the computer participates in disembodiment as much as the attempt to equate the mind with information technologies.

Moreover, to follow a question with the question of whether language can be embodied without humans/users, again I say “no.” *Fidget* demonstrates not only that the activity and intention of the writing subject are not extractable from language, but also that culture – that is, human community – is not extractable from either the writing subject or language in general. To claim otherwise is not only akin to thinking of humans as existing solely along the axis of the vertical (the biological, the machinic), ignoring the horizontal axis (the social, cultural), but a misrepresentation of the vertical as that which is separable from the horizontal. This is to say, again

drawing from the thinking of Cavell on Wittgenstein, that language is an always dynamic system inherently based on communal-agreement.

Therefore, the online version seems to enact the limits to such embodiment not so much in terms of the feedback loop between both self and other, but in terms of the loop between human and machine. While it is clearly language being performed on the stage of the screen, *Fidget* online performs itself oblivious to its readers/viewers and there is no equivalent like it in traditional terms of the theatre – with the exception of our limited ability to change what could be called the scenery and the setting, it is performance many times removed from writer, reader, actor and audience. But, once this unbridgeable distance between reader and text is acknowledged as such, I would say that we, the readers, are forcibly thrown back on the recognition that human cognition and language use is not equivalent to computer processing. Jean-Francois Lyotard's work in *The Inhuman: Reflections on Time* on the relation between body, thought, and the technological sciences is relevant here, for his argument is quite clearly that we cannot and should not want to fulfill the dream of providing “software with a hardware that is independent of the conditions of life on earth”; he writes, “As a material ensemble, the human body hinders the separability of this intelligence, hinders its exile and therefore survival” (Lyotard 1988). It is not simply that thought is not separable from body and so cannot be conceived as a machine – it is that it should not be, for to do so is to wish for the annihilation of all bodies and so all thought.

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Digital texts like *Fidget*, then, *are* posthuman embodied works in that the reader is embodied through its reflexive enactment of distancing text from body. Conversely, and stepping away from the generalized dream of post-human embodiment to the particular figure of the cyborg, works such as John Cayley's “Indra's Net” project can be understood as aggressively taking up (in Eco's terms of the “open work”) interactivity, movement, co-creation and continuous generation, and so here directly enacting embodiment.

Named after what was originally a Hindu metaphor “for universal structure used by the Chinese Huayan Buddhists to exemplify the ‘interpenetration and mutual identification’ of underlying substance and specific form”

(Cayley *Indra's Net or Holography*), the “Indra’s Net” pieces employ generative methods and aleatory processes to create texts for a reader who can interact with it and create for themselves an entirely “new” poem from an always original text. Cayley writes:

... in my most recent distributed piece, readers can alter the work (irreversibly), collecting generated lines or phrases for themselves and adding them to the hidden given text so that eventually their selections come to dominate the generative process. The reader’s copy may then reach a state of chaotic stability, strangely attracted to one particular modulated reading of the original seed text.

(Cayley 1998)

Given this level of interactivity that is built in to “Indra’s Net,” it is no surprise that selections from it such as “Book Unbound” have been set up either as installations in which the texts are projected onto the walls and readers/passers-by can interact with the text, change the direction of the “reading,” access explanatory material on the texts; or as performance readings with “writers/collaborators performing with the literary object as the programmatological process generates new text” (Cayley *Indra's Net or Holography*). The potentially transactive relationship of work and reader is clearly indicated in one of the explanatory notes for “Book Unbound”:

When you open the book unbound, you will change it. New collocations of phrases generated from its hidden given text – a short piece of prose by the work’s initiator – will be displayed. After the screen fills, you will be invited to select a phrase from the generated text by clicking on the first and the last words of a string of language which appeals to you. Your selections will be collected on the page of this book named Leaf, where you will be able to copy or edit them as you wish. (Cayley 2002b)

Again, with a set-up similar to that of the theatre, “Book Unbound” demands that all participants interrogate what it means to be a participant, what it means to be a reader, writer, performer – after all, in the case of the gallery installation, who or what is performing/reading? The programmed machine, the original programmer, other readers themselves who, in interacting with the poem, perform “writing,” “reading,” “performing,” and “programming” for themselves? Is it the act of interacting itself that is being performed by the human and the machine?

In being largely mediated by computers and readers/viewers, the “Indra’s Net” project, then, not only seems to suggest what well-schooled students of postmodernism might refer to as the impossibility of (as well as the constant, latent desire for) an authentic language with a firm and fully justified bond between signifier and signified but, more importantly “Indra’s Net” appears before us as an always-shifting, amorphous apparition with no material, tangible presence, existing nowhere in nature, nowhere in what we think of as “the outside world.” Even the language it maps and is mapped by has been effaced and hidden away by the absence/presence of the glow of the screen that, in being subject to the arbitrariness of the flick of a switch, also denies us the possibility of ever being able to say, “Now, the poem is present. Now, the poem is absent.” It is always neither. In this way it is also the antithesis of stasis, the embodiment of particularized flux that is in the realm of neither the human nor the non-human.

From the perspective of Haraway’s “Manifesto for Cyborgs,” “Indra’s Net” is a cyborg; interacting with it we become cyborgs; our understanding of the world becomes one informed by the cyborg vision. And, not unlike Haraway’s cyborg that is “all light and clean because they are nothing but signals ... eminently portable, mobile ... as hard to see politically as materially” because “they are about consciousness – or its simulation” (Haraway 1985, 70–71), the existence suggested (or actually perpetuated, brought on) by the self-generating/reader-driven/interactive poem suggests a cyborg world that is about “lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints” (Haraway 1985, 72). Not afraid precisely because poems such as Cayley’s open up the possibility of living the metaphor of Indra’s net, of unfinding ourselves “‘in’ the dreamlike world that the Diamond Sutra describes ... where there are no objects, only an incessant shifting of masks; where there is no security and also no need for security, because everything that can be lost has been, including oneself. Especially oneself” (Loy 1992).

Notes

1. For the more recent work, see Hayles (2001).