The Uselessness of [Digital, Computer, Media, ____ etc.] Literacy

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In integrated electronics, as in life, the solution to shared imperfections
is a relationship based on complementary strengths.[1]

Neil Gershenfeld,
The Physics of Information Technology

Way Back, 'Before the Beguine'

When speaking of the uselessness of 'digital', 'computer', 'media', 'information',
'technological', 'physical', 'scientific', 'water', etc. literacies, it is entirely appropriate to
begin 'Before the Beguine', to slightly alter the title of a musically ambitious jazz waltz from
Cole Porter and its eventual popularisation by Artie Shaw in the 1930s. This is so because
when speaking on the topic of literacy — of its psychological conception, material
production, social distribution and private/public articulation — any correspondent is
inevitably engaged with the entire width and breadth of human knowledge, in every single
time and space, across the whole horizon of our individual/collective existence. It is a topic
that involves every one of us.

Concomitantly, under the pressure of 'beginning' somewhere, somehow, even
sometime, it is just not good enough to cite those sources that are direct influences, or those
more amorphous social/cultural instances that serve as implicit influences in discussing this
topic, especially its proliferation in a great many electronic dis/guises.

So, where to *really*, *truly* begin in the morass of this emerging uselessness of the term
'literacy', especially as it is utilised in the highly differential field of multiply badged
literacies mentioned in the opening sentence? Could it be possible to start before the

invention of the Internet/WWW, or even before the justly in/famous Marshall McLuhan in the 1960s? Possibly before the moving picture of a speeding train pulling into a station scared the living daylights out of cinema audiences in the early 20th century? What about around the time of the invention of the Gutenberg press and the resulting Protestant Reformation and the Counter Reformation? Maybe even before Socrates verballed young Athenians in the agora and was poisoned with hemlock by the city's author[ities] for his troubles? What about the time a clan of Wiradjuri people sat huddled around a campfire on the banks of the Murrumbidgee River in the Riverina region of Australia re-telling Dreamtime myths handed down from ancestral beings? Somewhat inconceivably, like *Qfwfq*, the narrator of Italo Calvino's *Cosmicomics*, whose story begins sometime before the Big Bang and who nonchalantly meanders through it and happily comes out the other side to greet us in the modern day?[2] Indeed, in every historical moment, in every spatial locale, the vagaries of knowledge-making concern each and every one of us, regardless of our psychic disposition, our IQ or eQ rating, our demographic affiliation, our disciplinary field, or our institutional/familial context. This is so partly because there is now a vast panoply, a wild excess of literacies; with the advent of electronic forms of knowledge there is no longer one unitary definition for literacy and most likely there never was.

It is important then to acknowledge all *Homo sapiens* before once again questioning the continuing importance of the term 'literacy' (along with its psychological doppelganger alphabetic consciousness), in the context of defining and coming to grips with electronic knowledge. This a-logical acknowledgement of the full complement of humans and their knowledge-making capacities across everyday life, in every historical epoch and in every spatial setting, is especially important in periods of deep-seated and wide-ranging change like the one that we, as potential '*Globo sapiens*', are fully even if differentially immersed.[3]

Examined cosmologically, there is no clear limitation to this electronically constituted epistemological immersion, no easily formulated beginning, middle and end-game, not even in the highest echelons of power, nor in the most degraded contexts of impoverishment. This is partly why 'wayfinding' (via both the GPS and within the data deluge itself) has become such a crucial skill in an electronically mediated global context.[4] It might also be worth reminding ourselves as we try to find our way in the many and varied confusions we face, that the 'history of [method] in Western thought goes back to the Latin *methodus*, itself a form of the Greek *meta* (pursuit, quest, follow) plus *odos* (way).'[5] Suddenly, or not so suddenly, we are all awash in the epistemological ocean, sometimes better known as the globalised knowledge society, which also renders particular elements of the latter more imperceptible, while also reminding us that the oceanic and the un.conscious have been long time bedfellows. Nonetheless, like Plato and Descartes and Derrida before us, we are all trying to find our way in this transformed environment of knowledge. What we most likely don't need is a modern day Descartes dogmatically laying down *the* law. "There is more than one way to skin a cat!" when it comes to knowledge, that most malleable and slippery of constructs.

Is There a 'Real' Author in this Text?

From another contradictory tangent — that is, from this particular author (me) acting in and through my real embodied existence — this generalised acknowledgement of all humans and their highly variable forms of knowledge must also be counterpointed with some specific reference points, mostly, and just maybe, because as Michel Foucault says,

> The author allows a limitation of the cancerous and dangerous proliferation of
> significations within a world where one is thrifty not only with one's resources
> and riches, but also with one's discourses and significations. The author is the
> principle of thrift in the proliferation of meaning.[6]

I've had a long-standing interest in the whole question of literacy for some time now. In 2004, for instance, I published a short essay — 'The Literacy Control Complex' — one that undertook the task of bringing into question the proliferation of these noun conjunctions with 'literacy' in their make-up.[7] As this earlier essay suggested, terms like 'computer literacy', 'media literacy',[8] 'digital literacy',[9] 'information literacy',[10] 'l(IT)eracy',[11] 'silicon literacies',[12] 'multiliteracies',[13] 'computer gaming as literacy',[14] 'visual literacy'[15], 'technological literacy'[16], 'multimedia literacy'[17], even 'water literacy', 'scientific literacy' and '_____ literacy' [insert your own favourite], have come about as a direct result of the electrate transformation of knowledge and that the literate tradition was trying keep control of this emergence by categorising it as a sub-branch of its own widely perceived hegemonic status. To repeat Gregory Ulmer's (the progenitor of the transformative term 'electracy') point quoted in this earlier essay: 'To speak of computer literacy or media literacy may be an attempt to remain within the apparatus of alphabetic writing that has organized the Western tradition for nearly the past three millennia.'[18] As the above-expanded list suggests, this proliferation of noun-conjunctions has continued unabated.

My return this subject (one that is never absent) occurred after a recent concurrent reading of both John Hartley's *//The_Uses_of_Digital_Literacy//* (itself a homage to Richard Hoggart's highly influential discussion from 1957, *The Uses of Literacy*)[19] and Brian Rotman's *Becoming Beside Ourselves: The Alphabet, Ghosts, and Distributed Human Being*.[20] Clearly, in stating the obvious, the title of this renewed meditation on my part takes its cue from *//The_Uses_of_Digital_Literacy//* by substituting 'uselessness' for 'uses'.

While many of the examples used in *//The_Uses_of_Digital_Literacy//* (and elsewhere) are undoubtedly components of an electronic epistemology (for instance, digital storytelling, Youtube, a cultural emphasis on journalism, gaming, texting, mobile telephony, etc.), the

continuing use of the term 'literacy' in this particular discussion (and in many others) makes it self-evidently necessary to continue to question its usage in computer mediated, electronically articulated environments. It is, after all, the computer that provides the focus for all things electronic and digital and not the voice box, nor chirographic or printing press technology.

Given the continuing proliferation of these noun-conjunctions, it is important to extend the discussion on the assumptions of this literate ghost in the electronic machine because of the potential for cognitive, socio-cultural and politico-economic dissonance that the continued use of the term 'literacy' has in both thought and deed. It can also be said, immodestly free of any modesty, that the discussion calls into question the very evolutionary potential of *Homo sapiens* as a species. If, as Walter Ong suggests, 'Writing restructures consciousness',[21] and as Brian Rotman argues, there are 'much commented upon concomitant and collateral psycho-neurological effects of the alphabet, such as the emphasis on linearity, the inculcation of analyticity, and the promotion of context-free and atomised modes of thought,' then an electronic epistemology will also have differing 'psycho-neurological effects'.[22] To continue examining the latter changes through the former paradigm then is a category error of the most capital kind, a paradox to which this polemic also partly succumbs. It is now time to extend this debate from merely a critique of these noun conjunctions to clarifying why the term 'literacy' is no longer a useful category for classifying, utilizing and producing electronic forms of knowledge in the current moment *and* for future possibilities.

The Real Story Begins Here:

John Lennon was my best friend during my final primary school years in the 1960s. We sat together in class, played together during breaks and caught the same bus to and from school. It was after one of those trips to school that, as I remember it at least, serves as an 'image of wide scope (the core image guiding creativity)' for my interest in, or rather my inaugural suspicion of, the literate-centric schooling tradition.[23] On this particular day, John Lennon and Terrence Maybury alighted from the bus and started the half or so kilometre walk to the school environs. On the way we picked some flowers that hung across the front fence of one the houses on our journey. By the time we arrived at school word had spread of our 'misdemeanour'. After receiving a dose of corporal punishment from the school's principal — six lashes, three on each hand, with a 30cm long leather strap — we were paraded in front of the school's morning assembly and described by that same principal as the "baddest, baddest boys I have ever met". It was a proud moment for us: John Lennon was one of the 'dumb', 'tough' kids in the class, while I was one of the 'smart', or 'smart-arse' ones. For each of us though our 'cred' rating soared after this episode, which can only be described as a monumental disparity between deed and punishment, between action and consequence, between its representation by the powers that be and its reality. This incident is also another reminder of Howard S. Becker's well-known claim that 'a school is a lousy place to learn anything in'.[24] With the long chain of hindsight at my disposal, this episode has proved the most memorable starting point for questioning of the literate culture of schooling and its didactic, sometimes dictatorial, occasionally even fascist methods, many of which are still with us today.

There is also a deeper psychoanalytic rendering of this primal scene pertinent to the uselessness of the term 'literacy' in electronically mediated contexts. While the above rendering is a *written* account, initially it was virtually experienced, in its recursively

recounted mental form, as a *scene*; that is, as a recalled memory combining a unique sequence of action and movement, colour and light, involving a particular cast of characters and dialogue in a specific location, one that had an entrance and an exit. But before psychologically memorialising the scene, and most likely altering its form in the process, I actually experienced it. As such, the recounted scene has undergone a number of representational transformations, which while a subject of profound interest will not detain us here. What has remained throughout this re-memorialising translation though is the sensate intensity of the scene, an intensity elevated almost exclusively by its injustice, which for me, as mentioned, remains emblematic of the 'didactic' imperative of the literate tradition.[25] It was also during the 1960s that Marshall McLuhan argued that 'typographic logic created "the outsider," the alienated man, as the type of integral, that is, intuitive and *irrational*, man.'[26] In a dramatic irony of some significance, our Christian Brother teachers were themselves following an archetypal script refined by the technology of the Gutenberg press: in his irrational response to the flower-picking episode the school's headmaster created 'outsiders' out of John Lennon and Terrence Maybury. Whatever its positive and/or negative outcomes, however, literate culture is primevally wedded to a centralising control complex, casting out its illiterates and undesirables, it 'intuitive and irrational' pupils, as disposable junk, a theme that appears again and again in differing guises in the theory and practice of literacy.

As is usually the case though, a primal scene can have any number of refracted interpretations. Another interpretation revolves around Gregory Ulmer's already referenced insistence that a remembered scene like the one above serves not simply as an anecdotal starting point but constitutes an 'image of wide scope', a 'core image guiding [my] creativity', and the centre of a methodological style of investigation he labels 'mystoriography', a companion animal to historiography.[27] It is this unique one-off

mystoriographical method that the electrate-centric person clothes him- or herself in when articulating knowledge through electronic modalities.

The anecdote is also an exemplar of Silvan Tompkin's 'script theory', a process whereby *affect* is elevated over *reason* as the body's primary epistemological grounding through continually repeatable scripts or scenes.[28] The scene also serves as the simplest example of a psychoanalytically self-referential analysis, one that defines itself through a 'poetics of research, as opposed to an empirics of research'. As Robert Romanyshyn describes it in *The Wounded Researcher*,

> A poetics of research makes neither research into poetry nor researcher into poet. Rather, it deepens research and makes it richer by attending to the images in the ideas, the fantasies in the facts, the dreams in the reasons, the myths in the meanings, the archetypes in the arguments, and the complexes in the concepts.[29]

This insertion of a primal scene of my 'own' making herein embodies me in this research into literacy (and its cultural, political, social and economic outcomes), and clearly makes it a means via which Terrence Maybury, who as a disembodied, third person, literate-centric authorial 'I' (or a kind of alphabetically split 'ghost' in Rotman's terms) is replaced by a bio- and psycho-centrically implaced Terrence Maybury of amorphous definition, one whose ego has been tuned by an electrate-centric, collectivised, but always shifting 'we' central to Ulmer's speculations on electracy; this is, after all, the 'we' in 'me' and not simply a literate autonomous 'I'.

Without a doubt (or just a modicum of it), the intensity of the injustice involved in this schooling scene propelled me on a course of questioning the very foundations of the literate tradition, a script centred on always questioning the author[ity] of the text. In its constitution

as a primal scene, it will also arouse a collaborative kind of embodiment in that it could potentially segue into connecting with an equivalent negative schooling scene for each and every reader of this discussion, which the space below is left open for your contribution:

The End is in the Middle

It is now time to move this discussion to the excluded middle of this noun-conjunction extravaganza, a tradition of thought that still remains largely unwilling to question these assumptions about literacy and alphabetic consciousness. This persistence of a literate framework is more than infinitely strange given that by the early 1960s Marshall McLuhan was calling literacy into question in *The Gutenberg Galaxy.*[30] Furthermore (and very much influenced by Derridean deconstruction and differánce), in *Imagologies*, published in the mid 1990s, Mark C. Taylor and Esa Saarinen were postulating a 'post-print culture'.[31] All of these question marks over literacy (and more besides) are distilled in Brian Rotman's recent endgame agonising over alphabetic consciousness (and its writerly, metaphysical analogue); and even though his remarks seem unambiguous, they are still somewhat tinged with nostalgic regret:

It becomes possible to imagine the end of the entire tradition of such

writing induced metaphysics, to perceive the archaism of these spectres,

their falling into disuse; possible to recognize we are approaching a

particular moment in the history of Western writing — the beginning of the

end of the 'era of alphabetic graphism'.[32]

Once again, retrospectively speaking, the beginning of literacy's endgame started long ago, at least with the invention of chemical photography, telegraphy and Morse code, and subsequently, cinema, radio, television and the WWW/Internet. It is also embedded in the traditional long standing battle in Western epistemology between words and images, one now lost to the easy proliferation of digital image-making techniques and technologies in both their still and moving manifestations.[33] It is, however, equally embedded in literacy's theological concentration on the Armageddon impulse, on the absolutist forms of termination it continually foregrounds; hell is the archetypal figure here. What we've failed to recognise is that a literate epistemology (and the coded wisdom it produces) always, in fact, auto-references itself in this eschatological aspect of its methods and less so in some object or idea in the world, a point put acutely into play by the exemplary 'end of history' and/or the 'end of ideology' and/or the proliferating 'end of this or that' theses. In a line that could be lifted straight from Derrida, literacy's endgame has been with us from its very beginnings over three thousand years ago. STATED PLAINLY: The time of literacy's usefulness as an overarching category has passed. Why then has 'literacy' as a frame of reference passed its use-by date?

In the Beginning was the Word (Nothing Beforehand?)

Religions of the book are unique in their characterisation of God as a monotheistic entity devoid of multiplicity. In this monotheistic tradition there is ONLY ONE TRUE GOD. It may seem strange to invoke the Godhead in the context of secular, democratic Western democracies, but it is this supposedly atheistic secularity that needs to be brought into question. John Hartley, for instance, in his periodisation of Western meaning-making traditions into 'premodern', 'modern' and 'contemporary', rightly characterises the first category as a context where all knowledge is derived from God, and where the priests were there to assist in our (usually fallible) interpretation of the infallible scriptures.[34] This style of periodisation presumes though that the Godhead's imprimatur — the Word's sacred, unassailable status — is erased in subsequent periods of modernising secularisation, a point especially important in the 'contemporary' era.

However, contrary to the God-Ghost's fading light, and the Word's sacred status remaining encapsulated in and by 'premodern' times, the sometimes fundamentalist fervour and proselytising self-righteousness accompanying religions of the book continues to this day. (This is also an indication that in electronic knowledge, any given item can appear in multiple categories, a point central to the move from a literate notion of taxonomy to an electronic understanding of folksonomy).[35] As Rotman characterises it, the 'God-Ghost' continues to haunt the literate imagination and thus alphabetic consciousness. Given, also, that the supreme power over the whole of Creation is invested in and through the Word of God, God himself (depicted as always patriarchal) is the Supreme Ruler. If the power of God and the power of the Word are in a state of equipoise, the yin/yang of the control complex, it is not difficult to imagine the literate author as a demigod, or even the literate educated person as an especially unique mortal entity, hence invoking the whole history of autonomous individualism and citizen sovereignty as a quasi-religious exercise. The God-

Ghost embedded in the literate imagination continues to surreptitiously deify those of us who are the purveyors of its supposedly secular inheritance. Rather than being erased by 'modernising', or 'contemporary' developments, the unassailable sanctity of the Word in 'secular' Western epistemology continues unabated with all the consequences of infusing our deliberations with the Word of God, with its authorial completeness and order, of its mono-theologically inclined sensation of Absolute Truth. The Word of the God-Ghost circumscribes itself as the One and Only Word, leaving out any room for ambivalence, ambiguity, dissent, or deviation from this Absolute Truth. It is unlikely the Ten Commandments would have lasted this long if they were 'spoken' by God to Moses; rather, these dictates are *set in stone*. Through all the dynamic hallways of linguistic adaptability and change lurks the self-righteous and literal ghost of Absolute Truth in the form of the *Word* of God. On this spurious lesson alone, with its unwillingness to engage in the terrain of our 'shared imperfections' and negotiating through the skein our 'complementary strengths' in order to arrive at a communally shared truth (maybe even a wiki-truth or a blogospherically mediated truth), the term 'literacy' should be dropped from our contemporary efforts at defining electronic knowledge. In electracy, the Word is now merely one among many modalities; it can no longer be considered a 'master symbol', determining and defining these other modalities (more of which later).[36]

"My Word", the Self as Discovery and Invention

The anointed quality of the Word in the literate imagination is a clue to the ferocity of the debates that surround the topic of literacy, all of which confirm Gunther Kress's point that it is *now* one of our 'fundamental anxieties', not merely 'becoming one'.[37] These worldly anxious but theocratically inclined spectres also point to crucial debates around the role of language in subject formation, to the way we come to understand ourselves as 'citizen-

subjects'.[38] Over the entire course of Western metaphysics language is often assumed to be the mediating centrepiece of subjectivation. It is this sometimes-unexamined role of written language in subjectivation (at least from an 'ordinary' citizen-subject's point of view) that helps anchor this current bout of anxiety over literacy. While philosophers from Plato to Jacques Lacan have pondered the role of language in subject formation from a wide variety of angles, Gregory Ulmer, drawing on Paul Feyerband's influential 1960s tract *Against Method*, has implicitly questioned this dominance in our scientific and artistic endeavours by elevating a pre-existing collectively agreed upon 'method' as an overarching justificatory impulse in the production of literate knowledge, one that comes at the expense of 'invention' and 'discovery'.[39]

An emphasis on objective justification requires that we both speak to and write up this methodological framework as a means of both collective verification and consolidation, and as a structure within which social, supervisory and disciplinary protocols are enacted. Writerly justification, being subtractive, works by closing down options, leading to a unitary, monological conclusion, while on the other hand, as Paul Carter makes clear,

> The impulse to make or invent something stems, rather, from a growing sensation of silence, of loss, lack, incoherence or absence. The need to draw together what has been scattered apart originates not in the will, but in the realm of eros; it is the frustrated desire of connection that inspires the recreative act.[40]

This additive process of cross-pollination across multiple arenas is a distinctive feature of electronic forms of knowledge. Any move 'from literacy to electracy', from 'argumentation' and 'explication' to 'invention' and 'discovery', then, also signifies a shift in the unitary conception of the self to one where the 'citizen-subject' is configured in and across a

diversity of simultaneously psychic, cultural, social, political and economic manifestations, a movement from the one dimensional character of *being* to the multitudinous pathways of *becoming*.[41] It will be necessary to remove the term 'literacy' from the electrate epistemological equation if any notion of the self as multiplicity, as elastic and interactive, as collaborative and engaged, and crucially, as conciliatory, is to gain both personal and popular acceptance and subsequently wholesale traction.

The Actual Middle Point of Literacy is Sovereignty

While Saskia Sassen attributes the 'beginning' of 'the term *sovereignty* with Aristotle', it might more accurately be located in the peculiarly ancient *and* modern intensity of the religious impulse and its mono-theological explanation of all and sundry. Further, while Sassen rightly recognises the term's provenance as emerging 'From being the sovereignty of the ruler, it became the will of the people as contained in the nation-state, that is, popular sovereignty', she doesn't give full force to the idea that the monarch derived their own sovereignty from God.[42] In many cases a monarchical ruler proclaimed their unassailable sovereignty as being vested in their status as a divine representative of God on earth. The almost cosmic breadth of this linkage then is clear: the post/modern literate-centric person can trace a sovereign genealogy from their current 'civilised' status back through partisan nationalism, on through monarchical autocracy, and finally to a transcendental all-powerful God. This makes sovereignty the psychic and political glue holding together this almost cosmic historical force of both autonomous selfhood *and* nationhood within each and every literate educated person. The strength and depth of this genealogy is most likely the reason for its continuing un.conscious solidity. It might even be no exaggeration to say that the fear and anxiety surrounding the decline in literacy levels is the erosion of this sense of

sovereignty and autonomy that has for so long been the default position of the literate person, of the literate nation, of the literate world.

How and why might sovereignty be at the centre of the literate educated person? And equally, how and why might sovereignty be eroding at this current juncture? One current popular refrain of interest here is the disparagement of academics and intellectuals as being out of touch with reality, or of stating the obvious, or of being too abstract. There is undoubtedly a pressure on academics to popularise their styles of writing and reduce their level of obfuscation in an effort to be more widely read and understood.[43] Academics, journalists, writers, intellectuals, etc. are on the high-literate zone of the production scale of knowledge making. On the other side of the spectrum there are the declining literacy levels in primary, secondary, sometimes even of tertiary students, complained about often enough in the pages of *The Australian* and particularly in the work of Kevin Donnelly who regularly appears in that paper's opinion pages.[44] Across all these contexts, and more, there is no questioning of the continued usefulness of the term 'literacy', quite the contrary.

It is important to briefly sketch this broader questioning of sovereignty in order to more fully understand its psychological, citizen-subject orientated dynamic. As mentioned, the sovereign impulse can be traced down through the ages via religious, monarchical and governmental mechanisms. As Andrew Calabrese further elaborates,

> The idea of the sovereign state is often traced to the political philosophy of Jean Bodin, whose *Six Books of the Commonweal*, first published in 1576, focussed on the power of the sovereign, who holds supreme power over citizens, to make laws.[45]

In a very real sense then sovereignty has cascaded down through time and space via various media categories in those differing times and spaces. It is widely recognised that the Treaty of Westphalia of 1648, which brought an end to the Thirty Years War and the Holy Roman

Empire, constitutes the beginning point of the modern nation state, and its concomitant

psychological profile, national identity. Entwined in these developments was the

'introduction of the movable type printing press by Gutenberg in 1455', and 'the

secularization and spread of literacy, which helped speed along the Protestant

Reformation'.[46] Indeed, the mainstay of the Reformation — Martin Luther — is quoted as

saying, 'Printing was God's highest act of grace'.[47] Between this period (encompassing also

the Renaissance and the Enlightenment) and through to the Second World War, nation states

(increasingly of the western, democratic persuasion) actively intervened in the education of

citizens to produce a condition of almost universal literacy through the funding of public

education supplemented by its private equivalent. As Calabrese also observes, all

communicational media, from print, post, telegraphy, telephony, radio, television and cinema

evolved out of and were meant to serve an homogenous national culture largely regulated by

these nation states.[48] From the Second World War to today, the forces of *globalisation* have

come to augment and, some might say, replace the *international* system envisioned by

Westphalia and whose culmination is represented by the establishment of the League of

Nations and subsequently the United Nations. Notably, it is the United Nations' Universal

Declaration of Human Rights that might be seen as the emblematic document that authorises

in print a shift from the national level of collective identification to a subjective level of

individual identification and its autonomous status within the 'The Letter of the Law'.[49] From

around the Second World War onwards we increasingly became globalised 'citizen-subjects'

foremost and national citizens second-most, if at all. The reactionary calls for reinvigorating

national citizenship are, in part, a response to this development.

Sovereignty's seductions then should now be obvious: not only is it 'control' over

others, it is also implicitly 'control' over one's very sense of self-making, over the various

passions like lust, gluttony, avarice etc. that are continuously threatening to dissolve the

'autonomous', 'rational' person. Without a doubt, and for the time being, the partisan nationalist always returns as the site of psychic stability. Of course, this control is an abstracted delusion, an ongoing tension poetically played out in the Bill Clinton/Monica Lewinsky affair: "I did not have sex with that woman!" Control over one's self though comes second place to control over others and it is this point that remains central to understanding a psyche that is reproduced by the literate imagination, an idea that, as Claude Lévi-Strauss explains, has an ancient provenance:

> And when we consider the first uses to which writing was put, it would
>
> seem quite clear that it was connected first and foremost with power: it was
>
> used for inventories, catalogues, censuses, laws and instructions; in all
>
> instances, whether the aim was to keep a check on material possessions or
>
> on human beings, it is evidence of the power of some men over other men
>
> and over worldly possessions.[50]

Not only was the very beginning at the heart of literate knowledge allied more with 'The Word of Mammon' and 'The State, the Bureau and the File', as Jack Goody further reiterates,[51] it might also be added to this potpourri of comments that writing and alphabetic consciousness have also helped underpin the power over and the subsequent destruction of our worldly habitat that has been an encroaching hallmark of human activity since the advent of rational, Enlightenment thinking. This rational control over nature has brought humanity and its global habitat to a precipice of an environmental crisis. And from this crisis has emerged the idea that we are now in the middle of a transition from a carbon-based economy to a silicon-based economy, one fuelled by renewable energy. The hegemonic status of literate forms of reason, consolidating themselves into powerful global blocks from the Enlightenment onwards, have now reached their eschatological climax, as suggested by Michel Serres's point that:

> The growth of our rational means carries us off, at a speed difficult to estimate, in the direction of the destruction of the world, which, in a rather recent backlash, could condemn us all together, and no longer by locales, to automatic extinction.[52]

If Jean-Jacques Rosseau's *Social Contract* required universal literacy to understand, install and police the terms of that obligation, a duty obligating us to our fellow citizens in an ethical bond, then Michel Serres's response to this text in *The Natural Contract* suggests a differing epistemological framework is necessary. In the natural contract, our primary obligation shifts from the social to the ecological, from person to context. This newly awakened covenant between person and place is couched in ecological/anthropomorphic terms and less so in social terms, that is, a person-to-person contract, although the latter cannot be eliminated. In the natural contract, a web of swaying interfaces hold court: with water, air, sunlight, wind, earth, fauna, flora, etc. along with other humans in this global habitat. (It is also worth keeping in mind here Richard Rorty's warning that, 'The tougher things get, the more ties of loyalty to those near at hand tighten, and the more those to everyone else slacken.')[53] Eco-logic presupposes a wide range of differing and always oscillating obligations not simply a unitary social one.

A fundamental communicative property of nature is electricity, only relatively recently harnessed to human use. From the early Atomists to Michael Faraday's discoveries of electromagnetism, bringing with it the oscillating interaction between attraction (+) and repulsion (−) made manifest in electrical phenomena (one brought to light by Benjamin Franklin's experiments),[54] through the invention of chemical photography and Charles Babbage's Difference and Analytical Engines, to Samuel Morse's electrical telegraphy, among a host of more recent electrical developments, all of which provide for an infrastructural base on which an electronically focussed epistemological protocol might be

enacted within the purview of the natural contract.[55] In an effort to leave behind the transcendental essence of the God-Ghost created by the literate imagination, a more materially embodied framework that includes eco-logic, electricity and subsequently, electracy, forms the more appropriate conceptual matrix in and through which knowledge is computationally mediated in a globalised polity and society. This is so partly because 'The electrical industry is exceptional in that its birth and development were the direct consequence of scientific research.'[56] By framing computer mediated knowledge through an electrate framework, *Globo sapiens* embark on the difficult but necessary journey of taking responsibility for the production of knowledge more fully onto themselves and of foregoing recourse to a 'higher power'. It remains to be seen though whether we are willing to take full responsibility for the troubles we find ourselves in (either epistemological or environmental) or continue to rely on the God-Ghost to enlighten, lead or blind us.

Eco-Logic is Contextually Multimodal

There is one more characteristic of this electrate environment that seriously undermines the continuing relevance and hegemonic status of a literate epistemology. For some time now multimodality has been a widely acknowledged feature of electronic communication. The linguistic signifier is at least two steps removed from the object to which refers, that is, its signified. When the word 'dog' appears, it is only long standing convention that presents the image of a dog; the sign itself does not automatically assume the presence of a represented dog. Brian Rotman puts it this way: 'Unlike other inscriptional systems such as Egyptian hieroglyphics or Chinese characters or Mayan glyphs or scientific and mathematical symbols and diagrams, alphabetic writing lacks any visual connection to what it represents.'[57] It is this double removal of representative processes from the 'reality' it depicts that grounds the abstract features and the largely monological, linear character of literate knowledge. If, on

the one hand, 'What disappears in writing is the body and what the body knows—the visual, tactile, and aural knowledge of lived experience',[58] then on the other hand, it is multimodality that forces back upon us 'the facts of biology and physiology', in particular, 'our 'senses': sight, hearing, smell, taste, feel.'[59] And while there is much discussion of the body across a range of domains, it remains a critical point that a body has no existence outside its context: 'Soul and habitat … are correlates of one another.'[60] An electrate framework, modulated through a multimodal network of knowledge then is one that is locally, even regionally embedded, as well as globally cognisant, a confirmation of 'Rule 5' of Steve Woolgar's 'Five Rules of Virtuality', and that is, 'The more global the more local.'[61] It is this transformed set of epistemological arrangements that leaves this old double act — nationalism and literacy — very much under a cloud.[62]

Rather than the transcendental, abstracted, independent, linear-logical figure of literacy, then, an electrate self is governed by its local/regional implacement embedded in its global habitat and actualised by and through a wide range of media modalities; in this process any particular 'me' is instantly collectivised into *Globo sapiens*, usually configured as a 'we', while also continuing unabashedly with the onanistic impulse of the 'I' so endemic to alphabetic consciousness.[63] Here then it is imperative to detail a brief outline of multimodality.[64] Any fear or suspicion of multimodality though is rooted in that ancient religious aphorism, the second commandment: 'Thou Shall Not Worship Graven Images'.[65] In electronic communication then multimodality is its capacity to incorporate the three broad categories of sound, image and text. While the digital image is much lauded in both its still/moving and colour/black and white variations, sound is also returned to the representative fold in its three broad guises of speech, music and sound effects. Even the word is now increasingly a digital artefact rather than an analogue one, a transformation giving rise to electronic writing. For Rotman, one of the most serious omissions of alphabetic

forms of representation is the erasure of the voice's prosodic qualities: things like rhythm, intonation, timbre, metre, pitch, phrasing etc.[66] It might also be added here that the accompanying bodily gestures to vocality (hand movements, eye-rolling, facial expressions, for example, are usually visual in character) are also omitted. In electrate forms of representation there is a cornucopia of expressive modes, another of which, light, is a much-neglected area of investigation.[67] Colour is another mode made expansive by electronic forms.[68] There is then a 'synaesthetic' relation (how one or more modes is interrelated with other mode/s) among the various modalities populating electronic forms of knowledge largely unknown in alphabetic writing.[69] Clearly, the literate form is mostly singular and unitary in its formal structure while electrate forms (deliberately pluralised) return a whole host of modalities to the communicative and thus the educative enterprise. Multimodality is even more apparent when the body is understood as an in-situ meaning-making entity, one alive to the additive nature of communication-in-context. Once again, on this multimodality point alone, the term 'literacy' is singularly inadequate in structuring, disseminating and comprehending electronic artefacts.

And Now That the End is Really Here …

Towards the end of his life, and in the beginning years of Soviet communism, Lenin recounted the parable of a mountain climber who nearing the summit, the very object of a climber's obsession, found the passage to the top utterly impassable. Rather than backtrack to the last known node and try a different passage to the summit, the climber finds it necessary to retreat to the very beginning — the base camp — and start out all over again in order to reach the top via an entirely different route.[70] In the spirit of Lenin's climber we too might retreat to the very beginning, to that greatest of inventions of the literate abstract imagination: the Big Bang. Whether scientifically or theocratically authorised, the Big Bang serves as an

indication of a period we can initialise as B. K., which is the period Before Knowledge. In going back to the B. K. base camp, where there is no knowledge, no human achievement, indeed of no human existence, we can begin again to think of a new route to the summit of our current situation, one made necessary by the advent of electronic knowledge and globalisation. Electrate knowledge helps precipitate this wholesale rethink by dint of the fact that as a framework covering various aspects of the oral, the literate and the electronic, it scrambles the much discussed cognitive divides among these three categories.[71] The Big Bang also serves to materialise our communicative and educative impulses, not to mention our self-(un)-making capacities, rather than passing them off as theocratically originated and thus dogmatically static, spaceless and timeless, while at the same time leaving intact a variable spiritual dimension. This different route to our current dilemmas might then provide us with a refreshed blueprint for the increasingly urgent necessity of conceptualising a process for dynamically structuring electronic knowledge in the current era.

There is one last issue at which this exit-point seems the most appropriate place to leave in readers' imaginations. Electronic media, in its essential argumentative structure of going from, "now this" to "now that", and then digressing to, "now for something completely different," illustrates that the assumed logic of linearity in alphabetic textuality is itself not the only means of cognitive and thus representational coherence.[72] The increasingly corrupted notion of separating emotion and reason, and sublimating the former in the pedagogic enterprise, a point about which Gregory Ulmer says, 'A culture that has split the two sides of its intelligence the way ours has is seriously disabled', requires that we rethink the very parameters of logic itself.[73] In all things electrate, where, as Brian Massumi says, 'Every example harbors terrible powers of deviation and digression,'[74] developmental logic is governed by memory which itself is guided by 'network associational' reason and not by the more formal rules of a dispassionately remote and objective rationality.[75] Ulmer's whole

oeuvre has been devoted to explaining this propensity within electronic logic to reason with memory, an emblematic comment being, 'The desire to know, the love of learning, in any case is experienced emotionally, carried not in arguments, but in images and stories, at the level of memory'.[76] The whole idea of a literate-focussed method with a focus on reason is then open to question.

This shift in logical structuring is possibly no better illustrated in electronic culture than in the art of the sound-bite: "I did not have sex with that woman!", the example of which provides the means to span out in a wide range of 'logical' directions. And perhaps also emblematic here is the concentration on all things technological in electronic pedagogy, in either of its technophiliac or technophobic manifestations, a logic that tends to reinforce a schematic and predictable quality, while also helping to consolidate electrate knowledge within a literate framework.[77] By elevating 'literacy' and 'technology' as pre-eminent structuring devises in discussions on the future of electrate knowledge we are putting the *actual* horse and cart before even a detailed *concept* of the horse and cart is articulated. Thankfully, in the actual practice of electracy, these conceptual frameworks are being worked out, designed even, on a day-to-day basis as we 'go forward, into the future', which will be even more thoroughly electronic and electrate than it is today: 'Electracy does not already exist as such, but names an apparatus that is emerging "as we speak," rising in many different spheres and areas, and converging in some unforeseeable yet malleable way.'[78] It now time to speak electracy into consciousness, into practice, into the very heart of learning and teaching itself. Doing away with the term 'literacy' would make exactly the right beginning.

References

1   Neil Gershenfeld, *The Physics of Information Technology* (Cambridge University Press: Cambridge, 2000), p. 157.

2   Italo Calvino, *Cosmicomics*, trans. William Weaver (Abacus: London, 1982).

3   Patricia Kelly, *Towards* Globo Sapiens*: Transforming Learners in Higher Education* (Sense Publishers: Rotterdam, The Netherlands, 2008).

4   Peter Morville, *Ambient Findability* (O'Reilly Media: Sebastopol, California, 2005), see especially, 'A Brief History of Wayfinding', pp. 16–42.

5   William E. Doll Jr., 'The Culture of Method', in William E. Doll Jr., M. Jayne Fleener, Donna Trueit & John St. Julien (eds.), *Chaos, Complexity, Curriculum, and Culture* (Peter Lang: New York, 2005), 21–75, p. 21. (I'm indebted to Stephen Relf for introducing me to Doll's work).

6   Michel Foucault, 'What is an Author?', in Paul Rabinow (ed.), *The Foucault Reader* (Penguin: London, 1991), 101–120, p. 118.

7   Terrence Maybury, 'The Literacy Control Complex', in *M/C: A Journal of Media and Culture*, vol. 7, #2, 2004. Available at: <http://journal.media-culture.org.au/0403/05-literacy.php>. [Accessed 2/2/2010].

8   David Buckingham, *Media Education: Literacy, Learning and Contemporary Culture* (Polity Press: Cambridge, 2003), see especially 'Media Literacy', pp. 35–50. In a differing but related vein see also, Renée Hobbs, 'The Seven Great Debates in the Media Literacy Movement', in *Journal of Communication*, vol. 48, #1, 1998, pp. 16–32.

9   Paul Gilster, *Digital Literacy* (John Wiley & Sons: New York, 1997).

10   Christine Susan Bruce, 'Information Literacy: A Framework for Higher Education', in *The Australian Library Journal*, vol. 44, #3, 1995, pp. 158–170.

11   Cal Durrant & Bill Green, 'Literacy and the New Technologies in School Education: Meeting the L(IT)eracy Challenge?', in *The Australian Journal of Language and Literacy*, vol. 23, #2, 2000, pp. 89–108. See also, Bill Green, John Hodgens & Allan Luke, 'Debating Literacy in Australia: History Lessons and Popular F(r)ictions', in *The Australian Journal of Language and Literacy*, vol. 20, #1, 1997, pp. 6–23.

12   Ilana Snyder, 'Silicon Literacies', in Ilana Snyder (ed.), *Silicon Literacies: Communication, Innovation and Education in the Electronic Age* (Routledge: London & New York, 2002), pp. 3–12.

13   New London Group, 'A Pedagogy of Multiliteracies: Designing Social Futures', in *Harvard Educational Review*, vol. 66, #1, 1996, pp. 60–92.

14   Cynthia L. Selfe, Anne F. Mareck & Josh Gardiner, 'Computer Gaming as Literacy', in Cynthia L. Selfe & Gail E. Hawisher (eds.), *Gaming Lives in the Twenty-First Century: Literate Connections* (Palgrave Macmillan: New York, 2007), pp. 21–34.

15   Paul Messaris, *Visual Literacy: Image, Mind, and Reality* (Westview Press: Boulder, Colorado, 1994). Also, see the essays collected in James Elkins (ed.), *Visual Literacy* (Routledge: New York & London, 2008).

16   Richard P. Brennan, *Levitating Trains and Kamikaze Genes: Technological Literacy for the 1990s*, (John Wiley and Sons: New York, 1990). Also, see Carolyn Marvin's more nuanced discussion, 'Inventing the Expert: Technological Literacy as Social Currency', in *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century* (Oxford University Press: New York, 1988), pp. 9–62.

17   John Hartley, ''There Are Other Ways of Being in the Truth': The Uses of Multimedia Literacy', in *International Journal of Cultural Studies*, vol. 10, #1, 2007, pp. 135–144.

18   Gregory Ulmer, 'Foreword/Forward (Into Electracy)', in Todd Taylor & Irene Ward (eds.), *Literacy Theory in the Age of the Internet* (Columbia University Press: New York, 1998), ix-xiii, p. xii.

19   John Hartley, *//The_Uses_of_Digital_Literacy//* (University of Queensland Press: St. Lucia, 2009) and Richard Hoggart, *The Uses of Literacy* (Chatto & Windus: London, 1957).

20   Brian Rotman, *Becoming Beside Ourselves: The Alphabet, Ghosts, and Distributed Human Being* (Duke University Press: Durham & London, 2008).

21   Walter J. Ong, *Orality and Literacy: The Technologizing of the Word* (Routledge: London & New York, 1988), pp. 78–116.

22   Rotman, *Becoming Beside Ourselves*, p. 54.

23   Gregory Ulmer, *Internet Invention: Literacy into Electracy* (Longman: Boston, 2003), p. 10.

24   Howard S. Becker, 'A School Is a Lousy Place To Learn Anything In', in *American Behavioral Scientist*, vol. 16, #1, 1972, pp. 85–105.

25   Doll details the genesis of 'Comenius and the Didactic Method' in 'The Culture of Method', pp. 28–33.

26 Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (Routledge & Kegan Paul: London, 1962), p. 212. [Original italics].

27 For an extended discussion on 'mystoriography' see Gregory Ulmer, *Teletheory: Grammatology in the Age of Video* (Routledge: New York, 1989), pp. 82–112.

28 Silvan S. Tomkins, 'Script Theory: Differential Magnification of Affects', in H. E. Howe Jr. & R. Deinstbiener (eds.), *Nebraska Symposium on Motivation* (University of Nebraska Press: Lincoln, vol. 26, 1979), pp. 201–236. Also, Anna Gibbs discusses the relationship between Tomkins' ideas and electronic media in 'Disaffected', in *Continuum: Journal of Media and Cultural Studies*, vol. 16, #3, 2002, pp. 335–341.

29 Robert D. Romanyshyn, *The Wounded Researcher: Research with Soul in Mind* (Spring Journal Books: New Orleans, Louisiana, 2007), pp. 11–12.

30 McLuhan, *The Gutenberg Galaxy*.

31 Mark C. Taylor & Esa Saarinen, *Imagologies: Media Philosophy* (Routledge: London, 1994). See also, Jacques Derrida, *Of Grammatology (Corrected Edition)*, trans. Gayatri Chakravorty Spivak (Johns Hopkins University Press: Baltimore & London, 1997) and Jacques Derrida, 'Differánce', in *Speech and Phenomena: And Other Essays on Husserl's Theory of Signs*, trans. David B. Allison (Northwestern University Press: Evanston, Illinois, 1973), pp. 129–160.

32 Rotman, *Becoming Beside Ourselves*, p. 137.

33 On this point see, Victor Burgin, *The End of Art Theory: Criticism and Postmodernity* (Macmillan: London, 1986), see especially 'Seeing Sense', pp. 51–70.

34 John Hartley, 'The 'Value Chain of Meaning' and the New Economy', in *International Journal of Cultural Studies*, vol. 7, #1, 2004, 129–141, p. 132.

35 There is a great deal of work on this taxonomy/folksonomy question. An emblematic start is Jan Simons, 'Tag-elese or the Language of Tags', in *Fibreculture Journal* #12: 'Models, Metamodels and Contemporary Media', 2008. Available at: <http://journal.fibreculture.org/issue12/issue12_simons.html>. [Accessed 2/2/2010].

36 Eric Leed, '"Voice" and "Print": Master Symbols in the History of Communication', in Kathleen Woodward (ed.), *The Myths of Information: Technology and Postindustrial Culture* (Coda Press: Madison, Wisconsin, 1980), pp. 41–61.

37 Gunther Kress, *Before Writing: Rethinking the Paths to Literacy* (Routledge: London & New York, 1997), p. 1. See also Ilana Snyder, *The Literacy Wars: Why Teaching Children to Read and Write is a Battleground in Australia* (Allen & Unwin: Sydney, 2008).

38 Chela Sandoval uses this term throughout *Methodology of the Oppressed* (University of Minnesota Press: Minneapolis, 2000).

39 Ulmer, *Teletheory*, pp. 26–33.

40 Paul Carter, 'Interest: The Ethics of Invention', in Estelle Barrett & Barbara Bolt (eds.), *Practice as Research: Approaches to Creative Arts Enquiry* (I. B. Tauris: London & New York, 2007), 15–25, p. 21.

41 For another take on this central question in philosophy see Ilya Prigogine, 'Beyond Being and Becoming,' in *New Perspectives Quarterly*, vol. 21, #4, 2004, pp. 5–12.

42 Saskia Sassen, *Losing Control? Sovereignty in an Age of Globalization* (Columbia University Press: New York, 1996), pp. 1–2.

43 On this and related points see David Rowe & Kylie Brass, 'The Uses of Academic Knowledge: The University in the Media', in *Media, Culture & Society*, vol. 30, #5, 2008, pp. 677–698.

44 Kevin Donnelly, *Dumbing Down: Outcomes-Based and Politically Correct — The Impact of the Culture Wars on Our Schools* (Hardie Grant Books: Melbourne, 2007).

45 Andrew Calabrese, 'Communication and the End of Sovereignty?', in *Info: The Journal of Policy, Regulation and Strategy for Telecommunications Information and Media*, vol. 1, #4, 1999, 313–326, p. 315.

46 Calabrese, 'Communication and the End of Sovereignty?', p. 316.

47 Quoted in Elizabeth L. Eisenstein, 'Some Conjectures About the Impact of Printing on Western Society and Thought: A Preliminary Report', in *Journal of Modern History*, vol. 40, #1, 1968, 1–56, p. 34.

48 Calabrese, 'Communication and the End of Sovereignty?', p. 316.

49 Jack Goody examines the relationship between literacy and the law under the chapter title of 'The Letter of the Law' in *The Logic of Writing and the Organization of Society* (Cambridge University Press: Cambridge, 1986), pp. 127–170.

50 Georges Charbonnier, *Conversations with Claude Lévi-Strauss*, trans. John & Doreen Weightman (Jonathan Cape: London, 1969), p. 30.

51 Goody, *The Logic of Writing and the Organization of Society*; respectively, pp. 45–85 and pp. 87–125.

52 Michel Serres, *The Natural Contract*, trans. Elizabeth MacArthur & William Paulson (University of Michigan Press: Ann Arbor, 1995), p. 14.

53   Richard Rorty, 'Justice as a Larger Loyalty', in Pheng Cheah & Bruce Robbins (eds.), *Cosmopolitics: Thinking and Feeling Beyond the Nation* (University of Minnesota Press: Minneapolis & London, 1998), p. 45.

54   For a short introduction to Benjamin Franklin's experiments and his articulation of positive (+) and negative (–) see Laura Rigal, 'Imperial Attractions: Benjamin Franklin's *New Experiments* of 1751', in Lauren Rabinovitz & Abraham Geil (eds.), *Memory Bytes: History, Technology, and Digital Culture* (Duke University Press: Durham & London, 2004), pp. 23–46.

55   Geoffrey Batchen offers a Foucaultian inspired archaeological insight into this historical theme in 'Electricity Made Visible', in Wendy Hui Kyong Chun & Thomas Keenan (eds.), *New Media Old Media: A History and Theory Reader* (Routledge: New York, 2006), pp. 27–44.

56   T. K. Derry & Trevor I. Williams, *A Short History of Technology* (Oxford University Press: Oxford, 1960), p. 608.

57   Rotman, *Becoming Beside Ourselves*, p. 124.

58   Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection*, (Duke University Press: Durham & London, 1993), p. 44.

59   Gunther Kress, 'Multimodality', in Bill Cope & Mary Kalantzis (eds.), *Multiliteracies: Literacy Learning and the Design of Social Futures* (Macmillan: Melbourne, 2000), pp. 182–202, p.184.

60   Robert Pogue Harrison, *Forests: The Shadow of Civilization* (University of Chicago Press: Chicago & London, 1992), p. 149.

61   Steve Woolgar, 'Five Rules of Virtuality', in Steve Woolgar (ed.), *Virtual Society? Technology, Cyberbole, Reality* (Oxford University Press: Oxford, 2002), 1–22, pp. 19–21.

62   It is Benedict Anderson who argues most persuasively on the connection between nationalism and literacy in *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (Verso: London & New York, 1991). See also Marshall McLuhan, *Understanding Media: The Extensions of Man* (Routledge & Kegan Paul: London, 1964), especially, 'The Printed Word: Architect of Nationalism', pp. 170–178.

63   I examine many of these issues in greater depth in Terrence Maybury, *Chora-Logic: Electracy as Regional Epistemology*, Doctor of Philosophy Thesis (Central Queensland University: Rockhampton, 2007). Available at: <http://library-resources.cqu.edu.au/thesis/adt-QCQU/public/adt-QCQU20081022.150147/>. [Accessed 1/2/2010].

64   Further sources here include Gunther Kress & Theo van Leeuwen, *Multimodal Discourse: The Modes and Media of Contemporary Communication* (Arnold: London & Oxford University Press: New York, 2001) and Carey Jewitt, *Technology, Literacy and Learning: A Multimodal Approach* (Routledge: London & New York, 2006).

65   Rotman, *Becoming Beside Ourselves*, p. 124.

66   Rotman, *Becoming Beside Ourselves*, pp. 3, 26, 125, 128.

67   An exception here is the analysis of the interplay between photographic media, lighting and race in Richard Dyer, *White* (Routledge: London & New York, 1997), see especially 'The Light of the World', pp. 82–144.

68   Gunther Kress & Theo van Leeuwen, 'Colour as a Semiotic Mode: Notes for a Grammar of Colour', in *Visual Communication*, vol. 1, #3 (2002), pp. 343–368. For a practical overview, see Richard B. Norman, *Electronic Color: The Art of Color Applied to Graphic Computing* (Van Nostrand Reinhold: New York, 1990).

69   Kress & van Leeuwen, *Multimodal Discourse*, pp. 66–67.

70   This parable is recounted in Lenin's, 'Notes of a Publicist' (1922). Its theme is discussed at length in Slavoj Zizek, 'How to Begin From the Beginning', in *New Left Review*, #57 (May/June), 2009, pp. 43–55.

71   The cognitive divide thesis is outlined by Eric Havelock in, for instance, *Preface to Plato* (Blackwell: Oxford, 1963) and Jack Goody & Ian Watt, 'The Consequences of Literacy', in Jack Goody (ed.), *Literacy in Traditional Societies* (Cambridge University Press: Cambridge, 1968), pp. 27–68. The cognitive divide thesis is brought into question by Sylvia Scribner & Michael Cole's analysis of the script developed by the Vai people of Liberia in *The Psychology of Literacy* (Harvard University Press: Cambridge, Massachusetts & London, England, 1981).

72   Neil Postman uses the "Now ... This" argument to illustrate televisual logic as a negative attribute in *Amusing Ourselves to Death: Public Discourse in the Age of Show Business* (Heinemann: London, 1987), pp. 99–113.

73   Ulmer, *Teletheory*, p. 66.

74   Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Duke University Press: Durham & London, 2002), p. 18.

75 Gregory Ulmer, *Heuretics: The Logic of Invention* (Johns Hopkins University Press: New York, 1994), p. 36.

76 Ulmer, *Teletheory*, p.11. Ulmer further examines these aspects of an electrate methodology in *Heuretics* and more practically in his 'textbook' on electracy, *Internet Invention*.

77 This emphasis on technological determinism in e-learning is unpacked in Edward Hamilton & Andrew Feenberg, 'The Technical Codes of Online Education', in *E-Learning*, vol. 2, #2, 2005, pp. 104–121. Available at: <http://www.wwwords.co.uk/elea/content/pdfs/2/issue2_2.asp>. [Accessed 2/2/2010].

78 Ulmer, *Internet Invention*, p. 7.