I will confine myself to telling you that I dream of immense cosmologies, sagas, and epics all reduced to the dimensions of an epigram.  

Italo Calvino

Epigrams are used traditionally to presage a beginning, the beginning. They announce the thematic import of the discourse that is to follow. The epigram is a kind of pre-talk, an avant-scene. Sometimes there is more than one. In the case of multiple epigrams, an entirely new system of relations is established between the epigrams themselves, a pre-structure within a pre-structure. This kind of interconnected multiplicity – of a kind that detained the attention of the two great Augustan satirists of pedantry, Alexander Pope and Jonathan Swift – prompts a question: what if the epigram is the event and not its
harbinger? What, in other words, if the epigram is not the link that prepares us for conceptual passage elsewhere, but is itself a singular event in which an entire discourse is implicit? Discourse is not something that follows, happens afterwards, but is already happening, is already present in the discrete fertility of epigrammatic concision. Need I, then, say any more?

In keeping with the poetic of this symposium, I am less interested in the reception of this theory than in dramatizing its making as a constructive process; or, dare I say it, a hypertextual process. I'm interested in extending my interest, explored in Memory Trade, in the particulate nature of the alphabet as a finite structure of elementary particles or bits, capable of infinite generation of meaning. That is, I'm interested in a sub-morphological theory of meaning, drawing on the concept of the sub-atomic particle of quantum mechanics. If literacy is concerned with letters as fundamental, irreducible particles of meaning, then how can we transport the idea of the particle into the digital realm, the online environment and the hypertextual web? Such a project is fraught with the potential of being un-receivable, since outlining a post-literate digital literacy is outside the hermeneutic circle of literacy itself. So what follows is a translation of a future model of digital literacy.

So let's begin again. But not at the beginning, but always already in the midst of things. The way any good essay, to re-purpose a phrase of Adrian Miles', should start.

*The ideal for a book would be to lay everything out on a plane of exteriority of this kind, on a single plane, the same sheet.*

Gilles Deleuze & Félix Guattari
In *A Thousand Plateaus*, Deleuze and Guattari interpret the epigram in an intriguing, multimedia way, using images instead of text. Not, for a minute, that there is anything un or a-textual about an image. However what is striking is the principle of signifying a conceptual link or portal into the text through iconic insinuation, implication and suggestion, rather than the overt, literal topicality of the written epigram. In the introductory chapter entitled “Rhizome”, from which the above epigram is taken, they prefigure their discussion of deterritorialisation, rhizomorphism and writing to the nth degree, with a fragment from a 1948 score by Sylvano Bussoti, dedicated to John Cage’s collaborator, David Tudor. While their discussion of multiplicities and enunciating machinic assemblages is rigorous and engaging, a discussion conducted between pages three and twenty-five, the work of this discussion has already been done in their epigram. In terms of the theory of discrete fertility I want to make here, their twenty-two page discussion is an exegesis, an elongated unwrapping, a verbal equivalent to the exploded diagram. Within these twenty odd pages, what wonders emerge: complex ideas to do with textuality, abstraction and becoming that have indelibly left their mark on the contemporary intellectual landscape— ideas that require a further five hundred and sixty pages of delineation and articulation. And here we start to generate a sense of an idea that, while not in any way new, has preoccupied practitioners and theoreticians of the broad category of writing that Espen Aarseth has called “cybertext”. It is a sense of overwhelming density crammed into a small space, whether it is the finite pages of a book, an epigram or a docuverse: an intimation of compressed profundity, what the French theorist of space Gaston Bachelard called “intimate immensity”. In the context of literature, Paul Valéry had suggested that the beginning of a novel contained its entire
poetics in a nutshell. While an idiomatic figure of speech, the idea of something vast being contained within something small, like a nutshell, has attracted writers throughout history. Shakespeare’s Hamlet, engaged in lively banter with Rosencrantz and Guildenstern, ponders the question of the space of the mind, noting that “I could be bounded in a nutshell and count myself a king of infinite space”. Three centuries later, James Joyce pondered that image and put it to the service of his own universe in a nutshell, or “microbemost cosm”, in *Finnegans Wake*, where Shakespeare’s conceit is transformed into “Allspace in a Notshall”. Writing at a time when quantum mechanics was making its first tentative steps towards particle theory, Joyce was highly attuned to and turned on by the idea that language, as a particulate structure of finite bits, could yield, under the right kinds of polysemic pressure, a “most spacious immensity”.

Received wisdom has it that what was an ideal within the technology of the printed book is now literal fact within a hypertext environment. Drawing on the work of French poststructuralism, theorists from George Landow to Gregory Ulmer have argued that the ideal of the writerly text is realised, or literalised, in the hypertextual network. While some interesting theoretical expositions have been undertaken in this respect (in particular the work of Ulmer), the auratic quality of the writerly text has lost something of its glow. For it is the *ideal* nature of the writerly text that generates fascination, the fact that although so much has been written about it, it could not be found in bookstores or libraries—even in the catalogues of Routledge, that fine purveyor of theoretical exotica, you will only find one title, and a single copy at that, of *Maniacs in the Fourth Dimension*, by Kilgore Trout, of which I am the proud owner. Where the writerly text could be more readily glimpsed, though, if you were lucky, was on the bookshelves of certain writers of a particular kind of fiction. It is no accident that one of the great influences on contemporary theories of
writing and complexity was Jorge Luis Borges. His presence in *A Thousand Plateaus* is
like Flaubert’s God in nature, everywhere felt but nowhere seen (well, virtually unseen,
as he is mentioned twice in the book). The introductory chapter is dominated by his
parable of the map and the territory, in which a map is made of such scale and
verisimilitude that it actually covers the empire it was designed to represent.13 Moreover,
a fragment from his later 1975 text, “The Book of Sand”, exists as the epigram to the
same chapter in a quantum edition of *A Thousand Plateaus*. As with Borges’ other
exists “in an infinite series of times, a growing, dizzying web of divergent, convergent,
and parallel times”.14 The epigram reads like this:

*I turned the page; the next page bore an eight-digit number. It also bore a small
illustration, like those one sees in dictionaries: an anchor drawn in pen and ink,
as though by the unskilled hand of a child.
It was at this point that the stranger spoke again.
‘Look at it well. You will never see it again’.
There was threat in the words, but not in the voice.
I took note of the page, and then closed the book. Immediately I opened it again.
In vain I searched for the figure of the anchor, page after page.*15

Jorge Luis Borges

Borges’ “Book of Sand” is a remarkable text, since it confounds the reader with a quality
of dynamism that books, for centuries, weren’t thought to possess. That is, the printed
word, unlike its pixelated counterpart, is fixed, unchanging. Only when a text is re-set
for a new edition can words be altered. In the “Book of Sand” we encounter a text that
is never the same each time it is revisited, a text that never repeats itself: every time the
same page is consulted it contains something different. Moreover, despite its finite limitations, the number of pages proliferate each time it is opened:

*I took the cover in my left hand and opened the book, my thumb and forefinger almost touching. It was impossible: several pages always lay between the cover and my hand. It was as though they grew from the very book.*\(^{16}\)

Like sand, the mysterious book has no middle or end, and no matter how hard the narrator tries, he can never open the book at the first page.

In typical Borges style, the book is surrounded by mystery. Brought to the attention of the protagonist/narrator by its equally mysterious custodian, it becomes an obscure object of desire for a time. But only for a time, as its strange sublimity overwhelms its owner, defiling his sense of order and reality. Like Borges’ “Book of Sand”, the parallel edition of *A Thousand Plateaus* has on occasion crossed the desks of the coterie of academics aware of its elusive presence. Brian Massumi is reported to have seen it, though its oppressive proliferation is said to have turned him off translation for life. If what I have heard is true, he is said to only write epigrams now, one of the more conspicuous, written soon after his encounter with this melancholy volume, is drawn from Joseph Conrad’s novella *Heart of Darkness*:

*The horror, the horror.*

Joseph Conrad

If you read carefully between pages one thousand and one thousand and one of Charles Baudelaire’s notebooks, you will find an odd and despairing reference to it. I myself have
not escaped its inscrutable alchemy. The image of the disappearing figure of the anchor could not have been more prescient of my theory of discrete fertility. What I am moving towards is a theory of hypertext as a discrete singularity that has imploded the classic, dyadic structure of node and link. In this theory there is no room for anchors.

Borges’ fabulatory approach to the idea of the infinite book retains the resonances of uncertainty and implausibility associated with the writerly text. While the “Book of Sand” may not yet exist, the idea that it might or could exist is enough, to paraphrase Borges, to trouble our minds. And it is this element of the fabulatory, of that which may exist, that is both enticing and disquieting. To actually possess such a book is to no longer entertain the possibility of its potential, and it is this quality that fascinates Deleuze and Guattari about the ideal of the book as a flattened plane of indescribable excess. Once such a book exists, once it is a reality, it no longer has the potential to be inscrutable, just out of grasp, always ungraspable.

In thinking about the idea of intimate immensity, of discrete fertility, of universes within nutshellss, I’m drawn to the idea of the charged potential of the singular image, the epigram, the discrete thing liberated from the obligation to introduce or link to something else. I’m interested in the obliteratiom of adjacency, juxtaposition, the link, and the connection: the disappearance of the anchor. In thinking of the charged potential of a singular thing, we need to make a theory of potential writing. In order to do this I need a talisman, a heuretic device. So let’s have another epigram:

*My temperament prompts me to ‘keep it short’, and such structures as these enable me to unite density of invention and expression with a sense of infinite possibilities.*

17
In his *Language of New Media*, Lev Manovich uses Dziga Vertov’s 1929 film *Man With A Movie Camera* as a heuristic device throughout the book. In doing this he is demonstrating his theory that the language of new media is not something new, for which we have to invent a critical metalanguage. On the contrary, he argues that what we understand to be the principles of new media aesthetics are already at work in older cultural forms such as cinema. In a similar fashion, I want to demonstrate that my theory of hypertext as a discrete fertility can be made from residual forms of textual compression. To achieve this end, I, too, have chosen a pre-electronic text as a talismanic – or talismatic\(^{18}\) – guide to discrete fertility.

Italo Calvino’s proto hyper-novel, *If On A Winter’s Night A Traveller* (1979), is an example of such an experiment in textual compression. It is an experiment in what Calvino has called a “‘discrete’ rather than a ‘continuous’ reality”, a break with a tradition of story-telling in which one word is made to stand “in sequence with another”.\(^{19}\) *If On A Winter’s Night A Traveller* stands for an attitude to experimental writing devoted to the problematics of the beginning, of the commencement. Two obvious precursors, over which Calvino has re-written his novel as a palimpsest, are Laurence Sterne’s *Tristram Shandy*\(^{20}\) and *The Tales of the Thousand and One Nights*. If you are not familiar with Calvino’s text, there are abundant descriptions of it within its own pages:

*I have had the idea of writing a novel composed only of beginnings of novels. The protagonist could be a Reader who is continually interrupted. The Reader buys*
the new novel A by the author Z. But it is a defective copy, he can’t go beyond the beginning… He returns to the bookshop to have the volume exchanged.21

Writing just before his death on the principles of what he called the hyper-novel, Calvino noted that in If On A Winter’s Night A Traveller his aim was

to give the essence of what a novel is by providing it in concentrated form, in ten beginnings; each beginning develops in very different ways from a common nucleus, and each acts within a framework that both determines and is determined.22

Calvino wrote these words on the occasion of preparing a series of presentations that would form the Charles Eliot Norton Lectures in 1985 (they were published posthumously in 1988). The essay in question, “Multiplicity”, was his attempt to map out the trajectory of complexity and encyclopaedism into the new millennium. In theorising the progress of the novel, Calvino was also extending a theoretical project he had begun in the late 1960s to do with the impact of computers and information technology on writing. In thinking about the kind of experimental, cybernetic writing that was being produced in Italy at that time, Calvino argued that such a technology was

A tool for the formal decomposition of what is structured, and for challenging the normal train of thought. At a basic level this tool is a charmingly lyrical one. It satisfies a typically human craving: the production of disorder. A proper literature machine involves the craving for disorder as an inevitable reaction to a previous order. Such a machine will produce avant-garde material in order to sluice out its circuits after they have been clogged up by too long a period devoted to the production of classicism. It will feel unsatisfied with its own traditionalism and start planning out new ways of looking at the written word until it completely overturns the matrix which it had followed up till then.23
Sounds a lot like an intimation of imminent hypertextuality to me. His own account of *If On A Winter’s Night A Traveller* as a kind of generative grammar, a literature machine, attests to his anticipation of the convergence of information technology and writing. But it also attests to a principle well known to narratology, the infinite generation of forms from finite structures. His sense of the “potential multiplicity” of such a literature machine evokes what I have been referring to as the density of the particle. This density of the particle, or potential multiplicity, is something glimpsed, sensed as potentially there, but diffused once it is extended into a relation, a link, an elongation. Something of this implosive density is revealed in this passage from *If On A Winter’s Night A Traveller*:

*I’m producing too many stories at once because what I want is for you to feel, around the story, a saturation of other stories that I could tell and maybe will tell or who knows may already have told on some other occasion, a space full of stories that perhaps is simply my lifetime, where you can move in all directions, as in space, always finding stories that cannot be told until other stories are told first, and so, setting out from any moment or place, you encounter always the same density of material to be told.*

Vannevar Bush no doubt encountered something of the same excess in his ruminations on the Memex, and Ted Nelson was in no doubt that hypertext was very much a manifold literature machine—responsive to, as well as generative of, textual excess. In energising and capturing the charged multiplicity of the beginning, Calvino is suspending the reciprocal relation to *something else* of discrete syntactical structures, such as the clause or the phrase. The ten chapters which make up the novel are in fact ten unfinished sentences, intransitive structures that fail to take an object, fail to move the sense on to a subordinate clause and, therefore, grammatical and narrative closure.
What is dramatised in this sequence of first words is the unrealised potential of implicit “invisible connections” bursting at the seams and intimating dispersion. *If On A Winter’s Night A Traveller* goes some way to realising Calvino’s desire to write, in the manner of Deleuze and Guattari’s ideal book, “a collection of tales consisting of only one sentence only, or even a single line”.26 Precursors to this ideal include the one line novel written by the Guatemalan writer Augusto Monterroso, *When he woke up, the dinosaur was still there*; and the untitled text to be found in Paul Valéry’s notebooks, “Idea for a frightening story: it is discovered that the only remedy for cancer is living human flesh. Consequences”.

This is the energy of the quantum particle, of dense matter in an infinitesimally small space. It is the energy of the first word, or what I have been calling discrete fertility:

*The romantic fascination produced in the pure state by the first sentences of the first chapter of many novels is soon lost in the continuation of the story: it is the promise of a time of reading that extends before us and can comprise all possible developments. I would like to be able to write a book that is only an incipit, that maintains for its whole duration the potentiality of the beginning, the expectation still not focussed on an object. But how could such a book be constructed? Would it break off after the first paragraph? Would the preliminaries be prolonged indefinitely? Would it set the beginning of one tale inside another, as in the Arabian Nights?*27

In one of his many great essays, Calvino reflects on the persistent relationality of words, of the limits to which we will push adjacency, the bringing together of separate words into “reciprocal fertility”.28 His notion of the incipit is the crystalline opposite to the idea of the relation, the transition, or the link. It is consistent with what he identified as a
“contemporary intellectual process” that involved the “revenge and triumph of all that is discontinuous, divisible and combinatory over continuous flux”. If the word hypertext had currency in literary criticism in the late 60s when he wrote these words, it would in all probability have been used to describe the outcomes of this process. In this respect, hypertext continues to do the work of experimental literature in its tendency to break up continuous discourse, to deconstruct the flow of meaning into “unlimited combinations, permutations and transformations”.  

A word, though, on this term discontinuity. As far as Calvino was concerned, continuity was to be disrupted at all costs and the most powerful mechanism for doing so was to sustain the beginning, to put off extension and yet retain a powerful sense of restrained encyclopaedic complexity. Within new media discourse it is de rigueur to bandy terms such as discontinuous, non-sequential, non-linear, etc. But for all the hype about hypertext as a liberation of discontinuity, there has been scant attention paid to the highly continuous nature of the binary structure of the node and link. This manifold figure binds two dependent items into a reciprocal, symbiotic order, in which there is little choice and little possibility of variation, since the activation of one leads to the materialisation of the other.

The incipit is a more dramatic act of dis-continuity, of suspended continuity, in that the possibility of reciprocal combination is absent. Combination entails extension, the release or issue of condensed meaning or information into the flow of syntax, trails and pathways. The idea of hypertext as extended text without extension is troubling to our metaphysics precisely because of its singularity, its refusal to open out, to flow, to elongate. Within cosmology, the idea of a singularity refers to a moment of space-time
before which, theoretically speaking, there was no such thing a space or time, and out of which issues, in the cataclysmic explosion of the big bang, the entire universe. It is a theoretical postulate that equally troubled physicists and cosmologists, since the laws of relativity, which the universe was said to observe, have no meaning in this quantum state of infinity within a sub-atomic particle of sand (hence the need in this project to translate a potential, as yet unknowable and unrecognizable form of digital literacy into the letters and meanings we are familiar with). Stephen Hawking, another dabbler in universes in a nutshell, has dubbed these irreducible sources of energy as “virtual particles”.30 (In the context of the virtual, it’s worth remembering, by the way, that Roland Barthes wrote a wonderful fabulatory exposition of a writerly text called S/Z. Sensitive to the particulate nature of the writerly — which is another way of describing the virtual — he begins the essay, with due deference to this text, with the observation that, “There are said to be certain Buddhists whose ascetic practices enable them to see a whole landscape in a bean. Precisely what the first analysts of narrative were attempting: to see all the world’s stories [and there have been so many] within a single structure”).31

It is the nature of virtual particles that they cannot be observed directly, either with the naked eye or the more accelerated gaze of a particle detector. However their influence can be detected indirectly in terms of very small yet decisive changes in the forces between atoms. So they are virtual in the sense of being there but not apparently there (an inversion of the commonly accepted definition within new media theory of the virtual: that which is apparently there, but not). And it is for this reason that this particle theory of hypertext is a potential literature, an oulipean exercise forged out of the workshop of potential literature. While we may never actually see such an example of particle hypertext, we can nevertheless engage with the theoretical force of its implications for
thinking about hypertext. Such an exercise is my own modest attempt to revive the aura
of experimental writing that once surrounded the writerly text. It is a theory of the text
occupying a fabulatory space and time of the possible, parallel to our own. Within certain
speculative realms of thought we can occupy this special form of time, such as particle
physics, which tempts us to think of the idea of a black hole as a minute speck of intense
gravity, in which time and space condense into a singularity outside time and space. In
the fictions of Borges, too, we can temporarily think outside the pervasive cultural logic of
binarism that still structures new media forms such as hypertext. For Borges himself had
stared into the particulate density of discrete fertility. The most famous image we find of
this confrontation with the infinite in his fiction is the figure of the Aleph. Defined as a
point in space that contains all points, the Aleph is described as “a small iridescent
sphere of almost unbearable brightness… [It] was probably two or three centimeters in
diameter, but universal space was contained inside it, with no diminution in size”. The
problem the narrator faces in describing the Aleph is made very clear, in that while the
things he sees in it occur simultaneously, the act of writing about it is successive,
“because language is successive”. Hence, as binary, manifold subjects, for whom it
is second nature to seek connections and links between discrete things, it is difficult to
imagine a particle theory of hypertext (to repeat the point made above, hypertext is an
economy of writing consistent with binarism and not a departure from it). Electrate
subjectivity, to adopt a word of Greg Ulmer’s, is concerned with articulating, rather than
partitioning or managing, the multiple channels of information flow associated with the
age of remediating technologies. It is a concept of subjectivity that finds resonance in the
schizo-analysis of Deleuze and Guattari, more irrational than rational, abductive rather
than deductive and, above all else, concerned with excess and multimedia flow: a
comprehension of subjectivity that Guattari has described as “polyphonic and
heterogenetic”. It is a way of seeing the world all at once, simultaneous, as Marshall McLuhan once prophesied and David Bowie demonstrated in a famous television-watching sequence in Nicolas Roeg’s 1976 film *The Man Who Fell To Earth*. Borges’ narrator in *The Aleph* presents us with a slow motion, serial version of it:

> Each thing (the glass surface of a mirror, let us say) was infinite things, because I could clearly see it from every point in the cosmos. I saw the populous sea, saw dawn and dusk, saw the multitudes of the Americas, saw a silvery spider-web at the center of a black pyramid, saw a broken labyrinth (it was London), saw endless eyes, all very close, studying themselves in me as though in a mirror, saw all the mirrors on the planet (and none of them reflecting me) (Aleph, 283).

A break with the Lacanian subject of self and other, the quantum subject disappears from the binarism of the mirror stage into singularity of being-outside space and time. As for me, I finish by declaring an idea for a future project: I would like to write a seminar paper that consists of a discrete siglum of indeterminate and complex import, a cipher that would eliminate duration and extension, yet suggest the presence of indeterminate outcomes. The essay would have no beginning, middle or end, but would have the generative force of the infinite to be found in the paradoxes of Zeno of Elea, of the formula $E=mc^2$ or the conjugation of the verb to be. It could be encapsulated in the following epigram:

... *it suffices that a book be possible for it to exist. Only the impossible is excluded.*

Jorge Luis Borges

2 Pope’s *The Dunciad Variorum* (1729) and Swift’s *A Tale of A Tub* (1704) have received little attention in the context of hypertextuality. They are, however, important avant-texts in the history of electronic writing and digital literacy.


4 I am highly conscious of the particle/wave duality in quantum theory. There is future work to be done in this respect. Indeed, as a grammatologist, I am attracted to the ambivalence of quanta as both wave and particle: Werner Heisenberg’s “uncertainty principle” as the pharmakon. For the time being, though, I am restricting my focus to the sub-atomic level of the particle (rather than the measurement of its velocity in terms of waves).

5 I put this word under erasure for the obvious reason that while it is not appropriate to the project at hand, it is the only word available to suggest what is at stake in an emerging networked world, in which the letter is no longer the dominant form of media. Navigating a hypermedia text, for example, is not reliant on alphabetic literacy in the way that reading a novel certainly is.

6 The idea of describing a potential digital literacy that is not based in letters is, on second thought, not satisfactorily suggested by putting words under erasure. As a response to this problematic, I have drawn on the iconographic language of Australian digital artist Troy Innocent. Innocent’s “Memetic” font is an attempt to create a symbolic, icon-based language that departs from the phonetic alphabet and provides, instead, a purely visual register of communication that is suited to the creation of virtual spaces conceived of as language; that is, a symbolic interpretation of digital code in iconographic terms. The art works in which Innocent
has explored this iconographic language can be seen at http://www.iconica.org.

7 Adrian Miles, “Intervals and Links: The Indeterminacy of A Link’s Possible Future”, paper presented at Digital Arts and Culture 99, Georgia Institute of Technology, Atlanta, October 29, 1999.


12 ibid, p.150.

13 Borges recounts this parable in “Partial Magic in the Quixote” and also in the short fragment “On Exactitude in Science”.


16 ibid, p.481.

17 Italo Calvino, “Multiplicity”, p.120.

18 This wonderfully apposite neologism was coined by Adrian Miles at the I Link, Therefore I Am: Digital Design Literacies symposium, RMIT University, Melbourne, April 16, 2002.


20 In his study of Tristram Shandy, reception theorist Wolfgang Iser presents the text very much as
an open-ended, omni-directional narrative. The entire narrative, in Iser’s words, concerns the very issue of commencement and first words pertinent to this discussion. The beginning of the novel, Iser asserts, is suggestive of the poetics of the entire text: “multilayered problematisation of how to start”. *Tristram Shandy*, Landmarks of World Literature series (Cambridge, Cambridge University Press, 1988), p.2.


22 Italo Calvino, “Multiplicity”, p.120.

23 “Notes Towards a Definition of the Narrative Form as a Combinative Process”, p.95.

24 ibid.


26 Italo Calvino, “Quickness”, p.51.


28 “Notes Towards a Definition of the Narrative Form as a Combinative Process”, p.93.

29 “Notes Towards a Definition of the Narrative Form as a Combinative Process”, p.94.


31 S/Z, New York, Hill & Wang, 1974, p.3
