The background of the cover is a composite image of Earth from space. It features a grid of thin, light-colored lines overlaid on a satellite-style image of the planet. The colors are primarily deep blues and purples, with some areas of orange and red, possibly representing different data layers or geographical features. A prominent feature is a large, irregularly shaped area in the lower right quadrant that is filled with a dense, white grid pattern, resembling a satellite's scanning path or a data grid. The overall aesthetic is technical and futuristic.

technicity

edited by

ARTHUR BRADLEY

LOUIS ARMAND

TECHNICITY

edited by

ARTHUR BRADLEY

&

LOUIS ARMAND

þ

Litteraria Pragensia

Prague 2006

Copyright © Arthur Bradley & Louis Armand, 2006
Copyright © of individual works remains with the authors

Published 2006 by Litteraria Pragensia
Faculty of Philosophy, Charles University
Náměstí Jana Palacha 2, 116 38 Prague 1
Czech Republic

All rights reserved. This book is copyright under international copyright conventions. Apart from provisions made under Fair Use, no part of this book may be reproduced, stored in a retrieval system, or transmitted in any form, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from the copyright holders. Requests to publish work from this book should be directed to the publishers.

The publication of this book has been supported by research grant MSM0021620824 "Foundations of the Modern World as Reflected in Literature and Philosophy" awarded to the Faculty of Philosophy, Charles University, Prague, by the Czech Ministry of Education.

Cataloguing in Publication Data

Technicity, edited by Arthur Bradley & Louis Armand.—1st ed.

p. cm.

ISBN 80-7308-125-3 (pb)

1. Critical Theory. 2. Philosophy of Technology. 3. Media Studies.

I. Armand, Louis. II. Bradley, Arthur. III. Title

Printed in the Czech Republic by PB Tisk
Design by lazarus

Contents

| | |
|---|-----|
| <i>Introduction</i> | |
| Thinking Technicity | 1 |
| | |
| Bernard Stiegler | |
| <i>Anamnēsis & Hypomnēsis: The Memories of Desire</i> | 15 |
| | |
| Louis Armand | |
| <i>Technics & Humanism</i> | 42 |
| | |
| Arthur Bradley | |
| <i>Originary Technicity: Technology & Anthropology</i> | 78 |
| | |
| Christopher Johnson | |
| <i>I-You-We, Robot</i> | 101 |
| | |
| Hartmut Winkler | |
| <i>Discourses, Schemata, Technology, Monuments: Outline for a Theory of Cultural Continuity</i> | 129 |
| | |
| J. Hillis Miller | |
| <i>Who's Afraid of Globalisation?</i> | 152 |

| | |
|---|-----|
| Belinda Barnet <i>Do Technical Artefacts Evolve?</i> | 167 |
| Darren Tofts <i>What was I? When did it Happen? What am I Becoming?</i> | 200 |
| Geert Lovink (with Kenneth C. Werbin) <i>Critique of Ranking & Listing: An Email Exchange</i> | 225 |
| McKenzie Wark <i>Topos (on Civilization III)</i> | 244 |
| Donald F. Theall <i>The Rediscovered Marriage of Art & Technology in the Founding Moments of Culture</i> | 262 |
| Niall Lucy <i>The New Journalism: A Report on Knowledge</i> | 281 |
| Laurent Milesi <i>Taste, Tastare, Tact: A Deconstructive Touch of Digital Theory</i> | 317 |
| Michael Greaney <i>Suspended Animation: Futures of Technophobia</i> | 346 |
| Mark Amerika <i>Technicity, StyleTime, & the Loop: A Gertrude Stein Remix</i> | 370 |
| <i>Notes on Contributors</i> | 373 |

Introduction

Thinking Technicity

Now, since the soul is immortal and has come to be many times and has seen both the things here and those in Hades—in fact all things—there isn’t anything it hasn’t learned. As a result, its being able to recollect what pertains to virtue and other things is nothing to be wondered at, since it also knew them all previously. For, nature as a whole being akin and the soul having learned all things, nothing prevents someone, once he has recollected just one thing—what human beings call “learning”—to discover all else, if he is courageous and doesn’t grow weary in the search. For searching and learning as a whole are recollection [*anamnēsis*].¹

In the *Meno* and other texts, Plato institutes a now infamous opposition between the Socratic “recollection” of the immortal soul, called ἀνάμνησις (*anamnēsis*), and the artificial or technical supplement to memory, called ὑπόμνησις (*hypomnēsis*). It is with this entirely unprecedented opposition that western metaphysics and, arguably, western philosophy

¹ Plato, *Meno*, 81c-81d, in *Protagoras and Meno*, trans. Robert C. Bartlett (Ithaca: Cornell University Press, 2004) 10. To be sure, Plato’s philosophy is too multifaceted to be condensed into a simple or monolithic idealism. It is only necessary to turn to the later *Timaeus* to find a kind of Platonic materialism: the Demiurge constructs the Forms out of an original and primordial matter through a series of—apparently contingent—acts of technē. In an intriguing move, the particular or arbitrary acts of creation undertaken by the Demiurge are only *subsequently* recognised to be, or transformed into, universal Forms that exist in an independent ideal realm (46d-48).

more generally, comes into existence. To Plato's way of thinking, thought is nothing other than the act of the immortal soul remembering itself once again. On the one side, then, we have thought, the infinite, the transcendental and something called "philosophy." On the other, however, we have artifice, finitude, the empirical and something called "technicity." Yet what happens to the finite world—with all its inherent contingency, variability and fallibility—when the immortal soul recollects itself? If thought is defined as the recollection of immortality, then finitude, contingency and technology are, as Bernard Stiegler has argued, thereby consigned to the darkness of the unthought: true *anamnēsis* apparently has no need of the sophistical or technical supplement that is *hypomnēsis*. What, though, might it mean to "think" this unthought, that is to say, technicity itself?

It is usually Aristotle, rather than Plato, who is credited with inventing the philosophy of technology in the modern sense of the term. As was the case with Plato, he institutes a hierarchy between theoretical (*epistēmē*) and practical thought or knowledge (*technē*): the *Metaphysics* and the *Nicomachean Ethics*, for instance, consistently distinguish between philosophical knowledge—which is an end in itself—and technical or craft-knowledge—which is merely a means to an end. However, Aristotle is also the first thinker to construct an *ontology* of the technical object. To Aristotle's eyes, *technē* is an essentially inert, neutral tool whose status is entirely determined by the use to which it is put by human beings.² If nature (*physis*) contains the principal of its own motion—an acorn will grow into an oak tree all by itself—the same is obviously not true for a technical or fabricated object: an oak table or bed frame requires an efficient cause (*causa efficiens*) such as an artisan to bring it into being. In this way, we arrive at an idea of technicity that has dominated philosophy for almost 3,000 years: *technē* is a prosthesis (*πρόσθεσις*: *pro-thesis*, i.e., an addition; what-is-

² Aristotle, *Physics*, trans. Robin Waterfield (Oxford: World's Classics, 1999) 33-6, 192b-193b.

placed-in-front-of) considered “in relation to” nature, humanity or thought; one that can be utilised for good or ill depending upon who or what happens to wield it.

Yet, as the essays in this collection will show, it is precisely this concept of technicity—as tool, instrument or prosthesis—that now most urgently needs to be re-thought. It is something of a cliché—but no less true—to say that developments in contemporary technology have radically transformed our understanding of what it is “to be human.” As the disciplines of artificial intelligence, genetic engineering and information technology continue to develop at a bewildering pace, the ontological boundaries between the human and the technological constantly need to be re-drawn: what we used to think of as the defining properties of human being—mind, agency, affect, consciousness, the very operation of thought itself—are revealed to be inextricably bound up with complex, quasi-mechanical and technically replicable processes. Man today is less *homo cogitans* than what Hans Holstein termed *homo cyberneticus*.³ To put it crudely, technology in this way appears less an *instrumentum* of an a priori “reason,” than an ontological *state*. Consequently, technicity names something which can no longer be seen as just a series of prostheses or technical artefacts—which would be merely “supplemental” (or supernumerary) to our nature—but the basic and enabling condition of our life-world. From the watch we wear to the server we log into, we exist pros-thetically, that is to say, *by putting ourselves outside ourselves*. If the classical opposition and hierarchy between thought and technology can no longer be sustained from this perspective—such that what Plato calls *anamnēsis* may be nothing other than a complex repertoire of motor functions, cybernetic loops and self-replicating hypomnesic systems—then it is clear that this insight poses a new and urgent task for any philosophy of technology. In other words, the question arises as to whether it is possible to *think*

³ See Hans Holstein, *Homo Cyberneticus* (Uppsala: Sociographica, 1974).

something that is nothing less than the basic *condition* of thought itself.

To be sure, modern philosophy of technology has supplied many different answers to this question—from Marx, through Nietzsche, Freud, Bergson, Husserl, Benjamin, Simondon, Deleuze and Guattari, to Derrida and Stiegler—and this conceptual debate forms the backdrop to many of the essays that follow. It was Kostas Axelos who argued that the title of the first “*penseur de la technique*” belongs to Karl Marx: historical materialism, he suggested, set in motion the critique of the Aristotelian concept of *technē* as an essentially inert, neutral prosthesis.⁴ In a crucial sense, the very idea of an historical materialism inverts the Platonic order between thought and technics: consciousness is condemned to play a futile game of catch-up with a set of material conditions that are always running ahead of it. However, Marx’s radical insight into the sheer *irreducibility* of technicity—its utter resistance to any attempt to boil it down to a simple object that exists *for* a thinking subject—is also pressed into the service of a new materialist anthropology. For Marx, it is clear that technology can never simply be *opposed* to humanity because it is something that is essentially coterminous with our “nature”: we are what we do, and what we do is labour with tools or instruments. What Marx defines as the “labour process” in Chapter 7 of *Capital* is nothing less than an originary interface between humanity and technology whereby each invents and constitutes the other across time.⁵ If Marx’s insight into the

⁴ Kostas Axelos, *Marx, penseur de la technique: De l’aliénation de l’homme à la conquête du monde* (Paris: Minuit, 1967).

⁵ Karl Marx, *Capital*, trans. Samuel Moore and Edward Aveling (Oxford: Oxford University Press, 1995). In Chapter 7, Marx offers the following description of the labour process: “Labour is, in the first place, a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material re-actions between himself and Nature. He opposes himself to Nature as one of her own forces, setting in motion arms and legs, heads and hands, the natural forces of his body, in order to appropriate Nature’s productions in a form adapted to his own wants. By thus acting on the

mutual implication of the human and the technical is undoubtedly a radical step, it could nevertheless be argued that his political critique of machine capital (whereby the unalienated human subject can emancipate itself from domination by technology) still implicitly assumes the Aristotelian concept of a pre-technological causality without which *technē* itself would merely be inert matter. In other words, we might argue that—for all his undoubted radicality—Marx still remains beholden to the metaphysical philosophy of technology: something—a collective human subject or essence—still exists *outside* technicity.

It is Martin Heidegger who here takes the more radical step in asserting that the “question concerning technology” (die Frage nach der Technik) must be posed on an *ontological* level, framed within a critique of the metaphysics of presence: what begins as an anthropology or social science thus comes to reflect nothing less than the very “science of being.” Accordingly, and to a certain degree by way of Marx, this *scientia* or τεχνολογέω also implies a deconstruction of the logic of presence that has underwritten classical ontology hitherto. The thinking of being by way of technicity, as an operation of technological becoming, brings into view a certain distancing and mechanical iterability that invests presence, as it were, from the outset. This means that ontology, as a reflection upon being, is above all involved not only with a cognitive object that may be described as technical, but with an operation of reflexivity that could even be described as the very *apotheosis* of technicity.

In Heidegger’s writing, it thus becomes necessary to regard Marx’s account of the alienation of humanity under capital (as a mode of distancing) less as an historical materialist process and more as a techno-ontological condition: the human becomes the site of a specific destining or disclosure of being as

external world and changing it, he at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway” (115).

such.⁶ Heidegger's reading of *technē* dates back to his earliest works and goes through a number of important developments across his career.⁷ In his later writings, for instance, the "essence" of technology has nothing to do with ontic or empirical technology itself so much as with what he calls the *Gestell* or "Enframing" that constitutes the dominant revelation of Being in the epoch of technoscience: everything—including humanity—is disclosed as a "standing reserve" (Bestand) of energy to be liberated and stockpiled.⁸ However, even Heidegger's radical attempt to ontologise technics still retains an idealist or metaphysical residuum, at least according to such thinkers as Derrida. If Heidegger consistently seeks to maintain the ontological priority of an essence of technology—which is only tangentially connected to any ontic or empirical technology—then the danger is that his thought re-establishes the Platonic opposition between the infinite and the finite, the transcendental and the empirical, thought and technology, that it otherwise does so much to place in doubt: "it maintains the possibility of thought that questions, which is always thought of the essence, protected from any original and essential contamination by technology" Derrida writes.⁹ The consistent appeal to a dogmatically non-technological essence (Wesen) of technology that remains to be thought arguably deprives technology *itself* of any role in the constitution of thought. This would appear to leave empirical technology in the same inert,

⁶ Martin Heidegger, "Letter on Humanism," trans. Frank A. Capuzzi, *Basic Writings*, ed. David Farrell Krell (London: Routledge, 1978) 217-65; 243.

⁷ As is well-known, Heidegger's earliest explorations of the Aristotelian concept of *technē* as craft-knowledge take place in the 1920s in such works as the 1925 lecture course on Plato's *Sophist*. The '30s essay "The Origin of the Work of Art" introduces the new concept of *technē* as *poiēsis*. In "The Question Concerning Technology" and the other essays of the '40s, Heidegger introduces the concept of *technē* as *das Gestell*.

⁸ Martin Heidegger, "The Question Concerning Technology," *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper, 1977) 33-35; 15.

⁹ Jacques Derrida, *Of Spirit: Heidegger and the Question* trans. Geoffrey Bennington and Rachel Bowlby (Chicago: University of Chicago Press, 1989) 10.

undynamic state of passivity—mutely awaiting that which will give it meaning—to which Aristotle originally consigned it in the *Physics*. In this sense, Heidegger, too, still posits an “outside” from which technology itself might be thought.

After Heidegger, the most influential recent philosopher of technology, within the continental tradition, is Jacques Derrida. It is with the advent of deconstruction that we perhaps encounter the most radical attempt to articulate what Derrida calls our “*technological condition*,”¹⁰ and this attempt provides the impetus for a number of essays in this collection. From its seminal explorations of archē-writing in *Of Grammatology* to the later meditations upon tele-technology in *Archive Fever* and *Echographies of Television*, deconstruction can, with hindsight, be seen to represent a career-long attempt on Derrida’s part to question what he calls the metaphysical “dissociation between thought and technology.”¹¹ According to the deconstructive logic of the supplement (of recursion and metonymy), any attempt to oppose something technical to something non-technical (up to and including Heidegger’s distinction between technology and the so-called “essence” of technology) is automatically rendered problematic. This is what Derrida has referred to as the “paradoxical logic” of the relation of essence and supplement—as, for example, technology and the technological, technics and technicity, or indeed (although in a different sense) technē and physis, logos, etc.—echoing the “topological” contiguity named by Heidegger’s ontic-ontological difference, whose terms each come to operate as though they were “the detached fragment of a software more

¹⁰ Jacques Derrida, “The Rhetoric of Drugs,” *Points...Interviews, 1974-1994*, ed. Elizabeth Weber, trans. Peggy Kamuf (Stanford: Stanford University Press, 1995) 244-5.

¹¹ Jacques Derrida, *Memoires for Paul de Man*, trans. C. Lindsay, et al. (New York: Columbia University Press, 1986) 108.

powerful than the other, a part larger than the whole of which it is a part.”¹²

For Derrida, technics must be already installed at the heart of whatever we understand under the concepts of “nature” (physis), “life” (both *zoē* and *bios*) and “thought” (logos, psyche, *anamnēsis*, et al.). It quickly becomes clear that any attempt at recuperating technicity *for* ontology—as if it were a Logos to be discovered—necessarily returns us to the problematic of pure presence, the ideality of the sign, and the metaphysics of temporalisation. Accordingly, when we speak of a “technological ontology,” or *technicity*, we are already speaking of what Derrida terms *différance*; which is also to say a recursion and a *détournement*, by which the metaphysics of presence is opened to the logic of the fold, to techno-poiesis, and to radical distancing. If ontology necessarily requires an assent to the “is” of present-being, technicity discloses this being as “tele-” present, in the mode of a “prosthesis of/at the origin,” as Derrida says.

While Derrida’s thought enables us to glimpse the concept of an “originary technicity,” Bernard Stiegler has recently argued that the accompanying work of deconstruction is too often carried out on a predominantly formal, logical, and a-historical level. If we fail to attend to the technological character of historical discourse itself (and hence to a certain historicity and discursiveness of technics), the deconstruction of the opposition between philosophy and technology may appear purely *philosophical*, and the *historical* or *material* role that specific technological supplements themselves might play in that process is potentially occluded. Viewed within a positivistic or instrumental framework, this gesture would thus risk re-establishing the categorical mode of thought that has traditionally, within the history of Western metaphysics, accompanied such classical oppositions as *anamnēsis* /

¹² Jacques Derrida, “Two Words for Joyce,” *Post-structuralist Joyce: Essays from the French*, eds. Derek Attridge and Daniel Ferrer (Cambridge: Cambridge University Press, 1984) 148.

hypomnēsis, at one and the same time as it calls precisely this oppositional logic into question. In this sense, we might be tempted to wonder, as Stiegler does, whether or not even Derrida's re-thinking of technology doesn't remain vulnerable to the metaphysical pitfalls he identifies, in *Echographies of Television*, with a certain Heideggerianism: "Doesn't he [Heidegger] suggest that there is a thinking pure of all technics?"¹³

This collection of essays invites us to take up the question of technology anew. It is now becoming possible to speak of a new "technological turn" within contemporary continental thought to match the much-vaunted "ethical" and "political" turns of the 1980s and '90s. From the ground-breaking explorations of such seminal figures as Marx, Heidegger and Derrida to the work of more recent thinkers like Friedrich Kittler, Manuel de Landa and N. Katherine Hayles, the theory and praxis of technicity has become one of the defining—perhaps *the* defining—conceptual tasks of our moment. Yet despite the growing amount of important work in this field during recent years, it still often appears that there is no agreement on the precise terms of the debate itself. "Technicity" remains a term whose meaning is, if anything, more contested now than ever before, some 2,500 years after Aristotle first attempted to define it: it is variously defined today as everything from a philosophical concept or idea, a historical or material process, an anthropological tool or prosthesis, an ontological condition, a mode of discourse, a way of thinking to even the basic state of life itself. If the meaning of technicity remains very much in question, then it is hardly surprising that the much larger and more fraught questions of its relation to the status of the human, the animal, nature, culture, history, evolution, science and the political lie equally unarticulated. In this sense, we still need a sustained or concerted debate about the larger

¹³ Jacques Derrida and Bernard Stiegler, *Echographies of Television: Filmed Interviews*, trans. Jennifer Bajorek (Cambridge: Polity, 2002) 133.

implications of our technological condition and this is what the following collection seeks to set into motion.

Firstly, *Technicity* offers a series of theoretical reflections upon the formal relation between thought, technology and humanism. Bernard Stiegler, whose ongoing project *La Technique et le temps* (1994-) has done so much to re-open the question of technology after Heidegger and Derrida, opens the collection with a new meditation upon the Platonic opposition between anamnēsis and hypomnēsis. Pursuing a critique of what he has recently termed the “epoch of hyper-industrialisation”—where the inherently technical status of human memory and knowledge are now at the mercy of an unparalleled industrial exploitation—Stiegler argues that the question of hypomnēsis is now perhaps the defining political question of our age. Louis Armand picks up the question of the originally technical constitution of man through a re-reading of Marx, Heidegger and Derrida. Far from being a question or problem that is posed by a human subject, Armand argues that a generalised state of technicity turns this situation on its head: what we call the human is disclosed *technologically* as a being vested in the logic of the stereotype, the iterative event, supersession, futurity, and the mechanics of the possible. For Arthur Bradley, Derrida and Stiegler’s philosophy of originary technicity remains complicit with a residually anthropological account of the human: what unites their work is a tendency to consider the implications of technicity *for* a certain idea of the human rather than in terms of the technical constitution of life in general. Approaching this problem by way of the science fictional tenets of cognitive science, Christopher Johnson offers a set of postulates towards an anthropology of what he calls our “technological imaginary.” Why, he asks, do we consistently imagine the general process of technological *replication*, for example, in terms of the simple *reproduction* of human capacities—what Ruskin termed the “pathetic fallacy”?

Secondly—and more generally—the collection broadens out to offer a series of theoretical and empirical explorations of the

relation between technicity, materiality and culture in a range of different contexts. It is possible, Hartmut Winkler argues—in attempting to construct a new theory of the cultural continuity of media—to negotiate a middle ground between anthropocentric and technocentric media theories—whereby technicity is either wholly dependent upon a human user or evolves autonomously of humanity—by means of what he calls an “economy of discourses.” In Winkler’s view, it is only this economy that produces both continuity and rupture, innovation and stasis, dynamism and inertia within culture. In turn, J. Hillis Miller offers a meditation on the role played by new communication technologies in globalisation. According to Miller, the global impact of such technologies demands an equivalently global academic response. In his conclusion, Miller calls for a globalised cultural studies capable of articulating the myriad different ways in which culture is consumed—and indeed produced—throughout the world. Belinda Barnet is similarly concerned with the quasi-intentional role played by technicity in the production and transmission of culture. Pursuing and broadening Stiegler’s concept of tertiary memory—the exteriorisation and preservation of human memory in the form of manuscripts, works of art or computer programmes—via a reading of the work of Niles Eldredge, Barnet offers a prolegomena for a theory of evolution of technical artefacts.

Assessing the cultural evolution of one particular, if now all-pervasive, technical artefact—the internet—Darren Tofts addresses the long-standing assumption that—with its quasi-infinite capacity for virtual, real-time communication—the world wide web creates or fosters new forms of community and connectivity. Far from bringing people together, Tofts argues that the web contributes to the *diminution* of community. In his view, what began as a new means of connectivity and interactivity has in fact produced little more than increasingly individualised and privatised discursive spaces (epitomised by such sites as Myspace.com). Geert Lovink and Kenneth C.

Werbin's dialogue also concerns the status of one specific technical medium: the list. From the earliest literate societies, through the totalitarian horrors of Nazi Germany, all the way down to the electronic mailing lists of today, Lovink and Werbin's discussion shows how "list culture" has always been inextricably tied to questions of power, knowledge, surveillance and what Giorgio Agamben has recently termed the politicisation of bare life (*zoē*). For McKenzie Wark, it is the virtual space mapped by the computer game—rather than strictly the world of cyberspace—that is the defining *topos* of technicity in the 21st century. In the gamespace of *Civilisation III* and its equivalents, Wark's analysis shows that we enter an uncanny world which is both rule-bound and limitless, both absolutely quantifiable and infinitely substitutable, both actual and yet to come.

If Tofts, Lovink, Werbin and Wark are all concerned with present or future media, the contributions of Donald Theall and Niall Lucy return us to the (recent) past. Theall argues that the integration of the arts and sciences in James Joyce's *Finnegans Wake* anticipates much of the contemporary debate surrounding "originary technicity." To Theall's eyes, the "chaosmos" of the *Wake* is nothing less than a meta-textual exploration of the role of the book in what he calls "the electro-machinic world of the new technology." For Niall Lucy, it is the so-called "New Journalism"—pioneered by such figures as Tom Wolfe in the 1960s and early '70s – that provides a privileged historical vantage point for a critique of our technological moment. In Lucy's account, the New Journalism enables us to glimpse a different order of inquiry, knowledge and disclosure to what he terms the conventional journalistic—and techno-logical—ordering of the world as always already coherent and calculable. Laurent Milesi, meanwhile, explores the ontological and phenomenological implications of new technologies of touch and taste in light of Derrida's late work *Le Toucher—Pour Jean-Luc Nancy*. According to Milesi, the new forms of haptic media that are currently in development reveal the inherently

technical status of the “real” itself or what—after Derrida—he calls the “virtueal.” Michael Greaney’s essay analyses how a range of “technophobic” cultural texts respond to the irreducibly technical or virtualised status of human being. For Greaney, contemporary cultural attempts to “think” technicity invest everything in a massive repression of its *unthinkability*: what is nothing less than the internal condition of human thought and action is consistently externalised into an essentially foreign or *alien* threat. Finally, Mark Amerika’s grammatological collage proposes a brief “critical praxis” focused upon the assumed mutual exclusivity of technics and performativity, in which the question of technicity is not merely posed or described but *enacted*, raising anew the question posed by Derrida as to whether or not it has yet become possible to join the thinking of the machine to the thinking of the event.

Viewed as an ensemble, this collection of writings sets out to explore what “technicity” has come to mean at the beginning of the 21st century, whether theoretically, empirically, or both. What unites them is less a common conceptual, political or even methodological agenda than a shared series of *questions*:

1. Firstly, what characterises “technicity” today? Does this term merely stand for a revised utilitarian logic, a positivism for the digital age, a post-human residuum or some meta-ontological state? Faced with the ever present spectre of a “return” to something like a machine metaphysics, might it be possible to articulate an “originary” technicity that is both fundamentally material and yet inseparable from thought, being or language itself? To what extent, indeed, is technicity *thinkable* at all?

2. What is the relationship between contemporary philosophies of technicity and their historical predecessors? Do they represent a repetition of, or a radical break from, the philosophies of Aristotle, Marx or Heidegger? How do they make possible a new dialogue between philosophy, the technosciences and the life sciences—for example, in the exploratory modelling of consciousness by way of quantum

computing, or in the physical interaction of brains and computers by way of neural implants? To what extent does technicity thereby entail a radical revision of our traditional philosophical categories (physis and technē, zoē and bios, causality, automation, instrumentality, even the very concept of “philosophy”)?

3. What are the larger cultural, ethico-political or philosophical implications of this new thinking of technicity? How does the question of technology we have so far attempted to articulate inhere within, or arise out of, what Adorno called the contemporary “culture industry” and the aesthetics of the new media (whether in film, literature, journalism, games, the Internet, email, locative media, electronic mailing lists, digitalisation, “real time” communication and transmission technologies)? To what extent can we witness it at work in the political or geo-political sphere (globalisation, international law and rights, industrial, post- or hyper-industrial capitalism, production and consumption, the emergence of a new proletariat or what Foucault and, more recently, Agamben call the bio-political)?

Finally, and for us at least most pertinently, what impact does this state of technicity have upon our concepts of what it is to be human (rational animal, homo faber, homo sapiens, Dasein, even the so-called “posthuman” cyborg)? What—if anything—constitutes the “essence” of human being today? How might we begin to construct a thought that could do justice to that being? And if the task of “thinking technicity” is less a matter of anamnesically recollecting some immortal past than of entering a radically indeterminate hypomnesic future, then who or what—to go back to where we started—would be the agent—the “ego cogito”—of that thought?

Arthur Bradley and Louis Armand

Bernard Stiegler

Anamnēsis and Hypomnēsis: The Memories of Desire

1. *The exteriorisation of memory as loss of knowledge*

We have all had the experience of mislaying an object that is a carrier of memory—a piece of paper, an annotated book, a diary, a relic, a fetish, etc. We then make the discovery that a part of our self (just like our memory) is outside of us. This material memory, which Hegel termed objective, is partial. But it constitutes the most precious part of human memory: in it is formed the whole of the works of the human spirit in its most diverse aspects.

To write a manuscript is to organise one's thought by entrusting it to the outside world in the form of traces, that is, symbols. It is only through these symbols that one's thought is reflected, takes on *real* substance, making itself repeatable (iterable as Jacques Derrida would say) and transmissible: thought thus turns into knowledge. To sculpt, paint or draw is to go out to meet the tangibility of the visible. It is to see with one's hands while at the same time making visible, that is, visible again. In this way, sculpture, painting and drawing forms the eye of its beholders and, in so doing, sculpts, paints and draws *that eye*—trans-forms it. This is also what Joseph Beuys means by the phrase "social sculpture."

Human memory is originally exteriorised. Straight away, this means that it is technical. It first takes on the form of a lithic

tool two million years ago. As a spontaneously created support for memory, however, the lithic tool is not made *in order to* store memory: it is not until late Palaeolithic times that *mnemotechniques* in the true sense of the word will appear. These are the mythograms of a society steeped in magic, a society to which the Australian aboriginal churinga is a recent witness, as are tattoos on the body of a witch-doctor and the knotted cord of native American Indians. The writings at the origin of the first handwritten texts, which only appear after the Neolithic Era, give us the alphabet—which is still responsible today for organising the agenda of the business executive. From here on, this calendary object is an appliance: the Personal Digital Assistant. Thus, we have gone from mnemotechniques to *mnemotechnologies*.

This—originally objective and external—memory does not stop expanding technically and extending the frontiers of humanity's knowledge and power. At the same time, however, it eludes humankind and proves to be too much for them, calling into question their psychic as well as their social organisation. This becomes particularly sensitive when mnemotechniques start to become mnemotechnologies—but the same thing happened with Ancient Greece and then with the invention of printing. Today, memory has become the *major* element in industrial and technological development and everyday objects are more and more turning into supports for objective memory, which is also to say, for knowledge. This techno-logical knowledge embodied in devices also—and especially—leads to a loss of knowledge at the very moment we come to speak of “knowledge-based societies,” of “knowledge industries” [d’“industries de la connaissance”] and of “cognitive” or “cultural” capitalism.

We are permanently connected to mnemotechnological devices of all types, ranging from televisions to telephones by way of computers and GPS guidance systems. These cognitive technologies, to which we devote an ever-increasing part of our memory, also make us lose more and more of our knowledge.

Mislaying a mobile phone is equivalent to losing track of the numbers of the people one is in contact with and realising that they are no longer in one's own memory, but in the device itself. And we must here stop and ask ourselves if the *industrial and large-scale* development of mnemotechnologies does not constitute a *structural* loss of memory, or, more exactly, a *displacement* of that memory: a displacement by means of which memory can turn into an object of *knowledge control*, and form the essentially mnemotechnological base of those *societies of control* [sociétés de contrôle] that Gilles Deleuze started to theorise towards the end of his life.

This hypothesis is based on a very old philosophical question elucidated by Plato as something he referred to as hypomnēsis, and that Michel Foucault revived—when he too had reached the end of his life—as a question relating to hypomnēmata.

We exteriorise into our contemporary mnemotechnical devices more and more cognitive functions. Correspondingly, we lose more and more knowledge, which is thus delegated to the devices and the *services* which order, control, formalise, mould, but also, perhaps, destroy it. For this knowledge that escapes us seems to induce “human obsolescence,” which finds itself thereby more and more deprived, as if hollowed out from the inside. Thus, the more cars become perfected—the navigation system that assists the driver today in his driving will replace him completely tomorrow: he will control the vehicle from a distance through a system of automatic driving—the less we *know how* to drive. We lose the sensory-motor schemes which are formally recognised by the system as it becomes automatic. The more we delegate the assumption of the series of little tasks which make up the framework of our lives to devices and to modern industrial services, the more futile we become: the more we lose not only our know-how, [savoir-faire] but also our savoir-vivre—and with that the little pleasures that make life worth living. We end up only fit to consume indiscriminately [aveuglément], without the pleasures

that knowledge alone can provide—as if we were impotent. We become *disabled*, if not obsolete—if it is true that it is knowledge that gives us the power to be human.

The service economies [les économies de service], which rest on these technologies by means of which behaviours are formalised and managed, are characteristic of a hyperindustrial period that renders singularly topical the Platonic analysis of hypomnēsis. If it is true that *industrialisation in general* is the generalisation of a mnemotechnological reproductive capacity of the motor behaviour of *producers*, *hyperindustrialisation* is the generalisation of a mnemotechnological reproductivity of the motor behaviour of *consumers*. Just like the producer whose action is reproduced and whose know-how passes into a machine, dispossessing him of his value-knowledge, and leaving him only that quasi-animal labour strength which makes him what we call a proletarian, the consumer is deprived of his *savoir-vivre* and he finds himself at one and the same time disindividuated: he is now no more than mere purchasing power, in other words, the power to be an indiscriminating consumer—to destroy the world indiscriminately.

In “Plato’s Pharmacy,” Jacques Derrida largely built his undertaking to deconstruct metaphysics on a reading of the *Phaedrus* which showed how this dialogue opposes to the sophistry of hypomnēsis a philosophical anamnēsis. According to what he describes in *Of Grammatology* as the *logic* of the *supplement* that is the trace, however, it is impossible to *oppose* interiority to exteriority. It is impossible to oppose living memory to this dead memory of hypomnematon which constitutes living memory *as knowing*. Where metaphysics inserts *static oppositions*, we must rearticulate *dynamic compositions*: we must think in terms of a process—and Derrida calls this process a *différance*.

What Socrates describes in the *Phaedrus*—that the exteriorisation of memory is a loss of both memory and knowledge—is what, today, we experience on a daily basis, in *all* aspects of our existence and more and more often in our

feeling of impotence, if not disability. And this takes place at the very moment in which the extraordinary *mnestic power* of numerical networks makes us equally sensitive to the immensity of human memory, which seems to have become something that we can reactivate and access *ad infinitum*.

This seeming paradox means that the question of hypomnēsis is a political question and the object of a struggle [l'objet d'un combat]: a struggle for the politics of memory and, more precisely, for the formation of *lasting hypomnesic environments* [milieux hypomnésiques durables]. The exteriorisation of memory and knowledge in the hyperindustrial stage is both what extends their limitless power and what allows them to be controlled. This control is now exercised by the cognitive and cultural industries of societies of control which regulate neurochemical activity and the sequence of nucleotides. In this way, the neurobiological substrata of memory and knowledge are inscribed into the history of what needs to be analysed as a *process of grammatisation* in which biotechnologies are the most recent stage, and nanotechnologies will be the next stage. All this fully sets in place the question of a biopolitics of memory.

2. Grammatization as "history of the supplement"

There is no interiority *preceding* exteriority. On the contrary: exteriorisation *constitutes* the interior as what it is, that is to say, it distinguishes and configures it in the very act of what Leroi-Gourhan describes as a process of exteriorisation. This configuring distinction never stops shifting and each time it puts in place new relationships between individuals *per se* and collective individuals. In this way, it also puts in place new processes to educate individuals *per se* and individuals in society: new *processes of psychic and collective individuation*.¹

¹ Gilbert Simondon, *L'individuation psychique et collective* (Paris: Aubier, 1989).

With the appearance of mnemotechniques, the process of exteriorisation that is coming into existence technically takes concrete form as the history of grammatisation. The process of grammatisation is *the technical history of memory*, in which hypomnesic memory relaunches each time the constitution of an anamnestic *tension of memory*. This anamnestic tension exteriorises itself under the form of works of the spirit in which are configured epochs of psycho-social individuation. Grammatization is the process by which the undercurrents and the continuities that together weave existences are *discretely separated*: writing, as a discretisation of the flux of speech, is a stage in grammatisation. With the industrial revolution, the process of grammatisation suddenly outgrows the sphere of language—which is also to say the *logos*—and takes over that of material bodies. And to begin with, it discretises the *gestures* of producers with a view towards their *automated reproduction*—while at the same time there appear those mechanical devices of reproducing the visible and the audible which so impressed Benjamin.

This grammatisation of the gesture, which is the foundation of what Marx will describe as proletarianisation, that is, as *loss of know-how*, will be carried on with electronic and numeric devices as a grammatisation of *all* forms of knowledge. It will not only take the shape of cognitive mnemotechnologies whose linguistic knowledge has turned into those technologies and industries underpinning automated processing of languages [traitement automatique des langues] but also *savoir-vivre*, in other words, [human] behaviour in general from *user profiling* to the grammatisation of affects. This is what leads us towards the cognitive capitalism of hyperindustrial *service* economies.

Grammatization is the history of the exteriorisation of memory in all its forms: cerebral memory, memory of the central nervous system, the memory of the body and muscle, biogenetic memory. Exteriorised in this way, memory can constitute the object of socio-political and biopolitical controls through the economic investments of social organisations.

Through the intermediary of mnemotechnical organs—amongst whose number we must ultimately count machine tools (Adam Smith had since 1776 analysed the effects of the machine on the spirit of the worker) and all automatic machines, including domestic electrical equipment—these controls *thus rearrange psychic organisations*.

This is why the thought of grammatisation calls for a *general organology*, in other words, a theory of how the body's organs are articulated (brain, hand, eyes, touch, tongue, genitalia, viscera, the neuro-vegetative system, and so on), of artificial organs (the technical supports of grammatisation) and social organs (human groups divided into families, clans, ethnic groups, political institutions and societies, economic enterprises and organisations, international organisations and social systems in general, existing more or less deterritorialised, for example, legal, linguistic, religious, political, fiscal, economic, and so forth).

If we re-open the question posed in the *Phaedrus* in the hyperindustrial era of the hypomnesic mnemotechnological object, and from the point of view of such a general organology (which founds a *political organology*, an *economic organology* and an *aesthetic organology*), we find that the question of hypomnēsis constitutes the primary version of a concept of proletarianisation (insofar as it is true that *the proletariat is an economic catalyst unbeknown to itself because it is without a memory*). The memory of the proletarian has been absorbed by a machine reproducing gestures that he no longer needs to know how to make, and which he must now simply serve, because he has reverted to the status of a serf.

To examine the question of technical memory today is therefore *to re-open the question of hypomnēsis as a question concerning the proletariat* and as a process of grammatisation in which it is the *consumer* who is henceforth deprived of his memory and his knowledge. It is to study the stage of *generalised proletarianisation* induced by the generalisation of hypomnesic technologies. The truth of Plato would thus be in

Marx, but on the condition that we draw two further conclusions:

1. Marx himself does not conceptualise the hypomnesic character of technics and of human existence, which means that he does not yet see human life as ex-sistence.

2. The *inaugural* struggle of philosophy against sophistry, which centres on this question of memory and its technicity, is at the heart of the political struggle that, first and foremost, philosophy itself is. In this way, the re-evaluation of the range of hypomnēses in Plato, just like that of the deconstruction of hypomnēsis that Derrida proposes, must form the basis of a revitalised political plan in philosophy *wherein technics becomes central to what is at stake*.

3. *Philosophy as a reaction to the orthothetic stage of grammatisation*

If it is true that philosophy begins with Plato, it takes on concrete form in its fight against the sophistry surrounding the question of memory seen as mnemotechnique (hypomnēsis, but also rhetoric and technologies of language based on *logography*). The first preoccupation of philosophy is memory, that is to say, the epistēmē conceived of as anamnēsis, and it is a period of grammatisation that *provokes* this philosophical question. Philosophy constitutes itself as an affirmation of anamnēsis in reaction to the Sophists' practice of the hypomnēsis of writing, defined as the technicisation of linguistic memory and, to that extent, as false knowledge (*Gorgias*). In more general terms, technics is understood by Platonism as a pseudo-knowledge of becoming, that is, of the contingent, of the sensible and of the fortuitous whereas true knowledge is posited as necessary knowledge, in other words, a knowledge of essences intelligible to a being in its unchanging aspect.

Grammatisation is unthinkable within the framework of the couples constructed by Plato on the basis of the opposition between anamnēsis and hypomnēsis. From this basis, he is also led to oppose: 1) being and becoming, as well as 2) the soul and

the body; 3) the intelligible (construed as the immortality of that soul) and the sensible (construed as the mortality of the body—which is also the seat [le siège] of the passions and the trap [le piège] leading to the fall); all of which finally comes to rest on 4) the opposition of *logos* and *technē*. The opposition of living psychic memory to dead technical memory is the inspiration behind this whole series of oppositions. Conversely, to re-think memory as a process of grammatisation in which living memory and dead memory permanently rub shoulders with one another [composent en permanence] is an attempt to escape these oppositions. To think of memory as it is today, as a new stake in the politics that make up technics, is to take the first tentative step forward.

The question of philosophy is the question of the love of knowledge. That *love* of knowledge is forged in the furnace of a knowledge that is *lost*. This lost knowledge makes of knowledge an object of *desire*, of *philein* as well as *eros*, and every object of desire is an object lost in advance. It is only desired inasmuch as it *is lacking* [qu'il fait défaut]. This knowledge is lost by memory. The question of memory is raised in the philosophy of Plato for the first time in the *Meno*. It is in this work that knowledge is defined as reminiscence, as re-remembering. Re-remembering is here the fruit of the dialectic, itself a thought-based activity, to which the *Phaedrus* opposes the artifices of hypomnēsis which turn into, as a *technical body*, the *fall* itself. The *Phaedrus* takes up once again—with the myth of the winged soul—the theme that the *Meno* had turned down with the myth of Persephone. We learn in the former text that we are dealing with a knowledge that has been *forgotten* by virtue of that fall.

The loving question [la question amoureuse] in philosophy is that of a forgetfulness, which thus necessitates that an anamnēsis be carried out. Yet, this anamnēsis must be distinguished from the hypomnēsis of the Sophists. The memory of truth (of the idea) has been lost at source. At its origin, there is a default of origin [un défaut d'origine] but this

origin is not its true origin, being only what Plato defines as a *fall*.² Thus, Plato prefigures the monotheistic version of memory loss [défaut du memoire] as disobedience and error, in other words, as original sin. This fall plunges the soul into the realm of the technical which imprisons it inside the body. Out of this passion—ignited by artificial memory—the Sophists conjured up *pithanon*, persuasion and false beliefs, a schema which will be repeated with Rousseau. Hypomnēsis is *technics in general*. It is as opposed to anamnēsis as the body is to the soul. This is what sets the scene for the *Gorgias*. In this dialogue, philosophy is defined against the Sophists—who pretend that technics allow them to know everything (as “polymaths”)—as the love for a lost knowledge expressed by the *irreducible non-knowledge* of Socrates: Plato’s *dogmatisation of Socratic beliefs* will progressively tend to efface this non-knowledge.

What constitutes philosophy, the object of its desire—knowledge, epistēmē, or truth, alethēia—is precisely a question of desire (*philein, philia*, a social link in individuation called *justice*, a *One* that constitutes *Being*, and so on). This desire is *constituted by its technicity* but that technical nature, whose sophistical version *was problematic* in the Athens of the 5th century, is *repressed* by philosophy. It is this problematic knot that the opposition between anamnēsis and hypomnēsis translates. This is what constitutes philosophy as metaphysics, which it is *thereby* our task to deconstruct.

4. *Human memory is epiphylogenetic*

In response to the fall, the error, the original sin through which Plato conceives of the lack of origin that would precede a full origin, an *interiority*, an immortal soul—in short to the Platonic

² See Bernard Stiegler, *Technics and Time 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998) 16 and passim, for a detailed discussion of the originary default [le défaut d’origine] which plays a central role in his philosophy of technics. Translator’s note.

opposition of anamnēsis and hypomnēsis—human archaeology and palaeontology allow us a theory of memory in which it is apparent that technicity is what constitutes life *as ex-sistence*, in other words, *as desire and as knowledge*: this is what allows us to characterise hominisation by the appearance of an epiphylogenetic memory.

Zinjanthropus, discovered in 1959, is an Australopithecus that dates from 1.75 million years ago. His biped antecedents go back 3.6 million years. He weighed approximately 30 kilos. He is a genuine biped with an occipital hole exactly perpendicular to the top of his skull. Thus, he had freed up his front limbs from mere motor functions. From that day forward, those limbs were now essentially devoted to creativity and expressivity, in other words, *to exteriorisation*. His skeleton was found along with his tools in the valley of Olduvai. It was by basing himself on these facts that Leroi-Gourhan showed that what makes the humanity of man, and what constitutes a break in the history of human life, is the process of the technical exteriorisation of the living.³ What belonged until now to the realm of the living—the conditions of predatoriness and defensiveness—has now left that sphere. The struggle for life—or rather for existence—can no longer be bracketed with Darwinism. Man carries on this struggle, which we could also term a spiritual one, with non-biological organs, that is to say, with *artificial organs* consisting of technics. But this life, which is no longer mere bio-logy but an existence, is a *technical economy of desire*⁴ sustained by hypomnesic technical environments which are also symbolic.

Leroi-Gourhan shows that technics is a vector of memory. Between Australopithecus and Neanderthal Man, the biological differentiation of the cerebral cortex takes place which is known as the opening of the cortical fan. But, from Neanderthal Man onwards, the arrangement of the cortex hardly evolves any

³ See *Technics and Time 1*, 82-179 for Stiegler's reading of Leroi-Gouhran's *La Geste et le parole*. Translator's note.

⁴ On this point, see in particular my *Mécréance et discrédit 3. L'esprit perdu du capitalisme* (Paris: Editions Galilée, 2006).

further: Neanderthal Man's neuro-equipment is fairly similar to ours. From Neanderthal Man down to us, technics undergo a spectacular process of evolution, and this means that technical evolution no longer depends on biological evolution. Technical differentiation takes place outside a biological dimension and independently of it, outside that "internal environment" in which, Claude Bernard argues, the constitutive elements of the organism bathe. The process of exteriorisation is thus the process whereby a *third layer of memory* is constituted.

From the neo-Darwinism that grew out of molecular biology, and following on from the work of Weismann, it has been recognised that living beings endowed with sexuality are in possession of two memories: the memory common to the species, or genome, which Weismann calls *germen*, and the memory of the individual, termed somatic, conserved by the central nervous system in which is deposited the memory of experience. This has been in existence since the limnaea of Lake Geneva, which were studied by Piaget, up to and including the chimpanzee, by way of insects and vertebrates. Man gains access to a third memory supported and constituted by technics. A sharpened flint is formed from inorganic matter that is organised [*matière inorganique organisée*] by honing it to a point.⁵ The gesture of a craftsman [*technicien*] en-grams [*engramme*] an organisation which is transmitted *via* something inorganic, opening up for the first time in the history of human life the possibility of transmitting knowledge that is acquired individually, but in a way which is not biological. This technical memory is epiphylogenetic: it is at one and the same time the product of individual epigenetic experience and the phylogenetic support of an accumulation of knowledge, constituting an intergenerational cultural phylum.

⁵ The concept of "organised inorganic matter" [*matière inorganique organisée*]
— which resides between the organic matter analysed by biology and the inert
inorganic matter of physics— is a defining feature of Stiegler's account of
technics. See, in particular, *Technics and Time 1*, 48-9. Translator's note.

Because his knowledge proceeds from this primordial exteriority of memory, Meno's slave draws in the sand in order to trace a figure in which he discovers a geometrical object. In order to conceive his object, he needs to exteriorise it by organising the inorganic nature of the sand: this becomes in one fell swoop both the malleable surface which is able to receive and retain an inscription and the space and support of the projection of a geometrical *concept*. As ephemeral as it may be, the drawing on the sand can retain more durably than the mind of the slave one characteristic of an element of the figure because the slave's mind is essentially in flux: his thoughts never stop passing and fading so, as far as retention goes, he is finite. His memory always lets him down, his attention is always turned away from its objects towards new objects and he finds it difficult to "intentionalise" the geometrical object—to take it in view of its organic identity, its necessity, its intimate essence: its *eidōs*.

As hypomnesic memory, drawing is thus indispensable to this potential philosopher, the slave. At the moment of its enactment [passage à l'acte], which is to say, its anamnēsis, this drawing constitutes a crutch for the understanding,⁶ an *intuitive space wholly produced by the gestures* of the slave who traces in the sand, as his reason dictates, the outward signs of this reasoning. The sand keeps these signs as results that the slave, his intuition and his understanding have from then on "under his gaze" and on which they can prolong and *construct* geometrical reasoning. This is what the Platonic opposition between the intelligible and the sensible, in other words, between logos and technē, will render literally *unthinkable* in the dialogues that come after the *Meno*. In this way, metaphysics will come into being as the *denial of the original technicity of memory*.

⁶ See my *La technique et le temps 3: Le temps du cinéma et la question du mal-être*, (Paris: Editions Galilée, 2001).

5. *What is at stake philosophically with memory is transindividuation*
 Philosophical questions are all questions of transindividuation. Transindividuation is what results from the process of co-individuation of psychic individuals into the collective individual which brings them together as a human group—a process which does not cease to pose and to *individuate* the question of the One and the Many.⁷ Individuation is an operation of psychic *and* collective *memorisation* in which transindividuation is the metastabilisation of meanings. And transindividuation is that which—through the intermediary of psychic individuals—collectively individuates pre-individual foundations that are themselves constituted and supported by hypomnesic forms.⁸

Let us take it that the psychic individual is an *I*, and the collective individual is a *we*. The *I* can only be conceived of inasmuch as it belongs to a *we*: it is constituted by adopting a collective history which it inherits and in which a plural *I* may be recognised. This inheritance is an adoption in the sense that I am perfectly capable, as the grandson of a German immigrant, to recognise myself in a past that was not that of my ancestors, and which I can nevertheless make my own as a Frenchman or an American. However, such a process of adoption is structurally false because this memory is intrinsically artificial.⁹ Now, this artificiality, which is a default of the origin [défaut d'origine], is also what inaugurates the play [jeu] of *I* inasmuch as it is essentially a *process*, and not a state. If this process is an *in-dividuation*—inasmuch as it is a *tendency to become-One*, that is, *in-divisible*—this tendency (which Kant questions in the *Paralogisms of the Critique of Pure Reason*) is never realised

⁷ This is a reference to [Jacques] Garelli.

⁸ The position of Simondon on this point is ambiguous and tentative. On this point, see my “L’Apolitique de Simondon” in *La revue philosophique* (Autumn 2006) and “Nanomutations, hypomnēmata, grammatisation,” *Nanomutations*, ed. Avital Ronell (Paris: Editions Bayard, forthcoming).

⁹ This is what [Ernest] Renan thinks in *Qu’est-ce qu’une nation?* See *Discours et Conférences* (Paris, Calman-Levy, 1887) 277-310.

because it encounters, as an open-ended, dynamic system with negative entropy, a *counter-tendency* with which it forms a *metastable* equilibrium: an equilibrium bordering on disequilibrium in a *pre-individual mnesic environment* in which the *I* co-individuates itself in a *we*.

This is only possible because the *we* is also such a process. The individuation of *I* is always processually subsumed in that of *we*, while, conversely, the individuation of *we* can only be achieved through the individuations, which are processually polemical, of the *Is* which make it up. What links *I* and *we* in individuation is the pre-individual environment, which derives its positive conditions of effectivity from *retentional devices* [dispositifs rétentionnels]. It is by means of these devices that this pre-individual environment is also formed as a mnesic environment. These retentional devices are supported by the technical environment which is the condition of the encounter of *I* and *we*. The individuation of *I* and *we* is, in this sense, also the individuation of a *technical system* (which Simondon, curiously, did not see). The technical system is a device that benefits from having a specific role. If we consider a technical object, it only exists insofar as it is *built into* the heart of a device with other technical objects: this is what Simondon calls the technical ensemble. The rifle, and more generally, the technical-becoming with which it forms a system, are thus the possibility of forming what Foucault calls a disciplinary society.¹⁰

¹⁰ "Marx makes, for instance, superb analyses of the problem of discipline in the army and in workshops. The analysis I will make of discipline in the army is not to be found in Marx, but no matter. What happened in the army from the end of the 16th century and the beginning of the 17th century until practically the end of the 18th century? There was an enormous transformation which meant that in the army, which had been, until that point in time, essentially made up of small units of relatively interchangeable individuals, organised around a leader, those units found themselves replaced by a great pyramidal structure with a whole series of interim leaders, non-commissioned officers and technicians, mainly because a technical discovery had been made: the rifle that could be fired relatively rapidly and accurately." *Dits et écrits II (1976-1988)*, (Paris: Quarto Gallimard, 2001) 1006.

The technical system is what sustains the possibility of constituting retentional devices. As these devices are themselves by-products of the process of grammatisation, grammatisation thus deploys itself at the heart of the process of individuation of the technical system. The retentional devices of the mnemonic environments, which are created by each new stage of grammatisation, are also what condition the arrangements between the individuation of the *I* and the individuation of the *we* in an identical process of individuation that is *psychic, collective and technical* (i.e. *mnemonic*, and where *grammatisation* is a *sub-system of technique*).¹¹ This process consists of *three strands*, and each strand sub-divides into sub-strands or groupings of the process (for example, the technical system, by individuating itself also individuates its mnemonic or mnemotechnological systems in which the stages of grammatisation fork off from one another, and so on).

Before the (late) appearance of philosophy, the question asked by the first pre-Socratic thinkers (who were simultaneously geometers, physiologists, poets and legislators; *nomothetēs*) concerned what connected the Many—made up by the majority of citizens, the *Is*—to the One—whether that be called water (Thales) or being (Parmenides)—that constitutes the *we* stretching out to its furthest horizon: as *universal*. Framed in this way, the political question is thus that of the conditions which govern not only the metastabilisation of legal statutes, but also of epistemic ones, insofar as these share a common—in other words, a transindividual—horizon of meanings that spring from psychosocial individuation, and which philosophers think of as *eidē*, ideals.

Now, the beginning of pre-Socratic thought is the appearance of this concept of the One and the Many. At the same moment, the process of grammatisation which led to the invention of the alphabet inaugurated a *krisis* out of which sprang a new process of psychic and collective individuation:

¹¹ This last point is developed in greater detail in *La technique et le temps 4. Symboles et diabolos, ou la guerre des esprits* (Paris: Editions Galilée, forthcoming).

the polis, which took over from the regalistic society of the “priest-king.” From Thales to Plato, this krisis opened up the era of critical, which is also to say, political, thought, that was akin to a process of psychosocial individuation. In this process, the citizen distinguishes himself from the group, but invents this group as structurally incomplete and in a process of formation, precisely because of that distinction by means of which he detaches himself as a singular right.

This politico-philosophical concept of the One and the Many is the concept of transindividuation per se. It is in this way that Plato lays the basis for metaphysics as a *mnēmē* crossed by *technē*, that is, both as *anamnēsis* and *hypomnēsis*. The philosophical question that now needs to be asked—going through the krisis of the Sophists and out of the pre-Socratic era—is under what conditions it is possible to *transindividuate in artificiality* [facticité]. And this transindividuation is a question of that spirit which will become the principle of unity in Christian monotheism.

When the One turns into Being, the latter is divided into regions that constitute disciplines: knowledge is based on “regional ontologies” in Husserl’s parlance. This knowledge defines what is transindividuated between the psychic and the collective. It also defines the legitimacy of this transindividuation according to these realms of individuations which form parities (collectives of thought and of transcendental *wes*, still using Husserl’s terminology). These regional ontologies are themselves in conformity with the *fundamental* rules of transindividuation, as defined by the formal ontology of logic and/or metaphysics. In the same way, metaphysics—as a meta-individuation—is the result of philosophical individuation.

These operations underlie the history of metaphysics, as it has been variously deconstructed since Marx, through Freud, and up until the concept of grammatology. And yet, beyond this deconstruction, and before it (as in the pre-Socratic era), the question of individuation remains of primary importance.

Indeed, the question of *transindividuation in the anamnestic tension of the One and the Many* remains the object of philosophy proper.¹²

This is why philosophy is not over.

Transindividuation as retention

Transindividuation is an activity of the psychosocial side of memory. It thus shows that every question of memory is a question of selection, and, conversely, every question of selection is a question of memory. As soon as I select (in other words, for example, as soon as I speak and hush up that of which I do not speak), I constitute a memory, that is to say, I transindividuate or I participate in a process of transindividuation. To think this selection necessitates resorting to Husserl's phenomenology of the temporal object (Zeitobjekt).¹³ It also necessitates criticising Husserl's phenomenology at that point where the process of transindividuation appears in which the psychic and the collective take their place, as regulated by *the organological conditions of tertiary retentions* and formed by the hypomnesic supports of pre-individual environments. Epiphylogenesis is the *production process* of these hypomnesic tertiary retentions that support the primary and secondary retentions defined by Husserl and which form the framework of anamnestic life.

Primary retention, and its distinction from secondary retention, is what Husserl gets out of a phenomenological analysis of melody. In the "now" of a melody, that is, in the present moment of a musical object in a state of flux, the note

¹² To describe what I have called, in *Mécréance et discrédit 1. La décadence des démocraties industrielles* (Paris: Editions Galilée, 2004), "areas of consistency" is to describe areas of transindividuation in which what allows one to transindividuate existences is precisely that—consistency.

¹³ See Bernard Stiegler, *La Technique et le temps 2: La Désorientation* (Paris: Editions Galilée, 1996) 219-75 for a detailed reading of Husserl's phenomenology of time consciousness. Translator's note.

which is present can only be a note, and not just a sound, to the extent that it *retains in itself the preceding note*, which *continues* to be present in it. This preceding note that is *still present* retains in itself, in its turn, the note preceding it, and so on. And one must not confuse this *primary retention*, which *belongs to the present* of perception, with *secondary retention*, which was the melody I was able, for example, to hear yesterday, that I can hear again *in my imagination* as my memory of it dictates, and which constitutes the *past* of my awareness. We must not confuse, said Husserl, perception (primary retention) and imagination (secondary retention).

But there exists a third sort of retention and this is hypomnesic. Thus, before the invention of the gramophone, it was absolutely impossible to hear the *same* melody two times running. Since the appearance of the phonogram, which is a case of tertiary retention, *and a stage of grammatisation*, that is, a period of the supplement, the identical repetition of the same temporal object has become possible, and this allows us to better understand processes of retention. What appears here as the result of this is:

1. When the same temporal *object* occurs twice over, it creates two different temporal *phenomena*, which means that primary retentions vary from one phenomenon to another. The retentions of the first hearing, having become secondary, *play a selective part* in the primary retentions of the second hearing. This is true in general, but the tertiary retention that is the phonogram makes it *obvious*. Hypomnesic repetition makes a difference.

2. On the other hand, tertiarised temporal objects (phonographs, films, radio and television programmes), recorded or broadcast, and thereby controlled, are materialised time [du temps matérialisé] that overdetermine relations between primary and secondary retentions in general and allow us, in so doing, to control them. The difference can then be as easily *intensified* by tertiary repetition as annulled by it: repetition can lead to indifference.

Now, the interplay of primary and secondary retentions—insofar as it is anamnestic and selective, but excessively determined by hypomnesic tertiary retentions—is what constitutes the concrete reality of every operation of transindividuation.¹⁴ And the thought of tertiary retention, inasmuch as its periods constitute a history of the supplement as grammatisation, comes out of a general organology in which the history of the supplement is only conceivable in its triple physiological, technical and social dimension.¹⁵

In terms of political philosophy, the question is to describe and to criticise (to discern; *krinein*) the concrete processes of transindividuation. For example, the juridical is a concrete process of transindividuation—a concreteness signifying that it belongs to a period of grammatisation which overdetermines it. To promulgate a law is to transindividuate *à la lettre*—and the recent implementation of recordings of sounds and images in judicial instructions raises new questions of legal transindividuation.

This transindividuation is made according to laws which are themselves constitutional in the philosophical sense, in other words, constituted by a transcendental logic. Political philosophy consists in describing the legalities which allow the transindividuation of the juridical on the basis of that constitution which also conditions mathematics, and so on. The taking into account of the role of hypomnēsis in the formation of anamnēsis renders impossible—null and void—such a transcendental, that is, a priori, understanding of constitution.

¹⁴ In this approach, anamnēsis itself must be thought of along with the Aristotelian concept of act, of *energeia* and *entelecheia* on the basis of a *non-oppositional* pairing of act and power, in which power forms the pre-individual by leaving behind the opposition of form and matter, arising, as Simondon shows, from a hylomorphic schema.

¹⁵ I have shown elsewhere how the three organological levels are connected to the three forms of retention, and how the three syntheses of the transcendental imagination that Kant establishes in his Transcendental Deduction of *The Critique of Pure Reason* are constituted by a fourth synthesis which is prothetic and a posteriori.

And it is not by a simple coincidence that philosophy, as “queen of the sciences,” goes into crisis when new stages of grammatisation appear, which do not just concern the letter of the law.

In terms of political philosophy, the question is to know who appropriates and who controls the processes of transindividuation that could be defined as meta-transindividualising. It is these processes that allow us to control socio-economic and socio-political meta-transformations through hypomnēses proper to each period of grammatisation: meta-transindividuations are overdetermined by the technical or technological characteristics of tertiary retentions. To put it another way, the *and* of psychic *and* collective individuation (in which are formed the conditions of transindividuation) is technics—and this is precisely what philosophy has until now excluded. This is why we need to create a new philosophical horizon in which technicity is at the heart of transindividuation. This path which *passes* by way of deconstruction does not stop there¹⁶: the latter is not a cul-de-sac, providing one makes of it a technical history of the supplement conceived as tertiary retention in the process of individuation of a general organology.¹⁷

¹⁶ See Bernard Stiegler, “Derrida and Technology: Fidelity at the Limits of Deconstruction and the Prosthesis of Faith,” trans. Richard Beardsworth, *Jacques Derrida and the Future of the Humanities*, ed. Tom Conley (Cambridge: Cambridge University Press, 2002) 238-70, for a summary of Stiegler’s reading of Derrida’s deconstruction. In addition to Derrida’s quasi-transcendental “logic” of the supplement, Stiegler seeks to offer a history of specific mnemo-technical supplements. Translator’s note.

¹⁷ Nietzsche, the conceiver of trace and inscription in his Second dissertation on the *Genealogy of Morals*, is the philosopher who introduces the *genealogical* and thereby *organological* question of selection. Freud makes of this the question of the unconscious, the problem being that Freudian thought does not go as far as to formulate tertiary retentions or technics, which restricts him to a neo-Lamarckian view of things. Bergson, by virtue of the primacy he accords to time, which he *denies* to space, creates an oppositional pairing which is very different from that of Husserl who himself opposes primary retention to secondary retentions, but who excludes tertiary retentions for the same motives,

Capitalism and the grammatisation of desire

Memory works. Its work, which is akin to that of mourning, idealises its objects. This spontaneous idealisation (understood here in its Freudian sense) is a condition of transindividuation. But, on the other hand, transindividuation, as a process of producing meanings, presupposes ideation. As soon as there is language, Husserl's *Research into Logic* has shown, there is *ideation*. When the logos appears as itself, the work of the memory, as a transindividual work of the mind, goes from ideation to idealisation by a conceptual elaboration understood as *anamnēsis*: this is *dianoia* as *skholē*, as *melete*, as *otium*. But it is not possible to oppose *anamnēsis* to *hypomnēsis*, and that is why Foucault was able to show that *otium* is a practice of *hypomnēmata*.¹⁸

Nevertheless, we must re-evaluate Plato's discourse on *hypomnēmata* and *hypomnēsis* as factors in the loss of knowledge. From the point of view of a history of grammatisation, the *Phaedrus* anticipates questions which recur in *Capital*: questions to do with a political economy of memory. The *Phaedrus* says that the memory can proletarianise itself [se prolétariser], that *hypomnēsis*, like exteriorisation, is a disindividuation, and that this question is political (which is thus a question of sophistry). Today, industrial control of the memory by means of those *hypomnēmata* that are mnemotechnologies constitutes a loss of *savoir-vivre*, know-how and of theoretical knowledge (of transindividuation

namely, they are spatial and not temporal. Deleuze remains trapped in this Bergsonian oppositional pairing which he opposes to an Husserlian oppositional pairing. From this point of view, Deleuze is more Bergsonian than Nietzschean. The work of Barbara Stiegler (*Nietzsche et la critique de la chair* (Paris: PUF, 2005)) has shown that in Nietzsche the question of relations between the Apollonian and the Dionysiac already potentially pose these questions of technique and industry. On the contrary, a system of thought like that of Bergson, which still dominates Deleuze, cannot pose the question of technics—as may be seen for example in "Le Diagramme." From this moment on, his critique of societies of control is desperate.

¹⁸ Michel Foucault, "L'écriture de soi," *Dits et écrit II*, 1237.

concerning ideals). In the current state of hegemony that finance capitalism exercises over hypomnesic technologies, whereby these technologies are turned into technologies of *retentional control*, we lose the power of transindividuation.

To individuate oneself is to individuate the group: it is to *transindividuate* it and to *transindividuate oneself*. And vice versa, not to have access to transindividuation, to lose the power and the knowledge of transindividuating, is to *disindividuate oneself*—it is to ruin one’s psyche and to push it into psychosis.

The Greeks thought from within a process of psychic and collective individuation based on letters as orthothetic tertiary retention. Transindividuation takes on the form of a hegemony of literality in the sense that the symbolic environments, which are also mnesic, are all excessively determined by the literate hypomnēsis that governs citizenship. Objective alphabetic memory is orthothetic (“*orthotēs*” signifies exactness) in that it allows one to en-gram unambiguously a linguistic meaning via the principle of both a phonetic decomposition (analysis) and recomposition (synthesis) Internalised by speakers, this creates a new relationship with language, and, consequently, a new process of transindividuation of meanings: it subjects sense to the test of a new *différance* (in Derrida’s definition of the term). The textual identification of utterances—their hypomnesic objectification—intensifies their subjectification, their anamnestic individuation. But at the same time—and this is what Plato underlines—hypomnesic control à la lettre also allows “logography”: the ensemble of linguistic techniques which consist of manipulating opinion by *pithanon* (the art of persuasion), short-circuiting anamnēsis (which is transindividuation), and what Plato calls *dialectics*—which is above all a dialogue.

With the appearance of the first analogue recorders, the 19th century heralds the appearance of orthothetic mnemotechnological en-gramming devices. Mnemotechnological devices became numerical in the second half of

the 20th century. Such mnemotechniques and orthothetic mnemotechnologies permit at one and the same time both the intensification of individuation and its control in the sense of a disindividuation. These forms of analogue and numerical hypomnēmata raise once again the oldest questions of philosophy in a capitalist and free market context—which the mercantile activity of the Sophists no doubt anticipated—but where the industrial dimension introduces new questions. For industry is a new stage of grammatisation.

The grammatisation of mnesic and symbolic environments by technological equipment in effect takes place as the machine tool develops another form of orthothesis *by means of the control of gestures and, therefore, of bodies*. If literal hypomnēses controlled the intellectual functions of the mind from Antiquity onwards, and audio-visual hypomnēses control its sensible functions from the 20th century onwards, hypomnēses which control by reproducing the motor form [motoricité] of gesture appeared at the beginning of the Industrial Revolution. And here photography and cinema participate in this grammatisation of the gesture. The control of work through a form of scientific organisation that depends on grammatisation is put forward by Taylor in his *Principles of Scientific Management*.

The grammatised gesture is a tertiarised gesture: its mechanical reproduction intervenes as a form of tertiary retention into the motor activity of production. However, there has always been tertiary retention within the motor activity of production. This is what leads to the emergence of types of “experimental technology” in pre-historic times, such as the carved flints reconstructed by Neanderthal man. But, every form of management that has come out of Taylor’s theory of work represents a thought and a control of gestures by a type of orthothetic and mechanical tertiary retention. This constitutes a hypomnēsis of gesture through which the worker is transformed into a proletarian and deprived of his knowledge.

The analogue, and then numerical, devices that develop in the wake of industrial machinery and machine tools affect not only the methods of production but also those of consumption. A new stage in the exteriorisation of knowledge and of hypomnēsis is produced here which constitutes a process of *generalised* proletarianisation as loss of knowledge. Literal grammatisation is placed at the service of conception, the grammatisation of gestures at the service of production, and the grammatisation of the senses at the service of consumption. This cognitive and cultural capitalism constitutes a new and integrated hypomnesic organisation which enables the control of all forms of movement, that is to say, of emotion and of that which is [subsumed] in the unconscious.

That the appearance of bodies in the process of individuation—whether it be the body of the producer controlled by gesture or the body of the consumer controlled by sense—should occur at the same moment as the Nietzschean and Freudian concepts of desire and the drives as phenomena that arise out of the unconscious, is significant. Just when we are experiencing the reappearance of the question of anamnēsis and of hypomnēsis, just as, in terms which have taken on a colossal and global industrial and technological dimension, we have *telecracy*, what is at stake in the question asked by sophism to philosophy—to democracy—is a re-elaboration of the question of desire insofar as it is itself constituted or unconstituted hypomnesically according to the stages of grammatisation.

The process of individuation is the economy of what since Freud has been called desire: libidinal economy. However, Freud was not able to articulate a concept of hypomnēsis in psychoanalysis. As Jean-François Lyotard has amply demonstrated, his thinking is that of anamnēsis: an anamnēsis which is thought from out of the question of narcissism, from the ideal of the ego and sublimation as powers of transformation of animal instincts, and in particular of the sex drive, into a power of individuation and spiritual

transformation of the psychic and the collective by the constitution of a process of transindividuation that Aristotle was already calling “*philia*,” in other words, love.

The question which is addressed to us today on the subject of a politics of memory is therefore that of a politics of desire, that is to say, of a political economy of the unconscious. The unconscious is what connects bodies to tertiary retentions and hypomnesic supports, constituting the body as a technical power, in other words, as a power of the imagination, as a power of phantasy. To think today about the question of memory—insofar as it is originally exteriorised and allows us at one and the same time to intensify individuation and to produce disindividuation by loss of knowledge and by proletarianisation—is to reformulate a hypomnesic and anamnestic concept of the general economy of knowledge insofar as the latter is a manifestation of the libido.

In our time—such is the eminently strange and disturbing character of contemporary capitalism—we see that knowledge is destroyed, and thereby the libido, by an exteriorisation that enables both the control and the intensification of drives to the detriment of the libidinal economy, in other words, of *anamnēsis*. The mimetic, gregarious and drive-led nature of consumer capitalism reactivates the technics of the Sophists at an incomparably more powerful and dangerous level, which is that of the veritable grammatisation of desire itself. This constitutes a limit towards which capitalism obviously tends. If nothing comes to alter this state of affairs, capitalism will end in collapse and self-destruction.

From this moment on, we must set up research programmes into the hypomnesic economy of desire that numerical media make possible: such forms of media are carriers of anamnestic as well as hypomnesic possibilities of individuation and transindividuation that are hitherto completely unknown. The task is to think these numerical hypomnēmata and the new

forms of otium that can appear within them, and thus to found a new political economy of memory and desire.¹⁹

Translated by François-Xavier Gleyzon

¹⁹ This programme is *Réenchanter le monde: La valeur esprit contre le populisme industriel* and *La télécratie contre la démocratie: Lettre ouverte aux représentants politique* (Paris: Editions Flammarion, 2006).

Louis Armand

Technics and Humanism

A man's reach must exceed his grasp, else what's a metaphor?
—Marshall McLuhan

The ongoing critique of a scientific-technical rationality has brought into view a set of problems concerning claims for the autonomy of reason and the “neutrality” of technical systems in the evolution of the human idea, as an idea that situates man as a being unveiled in time and simultaneously transcending mere “temporality” by virtue of an access to historical consciousness. The philosophical interpretation of time, as what Martin Heidegger terms a “locus in a system,”¹ has, at least since Hegel, devolved upon a twofold understanding: as what is opaquely referred to as “the abstraction of consuming” (Abstraktion des Verzehrens)—the temporal mode of becoming as “transition from Being to nothing or from nothing to Being,” exemplified in the punctuality of Hegel’s “negation of a negation”²—and hence as “‘intuited’ becoming”—that is to say, as “the transition which does not get thought but which simply

¹ Martin Heidegger, *Being and Time*, trans. J. Macquarrie and E. Robinson (London: Blackwell, 1992 [1926]) 429. All page references are, according to convention, to the German edition cited in the margins of the English translation.

² Heidegger, *Being and Time*, 431; 432.

tenders itself in the sequence of 'nows.'"³ This conception of time as a sequence of "nows," which is "monstrously privileged" in the Hegelian system, situates temporality (which is intuited) as the dimension of the unthought par excellence, defining a primordial situation into which the idea of man is introduced as a way of dialectical unveiling. Stemming from its inexplicable character, the introduction of the human hypothesis assumes a degree of artificiality, in that not only is the revelation of man "mediated" in advance by an externalised agency (e.g. historical consciousness; yet also, paradoxically, history as mnemotechnic), but that the necessary contingency of "man" thus disclosed points to the concomitant necessity of accounting for the status of man as that abstract *interval* which causes, or allows, the temporal *to be thought*—firstly as what Heidegger terms the "indifferent subsistence" of difference, and secondly as *technē*. This "intervention" in the primordially of time, and its (subsequent) reification in the "abstraction of consuming," suggests a particular trajectory of humanism—through its various stages of socio-technological change, and appearing to culminate, in a latter-day expression of Herbert Spencer's evolutionary philosophy of the "inevitability of progress,"⁴ in the advent of the global commodity system and mass-medialised consumer culture—which thus locates the "ends of man" in the disclosures of a generalised technicity.

1

In an often-cited passage, Heidegger describes technology as a "challenge posed to humanity."⁵ This challenge, which is also a

³ G.W.F. Hegel, *Encyclopaedia*, §258, *addendum*; cited in Heidegger, *Being and Time*, 431.

⁴ Herbert Spencer, *Principles of Sociology*, 2 vols. (New York: D. Appleton, 1897 [1876-96]).

⁵ Martin Heidegger, "The Question Concerning Technology," *Basic Writings*, ed. David Farrell Krell (London: Routledge, 1993) 311.

confrontation, emerges from a crisis in the doctrinal certainties of humanism and the ideology of man as *animal rationale*, alongside a critique of time-consciousness and the appeal to a pure philosophy of “history” untrammelled by the experience of technicity. In Heidegger’s quest to “open our human existence to the essence of technology,”⁶ the relationship between the disclosure of being as phenomenality and the disclosure of being as discursivity—or what may be termed the “*technē* of inscription”—becomes increasingly at issue. In its technological sense, disclosure—as complementarily phenomenal and discursive—acquires what Maurice Merleau-Ponty has referred to as a “motor significance,” defining in turn a “motor physiognomy” comprised of “motor reactions,” each of which signals the amplification of our “motor being.”⁷

In the relation of the semantic evolution of “man” to a certain technology of “motility” (what Merleau-Ponty also refers to as “basic intentionality”⁸), human existence thus acquires the tenor of a “motor subject,” in whom being accedes to a materiality of discourse by way of an event (*Ereignis*): an accession, in other words, to a certain ontico-temporal prosthesis, symbolised, at least since the Industrial Revolution, in man’s relationship to the machine. This generalisation, which belongs to the worldly inasmuch as it belongs to a being-in-the-world, describes a virtuality—or event-state—in the constitution of the very technological situation of man; not as instrumental but as conditional. Such a non-instrumental conception of man, as technologically disclosed (which is to say, temporalised in a certain “primordial” sense), accords with the logic of what Jacques Derrida elsewhere terms a “prosthesis at the origin”—i.e. the “originary intrusion, the ageless intrusion

⁶ Heidegger, “The Question Concerning Technology,” 311.

⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge & Kegan Paul, 1962) 211.

⁸ Merleau-Ponty, *Phenomenology of Perception*, 158-9.

of technics,"⁹ as though in place of (or we might say, in *anticipation* of) a formalised agency vested in either a Cartesian cogito me cogitare rem or Hegelian Time and Spirit, as the essence of conscientia.¹⁰ In other words, the primordial *state* of temporality, into which man is supposedly interpolated in the Hegelian schema, is itself thereby revealed to be already opened to the possibility of such an "intervention," since the possibility of man's disclosure is already the interval of this temporality itself—even if this is only to be apprehended as an instantiation of the "now"—being from its "origin" a matrix of *technological events*. Subsequently for Marx, the machine no longer represents a counter- or post-humanistic development, but rather the very "essence" of humanism. In this way the limitations of the definition of technology as a "means to an end" (instrumentum), or as a human "activity," marking an intervention in an otherwise primordial state of affairs ("the differentiation at the heart of the social multiplicity: the division of labour"¹¹), are not so much overcome as transduced in an understanding of the "social evolution" of the human idea. That is to say, in the three-fold relation of nature (the given status of man); reason (the deduced status of man); and technology (the produced status of man)—linked to a movement that is historical only insofar as the historical itself is always an after-effect of whatever it is that can be said to *inaugurate* humanism. This "evolutionary" movement (which will always have seemed to accomplish itself independently of man) thus presents itself no longer as a dialectical unveiling, as in Hegel and later Marx, but as a "crisis" in the very logic of historical thesis, primordiality, causal agency and the ego cogito; a crisis once again signalled—within the ongoing critique of modernity—in the recursive trope of "the machine."

⁹ Jacques Derrida, *On Touching—Jean-Luc Nancy*, trans. Christine Irizarry (Stanford : Stanford University Press, 2005) 113.

¹⁰ Cf. Heidegger, *Being and Time*, 433.

¹¹ Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (London: Continuum, 2001 [1968]) 207.

What, then, is man's true life? While utilitarianism, as Lewis Mumford recounts, has always had a ready answer—"it consisted in having more wants than could be supplied by the machine, and inventing more ways in which these wants could be varied and expanded"¹²—industrial man has never simply been a function of productive stimulus and aesthetic response vis-à-vis a mechanical world that stands in place of and simulates the real (natural) world of experience and gratification of desire. Man has never been some sort of autonomous zone of variable or expandable wants in relation to the satisfaction of these wants, other than in the sense that want itself, or even desire, supposes something like a prosthesis, a supplement, an extension of what is necessarily or essentially human. Such is the ideological basis of humanism in its most general sense. The challenge posed by technology is thus not a challenge to humanity as such, but rather a challenge posed to certain ideological discourses of "man" which, lacking any sustainable claim upon a more foundational metaphysics, have in recent times entered into crisis. As Ernst Cassirer discusses in his *Essay on Man* (1944): "Man's claim to being the centre of the universe has lost its foundation. Man is placed in an infinite space in which his being seems to be a single and vanishing point. He is surrounded by a mute universe, by a world that is silent to his religious feeling and his deepest moral demands."¹³ Consequently, it is the very *idea* of man (and its domination by convention) that has most come to be placed in question and "alienated" by the evolution—or so-called progress—of modern technology. Indeed: "In no other period of human knowledge," Max Scheler argues,

has man ever become so problematic to himself than in our own days. We have a scientific, a philosophical, and a theological anthropology that know nothing of each other. Therefore we no

¹² Lewis Mumford, *The Condition of Man* (London: Martin Secker and Warburg, 1944) 304.

¹³ Ernst Cassirer, *An Essay on Man* (New Haven: Yale University Press, 1944) 13-4.

longer possess any clear and consistent idea of man. The ever-growing multiplicity of the particular sciences that are engaged in the study of men has much more confused and obscured than elucidated our concept of man.¹⁴

And yet, at least since the Renaissance, scientific discourse has implied a materialist foundation to the discourse of man, whose particularities have tended, necessarily, to define man's world in probabilistic terms, even as the "facts" of this world have come to lay claim to a certain universality and immanence. As John Dewey has noted, however:

The universality that belongs to scientific theories is not that of inherent content fixed by God or Nature, but of a range of applicability—of capacity to take events out of their apparent isolation so as to order them into systems which (as is the case with all living things) prove they are alive by the kind of change which is *growth*. From the standpoint of scientific inquiry, nothing is more fatal to its right to obtain acceptance than a claim that its conclusions are final and hence incapable of a development that is other than mere quantitative extension.¹⁵

The implied essentialism of man's factual world has consequently, from time to time, threatened to obscure the prosthetic character of this world, which is not strictly an empirically delineated world but rather a construed one. That is to say, the "facts of science," as Cassirer asserts, "always imply a theoretical, which means a symbolic, element."¹⁶ Furthermore: "It is symbolic thought which overcomes the natural inertia of man and endows him with a new ability, the ability to constantly reshape his human universe."¹⁷ The possibility of

¹⁴ Max Scheler, *Die Stellung des Menschen im Kosmos* (Darmstadt: Reichl, 1928) 13f; cited in Cassirer, *An Essay on Man*, 22.

¹⁵ John Dewey, *Reconstruction in Philosophy* (Boston: Beacon Press, 1957 [1920]) xv-xvi.

¹⁶ Cassirer, *An Essay on Man*, 59.

¹⁷ Cassirer, *An Essay on Man*, 62.

this reshaping, expressed as the “discourse of man” itself, hence situates technics—as the “system of human activities”—within a broader technological discourse by which the realm of man, as what Jacques Lacan terms “the realm of the symbolic,” necessarily implies the realm of the machine.¹⁸ And what is more, this implication of the mechanical is seen not to be somehow initiated in man, but rather as a general condition of symbolisation of which the “human condition” can be said to be a metonymic counterpart.

For this reason the “question concerning technology” requires that we look beyond the world of technical facts to the status of man as technological being, and hence move towards an investigation into the meaning of technology as such. “Technology,” Heidegger famously argues, “is not *equivalent* to the essence of technology ... Likewise, the essence of technology is by no means anything technological. Thus we shall never experience our relationship to the essence of technology so long as we merely represent and pursue the technological, put up with it, or evade it.”¹⁹ It is necessary, in other words, to account not only for the constitutive, but also conditional enlargement of the lifeworld of man—beyond its assumed artefactual basis—and not simply in the sense that by way of technological “progress” man has discovered a method for self-adaptation, but in the sense of a radical disclosure of man’s technological situation.

2

Since the Industrial Revolution, but particularly since the mid-nineteenth century, the human idea has increasingly converged

¹⁸ Jacques Lacan, “A Materialist Definition of Consciousness,” *The Seminar of Jacques Lacan. Book II: The Ego in Freud’s Theory and in the Technique of Psychoanalysis 1954-1955*, trans. S. Tomaselli (London: Cambridge University Press, 1988) 47.

¹⁹ Heidegger, “The Question Concerning Technology,” 311—emphasis added.

upon its own reification in the discourse of labour, the free market and commodification, above all with regard to the advent of so-called industrial man (which, while designating a specific cadre of labour, also comes to define a “universal,” abstract characteristic, such as we find in Heidegger’s term *Dasein*). And whether we look towards the early discourses of economic liberalism (Adam Smith) or industrial socialism (Robert Owen), we inevitably discover the figure of labour emerging in such a way as to “complete” the dialectic of humanism by firstly introducing the machine in the place of a rational, mechanical (Newtonian) god, and then by putting it in the place of rational (Cartesian) man. This emergence is then characterised, as Mumford suggests, by a further two-fold movement: 1. the machine, by removing all “fixed, fast, frozen relations ... caused man to face ... the real conditions of his life,” and; 2. in doing so, the machine became constitutive of man’s consciousness of the “real conditions of his life,” so that it is in fact “the technological developments that secure man’s existence.”²⁰ But the challenge posed to humanity is not simply a matter of designating man as a being-for the machine, for example, but in the disclosure that the category of “man” is itself first and foremost technological. The risk for humanism is not that mankind will be supplanted by and enslaved to the machine, but that we might finally learn to recognise ourselves in it; not as a ratio of means to a technological end, in our own image, but as the yet to be thought *rationale* of the human hypothesis.

The transformation of humanist thought during the Industrial Revolution, and the failure of earlier humanistic accounts to sustain the idea of a man-centred universe, has often been portrayed as a movement of technological nihilism according to which the individual (and the individual’s “freedom-of-the-will”) is supplanted by a mechanical uniformity and “mass” consciousness. The spectre of nihilism,

²⁰ Mumford, *The Condition of Man*, 330-1.

however, can more often than not be seen as a symptom of a “will to mastery” which “becomes all the more urgent the more technology threatens to slip from human control.”²¹ Technology as such, even in its most autonomous or most *inhuman* manifestations, does not represent a cold-blooded withdrawal from life, or from humanity—since, indeed, what we call inhumanity stands as a question of man’s accountability to man—but rather represents a disclosure of a properly human domain and hence of an idea of man *commensurate with his time* (i.e. commensurate with what Heidegger calls the *time of being*).

As Bernard Stiegler has suggested in his on-going study *La Technique et le temps* (1994-), the temporal relation of man and technology is therefore one of solicitation of a social order or social apparatus: no longer as a collective metaphor of an historical unfolding of human destiny or destining, but as a σύστημα; a *system* or *technē* of human evolution.²² In this sense, the socius can no longer be recognised in terms of organisation reified into the (politico-mimetic) institutions of “law, state, church, family, friendship, industrial association”²³—as Dewey says—but as emergent modes of discourse, according to which (just as in the history of scientific inquiry, critical *discussion* effected a “shaking up ... which loosened the firm hold of earlier cosmology”²⁴) the dichotomy of individual and society is transfigured into a dynamic relation of complementarity, recursivity, and reflexive temporality.²⁵ In the realm of the technological, however, recurrence and the counter-logic of the

²¹ Heidegger, “The Question Concerning Technology,” 313.

²² Bernard Stiegler, *Technics and Time. Volume I: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998).

²³ Dewey, *Reconstruction in Philosophy*, 188.

²⁴ Dewey, *Reconstruction in Philosophy*, xix.

²⁵ This “temporality” enlarges the experience of being by way of a technics of futurity, and hence of virtuality (what Heidegger terms a “standing reserve” or Bestand), whereby what is most timely is man’s access to being in its symbolic, discursive dimension. That is to say, as a *forethrow* of signification—whereby “being” is distinguished from the conventional notion of “organic life” which exists only insofar as it evolves in so-called present time.

discrete event are never located in a single dimension or instant, “in time” as it were, but rather in the technē of temporalisation itself (i.e. as essentially distanced or *tele-technological*), thus allowing for a certain duration in each of the spatial dimensions of what we call *inscription*. Being, in this sense, can thus be thought of as “being temporally inscribed” within the recursive, quasi-periodic structure of technicity that generalises itself in the emergent discourse of “man” as technological stereotype.

This discourse, forecasted in the work of Marx, has demonstrated itself to be of ongoing significance in the understanding of globalisation and the transformed status of man under the increasingly “synaesthetic” conditions of new mobile information environments, nano-media and hyper-commodification. Marx’s early investigations into the commodity, for example, brought into view not only the processes of “alienation” inherent in the relation of man-as-labour to industrial modes of production—i.e. the consequence of a process of “technologisation”—but also the alienation from a particular idea of man (posed as the adversary of technical production) the more the “representation of technology” comes to resemble and supersede this idea (i.e. as its stereotype).²⁶ Alienation in this sense becomes commensurate with a realisation that the technological condition of man points towards the historical supersession of man-as-commodified-labour and of labour “time.” Consequently, *post-industrialisation* (what Thorstein Veblen diagnosed as the “*indefinitely extensible* consumption of superfluities”)²⁷ becomes a threat to those discourses—exemplified in Weber’s protestant work ethic²⁸—that define man by way of a redemption-

²⁶ Cf. Karl Marx, “Economic and Philosophical Manuscripts,” *Early Writings*, intro. Lucio Colletti (London: Penguin, 1975), 324-5.

²⁷ Thorstein Veblen, *The Theory of the Leisure Class: An Economic Study of Institutions* (New York: New American Library, 1953 [1899]) 60ff.

²⁸ Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons (New York: Charles Scribner’s Sons, 1958).

through-labour (concealing the god-in-man as will-to-productivity, and later as will-to-consumption).

Guy Debord makes a comparable point when, in effect, he argues that the abstraction of labour time paradoxically affirms the concreteness of man's "individualised" status within the commodity spectacle—such time being, as Stiegler observes, "the process of modification of the individual stereotype, repetitive anticipation of the stereotype being only the arche-form of this temporality."²⁹ For Debord: "The spectacle originates in the loss of the unity of the world, and the gigantic expansion of the modern spectacle expresses the totality of this loss: the abstraction of all specific labour and the general abstraction of the entirety of production are perfectly rendered in the spectacle, whose *mode of being concrete* is precisely abstraction." Consequently: "The worker does not produce himself; he produces an independent power. The *success* of this production, its abundance, returns to the producer as an *abundance of dispossession*. All the time and space of his world become *foreign* to him with the accumulation of his alienated products. The spectacle is the map of this new world, a map which exactly covers its territory."³⁰ Likewise, it is only in the transformation of manufacture by way of technicity (i.e. by way of the machine and of the commodity) that the "human-abstract" is transformed from an image of discrete production to one of so-called continuous consumption *as* spectral accumulation (*vis-à-vis* the media-technological turn of post-industrialisation). For technology in this sense is linked not to the stratifications and rigidifications of ideology, but to the open possibility of a generalised, spectral "capitalisation"—

²⁹ Stiegler, *Technics and Time*, 159.

³⁰ Guy Debord, *The Society of the Spectacle*, trans. Donald Nicholson-Smith (New York: Zone Books, 1995) §29; §31. This then leads Debord to express the stereotypical status of the human-abstract in terms of the well-known formula: "The spectacle is *capital* to such a degree of accumulation that it becomes an image" §34.

above all in the phenomenon of globalisation already anticipated by Marx in 1872.³¹

3

In his preparatory study for *A Contribution to the Critique of Political Economy* (1859) and *Capital* (1867), posthumously published as the *Grundrisse der Kritik der Politischen Ökonomie* in 1939-41, Marx undertook an analysis of the relation of labour to technology as a function of temporalisation, commencing with a critique of machinery as labour-saving (i.e. as productive of surplus labour and labour *time*)³² and moving towards the thesis that labour is thereby transformed into a “living accessory” of the machine. The machine in this latter sense ceases to be simply a manifestation of fixed capital and acquires a particular symbolic function in the translation of “necessary labour time,” which works for mere use value or subsistence, to “surplus labour time,” which represents work for “exchange value.”³³ This circulation of value (the “necessary surplus” of symbolic exchange) is underwritten by the machine’s capacity to produce a standing reserve of labour time through “the reduction of the number of necessary workers,” etc., so that technicity is seen to extend from an extractive to a formative function in not only isolating and quantifying labour as temporality, but in acting upon its discursive character (as, e.g., potentiality).³⁴ It is by consequence of this discursive character that the production of standing reserve can be seen to acquire a signifying function, by virtue of its investment in a certain “futurity” which is no longer merely speculative but bound to

³¹ Karl Marx and Friedrich Engels, *The Communist Manifesto*, trans. Samuel Moore, intro. A.J.P. Taylor (London: Penguin, 1967) 83ff.

³² Karl Marx, *Outlines of the Critique of Political Economy*, trans. Martin Nicolaus (London: Penguin, 1973) 389.

³³ Marx, *Outlines of the Critique of Political Economy*, 767-8.

³⁴ See Deleuze, *Difference and Repetition*, 186.

the materiality of “time in hand.” Time in this sense, however, is not limited to a quantifiable “structure of occurrence,” but constitutes what we might call an event-state, according to which the “potentiality” of any standing reserve discloses itself both as a formal relation to technology as means-ends instrumentality, and as a mechanism of “objectless occurrence” or generalised possibility. That is to say, it discloses a *signifying* function, “productive of meaning,” rather than a function of rigid designation (or as a type of *temporalised mimēsis*).

The significance of “the machine” for Marx thus extends beyond the production-transformation dichotomy defined by the mathematician Charles Babbage—whom Marx cites as dividing machines into two categories: “(1) machines employed to produce power; (2) machines whose purpose is simply to transmit power and to perform the work”³⁵—towards what later biologists and cyberneticists come to term autopoiesis: the capacity of a machine or mechanism to transform and reproduce itself.³⁶ What we might call the autopoietic dimension of technicity in Marx’s conception devolves upon a certain recursive ambivalence—between inertia and dynamics (i.e. entropy)—in the structure of “fixed capital.” According to Marx:

Capital which consumes itself in the production process, or fixed capital, is the *means of production* in the strict sense. In a broader sense the entire production process and each of its movements, such as circulation—as regards its material side—is only a means of production for capital, for which value alone is the end in itself ... But the determination that the use value of fixed capital is that which eats itself up in the production process is identical to the proposition that it is used in this process only as a means, and itself exists merely as an *agency* for the transformation of the raw material into the product. As such a means of production, its use value can be that it is merely the

³⁵ Cited in Marx, *Outlines of the Critique of Political Economy*, 690.

³⁶ See Humberto Maturana and Francisco Varela, *Autopoiesis and Cognition* (Boston: Reidal, 1979).

technological condition for the occurrence of the process (the site where the production process proceeds) ... or that it is the direct condition of the action of the means of production proper, like all *matières instrumentales*. Both are in turn only the material presuppositions for the production process generally.³⁷

Consequently, the auto-consumptive, auto-poietic relation of agency to the production of value is required to be rethought in terms of a material condition—or presupposition, as Marx says—which, however, no longer possesses the status of a simple inertia (or involution) but of a “potentiated” dynamic ambivalence.³⁸ This ambivalence solicits the very processual system to which it is otherwise considered to be a mere adjunct or characteristic, being in turn the solicitation of value *qua* value (i.e. as a gradient of probabilities across which the production of standing-reserve is distributed in a relation to future possible modes of exchange). In this scenario, man—as the locus of future exchange (i.e. of what is to be disclosed)—approximates a tropic figure, in whom agency is affected “automatically,” as a series of processual event-states whose material condition is that of “exchangability” as such.

Man is thereby not simply, as Sartre insists, “what he makes of himself,”³⁹ but rather *is constituted* by virtue of a condition that simultaneously closes him off from the prior assumption of an inaugurating selfhood—other than in the sense that selfhood, or subjectivity, is “potentiated” in the exemplary status of the individual within the human hypothesis—and discloses him as *prosthesis* of technological agency. Thus, in Marx’s words, “labour appears ... merely as a *conscious organ*,” distributed among the “numerous points of the mechanical system; subsumed under the total process of the machinery itself.”⁴⁰ (In so doing, technology supplants the “ends of man”

³⁷ Marx, *Outlines of the Critique of Political Economy*, 690-1.

³⁸ Cf. Deleuze, *Difference and Repetition*, 91.

³⁹ Jean-Paul Sartre, “The Humanism of Existentialism,” *Essays in Existentialism*, ed. Wade Baskin (Secaucus, N.J.: Citadel Press, 1965) 36.

⁴⁰ Marx, *Outlines of the Critique of Political Economy*, 694.

as the metaphysical thought of the “truth” or “essence” of man, so that—like Sartre’s pronouncements concerning ontology—the concept of *humanitas* “has merely enabled us to determine the ultimate ends of human reality, its fundamental possibilities, and the value which haunts it.”)⁴¹

This total process—from the “psychotechnics” of Taylorism to the techno-mediality of McLuhan’s communicating systems⁴²—involves man in a twofold relation to the determination of being, as on the one hand its (indeterminate) horizon of possibility, and on the other as a necessary and recursive decidability. In both cases, the figure of man stands in relation to a total process within and against which his status is nevertheless posited as that of supersession. It is, as Derrida and Stiegler argue, impossible for man to *choose* technology, as though technology existed in a merely objective relation to an already complete idea of the human.⁴³ Man—by way, for example, of the trope of labour—is rather the locus of a choosing, of an interminable and—in this sense—impossible decision. This does not represent simply a formal transposition of the idea of man from the Cartesian to a Marxian register, or to a merely technicist or materialist register, but a fundamental shift in the conception of man as self-willed, purposive, rational consciousness. Indeed, as Marx’s analysis of the labour relation makes clear, it is the very status of *consciousness* that here requires to be re-thought, not as the prosthesis of an autonomous (social or metaphysical) agency, but (as Freud later argued) as an “automaton” of agency vested in a *signifying materiality*:

⁴¹ From *Being and Nothingness*, cited as one of three epigraphs to Derrida’s 1968 lecture, “The Ends of Man,” *Margins of Philosophy*, trans. Alan Bass (Chicago: Chicago University Press, 1982) 111.

⁴² Cf. Anson Rabinach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (Berkeley: University of California Press, 1992) 278.

⁴³ Jacques Derrida and Bernard Steigler, “The Archive Market: Truth, Testimony, Evidence,” *Echographies of Television*, trans. Jennifer Bayorek (Cambridge: Polity, 2002) 46.

As long as the means of labour remains a means of labour in the proper sense of the term, such as it is directly, historically, adopted by capital and included in its realisation process, it undergoes a merely formal modification, by appearing now as a means of labour not only in regard to its material side, but also at the same time as a mode of the presence of capital, determined by its total process—as *fixed capital*. But, once adopted into the production process of capital, the means of labour passes through different metamorphoses, whose culmination is the *machine*, or rather, an *automated system of machinery* ... set in motion by an automaton, a moving power that moves itself; this automaton consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as its conscious linkages.⁴⁴

In this way Marx identifies the machine not as the instrumentality of humanity's emancipation, but—expressed in more Heideggerian terms—as a mode of revealing of man's "essential being." The turn in Marx's early thinking, from the quantitative equivalence between the productive force of labour and "the productive forces of industry and technology" (and the conception of labour as "the quintessentially human activity defining social being and offering humanity the way to re-appropriate and regain its essential attributes"⁴⁵), to the recognition of labour power (*Arbeitskraft*, i.e. "increased productivity and greater intensity of labour"⁴⁶ as functions of labour time) as a paradigm for the recursive production and circulation of value, consequently points towards a structural discursivity in the technological transformations of man and as the disclosure of man's own-most capacity for being-in-the-world.

Man's "freedom" is consequently not a freedom purchased *by way of* technology, or at the price of the replacement of man

⁴⁴ Marx, *Outlines of the Critique of Political Economy*, 692-3.

⁴⁵ Rabinach, *The Human Motor*, 72-3.

⁴⁶ Karl Marx, *Capital: A Critique of Political Economy*, vol. 3 (London: Penguin, 1976) 666-7.

by the machine, but—at the risk of involving a metaphysical reduction—as a confrontation with the technological “essence” of the very condition for man’s being as such (“its conscious linkages”). This is not merely a tropic movement, from metaphorical equivalence to metonymic recursion, for example—by which “freedom” might be probabilistically defined as an operation across or between such contiguities)—nor is it limited to the insistence that technology “is merely abstract labour operating with ‘indifference.’”⁴⁷ Rather, it is a movement tied to the immanence of supersession as a mechanism of disclosure, according to which the individual obtains as the recursive, co-ordinate term par excellence, operating precisely upon the differentiability of implied value as what we might call an engine of ambivalence. Technology, “freed” of its prosthetic relation to the idea of man, gives birth to man as the anticipated “end-in-itself” of technological agency. Hence:

In no way does the machine appear as the individual worker’s means of labour. Its distinguishing characteristic is not in the least, as with the means of labour, to transmit the worker’s activity to the object; this *activity*, rather, is posited in such a way that it merely transmits the machine’s work, the machine’s action, on to the raw material—supervises it and guards against interruptions. Not as with the instrument, which the worker animates and makes into his organ with his skill and strength, and whose handling therefore depends on his virtuosity. Rather, it is the machine which possesses skill and strength in place of the worker, is itself the virtuoso, with a soul of its own in the mechanical laws *acting through it* ... The worker’s activity, reduced to a mere *abstraction of activity*, is determined and regulated on all sides by the movement of the machinery, and not the opposite.⁴⁸

⁴⁷ Rabinach, *The Human Motor*, 78.

⁴⁸ Marx, *Outlines of the Critique of Political Economy*, 693—emphasis added.

In this way Marx echoes Pascal's ruminations of two centuries earlier, on the machine and optimisation of performance as ratio of input-output. According to Pascal, the measure of a machine's performance cannot simply be its speed and accuracy, but its capacity, in effect, to both expropriate and render dispensable "a certain number of mental operations" deemed necessary for a "human calculator." For this reason, "the most ignorant person finds in [the machine] as great an advantage as the most experienced; the instrument supplies the defect of ignorance or lack of habit, and, by necessary movements, it performs all alone, without even the intention of the user, all the abridgements possible to nature."⁴⁹ Likewise Marx observes that: "The science which compels the inanimate limbs of the machinery, by their construction, to act purposefully, as an automaton, does not exist in the worker's consciousness, but rather acts upon him through the machine as an alien power, as the power of the machine itself."⁵⁰ It is at this point that we depart from anything that might be called a Marxist reading of Marx's text—i.e. from any conception of technology as historical *immanence*—towards a notion (provisionally formulated) of temporalisation as technological *imminence*.

4

Insofar as humanism has always involved the philosophical construction of an artificial "man," its methods of reasoning have tended towards either a politico-metaphysics or a generic reflexive accountability of social actions, based upon the assumption that technological processes are firstly ideational processes, whose forms tend to the reification of man as both agent and object of an otherwise historical consciousness. Whether metaphysical or genetic, the system of humanism has

⁴⁹ Blaise Pascal, *Œuvres Complètes*, ed. L. Lafuma (Paris: Seuil, 1963) 189b.

⁵⁰ Marx, *Outlines of the Critique of Political Economy*, 693

necessitated within itself a method of accounting for the status of artifice, of a generalised technē, in the assumption of the stereotype of “man.” Such a techno-methodology, articulated diversely in the work of Marx, Heidegger, and others, extends beyond the so-called man-machine dialectic to the emergence of the symbolic order as the *technological locus* of what is to be called man. In this way, Marx’s analytic of the machine should not be read as an account of a *reduction* of the lifeworld of man to the procedural-world of mere technics (or technical artefacts), but as an account of that generalised “alien power” inherent to the very “system of man.”⁵¹ This is one way of understanding what Marx calls “the general productive forces of the social brain,”⁵² in relation to which the “individual” (objectified as memory, intention, expertise or mental labour), stands neither as rational agent nor as rational prosthesis, but as what Merleau-Ponty has termed “the consciousness of the phantom limb.”⁵³

Bound to the motility of a social body and to a self-defining “means of production” from which it is also, paradoxically, alienated, the so-called subject describes a “ghosting” or “amputation in advance,” of some *thing*, as Freud says, that *thinks*. Man, in this sense, acquires the dubious status of a technological “afterthought,” a pseudo-machine in regard to which reason (as agency *tout court*) stands in a relation of prior possibility. And yet this prior possibility is itself contained in no *thing*, but is instead marked by a logic of the interval, of temporalisation, as the constative “transition which does not get thought.” Such a “prior” possibility—in the temporalised relation of being and the unthought—is therefore also the forethrow of a “consciousness” which is both illegitimate and in advance of itself, describing its own counter-filiation and genealogy. Implied in the intervention of a technē “at the

⁵¹ Cf. John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behaviour* (Princeton: Princeton University Press, 1944).

⁵² Marx, *Outlines of the Critique of Political Economy*, 695.

⁵³ Merleau-Ponty, *Phenomenology of Perception*, 93.

origin," such a logic of a *phantom consciousness* thus marks a supersession in the model of Cartesian physiology, as what Merleau-Ponty describes as "the juxtaposition of a *process* in itself and a *cogitation*."⁵⁴

In an apparently subtle manoeuvre, from mean-ends production (eidos-telos) to the contingency of a generalised event-state, this shift from paradigm to stereotype brings into view what we might call a synecdochic dimension in which "cause" and "condition" are inter-operated. In this way the human stereotype is viewed as a *technological* possibility, dependent (tautologically) upon "the technological developments that secure man's existence," as Mumford says. However, such an apparent inversion of the instrumentalist view of technology is not affected "dialectically" or through a transformation of the "human condition" by the advent of "mechanical reproduction" (technical reproducibility)—to borrow Walter Benjamin's phrase—but is rather in consequence of the disclosure, as Heidegger says, of what, in technology, is most challenging: man's confrontation with being. And insofar as man designates a subjectivity, this is no longer the inaugurating subjectivity of Cartesianism, nor the dialectical subjectivity of Hegelianism, nor the self-willed a priori subjectivity of Kant—but a subjectivity vested in technological agency, whose being is disclosed not by way of an act of the will, or of reason, but through the signifiability of its material interactions—as, for instance, in the operations of the Freudian unconscious, and ever more so in the development of cybernetics.⁵⁵

It is for this reason that Marx argues that: "What holds for machinery holds likewise for the combination of human activities and the development of human intercourse."⁵⁶ The system of mechanised interaction participates, in this sense, in

⁵⁴ Merleau-Ponty, *Phenomenology of Perception*, 102.

⁵⁵ Cf. Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (Boston: Houghton Mifflin, 1950).

⁵⁶ Marx, *Outlines of the Critique of Political Economy*, 704-5.

the same stereotype of what is called “social interaction,” namely the inter- or interval of subjectivity. Moreover, it points to a “primordial” reflexivity underwriting the structural assumptions of what is called intersubjectivity (what Marx terms *conscious linkages*), in light of which the machine-processes described by Marx are often regarded as not only autopoietic but absolute; a *self-determining reason* that remains purely mechanical.⁵⁷ Merleau-Ponty identifies a comparable relation between a generalised motility (as intentionality) and the twofold sense attributed to reflexivity; i.e. as “rational” agency and “unconscious” bodily operation. “The reflex,” Merleau-Ponty argues,

does not arise from objective stimuli, but moves back towards them, and invests them with a meaning *which they do not possess* taken simply as psychological agents, but only when taken as a *situation*. It caused them to exist as a situation, it stands in a “cognitive” relation to them, which means that it shows them up as that which it is destined to *confront*.⁵⁸

Reflexivity thus defines the *id est* of a materiality that *already* signifies; is already, in a sense, an ego cogito as what—“imminent” to a being that remains a perpetual becoming—is *yet to be thought*, on the horizon of the *unthought* and of the *unthinkable* as such: “it stands,” as Merleau-Ponty says, “in a ‘cognitive’ relation to them, which means that it shows them up as that which it is destined to *confront*.”

Heidegger, on whose account much of Merleau-Ponty’s phenomenology necessarily devolves, argues that the essence of technology—as what he terms *Ge-stell* or *enframing*—is “an ordering of destining, as is every way of revealing. Bringing-forth, *poiēsis*, is also a destining in this sense.”⁵⁹ Heidegger’s analogy, between *poiēsis* and *Gestell*, points to a way in which

⁵⁷ Mumford, *The Condition of Man*, 333.

⁵⁸ Merleau-Ponty, *Phenomenology of Perception*, 92—emphasis added.

⁵⁹ Heidegger, “The Question Concerning Technology,” 330.

the challenge posed by technology reveals itself in the medialisation or *confrontation* of “man and being.” Elsewhere, in “The Principle of Identity” (1957), Heidegger defines Gestell as: “the gathering of this challenge which places man and being face to face in such a way that they challenge each other” and thereby affect a *critical disturbance* of the conventionalisation of man. Consequently, Gestell is regarded as: “That in which and from which man and being are of concern to each other in the technical world ... In the mutual confrontation of man and being we discern the constellation of our age.”⁶⁰ As prelude to Ereignis or the technological “event,” Gestell thus marks for Heidegger the way in which technē, *qua* poiēsis, describes a relation to being that is one of bringing-forth, of “revealing” (as a programmed *syntax* of the event) and not of “manufacturing.” That is to say, it is concerned with what Aristotle, in the *Nichomachean Ethics*, refers to as the category of possibility (that “which is capable either of being or not being, and whose origin is in the maker and not in the thing made; for art [technē] is concerned neither with things that are, or come into being by necessity ...”).⁶¹

The discursivity of technē in this sense is thus linked by Heidegger to a concept of *readiness, disposability, or preparedness* (Bestand). In other words, of a technological “availability” (or syntactic-programme) as the underwriting condition of “the possible” —whereby humanity’s own-most potentiality for being can be regarded as bound up with a procedural technicity, in which the *agent* of bringing-forth (the “maker”) is likewise bound up with a conception of the machine that both “produces it and archives it,”⁶² as the objectless potentiality

⁶⁰ Martin Heidegger, *Identity and Difference*, trans. Joan Stambaugh (New York: Harper & Row, 1969 [1957]) 35.

⁶¹ Aristotle, *Ethica Nicomachea* VI.4.1140a, trans. W.D. Ross, *The Works of Aristotle*, vol. IX (London: Oxford University Press, 1915).

⁶² Jacques Derrida, “Typewriter Ribbon: Limited Ink (2) (‘within such limits’),” trans. Peggy Kamuf, *Material Events: Paul de Man and the Afterlife of Theory*, eds. Tom Cohen, Barbara Cohen, J. Hillis Miller and Andrzej Warminski (Minneapolis: University of Minnesota Press, 2001) 316.

Marx identifies in the structural relation of “fixed capital” to “surplus value.” Indeed, the particular matrix of Gestell-technē-poiēsis in Heidegger’s analytic of technics, being and time, can be seen to represent an existentialist ontology increasingly inflected by Marx’s conception of temporality as *discursive communication* among agents—i.e. as a network, interface or mechanism for the circulation and re-distribution of value—according to which agency itself may be said to be conceded to a reflexive *signifying materiality*, linked to what Heidegger terms the “indifferent subsistence” of difference.⁶³ (Hence, too, “reason” becomes a ratio between fixed capital and the reverance-effect of technical reproduction.) It is in this sense that Bestand needs additionally to be understood not simply as a “holding in reserve,” of a trace or residue of, for example, the substance of labour “time” (as though we were here speaking of a mechanism of translation or reification, on the one hand, and of a keeping-back or conservation, on the other), but rather, and seemingly paradoxically, of a temporalisation *without reserve*; the reserve of a without-reserve; the event.⁶⁴ Indeed, at a certain moment in Heidegger’s text, Gestell can be seen to represent an “‘event’ of an opening in completion,” through the “reciprocal ‘need’ of enframing and its other, this ‘appropriation’ which joins together the totalising drive of technology to the thinking

⁶³ Heidegger, *Being and Time*, 430. This does not mean, however, that we should consider Heidegger as continuing, in any straightforward way, the work of Marx, as François Châtelet argues. Nor does it mean the contrary—as exemplified in the claim that Heidegger’s early thinking was substantially directed *against* “the Marxist conception of *alienation* (Entfremdung),” as Pierre Bourdieu argues. Bourdieu’s reference to Heidegger’s “Letter on Humanism,” taken as an example of Heidegger’s rejection of Marx, does not, however, take account of the context in which the “Letter” was composed as an indirect response to Sartre’s *Existentialism is a Humanism* (1946). Cf. Bourdieu, *The Political Ontology of Martin Heidegger*, trans. Peter Collier (Cambridge: Polity Press, 1991 [1988]) 94-5.

⁶⁴ On the “economy without reserve,” cf. Georges Bataille, *La Part maudite* (Paris: Minuit, 1967).

that would exceed it" —all of which Heidegger designates with the term "Ereignis."⁶⁵

5

In the relation of technology to the "unthought," or temporalisation, in which the disclosure of man's being *exceeds*, the question that comes to present itself, and which Heidegger formulates most succinctly at the end of *Being and Time*, is: "Is there a way which leads from primordial *time* to the meaning of Being? Does *time* itself manifest itself as the horizon of Being?"⁶⁶ Between temporalisation as the unthought condition of technicity, and the excess of thought that characterises the time of being as appropriation (Bestand), the "question concerning technology" is thus re-orientated according to a certain *unreasonable demand*, as Heidegger puts it. Hence: "The revealing that rules in modern technology is a challenging [Herausfordern], which puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such."⁶⁷ This notion of surplus, echoing the abstract (symbolic) temporalisation of labour in Marx, thereby exceeds, or rather *détourne*, the rationale of productivity (as prolific nature), fixed in the present, upon which the Hegelian conception of primordality (the initially pure unity of the self, for example) is founded—and hence of the freedom of an "unrestricted self-equality"⁶⁸—and exposes what amounts to a contradiction at the level of the "essence" of being as perpetual *becoming*. This contradiction has been widely discussed in terms, among others, of mechanical *reflexivity* and the interval of temporalisation implied by the logic of self-equality (being, of necessity, a logic of medialisation, of contiguity and

⁶⁵ Translator's Forward to Heidegger, *Four Seminars*, xii.

⁶⁶ Heidegger, *Being and Time*, 437.

⁶⁷ Heidegger, "The Question Concerning Technology," 320.

⁶⁸ Heidegger, *Being and Time*, 433-4.

recursivity). The notion of time, as primordial continuum, acquires the status of an unthought “in excess of itself,” instantiated not in the metaphor of the Hegelian “pure concept” or “truth of consciousness” (Ichheit, egoity)—which posits itself, as Heidegger says, “solely in order ... *not* to be a difference”⁶⁹—but as synecdoche of this excessive movement “itself.” That is, as temporalisation or recursion (as the “singularity and generality of every ‘I,’” as Derrida says) within the very structure of reflexivity. This synecdoche is what Heidegger calls, in addition to *readiness*, *disposability*, or *preparedness*, an “expediting” and a “standing-reserve” (Bestand), and what Stiegler describes as “access to anticipation” and its equivocation as “access to the possible.”⁷⁰

In the Marxian ontology of technological man, “capital itself” is this “moving contradiction,” according to which technology—as a “bringing-forth”—represents a “becoming” bound not to continuous productivity but rather to supersession as *accretive contiguity*, and to the possibility of “instantiation” only by way of deviation, redundancy, anachronism. The so-called essence of man is thus given a particular inflection as this contradictory movement of a capital that “presses to reduce labour time to a minimum, while it posits labour time, on the other side, as the sole measure and source of wealth.” Wealth (value) is here no longer bound to the idea of necessity—e.g. to the authentic determination of selfhood or the immanence of human reason as freedom-of-the-will—but to the arbitrary determinations of symbolic exchange and mechanical agency. Hence, in proportion to the degree in which it “diminishes labour time in the necessary form so as to increase it in the superfluous form,” capital—as here

⁶⁹ Martin Heidegger, *Hegel's Phenomenology of Spirit*, trans. Parvis Emad and Kenneth Maly (Indianapolis: Indiana University Press, 1988) 125—this volume constituting the lecture course given by Heidegger at the University of Freiburg, winter semester 1930-1.

⁷⁰ Stiegler, *Technics and Time*, 160.

designating the very *system* of value—“*posits the superfluous in growing measure as a condition ... for the necessary.*”⁷¹

In defining man’s technological condition as a condition of supersession in which the figure of “man” itself operates neither as paradigm nor telos, but as a matrix or syntax of possibilities *articulated* by way of a recursive “temporalisation,” the synecdochic character of standing reserve not only generalises man’s status as *formal* but also *textual*—bound to the procedural substitutability and iterability of a general signifying system. The figure of man is in this sense temporalised insofar as it is bound up with the *time of signification*. In Marx’s schema, this mode of temporalisation is figured in the trope of “the machine” (“systemic in its performance,” as Paul de Man says, “but arbitrary in its principle, like a grammar”⁷²), as the complementarity of the individual-universal, or what Marx terms the *trans-formation* of man. “In this transformation,” Marx argues, “it is neither the direct human labour he himself performs, nor the time during which he works,” by which man’s technological condition is properly disclosed, “but rather the *appropriation* of his own general productive power, his understanding of nature and his mastery over it by virtue of his presence *as a social body*—it is, in a word, the development of the social individual which appears as the great foundation stone of production.”⁷³ Such a matrix of production—suggestive of a generalised constructional or syntactic system underwriting the “discourse of man”—in which, however, mastery is bound up with a counter-movement of appropriation, implies that its very systematicity (its mechanism) is that of dynamic paradox rather than, for instance, “dialectical” homoeostasis. In any case, the mastery vested in man, as Marx describes it, is bound not to the exercise

⁷¹ Marx, *Outlines of the Critique of Political Economy*, 707—emphasis added.

⁷² Paul de Man, “Semiology and Rhetoric,” *Allegories of Reading: Figural Language in Rousseau, Nietzsche, Rilke and Proust* (New Haven: Yale University Press, 1979) 298.

⁷³ Marx, *Outlines of the Critique of Political Economy*, 705-6—emphasis added.

of individuated will, but to man's "presence as a social body." It is in this sense that the figure of man operates as synecdoche, and according to which the "technological turn" of humanism does not resolve the paradox of technological agency (as appropriative), but rather devolves upon it, vis-à-vis the trope of what Marx calls the "social brain."

6

The figuring of the human hypothesis as one of a technological event-state consequently poses a challenge to the notion of the socius (or the state as "ethical idea and objective freedom," vis-à-vis the so-called *rational* constitution and corollary notion of the state *as individual*) found in Hegel's *Grundlinien der Philosophie des Rechts* (1821).⁷⁴ Dewey describes this notion as one that is founded upon "the realisation of *will*" as "the end of all institutions," and that private ownership, as "the expression of mastery of personality over physical nature, is a necessary element in such realisation."⁷⁵ The relationship of appropriation, property, mastery and will, cannot, as Dewey says, be dissolved here in a simple movement of dialectical overcoming in the idea of a "universal meaning that covers and dominates all particulars."⁷⁶ Instead, the synecdochic relation of the socius and individual, or universal and particular in Marx, articulated by way of an irreducible temporalisation, ties the logic of appropriation not to a contest of wills but to the recursive forethrow of an agency that is properly technological, and in which relation man stands as "the juxtaposition of a process in itself and a *cogitation*."

Hence it is necessary to distinguish in Marx those lineaments of technological agency that pose "conscious

⁷⁴ G.W.F. Hegel, *Elements of the Philosophy of Right*, ed. Allen W. Wood, trans. H.B. Nisbet (Cambridge: Cambridge University Press, 1991) 275ff.

⁷⁵ Dewey, *Reconstruction in Philosophy*, 189.

⁷⁶ Dewey, *Reconstruction in Philosophy*, 189.

linkage” not so much in opposition to the Hegelian concept of will, or even to the idea of calculated “self-interest,” but as its *détournement*. In any case, such “interests,” as Dewey remarks, “can be employed as vital terms only when the self is seen to be in process, and interest to be a name for whatever is concerned with furthering its movement.”⁷⁷ What is called the “self,” here, should therefore be considered as a dynamic matrix of “conscious linkage” within the locus of a technological agency (Marx’s “social brain”). We might say that agency is thereby *conceded vis-à-vis* the assumption of a “metaphor” of collective consciousness, in the operation of signs or circulation of value (as symbolic exchange) accompanying the transductive relation of labour-time, surplus value, and the abstraction of the human stereotype (i.e. as synecdoche or *characteristica generalis*). In this way, the logic of surplus can be said to affect a “temporal” movement of supersession and metonymic recursion (“characterised,” in Wiener’s formulation, “by an invariance with respect to a shift of origin in time”)⁷⁸—denoting, thereby, a tropological “equivalence across contiguity,” as the locus of what emerges in the figure of man as quasi-individuated *subject*. Heidegger’s thinking of technology—mediated by way of cybernetics, pragmatism and Marx—thus appears to culminate, as Andrew Mitchell has argued, “in a logic of replaceability (*Ersetzbarkeit*) and consumption (*Verbrauch*).”⁷⁹ A logic which can be seen to be summarised in the Heideggerian dictum: “Being is being-replaceable.”⁸⁰

This recursion of the temporal, as tropic or signifying function, situates the disclosure of man (as technological standing reserve) in dynamic relation to the “anticipation” of what Heidegger terms “an ordering of destining”—i.e.

⁷⁷ Dewey, *Reconstruction in Philosophy*, 195.

⁷⁸ Norbert Wiener, *Cybernetics; or, Control and Communication in the Animal and the Machine* (Cambridge, Mass.: MIT Press, 1965 [1948]) viii-ix.

⁷⁹ Translator’s Forward to Martin Heidegger, *Four Seminars*, trans. Andrew Mitchell and François Raffoul (Bloomington: Indiana University Press, 2003) xi.

⁸⁰ Heidegger, *Four Seminars*, 62.

futurity—whereby what is held in reserve operates, complementarily, as a *forethrow* (e.g. of “potentiated” force, or power, in the sense of δύναμις; dynamis). This complementary movement is not teleological, but an *accession* to the objectless occurrence of the “pure event” of possibility (viz. δύνασθαι, *to be able*). And insofar as the status of man is bound to the trope of futurity, as one whose being is revealed only by way of a challenge posed to the very *idea* of what (human) being entails, technology must finally be regarded as no mere instrument of supersession or reification (i.e. of a technological *paradigm of man*, or scientia generalis), but rather the disclosed condition of “man” as “mirror of anticipation.”⁸¹

For Heidegger, then, the instrumental definition *necessarily* does not show us technology’s essence, nor does it provide grounds for an assumption of autonomous agency in man’s relationship to so-called technical objects. In clear contrast to Hegel’s definition of the machine as an autonomous tool, Heidegger argues that: “Seen in terms of the standing-reserve, the machine is completely non-autonomous, for it has its standing only on the basis of the ordering of the orderable.”⁸² In other words, what is here called “the machine” is not the mere abstraction of labour, divided off from man and operating in his stead, but rather the inscription of man’s very horizon of being and antecedent condition within the appearance of orderability—i.e. by way of a certain *calculus of the possible*. This particular inflexion of the Marxian concept of time and value has often been interpreted as providing the epistemological (and onto-anthropological) criteria for a type of cyber-humanism, according to which “technology” constitutes—in however broad a sense—a “cultural system that reconstructs the entire social world as an object of control.”⁸³

⁸¹ Stiegler, *Technics and Time*, 153.

⁸² Heidegger, “The Question Concerning Technology,” 322-3.

⁸³ Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (Oxford: Oxford University Press, 2002) 6-7.

Control in this sense is defined not as the instrumentalisation of a social destiny, but as emergent structures of organisation “programmed” by way of material constraint, or probability (as a calculus of the possible). Consequently, as Herbert Marcuse has argued (although for different reasons), “technological rationality has become political rationality,”⁸⁴ insofar as politics describes an “architectonic” science devolving, once more, not upon an “instrumental maieutics” or “technological mastery” of prevailing (or future) conditions in the lifeworld, but upon what Stiegler calls “the material trace of the stereotype.”⁸⁵ That is to say, upon the typological criteria defined by a mechanics of variable probabilities—e.g. in the disclosure of man’s being “from time into time,” as Heidegger says—thus defining the “operative role” of the humanistic stereotype. This leads Heidegger to the question, “What is the instrumental itself?” and to an analysis of the relationship between instrument and cause, and of fourfold causality (*causa materialis*; *causa formalis*; *causa finalis*; *causa efficiens*). The status of cause, as “that which brings about,” makes befall, or *occasions* (vide the Aristotelian conception of *aition*, “that to which something is indebted”),⁸⁶ is thus linked to the relation of *eidōs*, *telos*, *logos* and what Hegel terms primordially and what Stiegler elsewhere terms the “memory of the stereotype”; i.e. the techno-mimetics of “consciousness”⁸⁷ as pre-presentation of causes. Causal-instrumentality is thus re-conceived in terms of reflexivity which, by consequence, delineates what is called a subject as the *inter* of a generalised temporalisation: being the virtuality of an event *in advance of itself*, underwriting all the “economies of thought” or, for example, the “motivating factors” of any sign operation tending to what is called

⁸⁴ Herbert Marcuse, *One Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Boston: Beacon Press, 1964) xv-xvi.

⁸⁵ Stiegler, *Technics and Time*, 158.

⁸⁶ Heidegger, “The Question Concerning Technology,” 314.

⁸⁷ Stiegler, *Technics and Time*, 151.

symbolic exchange or the circulation of value, and so on. This would also describe what Derrida calls “the differential deployment of technē, of techno-science or teletechnology,”⁸⁸ as the *spatialising of temporality*—i.e. as a movement of metonymic contiguity (*partes extra partes*) and synecdochic equivalence (*pars pro toto*)—which Derrida elsewhere designates by the neologism “différance.”

7

The tropic recursion and causal ambivalence that characterises technē as temporalisation likewise reveals itself in the operations of synecdoche—as the *heterotechnical* relation of *eidōs-telos-logos* (i.e., the relation of cause to the reflexive, self-presentation of means-ends, as both instantiation and assumption-in-advance). And insofar as technē, in this sense, “reveals whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another,”⁸⁹ as Heidegger argues, it also marks out an axis of ambivalence with regard to its status as *Ereignis* or event. This ambivalence, which is not merely the ambivalence of efficient causes, defines what, in place of any a priori system of a *state of affairs*, of an *initial state* or of a *primordially*, conditions the indeterminacy of “the event” as technological—as such—and thereby instigative “in the first place” of what is called systematicity. In the socio-technical problematic outlined by Marx, this event-state ambivalence thus points to “something constitutionally heterogeneous to the social system or structure,” as Ernesto Laclau (echoing de Man) puts it, which

⁸⁸ Jacques Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning, and the New International*, trans. Peggy Kamuf (London: Routledge, 1994) 169.

⁸⁹ Heidegger, “The Question Concerning Technology,” 319.

is “present in the latter from the very beginning, preventing it from constituting itself as a closed or representable reality.”⁹⁰

Yet here, again, the assumption of such a closure or “representability of the real” presents itself as the *real* spectre of dialectics; not the totalising movement that, by rhetorical sleight of hand, encloses the real in the symbolic, but the originary difference that gives the imaginary *in place of it* (i.e. in place of the “it” to which the *idea of the real* supposedly corresponds, whether it be representable or not). Hence Freud’s remarks apropos of the Id and (the objectified *imminence* of) the Ego: “wo es war, soll Ich werden”—this “it” towards which subjectivity gravitates as though under a wordless, unsymbolisable compulsion, of which the Ego is nevertheless the symbol par excellence, since it is the object-Ego here, and not any subjectivity, which comes to think and to perform what Marx calls the “conscious linkages” of the symbolic mechanism (i.e. of so-called representation). This is a long way from the implied *immanence* of closure or representability of a real that is merely impeded by the heterogeneity of its constituting event, or the indeterminacy of its outcomes (“now one way and now another”).

We may likewise consider the mechanical stereotype as paradoxically both a “totalisation” and “particularisation” (metonymy, synecdoche), gesturing towards a general relation of singularity to the status of the in-dividual as *figure* of the event-state: i.e. in accordance with what de Man describes firstly as the “pattern of substitution that all tropes have in common,” and secondly as “the difference necessarily introduced by the substitution”⁹¹—*introduced* in the sense of an interval of temporalisation; the *inter* of subjectivity. Thus, not implied immanence—even of the unrepresentable—but

⁹⁰ Ernesto Laclau, “The Politics of Rhetoric,” *Material Events: Paul de Man and the Afterlife of Theory*, eds. Tom Cohen, Barbara Cohen, J. Hillis Miller and Andrzej Warminski (Minneapolis: University of Minnesota Press, 2001) 230.

⁹¹ Paul de Man, *Aesthetic Ideology*, ed. Andrzej Warminski (Minneapolis: University of Minnesota Press, 1996) 62-3.

situationality is what, for de Man, defines the stereotype as “heterogeneous with regard to the system.”⁹² In addition, this heterogeneous character describes a “generalised system” of “metonymic displacements articulated by relations of contiguity,”⁹³ exemplified above all for de Man in the figure of synecdoche: “The synecdoche that substitutes part for whole and whole for part is in fact a metaphor, powerful enough to transform temporal contiguity into an infinite duration.”⁹⁴

But what does this mean, if not the invocation of a certain paradox of equivalence (“infinite duration”) delineated, indeed determined, within a system of causal discontinuity? That is to say, *within* the very interval of technological recursion, wherein the perpetual forethrow of *temporalisation* demarcates the n+1 of a formal infinity, and wherein “what endures” is nothing other than the recursive moment itself, as synecdochic exemplum. Hence, in speaking of the transduction of contiguity into infinite duration, as de Man does, we necessarily imply what Derrida has frequently referred to as the “prosthesis of/at the origin”: that elusive, originary calculus upon which the entire system of ordinality is constructed and predicated, and according to which we may therefore speak of a certain *primordiality* of synecdoche (as, to again invoke a paradoxical formulation, the “one before the one”). This double movement, at the limits of ordinality, of equivalence and contiguity—that is to say, at the *limits of any metaphysics*—is the stereotypical movement par excellence. And it is in accordance with this double logic of the stereotype that the machine (as the “figure” of a generalised technology) discloses man’s being as event-state of the unthought; of the excess of thought; of futurity, temporalisation, or technological *imminence*. That is, as what continues to be impending, to come, while nevertheless being “in reserve.”

⁹² de Man, *Aesthetic Ideology*, 59.

⁹³ Laclau, “The Politics of Rhetoric,” 237.

⁹⁴ de Man, *Aesthetic Ideology*, 63.

Contrary to the idea of man as aggregate of reason, will, instrumentality, the ambivalence of the human stereotype (as heterotechnical, or hetero-temporal, relation of primordially to the “emplacement in advance” of a “system” of radical contiguity) brings into view a *rationalisation* of man (as it were, *after the event*) which is, in fact, the contrary of a technological condition that is neither arbitrary nor readily comprehensible, yet neither bound to a transcendental or mysterious principle of cause. The sense in which technology “represents the completion of the logic governing metaphysics and *to that extent*” is “likewise an opening” (as Heidegger says), ought to indicate to us that the dynamic interval of what has been termed “originary technicity” cannot simply be negativised—e.g. as *preventative* of a system (of man, of “human artefacts”) constituting itself *as a closed or representable reality*—as though it were nothing other than a type of technological or semiological prophylactic. Nor, as Bestand or archē-form of temporalisation, can it be negativised as the withholding of some *thing*, of some essential expenditure or consumption, an in-completion in effect that interrupts only insofar as it is circumscribable (that can always be overcome by one means or another). Instead, this “event of an opening,” of an immeasurable possibility, discloses the inception or *inter-ception* of the stereotype only as what “joins together the totalising drive of technology to the thinking that would exceed it,”⁹⁵ i.e. as metonymic recursion, according to which surplus value “*ceases to be localisable*”⁹⁶ in the figure of a “reality” around which certain technological polemics continue to be orientated. “Here we can see once again,” to interpolate from Hardt and Negri’s remarks on the state of economic globalisation, “the importance of the revolution of Renaissance humanism. *Ni Dieu, ni maître, ni l’homme*—no transcendent power or measure will determine the values of

⁹⁵ Forward to Heidegger, *Four Seminars*, xii.

⁹⁶ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1993) 491.

our world. Value will be determined only by *humanity's own continuous innovation and creation*.⁹⁷ The challenged posed to "humanity" by technology, by the Marxian "machine," is thus none other than that of the disclosure of the human stereotype as a *tentative* or *trope of anticipation*; i.e. as what is termed a "problematic." A remark by Gilles Deleuze provides an interesting dilation on this theme:

The famous phrase of the *Contribution to the Critique of Political Economy*, "mankind always sets itself only such tasks as it can solve," does not mean that the problems are only apparent or that they are already solved, but, on the contrary, that the economic conditions of a problem determine or give rise to the manner in which it finds a solution within the framework of the real relations of the society. Not that the observer can draw the least optimism from this, for these "solutions" may involve stupidity or cruelty, the horror of war or the "solution of the Jewish problem." More precisely, the solution is always that which a society deserves or gives rise to as a consequence of the manner in which, given its real relations, it is able to pose the problems set within it and to it by the differential relations it incarnates.⁹⁸

Yet we might also say that, in the *assumption of a problem as such*—the very *paradigm* of the problem, made manifest under whatever economic or technical conditions (to which "society," its "real relations," "man," are, by consequence, posed as the necessary *correlative* solution, since they are precisely *anticipated* in the figure of the problem)—we are finally confronting the status of the technological within the discourse of man, as that which is most *problematic*; insofar as it ("technology") is characterised by the repetition and deferral of its object ("man") onto the general category of the unthought, the in-excess-of-itself, the immeasurable, and hence of an open possibility. This

⁹⁷ Michael Hardt and Antonio Negri, *Empire* (Cambridge, Mass.: Harvard University Press, 2000) 356—emphasis added.

⁹⁸ Deleuze, *Difference and Repetition*, 186.

is because “technology” in this sense cannot be reduced to a “problem” mankind sets itself. Rather, it assumes the complexion and complexity of a problem for which mankind is the anticipated solution—insofar, that is, as it represents the privileged trope of the “itself,” of a reflexivity still bound to the rhetoric of a science of reasoned cause, of problematics as such, for which “man” becomes, if not an instrumentum, a *matière instrumentale*.

Mankind—humanity—is thus neither transcended nor contradicted by the machine, but instead, as Derrida contends, is “produced by the very possibility of the machine.” That is, by “the machine-like expropriation” by which the so-called essence of man’s being is encountered by way of “technicity, programming, repetition, or iterability.”⁹⁹ And insofar as the machine describes the fundamental *modus operandi* of what Marx calls productive capital as this “moving contradiction,” technology is thus “no mere means” but, as Heidegger says, an “enframing” and “a way of revealing.”¹⁰⁰ As productive of surplus or standing reserve, the *immeasurability* of the machine describes a supplemental movement in the production of the human stereotype *as the necessary condition* of man’s being: not as an essence that is revealed, but as the disclosure itself of possibility.

⁹⁹ Derrida, “Typewriter Ribbon,” 335; 336.

¹⁰⁰ Heidegger, “The Question Concerning Technology,” 318.

Arthur Bradley

Originary Technicity? Technology & Anthropology

There is no natural originary body: technology has not simply added itself, from the outside or after the fact, as a foreign body. Or at least this foreign or dangerous supplement is “originarily” at work and in place of the supposedly ideal interiority of the “body and soul.” It is indeed at the heart of the heart.¹

In Jacques Derrida’s view, we live in a state of originary technicity. It is impossible to define the human as either a biological entity (a body or species) or a philosophical state (a soul, mind or consciousness), he argues, because our “nature” is constituted by a relation to technological prostheses. According to a logic that will be very familiar to readers of his work, technology is a supplement that exposes an originary *lack* within what should be the integrity or plenitude of the human being itself. To put it in a word, what we call the “human” is thus the product of an *aporetic* relation between interiority and exteriority where each term defines, and contaminates, its other. If Derrida was arguably the first thinker to explicitly propose a philosophy of originary technicity—although there

¹ Jacques Derrida, “The Rhetoric of Drugs,” in *Points ... Interviews, 1974-1994*, ed. Elizabeth Weber, trans. Peggy Kamuf (Stanford: Stanford University Press, 1995) 244-5.

are obvious precedents in the work of Marx, Nietzsche, Bergson, Husserl and Leroi-Gouhran—this line of enquiry has been pursued, refined and extended by a number of other figures including, most notably, Bernard Stiegler. The technological turn in continental philosophy also feeds into a more general crisis about what—if anything—might now be said to be “proper” to humanity. This can be witnessed in the recent debate—gathering together voices from science fiction, cultural theory and the human, life and cognitive sciences—about our so-called “posthuman” future.² To what extent can we still speak of a “we” at all?

It is often supposed, then, that contemporary philosophy of technology offers a—tragic or ecstatic—vision of the death or supercession of the human but what concerns me is actually whether it goes far enough. As I hope to show, it is possible to detect a residually anthropocentric dimension even within the state of “originary” technicity: what begins as a critique of the independent, self-cognisant agent that is the “liberal humanist subject” often seems to presuppose, or magically re-discover, the very model of subjectivity it calls into question. To be sure, Derrida’s philosophy of technology entails a massive re-thinking of a metaphysical tradition that installs something called “the human” as the sole ground of all knowledge. Yet, it has also been charged with containing a residually phenomenological or idealist bias that still posits a cognisant, thinking subject as the arbiter of technology.³ Even those critics who adopt a more robust materialist, or empiricist, approach to technology may not be exempt from the suspicion that their approach betrays a closet anthropocentrism. If posthumanist theory seeks to plunge the Cartesian subject into the world of

² See N. Katherine Hayles, *How We Became Posthuman* (Chicago: University of Chicago Press, 1999); *Posthumanism*, ed. Neil Badmington (London: Palgrave: 2000); and Francis Fukuyama, *Our Posthuman Future* (London: Profile, 2003).

³ See Keith Ansell Pearson, *Viroid Life: Perspectives on Nietzsche and the Transhuman Condition* (London: Routledge, 1997); Mark Hansen, *Embodying Technesis: Technology beyond Writing* (Ann Arbor: University of Michigan Press, 2000) and John Protevi, *Political Physics* (London: Continuum, 2001).

material embodiments, what is striking is how resiliently it clings—whether for strategic or essential reasons—to such recognisably humanist concepts as agency; self-reflexiveness and even the concept of a core human “nature.”⁴ In Andy Clark’s populist survey of the field, posthumanism becomes the platform not for awful prophecies about the death of the human but for a deeply reassuring, almost self-congratulatory, affirmation of the enduring richness and complexity of human nature: “it is our basic *human* nature to annex, exploit and incorporate nonbiological stuff deep into our mental profiles.”⁵

To put it simply, I want to propose that the question of the “human” remains very much in play within continental philosophy of technology: originary technicity is not necessarily technical all the way down. It is this—admittedly speculative—hypothesis that will be tested in what follows. As I see it, an anthropocentric residuum within contemporary philosophy of technology expresses itself in 2 main ways:

1. On the one side, what appears to be a critique of metaphysical concepts of the human often remains heavily complicit with what it criticises. The classic territory of the liberal humanist subject—mind, consciousness or agency—is still regarded as the privileged site for technological critique. This means that the focus is always on what originary technicity means *for* a certain idea of the human and the relation between technology and other forms of life—including

⁴ See, for example, Hayles, *How we Became Posthuman*, 5 and Hansen, *Embodying Technesis*, 67-8. It is Hayles’s view that posthumanist theory merely seeks to mediate, as opposed to dismantle, the Enlightenment concept of the subject as pure and autonomous thinking subject. Similarly, Hansen defends what he calls “technological mediated, posthuman forms of human agency” against what he sees as the anti-humanist nihilism of Lyotard. In both cases, however, we might start to wonder whether “posthumanism” is merely humanism under another name. Who ever believed in *unmediated* subjectivity in the first place? Descartes? Kant?

⁵ Andy Clark, *Natural-Born Cyborgs: Minds, Technologies and the Future of Human Intelligence* (Oxford: Oxford University Press, 2003), 198.

the entire sphere of animal, natural or biological life—is occluded.

2. On the other, what appears to be a critique of metaphysical concepts of the tool also entails an implicit reduction of technology. The classical definition of technology as something that exists only in relation *to* the human—even if that relation is an “originary” one—is still prioritised over an investigation into technics as an *independent* material force or process. This means that the larger question of what form technology might take *outside* the—comparatively localised—process of human subject-constitution is also rarely asked.

In both these ways, I think continental philosophy of technology risks turning itself into little more than what Timothy Clark calls a “non-essentialist anthropology”: what is intended to produce a de-anthropologising of the human—originary technicity—becomes a new means of defining the *anthropos*.⁶

In what follows, then, I want to test this hypothesis through a reading of the work of two of the major—indeed defining—contemporary philosophers of technology: Jacques Derrida and Bernard Stiegler. It is between Derrida and Stiegler that the thesis of the “originary technicity” of the human receives its most rigorous and powerful formulation. As is well known, the two thinkers disagree on what is the best way to articulate this constitutive technicity—Derrida tends to think in terms of a philosophical *logic* of supplementation, crudely speaking, to which Stiegler seeks to add a material *history* of specific supplements—but they are united upon the radical implications it holds for the category of the human: the “who” of humanity and the “what” of technology, to use Stiegler’s well-known formula, are bound together in an insoluble, aporetic relation. However, it could be argued that the work of these two very different theorists—the one broadly philosophical, the other historical; the one quasi-transcendental,

⁶ Timothy Clark, “Deconstruction and Technology,” *Deconstructions: A User’s Guide*, ed. Nicholas Royle (Basingstoke: Palgrave, 2000) 238-257; 247.

the other materialist or genealogical—does not entirely escape a basic anthropocentrism. On the one hand, for instance, we might wonder whether Derrida's deconstruction of the boundary between thought and technology ever entirely dispels the illusion of an ego cogito who can reduce technics to a mere toy of thought. On the other, however, we might argue that Stiegler's attempt to collapse the opposition between the human and the technical leads him to reinstate what is undoubtedly a radicalised, but still recognisable, version of homo faber as the only being who is constituted by technology. For me, Derrida and Stiegler's work contains a paradoxical double gesture of what we will call "ex-appropriation" with regard to the human: what starts out as an attempt to *displace* the human onto a non-human outside is folded back *into* the human as its own "proper" mode of being. Either way, we end up with what Kate Soper calls the classic humanist appeal to the notion of a "core humanity" in terms of which human being can be defined, or understood.⁷ If Derrida and Stiegler both seek to think "the ends of man," then, it is possible to wonder whether both also invite the famous question that is posed to Hegel, Husserl and Heidegger in the classic essay of that name.⁸ Why, in other words, can something that believes itself to be a critique of anthropologism still be seen as essentially anthropocentric?

Derrida and Technology

Firstly, I would like to give a very brief reading of Derrida's philosophy of technology. It is with Derrida that originary technicity receives its first, albeit somewhat provisional and fragmentary, expression. As we have suggested, he sees the human as neither a biological nor a philosophical state but rather as the expression of a logic of supplementation. To

⁷ Kate Soper, *Humanism and Anti-Humanism* (London: Hutchinson, 1986) 9.

⁸ Jacques Derrida, "The Ends of Man," *Margins of Philosophy*, trans. Alan Bass (Hemel Hempstead: Harvester Wheatsheaf, 1982) 109-136.

quickly summarise, Derrida argues that what we call the human is constituted not by any positive essence, being or substance but by a *differential* relation to what ostensibly lies beyond it: we “are,” so to speak, our own outside. For Derrida, it thus becomes possible to speak of an aporia between the human and the technical where each requires supplementation by the other to be what it is in the first place: “Man allows himself to be announced to himself after the fact of supplementarity, which is thus not an attribute—essential or accidental—of man.”⁹ If the identity of the human is always bound up with its non-human prostheses, then Derrida argues that this insight throws into crisis the whole project of establishing a specifically *human* science: what he calls “grammatology” cannot be a “*science of man*” like anthropology because its opening gesture is to call the “*name of man*” into question.¹⁰ In his early triptych *Of Grammatology, Speech and Phenomena* and *Writing and Difference* (1967), Derrida begins to formulate this philosophy of the originary technicity of the human but, as we will see, it may still be possible to detect the traces of anthropocentrism within deconstruction.

To begin with, Derrida’s philosophy of technology famously takes the form of a concept of archē-writing that forms the general condition not simply of language but of consciousness, perception, memory, affect, ideality, indeed, the *entire field* of subjectivity. It is Husserl’s phenomenology that provides him with his first point of access to this problematic. As Husserl famously argues, phenomenology reduces or brackets off facticity—the world in all its changeability and contingency—in order to gain access to ideal objects. However, what makes the phenomenological reduction of the world possible—and thus access to ideality—is, as Derrida shows, nothing other than

⁹ Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press) 244.

¹⁰ Derrida, *Of Grammatology*, 83.

writing.¹¹ Derrida puts his finger on an intriguing moment in Husserl's essay "The Origin of Geometry" where the latter acknowledges that it is only because Euclid and other geometers *wrote down* their principles, in repeatable graphic form, that geometry ceased to be just a subjective idea in their own consciousness and became an objective, universal truth. On the one hand, then, geometrical objects are *ideal*: they transcend time and space and exist in exactly the same way for everyone. On the other, however, geometrical objects are *material*: they must be inscribed in a particular time and space in order to transcend anything in the first place. For Derrida, this aporetic relation between the ideal and the material—where the one requires the other to be itself in the first place—represents the beginning of his career-long attempt to articulate the originary "technicity" of thought. If writing makes possible the phenomenological reduction, and the reduction, in turn, is what gives access to the ideal, then this means that technology is already inside the ideal as its condition of possibility: technicity is, to put it another way, *irreducible*. In Derrida's work, we can see this attempt to articulate the constitutive technicity of thought being repeated again and again to the point where it becomes almost a defining gesture for deconstruction: "There is no deconstruction which does not ... begin again by calling into question the dissociation between thought and technology."¹²

It is, however, very important to be clear about exactly what Derrida means by this claim. As he makes explicit on a number of occasions, Derrida's deconstruction of the opposition between thought and technology does not consist in a simple *inversion* of the classical order of priority: "originary technicity" thus does not signify a crude Marxian technological

¹¹ Jacques Derrida, *Edmund Husserl's Origin of Geometry: An Introduction*, trans. John P. Leavey, Jr (Lincoln: University of Nebraska Press, 1978).

¹² Jacques Derrida, *Memoires for Paul de Man*, trans. Cecile Lindsay, et al. (New York: Columbia University Press, 1986) 108. It is possible to detect a similar deconstruction of the priority of thought over technics in Derrida's readings of Freud, Marx and Heidegger, to name only the most obvious candidates.

essentialism or determinism where agency is seamlessly and unproblematically transferred from the human to the machine.¹³ To be more precise, Derrida's concept is seemingly less to do with *technicity* as such than about re-thinking the idea of a full, simple or proper *origin*: the point is not to assert the ontological priority of either the natural or the technical, it seems, so much as to articulate an aporetic "logic" whereby neither term can come into being without being supplemented by its other. Yet, if this aporetic logic is, strictly speaking, neither technical nor non-technical, then why speak of an "originary technicity" in the first place? For Derrida, it is clear that archē-writing is less the proper name for this logic of supplementation than a strategic, "quasi-transcendental," nickname for something that is the condition of possibility of both speech and writing: "Writing is one of the representatives of the trace, it is not the trace itself."¹⁴ If he regularly articulates *différance* in technical terms—writing, programmes, cybernetic feedback loops and so on—Derrida nowhere suggests that technology offers an *exclusive* access to this logic of differing/deferring that could not be afforded by any other concept: "Différance is culture as nature different and deferred, differing-deferring: all the others of physis—technē, nomos, thesis, society, freedom, history, mind, etc."¹⁵ The implication is that "technicity" is merely *one* possible meta-concept amongst a potentially infinite number of others for the trace or aporia of origin. This attempt to articulate an *anterior* logic of

¹³ It is only necessary to cite the following claim as support: "Nor does it suffice to simply overturn the hierarchy ... to attribute an "essentiality" to technology." Derrida, *Margins of Philosophy*, 108.

¹⁴ Derrida, *Of Grammatology*, 167. According to Derrida, any attempt to reduce the general problematic of archē-writing to the *empirical* history of "vulgar" writing succumbs to the very scientism or positivism that dooms the project of grammatology (*Grammatology*, 74-86). This kind of positivism can still be witnessed, for example, in Kittler's claim that the originary trace is contingent upon the invention of the gramophone. See Friedrich Kittler, *Gramophone, Film, Typewriter* (Stanford: Stanford University Press, 1999) 33.

¹⁵ Derrida, *Margins of Philosophy*, 17.

supplementation—which is the condition of possibility of every empirical technological object, process or system—has, however, led to allegations of a residual idealism or transcendentalism within Derrida’s own philosophy in recent years. What—if anything—is *technical* about originary technicity?

For Derrida, then, it is clear that the logic of originary technicity makes possible a massive and irreducible *transcendentalisation* of technology: what begins as a mere prosthesis or supplement to the thinking or acting subject is now revealed to be an irreducible condition of thought, consciousness and subjectivity. It also seems to be the case, however, that this generalisation of technicity might be paid for by a certain *effacement* of its historical or empirical content. According to a number of recent critics, it is possible to detect a kind of idealist recidivism within Derrida’s philosophy of technology that leads him to reinstate the very opposition between thought and technicity it seeks to question:

1. On the one hand, this idealism manifests itself in a tendency to privilege the milieu of the ego cogito as the place where technology seemingly always happens: technicity is effectively boiled back down to a supplement—even if it happens to be an “originary” or constitutive one—of thought. The technological is granted what Mark Hansen has called a “relative exteriority,” at best, to the thinking subject.¹⁶ This is why Derrida often posits technicity purely as something that *exceeds* or *resists* the domain of the thinkable as opposed to something that exists wholly independently of the thinking subject. For Derrida, in other words, it often seems that technicity plays the same role that he claims “materiality” occupies for Paul de Man, namely, not so much a thing in itself as a kind of algebraic X that marks the spot where thought can go no further: it is “a very useful generic name for all that

¹⁶ Hansen, *Embodying Technesis*, 8.

resists appropriation.”¹⁷ If he would undoubtedly reject the unreconstructed realism of those who think they can get beyond thought into an unmediated technological outside,¹⁸ in other words, we might still wonder whether Derrida’s philosophy of technology risks turning itself into little more than a kind of deconstructive nominalism: technicity becomes, at best, a generic name or placeholder for that which *exceeds* thought. To what extent does this focus on what technicity means *for* thought deprive it of its own material force or dynamism?

2. On the other, this implicit focus upon the thinking subject leads, as we have seen, to an apparent abstraction of technology itself into a philosophical logic or system that is only remotely connected to ontic or empirical technologies: the essence of originary technicity is, if we can paraphrase Heidegger, not very technological. The danger is that the technical risks becoming elevated into the kind of monolithic, a-historical meta-concept it is supposed to bring down to earth. This, at least, is what Bernard Stiegler seeks to correct in his attempt to re-route deconstruction through the history of technics. For Derrida, it appears to be enough to focus upon a *logic* that traces

¹⁷ Jacques Derrida, “Typewriter Ribbon: Limited Ink (2),” *Material Events: Paul de Man and the Afterlife of Theory*, eds. Tom Cohen, Barbara Cohen, J. Hillis Miller, and Andrzej Warminski (Minneapolis: University of Minnesota Press, 2001) 277-360; 353. In fact, Derrida’s resistance to anything but the most indeterminate materialism can be traced all the way back to his earliest engagements with dialectical materialism in *Positions*: “if, and in the extent to which, *matter* in this general economy designates radical alterity ... then what I write can be considered ‘materialist.’” See Jacques Derrida, *Positions*, trans. Alan Bass (Chicago: University of Chicago Press, 1981) 64.

¹⁸ To be sure, Derrida would respond that philosophical materialism is no less immune to metaphysics than idealism and all his work on “matter” needs to be seen in that light. He continually stresses that the concept of “matter” remains just that—a concept—and, as such, it is complicit with the oppositional architecture of logocentrism: matter/spirit, matter/ideality, matter/form and so on. In this sense, it could be argued that Derrida’s philosophy does not so much disavow materialism—as critics like Hansen and Protevi suggest—as articulate a kind of metaphysical residuum that cannot be dissolved even within the most rigorous possible materialism. See, in particular, *Positions*, 63-7.

an originary supplementarity but according to Stiegler this “logic” can only be constructed retroactively on the basis of the *history* of specific supplements themselves: “it never ‘presents itself’ *except* in the occurrence (always singular) of an effective supplementarity, of a paradoxical ‘artefactuality,’ one in which the supplement becomes ‘essential.’”¹⁹ If Derrida would again be understandably suspicious of any attempt to “positivise” technicity—to turn it into a present empirical object—we might ask whether his own philosophy of technology risks implying that this originary concept is somehow an abstract, technics-free zone: originary technicity at times seems to be curiously exempt from the very technological contamination it supposedly articulates.²⁰ How far might Derrida’s attempt to evolve a *logic* of supplementation neglect the distinct mnemo-technical *supplements* that—according to his own critique of Husserl—make the ideality of logic itself possible?

¹⁹ Bernard Stiegler, “Derrida and Technology: Fidelity at the Limits of Deconstruction and the Prosthesis of Faith,” trans. Richard Beardsworth, *Jacques Derrida and the Future of the Humanities*, ed. Tom Conley (Cambridge: Cambridge University Press, 2002) 238-70; 254. See also Richard Beardsworth, *Derrida and the Political* (London and New York: Routledge, 1996) 145-57; Geoffrey Bennington, “Emergencies,” *Interrupting Derrida* (London: Routledge, 2000) 162-79; and my own “Derrida’s god: A Genealogy of the Theological Turn,” *Paragraph* 30: 3 (2006), for a range of responses to the relation between Derrida and Stiegler.

²⁰ See, for example, the exchange between Derrida and Stiegler in *Echographies of Television: Filmed Interviews*, trans. Jennifer Bajorek (Cambridge: Polity, 2002). It is possible to detect a tension throughout this dialogue between Stiegler’s continual attempts to emphasise the absolute specificity of new media technologies and Derrida’s reluctance to sign up to anything more than a monolithic and a-historical concept of originary technicity. For Stiegler, contemporary tele-technology marks a new and absolutely singular articulation of technology that is quite different from writing, but every time he presses Derrida to comment on this temporal singularity, the latter’s response is always to insist upon the immemorial and undifferentiated status of technicity: “These machines have always been there, they are always there, even when we wrote by hand, even during so-called live conversation” (38). To what extent does this insistence—however necessary—upon the originary status of technicity risk emptying it of historical content?

To summarise, then, I think Derrida's philosophy of technology risks *re-idealising* technics even in the act of installing an originary technicity at the heart of thought: what expropriates the ego cogito is implicitly re-appropriated as an object *for* an (absent but implied) thinking subject. If Derrida would sincerely reject any charge that his work contains a residual idealism—deconstruction, remember, is nothing less than the deconstruction *of* the opposition between thought and technology—the problem is that this act of deconstructing thought is too often carried out on a purely conceptual level: what should be outside any logic as its constitutive supplement—technicity—is apparently still capable of being expressed as if it were nothing more than a logical formulation. In this sense, we might wonder whether Derrida's philosophy of technology invites a similar critique to that which Marx levels at the supposed revolutions of the *German Ideology*: "All this is supposed to have taken place in the realm of pure thought."²¹

In order to test this hypothesis a little more, I would like to focus on one particular aspect of Derrida's philosophy of technology: his account of the political. It is now very well-known that the "politics" of deconstruction—if such a thing exists—takes the form of an affirmation of an absolute or "messianic" future that exceeds every horizon of expectation. As Derrida puts it in *Echographies of Television*, his filmed set of interviews with Bernard Stiegler, the "categorical imperative" of all politics is to constantly *invent* new rules that keep the possibility of this—incalculable—future open:

The, shall we say, categorical imperative, the unconditional duty of all negotiation, would be to let the future have a future [de laisser de l'avenir à l'avenir], to let or make it come, or in any case to leave the possibility of the future open.²²

²¹ Karl Marx and Friedrich Engels, *The German Ideology* (London: Lawrence and Wishart, 1970).

²² Derrida and Stiegler, *Echographies of Television*, 85.

Yet, the larger question here is what role technicity *itself* might play within this politics of invention. To be sure, Derrida stresses straightaway that political invention cannot simply be *opposed* to the technical as such but it is still possible to detect a certain reservation about the extent to which technics may be allowed to participate in *triggering* or *releasing* that invention. He continually stresses to Stiegler that properly inventive thought and action is actually characterised by its *irreducibility* to the kind of advanced systems of calculation, anticipation and reflexivity that contemporary technology makes possible:

Others would tell you just as readily that reflexivity nullifies the future. Mastery by reflexivity, by reproducibility and iterability, is also mastery of a future neutralised by calculation and insight. They might say to you, in effect, that reflexivity, and thus the technology associated with it, closes the future off, that it anticipates to the point of mastering in advance, by repetition, anything that might happen.²³

For Derrida, then, philosophy's invention of an absolute or incalculable future must *overcome* contemporary technology's tendency to shut that future down or reduce it to a mere future present.²⁴ If deconstruction is predicated on the constitutive *technicity* of thought, however, then we might want to ask how Derrida is able to posit a politics of invention that, at least apparently, stands *outside* the processes of technicisation: what logically exceeds or decentres thought as its condition of possibility is once again seemingly reduced to a mere object to be thought, or even overcome, by an implied ego cogito. Why is the thinking subject reinstated at the very moment where the priority of thought itself has been called into question?

²³ Derrida and Stiegler, *Echographies of Television*, 103.

²⁴ See *Echographies*, 5-6 and *passim*. In this interview, Derrida argues that contemporary tele-technology is characterised by the reduction or neutralisation of the *différance* of time—its essential non-identity with itself—into the synthetic “real time” of live transmission: time and space are collapsed into an all-consuming “now.”

Stiegler on Technology

Secondly, I would like to turn to Bernard Stiegler's philosophy of technology.²⁵ It is with Stiegler that the hypothesis of an originary relation between the living and the non-living is expanded from Derrida's—still somewhat abstract—logic into a fully-articulated historical or evolutionary process in which the birth of the human takes centre stage.²⁶ As was the case with Derrida, he argues that the human can be defined neither biologically nor transcendently because it comes into being *through* technics: Stiegler, however, seeks to offer a more precise historical account of this process of supplementation. To go quickly, Stiegler argues that the origin of the human lies in an evolutionary "process of exteriorisation" into technical artefacts that begins with the carving of the first flint tool: we are nothing outside our capacity to prostheticise ourselves. For Stiegler, it thus becomes possible to speak of a *historically situated* aporia or *différance* between the human and the tool where each can be said to constitute the other over time: "The technical inventing the human, the human inventing the technical."²⁷ If the human exists in a constitutive relation to the non-human at the very first moment of its appearance, then Stiegler argues that this fact necessitates a history of the human that operates "independently of all anthropologism"²⁸: what, he asks, if we have never been humans at all? In *Technics and Time 1: The Fault of Epimetheus* (1994), Stiegler begins to articulate this non-anthropological history of the human but, as we will see, we may also be able to trace the contours of a residual anthropocentrism within his philosophy of technology.

To start with, I want to consider Stiegler's brilliant reading of the myth of Prometheus.²⁹ Her focuses on the—entirely

²⁵ Bernard Stiegler, *Technics and Time 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998).

²⁶ Derrida and Stiegler, *Echographies of Television*, 139-40.

²⁷ Derrida and Stiegler, *Echographies of Television*, 137.

²⁸ Derrida and Stiegler, *Echographies of Television*, 136.

²⁹ Stiegler, *Technics and Time*, 185-203.

forgotten—role played by Prometheus’s idiotic brother, Epimetheus, in the famous myth of the Titan who steals fire from the Gods. According to Plato’s *Protagoras*, the two brothers are ordered by the Gods to equip each mortal species with different powers or qualities (*dynameis*) but Epimetheus persuades Prometheus to let him do the job himself. However, Epimetheus forgets to allocate anything at all to human beings—leaving them entirely defenceless—and so Prometheus is forced to steal the gift of skill in the arts (*technai*) by way of compensation for their loss. For Stiegler, this mythological account of the origin of man contains a crucial insight into the status of the human that will form the basis for his own philosophy: humanity is constituted by an originary *lack* of defining qualities—what he calls a “default” of origin [*le défaut d’origine*]*—that must be supplemented from outside by technics. If the error of Epimetheus means that human beings have no intrinsic qualities, however, it is important to note that this essential lack of identity still comes to somehow define the human being in opposition to all other forms of life: “Les mortels sont des êtres sans qualités,” Stiegler later comments on the Promethean myth, “à la différence des animaux, pour lesquels la distribution des qualités s’accomplit sans heurt.”*³⁰ In other words, what *defines* the human is paradoxically a radical, singular and exclusive *indefinability*. What form does this take?

It is actually possible to give a one word answer to this question: *epiphylogenesis*. As is well-known, Stiegler articulates three different forms of memory: *genetic* memory (which is programmed into our DNA); *epigenetic* memory (which we acquire during our lifetime and is stored in the central nervous system) and, finally, *epiphylogenetic* memory (which is embodied in technical systems or artefacts). Yet, if every form of life possesses the first two forms of memory, this is not the case with the third form. To put it bluntly, Stiegler argues that

³⁰ Bernard Stiegler, *Philosopher par accident: Entretiens avec Elie During* (Paris: Galilee, 2004) 42. This transcribed series of interviews for French radio gives a useful introduction to Stiegler’s general project.

the human is the *only* epiphylogenetic being because it is constituted not simply by genetic or epigenetic experience—as is the case with plant or animal life—but by its ability to record, stockpile and transmit those experiences in exteriorised form: flint tools, language, writing, computer programmes are all kinds of memory.³¹ On the one side, for example, the human produces the tool in order to preserve our individual experiences beyond our own natural life: our tools, artefacts and objects become legacies that are handed down to the next generation. On the other, the tool transforms what it is to be human by enabling us to experience individually what we have never naturally lived: our collective memory, culture or tradition is the product of technics. For Stiegler, then, epiphylogenesis represents a quasi-Lamarckian theory of “artificial selection” where successive epigenetic experiences are stored, accumulated and transmitted from generation to generation in the form of technical objects. In this sense, as we will see in a moment, Stiegler argues that the birth of man represents an absolute break with biological life because it is the moment in the history of life where *zoē* begins to map itself epiphylogenetically onto *technē*: what we call the human is “a living being characterised in its forms of life by the non-living.”³²

For Stiegler, what epiphylogenesis makes possible is a more precise historical purchase on technology: originary technicity is no longer a static *logic* that exists outside time, as Derrida suggests, but an unfolding historical *process* that proceeds from generation to generation. It is possible, however, to ask whether

³¹ Stiegler, *Technics and Time*, 140; 176-7.

³² Stiegler, *Technics and Time*, 50. For Stiegler, the theory of epiphylogenesis is negotiated through a reading of the work of the palaeontologist André Leroi-Gouhran. As Leroi-Gouhran argues in *Le Geste et la parole* (1964), humanity evolves through a process of exteriorisation: prehomimid man develops the capacity to temporalise—to retain the past and anticipate the future—through using flint tools. If technics determines temporalisation, and temporalisation determines hominisation, then technology determines and constitutes the birth of man. See Stiegler, *Technics and Time* 1, 134-82.

this historical specificity is bought at the cost of a telescoping of the effects of originary technicity to *one* particular moment in history above all others: the process of hominisation. According to a number of critics,³³ Stiegler's affirmation of the human as the only being whose life is lived by means other than life ends up reinstating the anthropologism that he does so much to query:

1. On the one hand, this almost exclusive focus on the human risks implying that every stage of evolution that *precedes* the birth of man is somehow free from any relation to technicity: biological life is effectively "naturalised" as if, once again, it were a technics-free zone. The emergence of epiphylogenesis apparently marks a rupture with what Stiegler revealingly calls "pure" or biological life.³⁴ This is because plants, animals and prehuman life forms cannot exteriorise themselves in technical objects and thus any epigenetic experience dies with the individual life itself. For Stiegler, non-human forms of life do not possess culture or tradition: there is no way that my cat, for example, can inherit individual experiences from its ancestors or transmit its own experiences to the next generation in the way that I can because it does not possess the means to externalise or objectify them in tools or writing. If Stiegler obviously wants to define the human through *technics*, however, we might want to consider whether technics must be defined as exclusively *human*. How far is Stiegler's insistence on the human as the only being that is constituted by technics bought at the expense of a reduction of the technical—what Deleuze, for instance, would call the machinic—constitution of life more generally?

2. On the other, this insistence on the specificity of the human also risks implying that technics has no existence outside the process of hominisation: technology is effectively

³³ See Keith Ansell-Pearson, "Life Becoming Body" *Cultural Values*, 1.2 (1997): 219-40; and, in particular, Richard Beardsworth, "Thinking Technicity," *Cultural Values*, 2.1 (1998): 70-86.

³⁴ Stiegler, *Technics and Time*, 140.

“humanised.” The tool is considered exclusively insofar as it is the exteriorised reflection—what Stiegler revealingly calls the flint “mirror”³⁵—in which the human comes to recognise itself. This is not to imply that Stiegler reduces technology to a mere tool or supplement of the human—the mirror does not so much reflect humanity as constitute it—but this very focus upon it as a *constitutive* force precludes any way of thinking it outside the milieu of human subject-constitution. For Stiegler, it is obvious that technology possesses an intentionality or dynamic of its own—it *evolves*—but this makes it all the more interesting that it is consistently thought as a means towards *human* evolution: the technical becomes the media or “interface” which selects forms for the human to take.³⁶ If Stiegler wishes to stress the technical constitution of the human, however, this again raises the question of whether the human is the only milieu in which the technical may operate: technics is once again reduced to what Hansen calls an exteriority that is only “relative” to the human. To what extent is Stiegler’s definition of the human as constituted by technics also bought at the expense of depriving it of an independent ontic status?

In summary, then, I think Stiegler risks *re-anthropologising* technics even in the very act of insisting upon the originary technicity of the human: what expropriates the anthropos once again becomes “proper” to it as its defining mode of being. If Stiegler would undoubtedly reject this line of critique—the moral of the story of Epimetheus is clearly that *nothing* is proper to the human—his enduring focus on hominisation as the unique moment when the living begins to articulate itself through the non-living means that his philosophy arguably still remains within what we might call the penumbra of human self-constitution. The supposedly self-identical human being is put into a relation only in order for the relation *itself* to be ontologised as an exclusively “human” one: we are the only being that relates. This radical attempt to ask “And if we

³⁵ Stiegler, *Technics and Time*, 141.

³⁶ Stiegler, *Technics and Time*, 49.

already were no longer humans?"³⁷ appears to presume that the answer to that question will *still* be in the form of the first person plural: "But who, we?"³⁸

In closing, I want to consider one specific example of this anthropological gesture in Stiegler's work in a little more detail: his account of the animal. It has been my hypothesis that Stiegler's focus on hominisation—for all its critical force and originality—forecloses the most radical implications of his work and ends up reinstating much of the traditional architecture of anthropology: the opposition between the living and the non-living, the natural and the cultural and, perhaps most interestingly, the human and the animal. As a number of recent thinkers have argued,³⁹ one way of tracing the contingency—which is to say the *violence*—of any anthropological system is through its exclusion of the animal and we can trace something of this in Stiegler's own unblinking focus on the status of human memory:

Voilà pourquoi la technique est indissociable de la mémoire humaine: ce qui fait l'humanité de cette mémoire, c'est-à-dire sa spiritualité, c'est la possibilité qu'elle a de se transmettre de génération en génération. C'est cette transmission directe des expériences individuelles entre générations qui est interdite dans le monde animal, et c'est pourquoi il n'y a ni culture animale ni esprit animal (ou, pour parler dans un langage plus classique, il n'y a pas d'hérédité des caractères acquis).⁴⁰

To be sure, Stiegler's position is utterly consistent with his idea of the human as the defining epiphylogenetic being but can we really insist that *only* humans possess technical memory, and

³⁷ Stiegler, *Technics and Time*, 136.

³⁸ Derrida, *Margins of Philosophy*, 136.

³⁹ See Jacques Derrida et al, *L'animal autobiographique: Autour de Jacques Derrida* (Paris: Galilée, 1999); *Zoontologies: The Question of the Animal*, ed. Cary Wolfe (Minneapolis: Minnesota University Press, 2003); and Giorgio Agamben, *The Open: Man and Animal*, trans. Kevin Attell (Stanford: Stanford University Press, 2005).

⁴⁰ Stiegler, *Philosopher par accident*, 49.

thus what he calls “culture” or “spirit”? It is hardly necessary to cite the—overwhelming—body of literature that now suggests the exact *opposite* is the case: animals use tools, manufacture tools, fashion repertoires of simple and complex tool types, construct embryonic versions of tool-kits and, finally, transmit this knowledge from one generation to the next in a way that is at least close to epiphylogenesis.⁴¹ However, Stiegler has obviously anticipated this possible objection to his argument, because he goes on to give this very intriguing, response to it:

Et si vous me faites remarquer que certains grands singes ont de telles cultures, je les admetts volontiers dans le monde qui commence avec l’humanité—autrement dit, comme premier facteurs embryonnaires de cette troisième mémoire [i.e. epiphylogenesis], je les fais sans hésitation entrer dans l’histoire humaine. C’est d’ailleurs pour cela qu’ils nous paraissent si proches.⁴²

For Stiegler, it becomes more accurate to speak—not of a human species—but a human *genre* that is plastic enough to

⁴¹ In fact, the use of tools by animals to solve natural problems is well-known in natural history: woodpecker finches use twigs to extract insects from trees; otters break open molluscs on stones and so on. It is far less common to see tool fabrication or manufacture in the animal world but even this has been shown to exist amongst certain species of birds and especially amongst large primates. To take just one simple example, it is now well-documented that wild chimpanzees in Africa use a “kit” of simple and complex tools (twigs, vines, bark and stems) for foraging, socialising and cleaning themselves. For chimpanzees, it is clear that tool-use performs the same temporalising function that it did for early man: a series of subtly different tools are fashioned and then deployed in the correct order in order to achieve a single goal. They will use large sticks to break open a beehive, for example, but then turn to more slender ones to scoop out the honey. Finally, it could also be argued that these tools constitute examples of epiphylogenetic memory: this kind of experience is undoubtedly too complex to be learnt from scratch by every chimpanzee and the evidence suggests that novices are taught by elders. See W.C. McGrew, *Chimpanzee Material Culture: Implications for Human Evolution* (Cambridge: Cambridge University Press, 1992) for a survey of the larger implications of primate tool use.

⁴² Stiegler, *Philosopher par accident*, 49.

include large primates like chimpanzees and orang-utans at one end and homo sapiens at the other. If this definition of the human appears generous enough to withstand the epiphylogenetic “overlap” between species, we might still detect an anthropological recidivism at work here that enables Stiegler to seamlessly absorb every apparent exception into the narrative of hominisation: what exceeds received concepts of the human is once again re-appropriated as a new definition of the human. Why is the name of “man” retained up to—and arguably even beyond—the point where it ceases to have any purchase?

The Ends of Posthumanism?

In summary, then, I think Derrida and Stiegler’s philosophy of “originary” technicity remains within the problematic that Derrida himself articulates in his classic critique of the human sciences, “The Ends of Man”: “What is difficult to think today is an end of man” which would not be “a teleology in the first person plural.”⁴³ It may be, of course, that the “we” of thought is simply inescapable: “we” cannot just decide to *stop* thinking anthropocentrically any more than we can decide to stop thinking altogether and no-one is more aware of this than Derrida and Stiegler. For Derrida, however, it remains possible to articulate a “third” position that belongs neither inside humanism as it is historically constructed nor in some naïve, allegedly posthumanist, “outside.” If we may never reach the literal or historical *end* of man, we may at least be in a position to trace the philosophical *closure*—the conceptual limits, finitude or contingency—of the anthropocentric system. What, though, might such a position look like?

To Derrida’s own eyes, it is Nietzsche’s *Übermensch* who provides us with a clue about how we might exceed humanism from *within* its own enclosure: “His laughter then will burst out,

⁴³ Derrida, *Margins of Philosophy*, 121.

directed towards a return which will no longer have the form of the metaphysical repetition of humanism, nor, doubtless, 'beyond' metaphysics."⁴⁴ Yet, isn't there something strangely ascetic about a self-proclaimed Nietzscheanism that, as Ansell Pearson has pointed out, invokes life, matter, becoming or technics only to leave them as empty concepts or philosophemes?⁴⁵ If Derrida's account of what we might call the irreducible anthropocentrism of philosophy is more relevant than ever in the epoch of the so-called post-humanities, we might again wonder whether it remains too close to what it seeks to deconstruct: what seeks to plunge the concept into the immanence of technicity risks elevating technicity to the status of just another concept. In Bernard Stiegler's philosophy of technology, Derrida's implicit ego cogito is replaced with a radicalised version of homo faber—where man both *makes* tools and is *made* by them—but whether he is any more able or willing to abandon an anthropocentric model of human singularity remains open to question.

What other ways might there be, then, of writing a history of the human that is independent of all anthropology? It is not possible to address this question in any depth here but one possible answer might lie in the emergence of a new genre of philosophical anthropology over the last decade or so where the past, present and future of the human race is narrated from the perspective of the (at least allegedly) *inhuman*. To start with, we might recall Jean-François Lyotard's attempt to write the history of the humanity from the cosmological perspective of the future death of our solar system. Alternatively, we might think of Manuel de Landa's techno-political narratives from the point of view of, for example, a future robot historian, rock formations, germs and viruses. Perhaps most interestingly, the novelist Michel Houellebecq chooses to narrate the death throes of the human race from the perspective of the endless

⁴⁴ Derrida, *Margins of Philosophy*, 136

⁴⁵ Ansell Pearson, *Viroid Life*, 11.

recurrence that is cloned life.⁴⁶ If it will always be possible to criticise apparently “inhuman” thought experiments like these as just the latest form of human ventriloquism—for how *exactly* can we adopt the “perspective” of a dying sun, a rock formation or our own cloned selves?—perhaps we might more generously describe them less as attempts to *overcome* anthropocentrism than to *exceed* it from *within*: they are not so much post-anthropologies as counter-anthropologies. For such thinkers, the temporality of the posthuman is neither falsely nostalgic nor naively futurist but almost a kind of Lyotardian future anteriority. In the now famous epilogue to Houellebecq’s *Atomised*, for instance, we might find less a (tragic or merciful) vision of the *future* death of the human than a more subtle attempt to imagine what *will have been* the being that “we” are:

As the last members of this species are extinguished, we think it just to render this last tribute to humanity, a homage which itself will one day disappear, buried beneath the sands of time. It is necessary that this tribute be made, if only once. This book is dedicated to mankind.⁴⁷

⁴⁶ See Jean-François Lyotard, *The Inhuman: Reflections on Time*, trans. Geoffrey Bennington and Rachel Bowlby (Stanford: Stanford University Press, 1992); Manuel De Landa, *War in the Age of Intelligent Machines* (New York: Zone, 1991); De Landa, *A Thousand Years of Non-Linear History* (New York: Zone, 1997); and Michel Houellebecq, *Atomised* (London: Heinemann, 2000). In the final chapter of *Atomised*, the narrator is revealed to be a sexless humanoid clone remembering the gradual demise of the human race from the vantage point of 2040.

⁴⁷ Houellebecq, *Atomised*, 379.

Christopher Johnson

I-You-We, Robot

What on earth do you think you are, if not a robot, albeit a very complicated one?¹

For some time now, it would seem that in a number of different disciplines and discourses, one particular term, “the human,” has become curiously pervasive. If one would hesitate to call this phenomenon a “new humanism,” as Lévi-Strauss, some fifty years ago, was calling anthropology, nevertheless it seems to be part of what structuralism had already identified as a process of conceptual transfer from the sciences to the humanities, which has resulted in a general awareness that the scientific advances of the previous and present century have the potential to transform our traditional understandings of the “human being” or “humanity.” Rhetorically, this interrogation around the idea of the human finds expression in such generic formulations as “what it means to be human,” or “what makes us human,” formulations which have become commonplace perhaps to the point of caricature. Despite such rhetorical inflation, the intellectual shift itself is a real one, and contemporary thinking on “the human” seems to be informed by a definable set of disciplines: evolutionary theory, the cognitive sciences, the biosciences, and in particular molecular

¹ Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1989 [1976]) 270-1.

biology. But what is perhaps most fundamental in the configuration we are attempting to describe here is the role of technology, and more specifically what must be seen in retrospect as having been the defining technology of the twentieth century: the computer. This particular technology, with its powers of calculation, simulation and emulation, and through its integration with a host of intermediate technologies, has proved itself not only to be an indispensable auxiliary to the sciences, but has also affected, in ways that still remain to be elucidated, the patterns of behaviour and the psychopathologies of our everyday lives. Because the computer is a “thinking machine,” infinitely more powerful and more versatile than previous supplements to human thinking, it has since its inception also been seen as a potential threat to the human, or what-it-means-to-be-human. Some forty years ago, Derrida, with his characteristic prescience, was already indicating the revealing function of this technology, which enabled us to think beyond the closure of traditional metaphysics and towards a philosophy of the programme.² What I would like to explore here, hopefully with the benefit of a certain, anthropological distance, is what might be regarded as the inevitable integration of computing and engineering, as it has emerged in the discipline called *robotics*.

I will start with what for all intents and purposes may be described as a subjective representation, a dream I had in the early hours of one morning in late January 2005:

I was preparing to go downstairs with somebody—I could not say exactly who, but it was somebody I knew. They were downstairs. I told my companion that there was a surprise waiting for him (or her) downstairs, and I had mentioned the word “robot,” insinuating that the word referred to something other than them, a toy, I think. They were twins, and were sitting on the sofa, their backs to us, playing with something—I

² Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press, 1976) 9.

am not sure what. Going up to the girl sitting on the left, with my left hand I pressed on a button hidden behind her left ear. The child's limbs became limp, and she collapsed on the sofa. And I think that I thought that the other child was the same, that is, a machine, but on second thoughts, I wondered whether she was in fact a living individual, the original.

This was a real dream, but if, since Freud, we think we know what a dream is, or might mean, I would like immediately to put to one side what might be a standard psychoanalytical interpretation of the sequence, as being of less interest than its generic status. In other words, what I find (and found) so compelling about the dream is not its individual or autobiographical dimension, but rather how *stereotypical* the sequence is as a condensation of certain of our fundamental attitudes towards technology. In this sense, the different components of the sequence would have constituted the residua not only of the day, but of months, years—a life—of living in a particular technological *habitus*. Bourdieu's term, adapted from Mauss, refers to the different social and cultural environments which determine the everyday mental and behavioural reflexes that we habitually take to be "natural" and therefore "normal." The category of habitus I am interested in here consists of the set of technologies which has enabled the creation of what, at the risk of reduction, one might describe as "autonomous agents," and the discipline which best represents the phenomenon of the autonomous agent is cybernetics.³ The history of human technology could therefore, schematically, be characterised as an evolution from the tool (human agent plus instrument) to the machine (human agent plus mechanism) to the cybernetic machine (programme plus mechanism). The contemporary convergence between the disciplines of artificial intelligence (AI) and robotics represents what should logically

³ The classic statement on the science of cybernetics remains Norbert Wiener's *Cybernetics; or, Control and Communication in the Animal and the Machine* (Cambridge, MA: MIT Press, 1961 [1948]).

be regarded as the final phase of this particular evolution of technology.

To return to the dream sequence with which we began: the figure of the robot, and more precisely the allusion to a *toy* robot, was quite transparently a transposition of a fact of my recent, waking life. A few months previously, I had bought a toy which had just come onto the market under the name “Robosapien.” Copyrighted 2004, and designed by ex-NASA scientist Mark Tilden, this figure is approximately 35cm tall, with NASA-style black and white plastic body casing and red, flashing eyes.⁴ If toys belong to certain, definable categories or genres, then the genre of Robosapien would unmistakably be that of science fiction, and there is doubtless much that could be said about the semiotics of this kind of artefact. What I want to concentrate on here is the *construction* of this toy, and the extent to which it represents a current state of (cybernetic) technology:

- ⤴ First, this is a humanoid robot, that is, its body plan imitates in a general sense the articulations of the human body. The imitation is not uniformly isomorphic with human anatomy, however, and most attention has been devoted to the upper part of the body, notably the arms, which have a number of degrees of freedom, and are therefore capable of a humanlike fluidity of movement.⁵ This relatively complex articulation ends at the “hands,” which are no more than three-pronged grippers, capable of only the most rudimentary prehension, and also the legs. The latter are only partially jointed at the knee, but the robot achieves a reasonable simulation of the human walking gait through a pendulum motion—stability is maintained by locating the

⁴ At the time of writing, this model has already been superseded by a more sophisticated, second generation version, Robosapien V2.

⁵ The terminology used here (degrees of freedom, fluidity, grippers, etc.) is derived from the standard terminology of robotics, as described in Stan Gibilisco, *The Concise Encyclopedia of Robotics* (New York: Magraw-Hill, 2003). The manufacturer’s description for Robosapien—written, one presumes, by Tilden—also uses elements of this terminology.

large batteries in the feet and therefore creating a very low centre of gravity.

- ✧ Second, the toy is both programmed and programmable. Thanks to the miniaturisation of electronic processors, “no computer is required,” according to the manufacturer’s description, and the different movements the robot is able to execute (forward and reverse walking, turning, right/left pitching, lifting and rotation of arms, rotation of head) are hard-wired into its own, on-board central processor (*firmware*). This primary level of control programming is supplemented by a second level comprising a limited repertoire of sequences of movement (dance, karate chops, etc.). It is at this level that further programming is possible: other sequences of movement can be programmed into the toy. All of this is achieved via the now familiar technology of the remote control handset: this is a *teleoperated* robot.
- ✧ Third, the cybernetic (command) relationship between programme and articulated body is only possible through the intermediary of the servomechanism, which converts the low energy signal emanating from the programme or processor into the higher energy level required to actuate movement. Thanks to the miniaturisation of one of the defining technologies of the twentieth century, the electric motor, the toy is animated by a number of servomotors located at different points in its body.

One could talk endlessly about and around this early twenty-first-century artefact, but to conclude on Robosapien, one final detail: like the young girl in the dream detailed above, Robosapien has a button, not below the ear, but just below the right arm. This is used for activating the robot, and reminds us that this sophisticated combination of computing and engineering, both at the informational level of programme and the servo-mechanical level of movement, needs a flow of

energy, or electricity, and that this flow is controlled by the simple, binary configuration of the on/off switch.

One might question the seriousness of Robosapien as an example, or exhibit, of late twentieth-century technology, just as one might question the seriousness of the genre to which it ostensibly belongs, science fiction. But in addition to its function as a plaything, as a mere item of entertainment, Robosapien is obviously also highly instructive as a reminder of the present and near-future possibilities of this kind of technology, especially in its diverse, “real-world,” instantiations.⁶ What one might say about toys, or artefacts, like this is that they administer a mild dose of future shock, the temporal equivalent of what used to be called culture shock. If we are always—and increasingly—quick to assimilate and adopt the technologically new, it could be argued that there is equally and always a certain delay in our awareness of how it transforms our different modes of being-in-the-world.

The new possibilities of miniaturisation and mass manufacture that one finds in products such as Robosapien also remind us that this technology has a history, that Tilden’s artefact is standing on the shoulders of almost a century of invention and experimentation in the area of autonomous mechanisation, the discipline that is now generically called

⁶ It is hardly necessary to remind ourselves of the continuum that links the toy to more “serious”—even deadly—applications of robotic technology. As a substitute or extension of the human, the robot can be used in all kinds of “hostile” environments, from fire fighting to space exploration to warfare. Before his venture into the mass market, Tilden himself designed robot explorers for the NASA Mars expeditions, and also worked at the Los Alamos National Laboratory, the Jet Propulsion Laboratory in California, and the American armed and naval forces. iRobot, the corporation co-founded by MIT roboticist Rodney Brooks, which developed the interactive doll My Real Baby, also supplied DARPA (Defense Advanced Research Project Agency) with 120 military robots, which were fitted with “swarm intelligence” in 2003 (see Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* [London: Duckworth, 2005] 333). Today robotics, in the form of remote controlled and autonomous weapons systems, represents a significant sector of the military budget in the U.S. and other advanced industrial countries.

robotics. That robotics should take its name from the science fiction of the first half of the twentieth century is itself not without significance. If the Czech playwright Karel Čapek “invented” the word robot, then it was the Russian-born American writer Isaac Asimov who, as he claims in the following passage, created the term “robotics”:

As I continued to write robot stories, this notion of carefully engineered industrial robots permeated my stories more and more until the whole character of robot stories in serious printed science fiction changed—not only that of my own stories, but of just about everybody’s. That made me feel good and for many years, decades even, I went around freely admitting that I was the “father of the modern robot story.” As time went by, I made other discoveries that delighted me. I found, for instance, that when I used the word “robotics” to describe the study of robots, I was *not* using a word that already existed but had invented a word that had never been used before. (That was in my story “Runaround,” published in 1942.) ... What’s more, in “Runaround” I listed my “Three Laws of Robotics” in explicit detail for the first time, and these too, became famous ... When I wrote my robot stories I had no thought that robots would come into existence in my lifetime ... Yet here I am, forty-three years after I wrote my first robot story, and we *do* have robots ... To be sure, these robots are not as intelligent as my robots are—they are not positronic: they are not even humanoid. However, they are evolving rapidly and becoming steadily more capable and versatile. Who knows where they’ll be in another forty years? One thing we can be sure of. Robots are changing the world and driving it in directions we cannot clearly foresee. Where are these robots-in-reality coming from? The most important single source is a firm called Unimation, Inc., of Danbury, Connecticut. It is the leading manufacturer of industrial robots and is responsible for perhaps one third of all robots that have been installed. The president of the firm is Joseph F. Engelberger, who founded it in the late 1950s because he was so interested in robots that he decided to make their production his life work. But how in the world did he become so interested in robots so early in the game? According to his own words, he grew interested in

robots in the 1940s when he was a physics-major undergraduate at Columbia University, reading the robot stories of his fellow Columbian Isaac Asimov. My goodness! ... [B]ecause I was writing science fiction, and *only* because I was writing science fiction, I—without knowing it—was starting a chain of events that is changing the face of the world.⁷

Asimov's claim to paternity of the term "robotics" seems to belong to a recognisable category of science fiction writing, that is, science fiction as science anticipation or science speculation, and it could be said that this kind of forward speculation is central to science fiction's claim to seriousness as a genre. In the passage quoted above, it would appear that there are three claims to paternity, each of them of variable plausibility. The first claim, that Asimov is the father of a subgenre of science fiction, the robot story, seems plausible enough: it is generally accepted that in this respect, he is a pioneer. His second claim, that he is the inventor of the word "robotics," would also seem an acceptable assertion, though one might begin to ask here the kind of question Derrida would undoubtedly have asked: Does one ever "invent" a word? Does not the morphological modification of the noun "robot," the suffixing of "-ics" (Greek: -ika) itself already indicate the abysmal structure of the history of language and the history of technology? And does the "invention" of a word in any way influence the field, or discipline which it designates, even if, as Asimov indicates here, one enunciates "laws" that relate to the discipline?⁸ The question of influence is fundamental to Asimov's third claim to paternity, which draws a single line of causation from his own early fictional writing on robots to the current (mid-1980s) state

⁷ Isaac Asimov, *The Complete Robot* (London: HarperCollins, 1995) 10-12.

⁸ Asimov's Three Laws of Robotics are as follows: 1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm. 2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law. 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws. Asimov, "Runaround," *I, Robot* (London: HarperCollins, 1996) 50-1.

of robotic technology, that early writing having inspired the vocation of a leading manufacturer of industrial robots. For a writer who had devoted his life to the understanding of science, to place oneself at the origin of “a chain of events that is changing the face of the world” does seem to be a rather naïve history of science. The obvious response to this singularising of the origin of robotics would be to ask whether the chain of causation is indeed a singular one, or whether, to use the terminology of systems theory, it is *equifinal*, in other words, the current state of cybernetic technology would always be an overdetermined one, determined by a number of convergent chains of events. It is one thing to claim that a cultural formation such as science fiction plays an important role in the imaginary of the makers of cybernetic technology; it is quite another to claim, as Asimov seems to be claiming here, that the technology itself owes its existence to such speculation. However, what one might usefully retain from Asimov’s remarks is the suggestion of a mutually parasitic relationship between science fact and science fiction, especially if one takes into account what has happened in the twenty or so years since the publication of the passage above. If, as Asimov notes, the four decades following his early robot fiction saw the realisation of sophisticated industrial robots, then in the two decades since that time we have witnessed the even more rapid evolution he predicted, to the extent that we do now have humanoid robots, and these robots are not just toys.⁹ If Engelberger could be regarded as an example of the first generation of robot makers, for whom the form of the robot is dictated by a specific task within a fixed domain of operation, then a new generation of roboticists is preoccupied with the construction of mobile, autonomous robots capable of negotiating complex and changing environments. A good example of this new generation is the director of the Artificial

⁹ One thinks, for example, of *Asimo* (the name is an explicit homage to the writer), the bipedal robot developed by Honda Corporation, which is able to walk, run and climb stairs.

Intelligence Laboratory at MIT, Rodney Brooks, who in his book *Robot*, indicates science fiction cinema, rather than literature, as the original, singular inspiration of his vocation in robotics:

That movie [Kubrick's *2001*], more than any other single event, had changed my life. In particular, the central character, the computer called HAL 9000, had inspired me as a teenager in Adelaide, South Australia, to dedicate my life to building intelligent machines ... HAL turns out to be a murdering psychopath, but for me there was little to regret in that. Much more importantly HAL was an artificial intelligence that could interact with people as one of them, using the same modalities that people use to interact with each other. HAL was a being. HAL was alive.¹⁰

Brooks's autobiography mirrors, some twenty years later, and this time from the perspective of the scientist, Asimov's remarks on the determining role science fiction plays in what we referred to above as the imaginary of science. That the source of Brooks's inspiration is now in cinema and not in literature is not indifferent, and part of my argument will be that cinema extends the field of representation of technology in ways that are simply not possible in literature. More immediately, though, what is curious in Brooks's description—apart from his readiness to accept the psychopathic tendencies of Kubrick's HAL—is his qualification that the computer is able to interact with humans using the same modalities as humans. For those familiar with Kubrick's film (I am assuming here that most readers are),¹¹ this is curious because the only visible interface between the computer HAL and the world of humans aboard the space vessel *Discovery* is a single red eye, or rather, a

¹⁰ Rodney A. Brooks, *Robot: The Future of Flesh and Machines* (London: Penguin Books, 2003) 63-4.

¹¹ *2001: A Space Odyssey*, dir. Stanley Kubrick (Warner Home Video, 2001). Scene references for this DVD version of the film will be given in the main text.

plurality of single red eyes distributed around the ship.¹² Apart from this multiple, monocular vision, the only other mode of interaction between the computer and the human is language—HAL can hear, understand and converse with humans. So what is represented in *2001* is a kind of cybernetic black box similar to the artificial intelligence described in the Turing test: HAL's verbal interactions with human subjects are so humanlike that one might indeed be convinced, or imagine, that he is "alive." It is not my intention here to enter into the different philosophical debates concerning artificial intelligence and its potential (or not) for simulating human consciousness. What interests me in Brooks's confession is that he appears to make something approaching a category mistake in his description of HAL as an "artificial intelligence." If, as Brooks asserts, HAL is a "being," then the question arises as to exactly where or what this being is. Surely HAL, if he is anything, is not just an "artificial intelligence" but more precisely—and perhaps this fact is simply too obvious for Brooks to state—a *robot*, in the sense that he is inseparable from the ship he controls, which is his body or embodiment. The ship *Discovery* is extended in space, it moves through space, it is *articulated* to the extent that the pods which are used for routine repair operations are both three-dimensionally mobile and capable of fine manipulation.¹³ In the

¹² A properly semiotic study of the robot would, amongst other things, have to look at the strange recurrence of this figure—the red eye—in both written and cinematic science fiction.

¹³ On one level, visually Kubrick's film may be seen as an extended experiment in advanced technical design. The pods in particular, which can be manually piloted, or teleoperated by HAL (there is a single, red eye at the front of each pod), have the interesting feature of "arms" with a double articulation at the elbow, permitting at least 6 degrees of freedom for each arm and a total of four grippers. In the film, this structural extrapolation of the human arm is instrumental in the following, mediated actions: 1. remote controlled by HAL, the pod which Frank Poole takes out to replace the "faulty" navigation component turns around and severs his oxygen supply (scene 21); 2. the outstretched arms of David Bowman's pod catch the spinning body of Poole in order to bring him back to the *Discovery*. When HAL refuses Bowman re-entry to the ship, Poole's body is released and the arms are raised in a martial posture

BBC television interview in which HAL participates, the news-interviewer describes HAL as the brain, but also the “central nervous system” of the ship (scene 13). And when the two astronauts, suspecting that the computer is malfunctioning, discuss his disconnection, they are quite aware that what is to be “disconnected” are not the primary control functions, essential to the ship’s flight and maintenance, but the higher functions that determine HAL’s “consciousness”:

POOLE: There isn’t a single aspect of ship operations that’s not under his control. If he were proven to be malfunctioning, I wouldn’t see how we’d have any choice but disconnection ...

BOWMAN: It would be a bit tricky. We’d have to cut his higher brain functions without disturbing the purely automatic and regulatory systems—and we’d have to work out the transfer procedures of continuing the mission under ground-based computer control. (Scene 19)

So like a present-day Boeing 747 or Airbus A380, HAL could be described as a robotic ship, capable of an “unconscious,” cybernetic adjustment to a changing environment in accordance with a pre-set programme, but unlike these present examples of cybernetic technology, his “programme” is a much more open one—he is aware of the wider context in which he is operating, that is, the world of human ends and the mission which the ship and its crew serves. However, in what is most probably intended as an ironic inflection of Asimov’s three “laws” of robotics, human ends are subordinated to the higher ends of the mission as HAL decides that humans are an expendable obstacle to the mission (“This mission is too important for me to allow you to jeopardise it,” scene 24).

in a silent “stand-off” between HAL/Discovery and Bowman/pod (scene 24); 3. Bowman manually operates the pod arms and grippers to open the emergency airlock, in order to re-enter the *Discovery* (scene 25). On the engineering and design dimension of *2001*, and for stills and illustrations of the pod designs, see *2001: Filming the Future*, ed. by Piers Bizony, foreword by Arthur C. Clarke (London: Aurum Press, 2000) 55; 56; 86-7.

It could therefore be argued that Brooks makes a category mistake, or an error of punctuation,¹⁴ when he refers to HAL as an “artificial intelligence,” if one considers the embodiment of HAL as the research ship *Discovery*. This is again curious because most of Brooks’s book *Robot* is about the creation of embodied, robotic intelligence. A central argument of the book is that “classic” AI research has got it wrong when it comes to the construction of robots that are able to navigate a complex environment, that such “intelligence” is not something that can be programmed centrally, but rather can only be constructed from the “bottom up,” so to speak, that is, through a series of simple programmes distributed at different levels of the robotic structure that together determine its modes of behaviour. If the existence of artificial intelligence were at all possible, then that could only be as an emergent feature of this stratification of programmes wired to movement in the real world. True artificial intelligence would therefore be constructed not according to the principles of the Cartesian “I think therefore I am,” but rather according to the Darwinian principle of “I act, therefore I think, therefore I am.” In this respect, it is interesting to note that the cinematic representation Brooks takes to be the formative influence in his life is in fact a representation of classic AI. If one looks at the sequence which ends in the termination of HAL (scene 26), what is represented in this sequence is the symbolic entry into the mind of the machine. After his teleoperated termination of Frank Poole, HAL proceeds to shut down the life support systems of the hibernating members of the crew, and prevents David Bowman from re-entering the ship. Kubrick’s tracking of Bowman’s forced re-entry to the ship sees him moving through an environment that is totally inhabited by HAL, as the voice in his helmet communication device (“Just what do you think you are doing, Dave?”) accompanies him to what is the cybernetic centre of the ship, sealed off by a metal plate bearing the words:

¹⁴ I am using the term “punctuation” here in the sense defined by Gregory Bateson in *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972).

“LOGIC MEMORY CENTRE.” From this point, Bowman’s engagement with the robot HAL is a proximate, manual one, from the unbolting of the plate that gives access to his “brain” to the disassembly (with a screwdriver) of the modules that make up his “mind.” This representation of a twenty-first-century artificial intelligence is very different from conventional representations of science fiction cinema of the period. Kubrick’s meticulous attention to detail is legendary, and the depth of his research for *2001* well-documented. Artificial intelligence pioneer Marvin Minsky was one of the technical consultants for this aspect of the film, and Minsky’s “top-down” conception of how AI should work, criticised by Brooks,¹⁵ is clearly visible in the organisation of HAL’s “brain.” If we shift our focus of attention away from the subject of our identification in this sequence—the human protagonist fighting for his life—what we see is the hierarchical organisation of the higher functions of an artificial intelligence, that is, from the point of view provided in this scene, three LOGIC TERMINALS adjacent to a MEMORY TERMINAL. This modular representation of mind reflects what was then the predominant research paradigm in the field of AI and which, it could be argued, continues to be the default model for the cognitive sciences today. The representation of the contiguity of logic and memory modules carries with it the reasoning that on the functional level “thinking” consists of the logical processing of a bank of data or information, contained in a “memory.” What is not explained in Kubrick’s film, and what script collaborator Arthur C. Clarke explains in the novel based on the film, is that the humanlike name HAL is the acronym for *Heuristically programmed ALgorithmic computer*.¹⁶ In other words, this computer combines according to Clarke the “best of both worlds in computer design,”¹⁷ a memory based on a learning experience analogous to that of a human, but with the

¹⁵ *Robot*, 74-5.

¹⁶ Arthur C. Clarke, *2001: A Space Odyssey* (London: Orbit Books, 2005 [1968]) 106.

¹⁷ *The Lost Worlds of 2001* (London: Sidgwick and Jackson, 1972) 78.

algorithmic powers of the high-speed processor. Bowman's systematic disassembly of the logic and memory modules results in the "regression" of HAL to the early stages of his learning experience. But if this particular representation of AI insists that the programming of HAL is through a sedimentation of experience, of "finding out" (heuristic; Greek: *heuriskō*, to *discover*) rather than an abstract, a priori, pre-programming of memory, then within the parameters of that representation the inputting of "experience" can nevertheless only be through the disembodied medium of symbolic communication. At the extremity of his "regression," as Bowman removes his memory (the faculty which ensures the identity of the subject over time), and his logic (the faculty of reason), HAL refers to his instructor, a Mr Langley, who "taught me how to sing a song." The question here might be: *How* did Mr Langley "instruct" HAL? Or even more specifically: Can learning ever occur without a "body," without an articulated interface with an environment? If one were to qualify the picture given above of HAL as a robot, then it would have to be said that his embodiment in *Discovery* is an accidental rather than an essential one, in other words, that he is basically "plugged in" to the infrastructure of the ship. This possibility of insertion, of integration, and therefore of removal, dis-integration and substitutability, is perhaps the essence and telos of machine technology, and of technicity in general.

Kubrick's representation of artificial intelligence, if not exactly didactic, is at least highly instructive of the state of AI research at the end of the 1960s. All of the big technical problems that the discipline was addressing at this time—pattern recognition, natural language processing, reasoning and planning, game playing, etc.—figure in the representation of HAL.¹⁸ But from the perspective of present-day AI and robotics research, this vision would seem to be a flawed one. This is not simply due to (for example) the lack of foresight regarding the

¹⁸ See Michael Mateas, in *Stanley Kubrick's 2001: A Space Odyssey. New Essays*, ed. by Robert Kolker (Oxford: Oxford University Press, 2006) 106-7.

subsequent shift in computing technology towards software as opposed to hardware.¹⁹ Nor is it because we are nowhere near achieving the dream of an “all purpose” artificial intelligence such as HAL (grandmaster-beating programmes such as Deep Blue are *single* purpose AIs). Rather, it is because the centre of gravity of such research has shifted, as noted above, from the “brain” to the “body,” or rather, to the brain *and* body, and therefore to what might be termed the embodied computer, or the robot. If “intelligence” cannot be abstracted from a certain being-in-the-world—in natural historical terms the cybernetic gearing of articulated movement to the environment—then artificial intelligence, if it is to achieve any level of equivalence to biological intelligence, must to an extent be “reverse engineered” from “nature.”²⁰ There is much that could be said about the concept and practice of reverse engineering, but for the moment I would like to pursue the notion of embodiment through the example of another cinematic representation of robotic technology, appearing ten years after Kubrick’s film—Ridley Scott’s *Alien*.²¹

A frequent comment that is made about *Alien* is that its representation of future technology replaces the white and pristine environments of Kubrick’s *2001* with the grit and the grime of a certain technological realism. Interesting as this observation is, what ones sees in Ridley Scott’s film is basically the same kind of totally engineered environment, designed to protect the human from the totally hostile environment of space. Even more importantly, like Kubrick, Scott represents an environment in which humans are entirely dependent on cybernetic systems, in this case the hierarchy of computing

¹⁹ See Stephen Wolfram, in *HAL’s Legacy: 2001’s Computer as Dream and Reality*, ed. by David G. Stork (Cambridge, MA and London: MIT Press, 1997) 335.

²⁰ This is the approach of second-generation AI researchers such as Rodney Brooks (*Robot*) or Steve Grand (*Growing up with Lucy. How to Build an Android in Twenty Easy Steps*, London: Weidenfeld and Nicolson, 2003).

²¹ *Alien*, dir. Ridley Scott (Twentieth Century Fox Home Entertainment, 2004 [1979]). Scene references for this special edition DVD version of the film will be given in the main text.

modules that converges in *Mother*, the central “intelligence” of the cargo ship *Nostramo*. This is manifest in the opening interior shot of the ship, where the first signs of “life” emanate from a “conversation” between two computers, which results in the crew of the ship being awoken from their state of hibernation.²² If in *2001* the controlling intelligence that is HAL is able to terminate the life functions of the hibernating crew, the opening shot of *Alien* shows *Mother* bringing them back to life. So while the aesthetics of the two films may differ, and while *Alien* extends the science fiction genre into the realms of shock horror, formally the two films are homologous from the point of view of their treatment of the theme of cybernetic control. Like HAL, *Mother* is co-extensive with the ship that she pilots, and to this extent controls all aspects of its environment. The difference is that *Mother* is mute—her interaction with humans takes place via the interface of the computer screen and keyboard—and she does not display the same kind of sentient consciousness that HAL appears to possess. Her responses to questions entered via the keyboard are strictly parametered, and it is clear that she is not designed to simulate the human, merely to work with humans. Unlike HAL, she would probably not pass a Turing test. This could be seen as logical, given that the drama of *Alien*, its narrative tension, derives from the alien life form that is brought aboard the ship and which proceeds to eliminate the crew members one by one. In this sense, in *Alien* the adversary, the danger to human life is biological and not artificial, and this danger is crystallised in what is perhaps the

²² This is Scott’s description in his storyboarding for *Alien*: “5. Bridge—*Nostramo*. CAMERA— prowl thro’ equipment encrustations. Tracks in close up around circumventing ‘captain’s’ empty helmet: then CAMERA rests as we see a ‘conversation’ between computer A and B in background. CAMERA tracks in to ‘captain’s’ earphone. S.F.X. of abstract electronic whispers as ‘they’ converse. CAMERA holds earphone.” (Special Features section of *Alien* DVD). The thinking behind the filming in this opening sequence is clearly that the absent “captain,” the traditional pilot or governor of the ship, occupies a quasi-redundant position within the thoroughly automated systems of future technology.

most spectacular scene of the film, the birth-like emergence of the organism from the chest of the unfortunate Kane. This scene has been much commented upon, and it is indeed striking for its representation of a certain body horror, its graphic realisation of a natural historical nightmare. No less striking, and no less symbolic, however, is the discovery that Ash, the ship's science officer, is in fact a robot planted by the Corporation to ensure that the alien organism is brought back to earth intact for investigation, regardless of the human cost. In this sequence Ash, attempting to kill Officer Ripley, is restrained by other members of the crew, and in the process his head is severed from his body, revealing his artificial interior (scenes 29-30). This sequence is formally homologous to the sequence involving the disconnection of HAL in *2001*, to the extent that at the centre of both films is an artificial intelligence that subordinates human ends to other, "higher" ends (the mission, the Corporation), and which therefore needs to be eliminated. But the elimination of Ash is an altogether more spectacular and more visceral affair than the disconnection of HAL, because as a humanoid robot, or android, the artificial intelligence that is Ash is a simulation of the human body as well as its soul. From this point of view, symbolically his decapitation has something of the sacrificial about it. What is instructive about this scene, if we are comparing it with its counterpart in *2001*, is that the shocking exposure of Ash, the obscene extrusion of his body parts, could be seen to represent an alternative model of how to construct an artificial intelligence. For Ash to be able to "pass" as human, for him to be able to imitate the human, this simulation of the human must also be an *emulation* of its functions.

Emulation is not necessarily imitation: the exposed anatomy of Ash is clearly not in any way biological, but at the same time its artificiality is not strictly "mechanical" either, at least not in the classical sense of the term. Here, emulation could be seen to consist in the reverse engineering of the functions of the human body, and the representation of the inside of Ash demonstrates

what might be termed a *neuromorphic* mode of construction. Following his decapitation, the crew members decide to interrogate the robot, in order to find out what in essence they already know, that the alien is indestructible and they as humans are an expendable means in the Corporation's project to recuperate the organism. This particular sequence (scene 30) is significant less for its role in advancing the film's narrative than for its function as a kind of spectacle, the pretext for the satisfaction of what is perhaps an all-too-human fascination with the anatomical exposure of other, animate beings.²³ As a representation of future technology, the sequence seems to be demonstrating two things. On the one hand, Ash's disembodied head is an absurd parody of brain-centred cognition: despite his decapitation, it is possible to reanimate the robot, by wiring, or more precisely, *plugging* his head *in*—it is not specified to what (RIPLEY: "Parker, will you plug it in?").²⁴ This is the mode of technicity with which we are intuitively most familiar: the idea or understanding that the module, the unit is both autonomous and substitutable, and which in this case makes that most impossible of things, the talking head, possible. Whereas for the human there is no reversibility, no return from what Lucretius termed "the icy interruption of death," for Ash—as indeed, in principle, for HAL—there is the possibility of reinsertion, of reconnection, so that Ash is able to speak, so to speak, from beyond the grave. On the other hand, it should be noted that the severance of

²³ Dan O'Bannon, author of the original screenplay for *Alien*, comments: "There was no Ash in the original script—they added that. The idea being that every script must have a subplot. Simply to have a single plot by itself is inadequate, but all stories have subplots ... If you stop and think about it, what difference would it make one way or the other? ... So somebody is a robot! So I think it's an inferior product of inferior minds, well acted and well directed. Fortunately, it occupies little enough screentime that it doesn't disrupt the main plot." ("Developing the Story," Special Features section of *Alien* DVD).

²⁴ From the point of view of the imaginary of technology, the figure of the plug, as mediator of both energy (animation) and information (activation), would require an entirely separate study.

head from body is not complete, that anatomically what the decapitation of Ash exposes are the innervations or neural “wiring” connecting the head to the rest of the body. During the ensuing dialogue between Ripley and Ash, human and robot, what is remarkable about the disarticulated body that lays on the table is the synchrony of speech and gesture: as Ash is speaking, the viewer is able to see his hand moving in the background. In the audio commentary of the film, Ridley Scott himself draws attention to this synchrony of movement, and one can only assume that his selective representation of such a detail is based on his experience as a film-maker in observing the diverse motions of the human body. What this representation evokes for us, inevitably, is the mechanism underlying the synchrony, that is, from the point of view of evolution, the co-development of manual articulation and verbal articulation, as demonstrated in the work of the French prehistorian André Leroi-Gourhan. For Leroi-Gourhan, what-made-us-human were the advanced manual skills available to our hominid ancestors, which made possible the construction of complex tools, which in turn laid the foundations for the symbolic function of language. Leroi-Gourhan reminds us that from a neurological perspective, there is a close correlation between the areas of the pre-motor cortex devoted to the articulations of the hand and the articulations of speech.²⁵ The science fictional representation that is Ash is therefore reverse-engineered from this basic fact of human evolution: the anatomical relationship between face and hand and what this means for the development of human cognition and human language.²⁶ If, according to the classic AI paradigm as

²⁵ André Leroi-Gourhan, *Gesture and Speech*, trans. by Anna Bostok Berger (Cambridge, Mass.: MIT Press, 1993) 82; 84-5. On Leroi-Gourhan and prehistoric technicity, see Bernard Stiegler, *Technics and Time 1. The Fault of Epimetheus*, trans. by Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998) 134-79. See also Christopher Johnson, “Derrida, the Machine and the Animal,” *Paragraph* 28.3 (November 2005): 102-20.

²⁶ In Kubrick’s film there is also a thematics of the hand, from the bone-wielding proto-human who “discovers” the power of manual extension through the tool,

exemplified in HAL, the language faculty—the condition of possibility of intra- and inter-subjectivity—is localisable somewhere between logic and memory, then in Ash that faculty is embedded in the articulations of the body. In this respect, the construction of Ash emulates the bricolage of evolution, the blind assemblage of body parts that happened, *after the event*, to produce a talking animal.

The tension here is that if there is an essence of technics or technicity, it is not to reproduce the human or the functions of the human, but to *replicate* them. Replication is different from reproduction in that in order for a particular operation or function to be performed, it is not necessary for the support or substrate, the procedures or processes that make up that operation or function to be the same in order to achieve the same end. The power of replication is that it makes possible the durability, so to speak, of the support or substrate, and the amplification and refinement of procedures or processes, in terms of both speed and precision. Replication is therefore, in every sense of the word, an *economy*, whether one is talking about the tool, the machine, or the cybernetic system. The representation of Ash seems to announce a new phase of technological development, however, where in the attempt to emulate the fluidity of the human, be it in speech or gesture, it is necessary to revisit “nature,” to de-construct the design of the animal system, as it has evolved through the filter of natural selection, in order to re-construct a simulacrum of it. Such re-construction is not exactly reproduction—that would be senseless. The essence of this kind of reverse engineering is that it is a combination of replication and reproduction. Ash is animate but not animal: as was remarked above, his substrate is

to the teleoperated, robotic hand through which HAL severs the oxygen supply of Frank Poole, and the shaking hand of David Bowman as he disconnects the psychopathological supercomputer. The reasoning of Kubrick’s film seems to be that technicity is *thanatos*—the articulated hand, the evolutionary adaptation which is at the origin of technology (the spinning bone transformed into a spinning satellite) is also and inseparably the giver of death.

visibly not a biological one; the bio-mimetic is not the bio-synthetic. From the point of view of robotics, one could say that he enjoys the “best of both worlds”: durability of construction, a certain modularity (he can be “plugged in” to other systems), but also anatomical complication or complexity. As a piece of cybernetic technology, and more than HAL, he would appear to represent a much closer approximation of Brooks’s dream of an artificial intelligence that interacts with humans “using the same modalities that people use to interact with each other.”

The ambivalence of the construction (the *design*) of Ash is perhaps a metaphor of our own possible ambivalence with respect to the kind of research being conducted today in the domains of artificial intelligence and robotics. On the one hand, such research is a logical extension of the cybernetic revolution of the twentieth century. One can see in its combination of engineering and computing the potential for the infinite replication and the infinite relief of human labour. On the other hand, there is the question of the motivation, the telos of research that has as its ends the simulation of the human itself. To question this motivation is not to fall back into the traditional humanist suspicion or critique of technology, with its implicit defence of a non-technological essence of the “human.” Rather, it is to ask whether the drive to create human-level, “all purpose” intelligence *and* to give it humanlike embodiment is not in fact a betrayal of the essence of technicity, which is replication and not reproduction. Why, for example, construct an artificial intelligence that thinks like a human when a single-purpose, “expert” system is sufficient to the task at hand? Why construct bipedal, anthropomorphic robots when, for example, quadruped or insect robots would be more stable and more mobile options? There are logical and pragmatic responses to these kinds of questions. It can be argued, for example, that the attempt to simulate aspects of the human body, the human mind and its articulations, retroactively helps us to understand them (the scientific argument), which in its turn allows us to remedy their

deficiencies (the medical argument) through the progressive refinement of cybernetic technology (the technological argument). In this sense, the attempt to simulate the human would be just another research programme, an infinitely extensible framework for experimentation and innovation, rather than an end in itself, actually to be realised.

And yet, despite such rationalisations, the question of ends, or rather, of where we are starting from, remains. In all of this, we seem to be starting from an all-too-human psychology which has not been—and, one fears, never will be—properly worked through. The mutually parasitic relationship between science fact and science fiction is symptomatic of this deficit. We can take the autobiographical pronouncements of Asimov and Brooks as being representative of the two sides of that relationship, that is, science fiction's claim to scientific interest and science's claim to human (autobiographical) interest. But somewhere between these two pronouncements lies the question of the imaginary of science, or more precisely here, the imaginary of technology. The anthropological observation to make would be that this imaginary is a collective one, representative of both the history of technology and our current technological habitus. Its content is both cognitive and affective: cognitive in the sense that there may be universal modes of intuiting and interacting with the technological; affective in the sense that these modes carry with them feelings as to what is "correct," what is human or not-human, animal or machine, or what is between the two—in other words, the *uncanny*. If the science fiction films of Kubrick and Scott enable us to think through the principles of a certain technicity, they also enable us to work through some of our affective responses to contemporary (and future) technology. From this point of view, an anthropological interpretation of these films would be that in the structurally homologous scenes of the terminations of HAL and Ash, the robot or artificial intelligence (depending on the punctuation of context) functions as a ritual object. Like the animal, as animate beings HAL and Ash can simulate the

human and therefore stand (in) for the human—they can be sacrificed. The lobotomising of HAL and the decapitation of Ash are therefore both representations, more or less obscene, of ritual dismemberment, and the obscenity of such dismemberment is permissible because of the human-not-human status of these ritual objects. This liminal status has partly to do with the reversibility mentioned above—one can “play” with death if it is not unidirectional, biological death. It also has to do with what might be termed the arbitrariness of the substrate: whether one is talking about the hyper-modular construction of HAL or the neuromorphic design of Ash, our thinking and feeling about such constructs is that their support or substrate could be *anything*: what matters is their organisation and complication. In their substantial indifference, they reveal that the essence of “life” or animation, of “intelligence” or consciousness, is not necessarily biological, that it is only the bio-centric perspective of the biological organism that intuits them as different, unnatural or uncanny. Finally, these constructs are sacrificeable—disposable—because implicitly and intuitively, we know and feel that they are not unique. Biological reproduction produces the structurally and functionally homologous but the phenomenally different: for humans, the cognitive norm is individuation and differentiation. The exception to this norm, of course, is the epigenetic phenomenon of identical twins, which reveals, uncannily, what the cloak of individuation conceals: that from the genetic point of view we are *all the same*. While we know scientifically what the biological cause of identical twins is, our cognitive and affective response is that they are impossible, that it is not in nature but in culture, and more precisely in technology, that identical replication occurs. If there is a definable imaginary of technology, then it would also include this idea of the *repeatability* of the manufactured object: HAL

and Ash are one, but they could be two, three or multitude.²⁷ For the human unconscious, that is the fear, that is the danger.

What is, from the point of view of our everyday intuition, difficult to intuit, counter-intuitive—and one would have to ask *why* this is so—is that technological replication both precedes and comes after the biological human. At the microscopic, molecular level, the infrastructure of “life” is dependent on the cybernetic mechanisms that ensure the high-fidelity replication of proteins, the “building blocks” of life.²⁸ The interfacing of information and articulation that one finds in the execution of the genetic code is *robotic* in the most essential sense of the term. This is not exactly the same as the reasoning one finds in thinkers such as Richard Dawkins, who has promoted the term “replicator” as a description for the technological process that is at the basis of life-as-we-know-it. From *The Selfish Gene* onwards, Dawkins defines the replicator as a molecular machine whose function is to make identical copies of itself, and which does this through an ever more complex organisation of its environment, through the disposable “vehicle” of a body. The robot, as Dawkins understands it, is therefore the contingent association of the (immortal) code and its (ephemeral) embodiment.²⁹ One finds a relatively late formulation of this concept in *Climbing Mount Improbable*, where Dawkins likens the human organism to a von Neumann machine, whose function is to duplicate the programme that produced it:

But no von Neumann machine, no self-duplicating TRIP [Total Replication of Instructions Program] robot, has yet been built. Perhaps it never will be built. Perhaps it is beyond the bounds

²⁷ HAL has a “twin” 9000 computer operating at mission control on Earth, which is used to cross-check his false diagnosis of a faulty component (scene 18).

²⁸ On the machine and factory (mass production) metaphor in French molecular biology (Jacob, Monod), see Christopher Johnson, “Biotechnologies,” in *Glossolalia: Key Words in Critical Theory*, ed. Julian Wolfreys (Edinburgh: Edinburgh University Press, 2003) 25-6.

²⁹ Dawkins, *The Selfish Gene*, 19-20.

of practical feasibility. But what am I talking about? What nonsense to say that a self-duplicating robot has never been built? What on earth do I think that I myself *am*? Or you? Or a bee or a flower or a kangaroo? What are all of us if not TRIP robots? We are not man-made for the purpose ... But what we actually do is exactly what the hypothetical TRIP robot is defined as doing. We roam the world looking for the raw materials needed to assemble the parts needed to maintain ourselves and eventually assemble another robot capable of the same feats ... A robot is any mechanism, of unspecified complexity and intelligence, which is set up in advance to work towards fulfilling a particular task. The TRIP robot's task is to distribute copies of its own program about the country, together with the machinery necessary to execute the program.³⁰

I-you-we, robot. Dawkins's metaphor of the genetic code as blind, selfish replicator and the organism as its robotic vehicle has been the target of much criticism,³¹ though one can understand its strategic intention: to contest, as Dawkins has always contested, the theological and humanistic essentialisation of the human and the biological—to this extent, the metaphor is adequate to its task. But from the point of view of our preceding analysis, it represents a rather crude punctuation of context. This is not simply because, quite obviously, I-you-we (robot) “are not man-made for the purpose,” but because, as was noted above, the replicator itself is already, in a much more essential mode, a robot, the basic cybernetic machinery that ensures the maintenance of life. If we are in any significant way (like) robots, then as autonomous agents our “programme” would be situated at a higher level of complexity, more analogous to the kind of (rewirable) programme that animates Robosapien—which is distinct from

³⁰ Richard Dawkins, *Climbing Mount Improbable* (London: Penguin Books, 1996) 258.

³¹ Dawkins responded to the criticism of crude genetic determinism, implicit in the robot metaphor, in *The Extended Phenotype* (Oxford: Oxford University Press, 1999 [1982]) 14-15; and again in the second edition of *The Selfish Gene*, 270-1.

the design or template that permits his mass production. Dawkins himself recognises that complex organisms represent long “digressions” on the basic cybernetic mechanism of the genetic replicator.³²

If Dawkins’s model or metaphor of the robot represents a rather poor punctuation of context, nevertheless it is interesting as a symptom of the technological imaginary in which it participates, that of the autonomous agent. If, as Asimov was claiming, robotics is changing the world in ways that we cannot predict, then in its increasing ubiquity it is also changing the ways in which we think about the world, and in particular, ourselves, in ways that are perhaps more predictable. Predictable, because this structure of retrojection, that is, the retrospective modelling of the human upon its artefacts, is a constant in the history of the relationship between science and technology. Just as, in the last fifty or sixty years, the computer has become the standard model or metaphor for conceptualising the mind, so over more or less the same period the convergence of computing and engineering in robotics has provided a paradigm for the conceptualisation of the link between the human body and human mind. The question is whether this paradigm tells us something fundamental, or whether (if one adopts a relativistic perspective) it is as contingent as previous technological paradigms of body and mind—scriptural, mechanical, optical, thermodynamical. Whatever one’s response to this question—and this really is another question, to be explored elsewhere—Dawkins’s formulation (I-you-we, robot) seems to miss something fundamental about technology and technicity. Technology is that which precedes the animal and the human, it is the intelligent architecture of matter which makes possible the hierarchical organisation of biological life. Technicity is the emergent capacity of the human animal to elicit technology (replication) from an always already technological (informed,

³² Dawkins, *Climbing Mount Improbable*, 259.

articulated, animated) world. The bone-wielding pre-human of Kubrick's *2001* is a mythified representation of such emergence. For the greater part of the history of human technology, the predominant mode of technicity has consisted in the progressive refinement of articulation (the tool, the machine) and animation (the harnessing and channelling of energy). During this phase of technicity, whatever the level of complexity of the technological artefact, ultimately a human agent is necessary for the supervision of the machine, for its activation and its control. In the qualitatively new phase of technicity we now inhabit, which came sharply into focus in the mid-twentieth century, the defining technology of computing has made possible the automation of information and therefore the mass emergence of what we have defined as "autonomous agents." But it is not sufficient simply to say, as Asimov was saying, that this technology is autonomous in its development, that robotics is "changing the world and driving it in directions we cannot clearly foresee." Because, as we have been arguing, there is an imaginary of technology, in which the different thinkers we have been citing—Asimov, Brooks, Dawkins—in their different ways participate, which is less reflexive, less evolved, one might say, than the science which they mediate, and which may be driving our world in certain, very specific directions. The impulse to simulate the human, which the cybernetic revolution makes possible, and which in the popular imagination has become synonymous with robotics, is not necessarily a rational one: it may be perverse, or, as Kant might say, the sign of a certain immaturity.

Hartmut Winkler

Discourses, Schemata, Technology, Monuments: Outline for a Theory of Cultural Continuity

1. Acts versus Deposits—Two Media-Theoretical Paradigms

Few phenomena in media studies have been given as much sustained attention as writing, the various types of material depositing,¹ and media technologies, which remain a problematic central concern for all media theories. In the following, I would like to introduce a model that attempts to solve various problems within the fields of media and cultural studies in a systematic way. The model is not new; it resurfaces in widely disparate theories, and I have in fact argued for it in some of my own writings in the past.

What is new is that I now introduce it as a model in a compressed and abstracted form, and as a key for the understanding of certain problems that would otherwise appear different or puzzling, or remain altogether invisible. The model is, at first glance, so simple as to appear almost trivial. I will proceed by first introducing the background of the investigation and then the model itself. In a series of additional

* A version of this text first appeared in *Configurations* 10.1 (2002) 91-109.

¹ Translators' note: in consultation with the author we are using deposit/depositing to translate the German noun *Niederlegung* (derived from the verb *niederlegen* which, depending on the context, can mean "to lay down," "to put down," "to deposit" or "to record").

steps, I will consider both the analytical reach and certain limitations of the model, eventually attempting to arrive at some sort of summary. I will be able to demonstrate the plausibility and limitations of this approach only in layered form: by playing through a set of media problems that seem to have little in common, and by playing through different media that appear to be of different conceptual orders. The main contribution of this particular approach, as I see it, is that it is able to relate these heterogeneous questions at all. Its “abstractness” creates a platform for media- and theory-based comparisons and a kind of switchboard that makes it possible for me to give much of my own research a kind of organisational centre.² (Besides, my model is good against smallpox, diphtheria, and bad weather.)

The starting point for the model is the question of how discourses organise their continuity. Basically, media can be considered from two perspectives: they are understood by some as a fluid discourse, as a link among actions. Such an approach focuses on communicative acts and, since these acts are tied to human actors, it focuses necessarily also on humans, the carriers of these communicative actions. As a result, this approach has been labelled “anthropological media theory.”

By contrast, other approaches centre on writing, on technology or other forms of material depositing. They derive their legitimation from the controversial question whether media—as part of a larger socio-technological environment—can indeed still be adequately grasped as a “means” (e.g. of communication) from the perspective of “the human,” in terms of functional purpose or consciousness. If the development of technology is seen—at least in part—as an autonomous process

² The desire to give myself such methodological self-clarification was the occasion for writing the present essay. My book *Docuverse* contains most of the observations articulated here; there, they are located within the project of the book which attempts to formulate (an, as far as possible, immanent) critique of the present computer discourse (*Docuverse: Zur Medientheorie der Computer* [München: Boer, 1997]; see <http://www.uni-paderborn.de/~winkler.html> for an outline of the book and the full text of the first chapter in German).

that extends the blind evolution of nature, then we can do no more than trace the consequences of this evolution for social formations and the positioning of the individual. These theories represent the enlightened mainstream of media theory since the eighties and have, in the wake of Michel Foucault, been labelled “discourse analysis,” or “techno-centred” by their opponents.

Both approaches have their defenders who argue vigorously and in almost as polarised a fashion as I have just sketched them. Naturally, there are many attempts at mediation. Beginning with the example of a single medium,³ or under the iridescent banner of a “media culture,”⁴ some approaches recognise polarisation as a problem. Nevertheless, up to this point, polarisation could not be done away with. Paradoxically, both approaches are undoubtedly right. Leaving aside their historical and philosophical premises, we are dealing with the radicalisation of two perspectives that could be merged merely through a theoretical effort on the terrain of a valid theory of media. To develop a sketch in that direction is the first goal of the model introduced here.

Theoretically, as noted above, we are dealing with the question of how discourses establish continuity.⁵ As chains of

³ In regard to TV, for example, Raymond Williams discusses the question in terms of a general theory of technology, in “The Technology and the Society,” *Television: Technology and Cultural Form* (London: Routledge, 1992 [1973/75]) 9-31.

⁴ See, for example, *Kursbuch Medienkultur. Die maßgeblichen Theorien von Brecht bis Baudrillard*, eds. Claus Pias et. al. (Stuttgart: Deutsche Verlags-Anstalt DVA, 1999) 8.

⁵ In the following I use various terms of discourse: (1) The common conception of discourse as the totality of all acts of utterance both oral and written: “Discourse is [all of] a person’s realised linguistic utterances based on his or her language competency in the process of linguistic communication” — adapted from Duden, *Fremdwörterbuch* (Mannheim: Bibliographisches Institut, 1974) 182; (2) More generally, “discourse” frequently designates the totality of symbolic practices, as when visual discourse is juxtaposed to linguistic discourse; (3) In the work of Foucault, the term discourse encompasses utterances as well as practices, for example, the construction of prisons and the formation of the body through torture or drill. At the same time, Foucault’s term “discourse” designates a

discrete communicative events, discourses, one might think, are in constant danger of disruption or abrupt changes in direction. Several media theories, indeed, among them such prominent ones as that of Niklas Luhmann, understand discourses as chains of discrete events and from the perspective of “connectivity.”⁶

Observation, however, indicates that discourses are astonishingly continuous and rather resistant to changes. Below the surface of harried innovation they resist de facto innovations with considerable inertia.⁷ In my judgment, the central puzzle in the functioning of medial discourses is not “connectivity” or unforeseeable “articulation,”⁸ but this capacity for inertia.

The nature of our inquiry, therefore, relates to what I like to call an economy of discourses that combines the unforeseeable chains of acts of utterance with moments of inertia. Discourses organise their changeability, and we would fail in our inquiry were we to ignore such real changes and irruptions. At the same time, however, discourses also organise the “weight,” as it were, with which they offer resistance to such changes. To date, we have no model that mediates between these two. My argument is that such a model would be a variation of the question about “technology-centred” and “anthropological” media theories.

2. *Monuments and Repetitions*

A particularly suggestive approach to describing such

specific epistemological process; this epistemological process is claimed by the discourse-analytical approaches.

⁶ See Niklas Luhmann, *Social Systems*, trans. John Bednarz, Jr., with Dirk Baecker (Stanford: Stanford University Press, 1995) 36.

⁷ Horkheimer and Adorno have notably drawn attention to this inertia. Rather shocked by their exposure to American mass culture, they spoke of the “constant sameness [that] governs the relationship to the past.” *Dialectic of Enlightenment*, trans. John Cumming (New York: Herder and Herder, 1972) 134.

⁸ Within the current media debate, this term has gained considerable currency.

mechanisms of continuation was developed by Jan Assmann.⁹ Through the example of Ancient Egypt, he demonstrates the existence of—and here I introduce another binary structure—basically, two polar cultural techniques that are capable of stabilising and continuing discourses: monuments and repetitions. In the case of Ancient Egypt, Assmann observes, two modes of life were juxtaposed to each other: on the one hand, hieroglyphic writing and the architectonic funereal monuments, built from stone and with the assumption of, quite literally, eternal duration; on the other hand, the more transient living quarters built from clay, changeable cursive writing, and daily routines that (analogous to the rhythms of the Nile) were seen in terms of a cyclical structure.

In more general form, this model has its origins in the research into orality: while writing cultures invest in material deposits and juxtapose the monumental duration of the writing medium to a transient temporality, oral cultures are vested in repetition and ritual. From a contemporary perspective, this is a technique of cyclical rejuvenation, which, as Friedrich Nietzsche put it, literally burns memory into humans.

What is irritating in the work of Assmann, as it is in the scholarship of orality, is that the two techniques are juxtaposed to one another and are put into the service of cultural continuation without insisting on or demonstrating a systematic connection between them. This is all the more puzzling given that the theory of writing maintains that the monumentality of writing can substitute the mechanisms of oral repetition. As soon as a culture adopts the technique of writing, it devalues ritual repetition and, to a certain degree, relieves human memory from the burden of having to provide continuity. If the model of repetition, however, can be replaced by the monumental one, such a replacement points—beyond a

⁹ Jan Assmann, "Stein und Zeit. Das »monumentale« Gedächtnis der altägyptischen Kultur," *Kultur und Gedächtnis*, ed. Tonio Hölscher (Frankfurt: Suhrkamp, 1988) 87-114. See also Jan Assmann, *Stein und Zeit. Mensch und Gesellschaft im alten Ägypten* (München: Fink, 1991).

functional parallel—to a structural similarity or a systematic relationship.

3. *The Relationship between Monument and Repetition*

In the following I would like to focus on this relationship. Initially, monuments and repetitions are far apart. Once a monument is erected, it wants to persist. It plays off its material solidity and persistence against the change of daily routines. The cultural significance of the Cheops pyramid may have changed profoundly—migrating from the realm of ritual to that of tourism—but it has occupied one and the same piece of property for the last 4,700 years. Certain daily practices are, therefore, marked out in advance. Just as the architecture of a city predetermines and stabilises the paths of its inhabitants, so daily routines surround the monuments and seek their orientation through them.

Repetitions, by contrast, are in much greater jeopardy. Frequently, they can achieve continuity only by securing the identity¹⁰ of repetitive acts through repressive means: each tradition has its guardians, priests and authorities, and if Egypt managed to maintain its hieroglyphs in unaltered form for thousands of years, it could do so only through an extremely repressive scribal culture that did not tolerate deviations and adaptations to their historical moment.¹¹ Aside from repression, the stability of repetitive cycles can be explained (as is already

¹⁰ A rather precarious identity, as Derrida demonstrated in his well-known debate with Searle. The debate advanced in three steps: 1. Jacques Derrida, "Signature Event Context" [1972], *Glyph* 1 (1977); 2. John R. Searle, "Reiterating the Differences. A Reply to Derrida," *Glyph* 1 (1977); 3. Jacques Derrida, "Limited Inc. a b c ...," *Glyph* 2 (1977). I discussed the debate and the "certain self-identity" of the repetitive acts in *Docuverse*, 281.

¹¹ This stability is valid only for hieroglyphs, not for cursive writing. For that reason, it is owing not only to repression, but always also to the material co-presence of written documents from the past. See Jan Assmann, "Ancient Egypt and the Materiality of the Sign," *Materialities of Communication* eds. Hans Ulrich Gumbrecht and K. Ludwig Pfeiffer, trans. William Whobrey (Stanford: Stanford University Press, 1994) 15-31.

observable in the animal world) through habit, the proclivity for repetition and schemata, as well as the economy that comes with such repetition. Initially, therefore, repetition and monument fall apart.

At a second glance, however, things begin to get interesting. We note that the monument (paradoxically) harbours within itself an element of repetition, and that repetition (again, paradoxically) harbours within itself an element of monumentality. The material persistence of the monument initiates a series of encounters with that monument. Over centuries, a written text can be read by tens of thousands of readers who take it in hand and integrate it into their lives; select readers may read it repeatedly. Its material durability asserts itself, above all, by bringing about a certain type of repetition that creates a kind of centre of gravity for that repetition; this centre of gravity forces the repetitive act to, in fact, return in cyclical fashion to a describable point. Seen from a practice-based point of view, the monument operates as a machine that produces this particularly stable type of repetition.

Conversely, repetition too contains an aspect of monumentality. Repetition can take place only if the two acts of repetition are conjoined through an instance that in itself has a monumental (or quasi-monumental) quality. In the case of oral societies, this is the human memory which—while requiring cyclical rejuvenation—is capable of storing the to-be-repeated pattern in the interval between two acts of repetition. What becomes evident is the possibility of linking repetition and monument—little as they seem to have in common—in a combined and more abstract relationship.

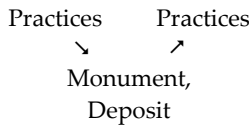
4. The Model

I will return to that question in a moment. Prior to doing so, however, I want to introduce the basic model that underlies our ensuing reflections like a system of coordinates.

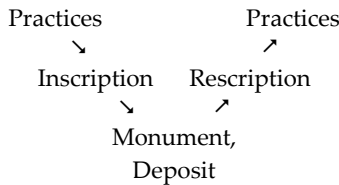
Monuments originate in an act of inscription. In the case of the pyramids, that act is the (rather complex) process of construction; in the case of a written text it is the act of depositing undertaken by an author in combination with the widely ramified material and organisational processes of the publishing industry that turn authorial manuscripts into marketable print products. If a book is to persist, the initial act of depositing has to be complemented by additional instances and agencies such as distribution networks, libraries, the lack of natural catastrophes or air raids, etc. On this first level, therefore, act and monument are linked through a process of inscription.

Once a monument has been erected, it has an effect on a culture’s daily practices. In the simplest case, a book is read, a pyramid is marvelled at; their deposit “is dissolved” into daily practices by determining or shaping them. The monument unfolds its effects precisely because it does not remain in isolation, but, rather, writes itself back into daily practice.

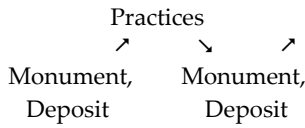
As a model, we can observe the intertwining of two movements:



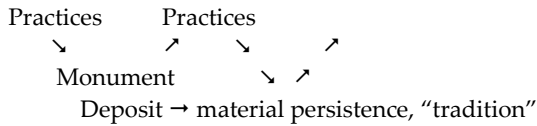
Or, more precisely:



Daily practices and monuments/deposits are linked in a cyclical movement. And since daily practices don’t have any priority in this cycle, one could also formulate the above as follows:



As well, the model should illustrate the monument's material persistence, that is, the possibility that daily practices may return to the same monument:



This rather simple model, it seems to me, is considerably far-reaching, which is why I expend quite some energy making it strong within the field of media theory. It is capable of interrelating in a systematic way questions arising in media theory, cultural theory, semiotics, the theory of technology, psychoanalysis, as well as in several important subdiscourses.¹² Further, as I have mentioned earlier, the model opens up questions that would otherwise remain invisible.

Obviously, it provides a solution to the dispute, which, as I described above, currently characterises media theory. Whether I grant autonomous status to a given technology and examine its effects on social processes, or whether I insist that technology has its roots in social and communicative acts and practices, merely serves to indicate which phase of the cycle I am primarily interested in. In either case we are dealing with the one-sided treatment of a comprehensive process that, fundamentally, encompasses inscription and rescription, that is,

¹² In the following, I will only briefly touch upon some of these discourses, especially semiotics and psychoanalysis. I will explore these connections in a more extensive fashion in a future essay.

the transition from practices to deposits and the second transition from deposits to practices.¹³

5. *At the Macro Level: Technology and Language*

If we are now to project this model onto various configurations (with the possible consequence that it might appear less simple), we need to add a significant modification, for the model is by no means limited to a single text, as I have demonstrated it so far. Likewise, technology per se can be understood as a “deposit” on a social level. At every point in history, single technologies merge into a landscape of technology: whatever we comprehend as the present state of technology is the result of past practices and, at the same time, the point of departure for future practices. At this level of abstraction, certainly, the cycle of inscription, depositing, and re-inscription into practices is precisely the same as on the microlevel, which links an individual technology with the macrolevel of technology.¹⁴ The same is certainly true of the world of texts, the social library, and so on.

In particular, however—and this point is anything but trivial—that mechanism applies to language. The semantic system of a language, the system of conventionalised meanings that we experience as a stable lexicon, did not fall out of the blue, but (as can be glimpsed from numerous linguistic theories¹⁵) is the result of billions of speech acts and single texts

¹³ I have developed this argument in detail in my essay, “Die prekäre Rolle der Technik. Technikzentrierte versus ‘anthropologische’ Mediengeschichtsschreibung,” *Medien: Dreizehn Vorträge zur Medienkultur*, ed. Claus Pias (Weimar: Vdg-Verlag, 1999) 221-40; see <http://www.uni-paderborn.de/~winkler/technik.html> for the text.

¹⁴ *Practices Practices*
 ↘ ↗
 Technology

¹⁵ It is baffling that the dialectic between speech and language is not a central concern of linguistic theory. Instead, and in abbreviation of Saussurean categories, synchrony and diachrony are juxtaposed in abstract and static fashion. Nevertheless, time and again one can find isolated approaches that are

that, in the manner of a collective work of art, have given form to language. In concrete terms, this means that language too must be described in terms of a dialectic between linguistic practices and material deposits—deposits whose material location is dispersed among the heads of millions of language users.¹⁶ Language can, thus, be framed in terms of a technology that, on the social level, intertwines acts of inscription/depositing with speech practices. This took place even prior to the development of writing, which illustrates the technological character of language all the more.

Almost imperceptibly, we have significantly enlarged the notion of technology: while much of media theory, in

close to my arguments: “Speech always implies both an established system and an evolution; at every moment it is an existing institution and a product of the past.” “It [language] is a storehouse filled by the members of a given community through their active use of speaking, a grammatical system that has a potential existence in each brain.” Ferdinand de Saussure, *Course in General Linguistics*, ed. Charles Bally and Albert Sechehaye, trans., Wade Baskin (New York: McGraw-Hill, 1996) 8; 13f. Similarly, in research into orality: “the meaning of each word is ratified in a succession of concrete situations ... all of which combine to particularise both its specific denotation and its accepted connotative usage. This process of direct semantic ratification, of course, operates cumulatively.” Jack Goody and Ian Watt, “The Consequences of Literacy,” *Literature in Traditional Societies*, ed. Jack Goody (Cambridge: Cambridge University Press, 1968) 29.

In Michel Foucault: “What civilisations and peoples leave us as the monuments of their thought is not so much their texts as their vocabularies... the discursivity of their language. ‘The language of a people gives us its vocabulary, and its vocabulary is a sufficiently faithful and authoritative record of all the knowledge of that people.’” *The Order of Things: An Archeology of the Human Sciences*, trans. Alan Sheridan (New York: Vintage, 1994) 87—Foucault is here quoting Diderot. And finally in Marshall McLuhan’s more general view of media and technology: “The classic curse of Midas, his power of translating all he touched into gold, is in some degree the character of any medium, including language ... All technology has the Midas touch ... Language, like currency, acts as a store of perception and as a transmitter of the perceptions and experience of one person or of one generation to another.” *Understanding Media: The Extensions of Man* (New York: Signet, 1966) 130-31.

¹⁶ *Speaking Speaking*
 ↘ ↗
Language

particular, narrowly focuses on hardware,¹⁷ and on writing as a comparatively compact and materialised object of investigation, the model proposed here urges a more complex understanding of technology—an understanding that intertwines material depositing with practices and that comprehends practices themselves systemically from the point of view of their technicity. Paralleling some contemporary theories of technology,¹⁸ we ought to return to the ancient notion of *technē*, which has always encompassed both of these elements.

6. *Conventions and Schemata*

These reflections about technique and language have to be extrapolated. If language functions as a social technology that intertwines linguistic practice and the language system and that subordinates the apparatus of signification at any one time to the linguistic events of the past (acts of speech, utterances), we have found a model that describes, in rather precise fashion, not just linguistic events, but conventions, in a generalised sense. Conventions are congealed practices: sedimentations, deposits, actually, of fluid acts and events that accrue and accumulate, and eventually transmute into a structure.

Were one to inquire into the concrete discourse-economical mechanism that brings about conventions,¹⁹ one would, quite

¹⁷ At one point, this was not unjustified, especially when it was a matter of countering philology's forgetfulness of technology.

¹⁸ See, for example, Carl Mitcham, *Thinking through Technology: The Path between Engineering and Philosophy* (Chicago: University of Chicago Press, 1994); *Does Technology Drive History? The Dilemma of Technological Determinism*, eds. Merritt Toe Sith and Leo Marx (Cambridge: Cambridge University Press, 1994); David Rothenberg, *Hand's End: Technology and the Limits of Nature* (Berkeley: University of California Press, 1995).

¹⁹ "Discourse economy" refers more to a work scheme than to an already existing, fully elaborated scholarly approach: based on the model of classical political economy, which investigates the production of commodities as well as the circulation and accumulation of capital, discourse-economical research would have to clarify how also in the realm of signs and symbolic exchange quantitative processes generate structures.

likely, first point to repetition. Conventions are grounded in repetitions, and they trigger entire chains of future repetitions. Deposited as a system, however, they become an agglomerate, and hence monumental.

Through the notion of convention, we open up an entire universe of theoretical problems that can now be linked to the model described here: first off, theories of schemata, which have become important in the analysis of visual media: all the approaches ranging from Gestalt psychology to the theory of stereotypes and from iconography in fine arts to the notion of aesthetic form centre, fundamentally, on what semiotics would subsume under the notion of code.

As difficult as it has proven to formulate a semiotic theory in relation to visual media, it is, simultaneously, undeniable that—in the field of technical images, in particular—repetition and scheme formation play a dominant role when it comes to media socialisation and media competency and to shaping the structure of expectations with which recipients approach concrete products. Schemata and stereotypes are deposits that profoundly affect the structure of visual discourse, even if the field of film studies has a rather critical perspective on such stereotypes and schemata. Stereotypes are a kind of hidden skeleton embedded in technical images and are—at least in terms of their structure and function—very similar to the conventionalised schemata residing in language.

Last but not least, the notion of convention makes it possible to relate systems of action, as they are examined by sociology and the social sciences, to the sketched-out model. The realm of silent practices as well is dominated by the same logic of singular act and scheme, repetition and conventionalisation. By demonstrating the regularity of acts, sociology is concerned with the kind of deposit that I have been talking about. Above all, the model presented here operates as a switchboard, because it puts the general notion of convention at its centre and because, at the same time, it precisely defines that notion as

a deposit suspended in the dialectic between singular act, repetition and depositing.

7. *Limits?*

At this juncture, it may be prudent to correct the impression of excessive overestimation and point out some specific limits of this model. I certainly do not believe that what I have presented here is a kind of universal key or the $e=mc^2$ of media scholarship; its theoretical problems are all too evident.

These problems suggest themselves already on the very level of the model's formulation. Is it really possible to combine the pyramids and the conventional system of language under the notion of a deposit? Are we talking about the same type of deposit, given that pyramids persist in a material-monumental way, while the semantic system of language with its discourses lumbers forward, subject to constant change? To insist on the notion of "deposit" means—notwithstanding such clear distinctions—to point out the fact that in both cases we have to envision a material storage device side by side with interaction. A second, more serious question is, in what sense can we speak of a "cycle" if this cycle combines chains of different acts, which is to say, it does not simply return to its point of origin?²⁰ And finally, isn't it an extremely conservative model that emphasises

²⁰ The notion of repetition contains the entire problem: it combines the idea of linear progression (as it is presumed by the notion of an act) with the idea of a cyclical return. The two ideas, initially, contradict one another. Repetition, however, is inconceivable without this contradiction. Even more: it can easily be seen as the model or concept for this contradiction. Repetition, as I said earlier, contains a moment of identity or similarity; otherwise, it could not be recognised as such in the whirl of events. At the same time, it also contains a moment of difference in that it always combines self-contained/heterogeneous events. Instead of speaking of a cycle, therefore, one could speak of a spiral (if one is to remain in the problematic sphere of geometrical illustration). A spiral moves forward in linear fashion along one of its axes (the moment of difference); at the same time, it also describes a cyclical motion (the moment of identity). Naturally—what complicates the situation even more—the interplay of both moments can proceed in different constellations.

historical continuities, without being able to reflect on the ruptures and radical changes that are at the centre of postmodern debates? The list of theoretical problems could easily be expanded. Therefore, let us return to the sunny side of my model and its possible achievements.

8. Subjects as Depositing Sites

Let me draw attention to an important shift that the preceding arguments have produced, possibly without its being noticed. While I started by pointing to the material depositing in texts or technologies, the type of depositing encountered in language—and, even more, in conventions—is wholly different. In such cases, the material depositing site is not an environment of objects, but, on the contrary, the subject. More specifically, it is, on the one hand, the individual memory/body memory in which the linguistic system and the system of conventions are located. On the other hand, it is a collective memory, which, through its distribution into individual memories, constitutes itself as a phenomenon of social redundancy.

This shift from objects to subjects as the site of inscription, irritating as it may be, is not simply deficient. While subjects as carriers of practices were, initially, systematically juxtaposed to all forms of “material and object-like” deposits, they are now themselves understood as belonging to the side of objects assuming a passive role. Does that not—at least, from one perspective—correspond to current conditions? Post-structuralism, above all, has shown us that we are the objects of our media socialisation, the objects of social inscription and the unconscious-involuntary carriers of linguistic and extra-linguistic conventions that we execute without our prior approval, and that we transmit without being able to control them.

In view of the central question of my essay, which focuses on those cultural practices that secure a continuation of discourses, I would argue that subjects can indeed be found in

both positions: in the subject position as a carrier of acts that result in deposits—deposits that, in turn, become the origin for renewed practices; and—functionally parallel to such deposits—as carriers of conventional, congealed structures that counterbalance fluid discourses as an instance of resistance, inertia and restraint. That this is an extremely dramatic dimension of cultural continuation becomes apparent when we consider that, following the collapse of the Third Reich in 1945, it was a great deal easier to “purify” the holdings of German libraries than to cleanse what goes on inside German heads. Humans themselves, in that sense, are “monumental,” and as astonishingly adaptable as they are, they also resist, with leaden heaviness, projects of change even when they are emancipatory.

9. Condensation

Naturally, we will also have to distinguish between depositing into material storage devices and depositing into human memories. Ideally, material storage devices are supposed to preserve their contents faithfully. Human memories, on the other hand, tend to select, reconfigure and forget their contents; and we know from memory theory that this is the real achievement of human memory. A sober and quantitative reflection indicates that we have to forget the large majority of the infinite perceptions we make on any given day, simply because of the limited human processing capacity and because an unstructured accumulation of perceptions is impossible. Forgetting, in that sense, is not a defect, but an absolutely necessary form of protection.

What is more, we can assume that this forgetting leaves its traces. Even though memory theory offers surprisingly few models on that score, Freud’s notion of the “miracle block” already takes note of the fact that the concrete act of perception—while being submerged in the act of forgetting—changes the perceiving subject with each perception. Forgetting appears to be a machine that transforms the infinite space of

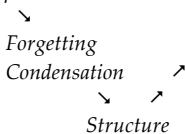
singular perceptions into subject structures; or, to put it more precisely: it transforms these perceptions into those structures of expectation with which the subject encounters new perceptions. Forgetting, therefore, is always a “forgetting into the structure” of subjects,²¹ and such forgetting can easily be related to Freud’s notion of “condensation,” as formulated in *The Interpretation of Dreams*.²²

10. Collective Condensation, Medial Condensation

There appear to be wholly comparable mechanisms on the collective level. If the system of language originates in the speech acts of the past, which have given form to the semantic system through a gigantic process of accumulation, language in its entirety must be seen as a product of “condensation.”²³ What is of relevance here is the quantitative proportion: billions of speech acts register as deposits in linguistic structures, whose virtue is that they are so compact as to fit into puny human skulls. Given our limited mental resources, this is an astonishingly compact and economical form of representation

²¹ See Winkler, *Docuverse*, 143ff.

²² *Perception*



²³ The most striking version of this thought was formulated by Christian Metz, whose book offers a psychoanalytic-semiotic theory of the cinema: “It is indeed a characteristic of language—and another aspect of the ‘problem of the word’—that it has this constant but never fully realised tendency to encapsulate a kind of complete (but concentrated, compressed) ‘argument’ in every word: a tendency which is also intrinsically condensatory. Even the most ordinary word, lamp for instance, is the meeting-point for several ‘ideas’ ... each of which, if it were unravalled, or decondensed, would require a whole sentence.” “Past condensations meet in each word of the language ... This is to define the lexicon itself as the product of an enormous condensation.” *The Imaginary Signifier*, trans. Celia Briton, Annwyl Williams, Ben Brewster and Alfred Guzzetti (Bloomington: Indiana University Press, 1982) 225; 239.

and a brilliant compromise.

Perhaps this is the most admirable aspect of language: as a social technology it transforms speech acts into compressed semantic-mental structures. And this conversion, the mechanism for the production of structures, is at the centre of what I elaborated above as a generalised model. The necessary dialectic between act and deposit, discourse and structure, is centred in the notion of condensation.

Naturally, this mechanism does not apply solely to language. It is evident that the stereotypes and theories of schemata in the visual media, to which I referred above, follow similar mechanisms: stereotypes and schemata assume their structure—even more visible than the units of language—in the progression of discourses; a long chain of western movies has given shape to the genre, and the structure of expectation with which recipients encounter it. Prior experience condenses into media competency, which, in turn, shapes a system of socio-symbolic topoi shared by both producers and receivers. It is time to retire the notion that visual media can be accessed without prerequisites.

Technology and architecture can be seen as products of condensation as well—this time, outside of human heads. The practices and knowledge of the past have accrued into the respective “state of the art.” Paralleling language, technology is a compressed structure containing the practices of the past and anticipating practices of the future. The same quantitative proportion applies here as well: trivialising Hegel, one could say that the practices of the past—that is, the technological practices of the past—have been “sublated in,” or displaced from, the collective *Kunstwerk* of technology.

This is relevant even on the level of the single product: As a socio-symbolic technology, the feature film—leaving all other medial differences aside—conceivably has surpassed literary fiction only because it shows “[a] higher [level of] condensation.” Deposited onto one material carrier, which can easily be consumed in 90 minutes, is the work on which entire

divisions of industrial specialists have been working for years, and they have done so with the help of an advanced technology in which is condensed, in singular form, societal work and technological know-how. The novelist's solitary act of writing, by contrast (supported solely by the collective Kunstwerk language), appears to be "technologically under-equipped."²⁴

11. Recapitulation: Monuments and Repetition

Revisiting the question of the relationship between monuments and repetitions, one connection should be sufficiently clear. Monuments can replace repetition because they themselves are social engines aimed at initiating repetition. Discourses manage to secure their continuity by establishing agencies of inertia that persist side by side and in tension with them.

At the same time, we do well to distinguish between the various types of agencies. Type 1 would be the pyramids, which combine persistence with—in an ideal case—unchanging duration thanks to their material durability. Type 2 can be represented by the human memory and the system of language: both are products of condensation and both exist and unfold within discourse; at the same time, their inertia and relative immobility provide a counterbalance to the tendency of discourse toward abrupt changes. All actual utterances and events must be seen with a view toward this agency of inertia. Paradoxically, therefore, type 2 embodies the historical-plastic monument that is mutable in itself.²⁵

²⁴ Comparison and thesis are, admittedly, rather crude, but I do not consider them to be out of place. Whoever judges media-historical transitions to be in need of interpretation will have to clarify why feature films obviously achieve a higher level of signification. Popular explanations along the line of, "movies are more successful because they are entertaining and easy to consume," are insufficient. What I have provisionally called "level of signification" would also have to be elaborated within the framework of an economy of discourse.

²⁵ Type 1: *Practices 1* *Practices 2*
 ↘ ↗ ↘
 Deposit,
 Monument → *material persistence*

achieves monumentality by way of accumulation and condensation. Towns, technologies and languages may serve as an example of what, because of their constant morphing, can only be described in terms of condensation. Subsequently, the notion of convention can only be apprehended by way of conventionalisation, which, in turn, has to be seen in the context of chains of repetitive acts.

The notion of condensation is the core of the model and its real theoretical gain. What characterises condensation is that it combines a quantitative with a qualitative aspect. When the incalculable range of linguistic utterances turns into a linguistic structure, acts are transformed into structures in ways that might recall Frederick Engels's dialectics of quantity and quality.²⁶ This enables us to connect our insights to quantitative-economic models. The mechanisms of circulation and distribution, which come quite naturally to economic analyses, are still hardly investigated in media theory. Split into empirical and theoretical analyses, quantities are left to superficial statistics, while theoretical models concentrating on the circulation of signs are quite rare, and an "economy of discourse" is, at best, a desideratum.

Referring to the concept of "condensation," technological reproduction, to use one of the most prominent concepts of media theory as an example, would be conceived of as a certain type of repetition. Technological reproduction generates structure (and redundancy) and—this is its monumental aspect—achieves cultural continuation. It would be the task of an "economy of discourse" to facilitate more precise synchronic and diachronic descriptions of such mechanisms.

Finally, the model presented here may help to correct certain systematic distortions of contemporary theorising. It seems obvious that current media theorists suffer from a flagrant "forgetfulness of language" and almost completely evade issues of language and code. My explanation is that semiotics,

²⁶ See Frederick Engels, *Dialectics of Nature*, in Karl Marx and Frederick Engels, *Collected Works* (London: Lawrence and Wishart, 1972) 25: 356-361.

formerly a hopeful candidate in the theory debates, has fallen into the abyss that separates anthropological from technology-centred approaches. With their grounding in action theory, the former focus on individual acts, but in doing so they forget that acts cannot be conceptualised independently of repetitions, that is, independently of a system of habits and conventions. This makes it necessary to reflect upon the tension between acts and "monumental" code.

Theories centred on technology, in turn, view code as a media-theoretical residue from the humanist-anthropological era because it is still tied to human carriers. The category of "meaning" is judged to be bloated and fuzzy, opposed to any materialist description of discursive processes, and hence negligible; especially since the actual history of media itself appears to have moved from "natural languages" to hardware-intensive visual media and, most recently, to the "pure" sphere of mathematical algorithms.

In light of what has been proposed here, however, this view is an illusion. If a code is obviously still at work in the case of visual media (and a crux of visual media is precisely that they systematically obscure this fact²⁷), and if, second, technology itself has to be conceptualised as a code, that is, as a condensed social deposit that is capable of determining subsequent practices, then it appears that the same question has to be asked about the computer. If we are to take this model seriously, we will have to pinpoint the exact instance in the computer where code emerges. I have attempted something along these lines by suggesting that one should approach the project of formal languages and formalisation from this point of view.²⁸

Rather than declaring code to be obsolete, it may be necessary to describe the production of meaning itself as a

²⁷ In the context of the debates on realism, the problem of the "invisible code" is discussed under the heading of the "illusion of transparency."

²⁸ See Hartmut Winkler, "Ueber Rekursion: Eine Überlegung zu Programmierbarkeit, Wiederholung, Verdichtung und Schema," <http://www.uni-paderborn.de/~winkler/rekursio.html>

social technology, that is, in materialist and discourse-economical categories. I have very roughly suggested as much by pointing to the transformation of discourse into structure; in such a way it may be possible to avoid both the allergy to “meaning” and the truncation of the concept of technology by way of eliminating language.

Media theory seems to depend on the elaboration of models that go beyond what is evident in media. These models are necessarily abstract, simply because only abstract models are able to cross the established, sizeable boundaries between different media that inevitably resist media-theoretical comparisons. As abstract models they are of necessity wrong. They are bound to miss precisely those mechanisms that are particularly characteristic of individual media and that have to be part and parcel of any single-medium analysis. But focusing on individual media (as well as one so-called “intermediality”) cannot spare us the labour of theoretical effort.

Developing a general notion of convention and conventionalisation, an idea of cultural continuation, an idea of how monuments and repetitions work together, and grasping what material persistence has in common with other types of continuation—all this appears to be necessary for any comparison between media. Once we assume that the various levels of acts, institutions, the symbolic and the technological—which are without doubt the four basic registers for any elaboration of media—do not simply exist on their own, we have to ask on what level they are mediated. This is precisely the question to which the model of the dialectical change of discourse into structure presented here wants to provide a first, tentative answer.

Translated by Geoffrey Winthrop-Young and Michael Wutz

J. Hillis Miller

Who's Afraid of Globalisation?

My question might be rephrased as “Who *ought* to be afraid of globalisation?” The answer to my title question is that a lot of people all over the world *are* afraid of globalisation. This includes a heterogeneous crew of environmentalists, isolationists, trade unionists, conservatives, and bleeding heart liberals. These people protest at meetings of the World Bank, the World Trade Organisation, and against the North American Free Trade Agreement. This group includes those in non-Western countries who fear that globalisation means nothing more or less than world-wide Americanisation and the consequent destruction of indigenous cultures everywhere. This will accompany, they fear, the total hegemony of United States economic and cultural imperialism. Our neo-conservatives in their incredible manic jubilatory naïveté call this the “new world order.” Those who fear globalisation also includes, however, those in the United States who want to make illegal immigrants guilty of a felony, to deport them all back to Mexico, and to erect a seven hundred mile wall on the Texas/Mexico border. It includes also those in the United States who wring their hands over the loss of jobs to “outsourcing,” a million or more jobs lost to China alone in the last few years, along with a consequent gigantic annual trade deficit with

* This paper was first given at a conference on globalisation at Wuhan University, in the People's Republic of China, 16-22 June, 2006.

China, as we buy more and more goods and services from China. These goods are in general extremely well-made, just as Chinese services are extremely well-performed, in places like call-centres in Dalian. The Chinese, like the Indians, do this for a fraction of the costs of the same goods and services in the United States. In the long run this will lower the standard of living in the United States and Europe, while gradually raising it everywhere else, as more and more highly skilled and highly paid United States workers are “laid off” because what they do can be done more cheaply and just as well or better in places like China or India or Malaysia. That is what Thomas Friedman calls the flattening of the world.

Ought this strange mixture of people be so afraid of globalisation? That is a different question. The answer is that being afraid of it is not going to stop it. Fear, moreover, is a bad state of mind in which to deal with a planetary change of unprecedented scope and rapidity. Best is to understand it and to try to take advantage of it, to deflect it in constructive ways, no easy task. Globalisation, in any case, is not going to stop or go away.

Marx and Engels, in a famous and quite remarkable paragraph in the *Communist Manifesto*, foresaw what today we call globalisation, both as an economic *mondialisation*, to give it the French name Jacques Derrida preferred, and as a cultural world-wide-ification. I am thinking of the section in the *Manifesto* that begins with the claim that:

All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify. All that is solid melts into air, all that is holy is profaned, and man is at last compelled to face with sober senses his real conditions of life, and his relations with his kind.

The need of a constantly expanding market for its products chases the bourgeoisie over the entire surface of the globe. It must nestle everywhere, settle everywhere, establish connections everywhere.

The bourgeoisie has through its exploitation of the world market given a cosmopolitan character to production and consumption in every country. To the great chagrin of Reactionists, it has drawn from under the feet of industry the national ground on which it stood. All old-established national industries have been destroyed or are daily being destroyed. They are dislodged by new industries, whose introduction becomes a life and death question for all civilised nations, by industries that no longer work up indigenous raw material, but raw material drawn from the remotest zones; industries whose products are consumed, not only at home, but in every quarter of the globe.¹

This section of the *Manifesto* ends with these prophetic sentences: "In place of old local and national seclusion and self-sufficiency, we have intercourse in every direction, universal inter-dependence of nations. And as in material, so also in intellectual production. The intellectual creations of individual nations become common property. National one-sidedness and narrow-mindedness become more and more impossible, and from numerous national and local literatures there arises a world literature." "World literature," Weltliteratur—the word and the idea are Goethe's. Though Marx did not foresee the iPod, he did see what changes technological innovation make. Today he would be speaking not of world literature, but of a homogenous worldwide culture of the new media: television, films, popular music, the internet, email, podcasts, videos, digital photos sent by email, and so on.

Marx and Engels saw the globalisation of capitalism as both a catastrophe and an opportunity. It would be a catastrophe for the old European nation states because it would weaken their hegemony. That weakening Marx and Engels more or less welcomed. Globalisation would also mean, they foresaw, the victory of capitalism as a world-wide single economic system of exploitation, commodification, and commodity fetishism. They

¹ Karl Marx and Friedrich Engels, *The Manifesto of the Communist Party* (1848): <http://www.anu.edu.au/polsci/marx/classics/manifesto.html>

also saw global capitalism, however, as the chance for communism, through the death of capitalism when it inevitably over-reaches itself through a process of autoimmune self-destruction. The workers will rebel to usher in the dictatorship of the proletariat. Marx and Engels, you will remember, do not appeal to the workers of this or that nation to organise within that country and resist. They say: "Working men [sic!] of all countries, unite!" If Marx and Engels prophesied the globalisation of capitalism, communism, as defined in the Manifesto, was itself explicitly a form of globalisation. Marx and Engels saw also that both forms of globalisation, economic and cultural, involve the weakening of nation state hegemonies and national cultures, for better or for worse.

Just what is our present day form of "globalisation"? It is a strange mixture of overlapping features. Moreover, what we call globalisation is occurring at different rates, to different degrees, and in different ways in different parts of the world. Large numbers of people everywhere are not globalised at all or only lightly globalised. My wife, for example, has so far not learned to use a computer. I have to do her Googling for her and type out emails she has written in longhand with a pencil to our children and grandchildren. Moreover, one should remember that globalisation has been accompanied by unparalleled economic exploitation, ethnic wars, suffering, and death. Jacques Derrida speaks eloquently about this aspect of globalisation in *Specters of Marx*: "For it must be cried out, at a time when some [such as Francis Fukuyama] have the audacity to neo-evangelise in the name of the ideal of a liberal democracy that has finally realised itself as the ideal of human history: never have violence, inequality, exclusion, famine, and thus economic oppression affected as many human beings in the history of earth and of humanity."² What was true in 1993, when Derrida wrote these words, is even more true and more glaringly obvious now, thirteen years later.

² Jacques Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning and the New International*, trans. Peggy Kamuf (London: Routledge, 1994) 85.

I have said that globalisation is a heterogeneous process. Economic globalisation is not the same thing as the global diffusion of tele-technological devices like computers, cellphones, and emails, though the former absolutely depends on the latter. Neither of these is the same thing as the environmental degradation, caused primarily by “developed” countries, that is causing global warming. None of those three is the same as the globalisation of media, though that too depends on the new technology. The globalisation of media means, among other things, the worldwide more or less instantaneous diffusion of news and advertising, as well as the concentration of media in the hands of people like Ted Turner or Rupert Murdoch. The globalisation of mass media is not the same thing, however, as the global diffusion of cultural forces like film, television, computer games, and popular music, even though they use the same tele-technological-prestidigitising devices: iPods, wireless networks, fiber optic cables, communication satellites, computers, and increasingly complex cellphones, with email, digital cameras, video-conferencing, game-playing, podcasting, and basic computing built in. A final form of globalisation is the transformation of the traditional concept of war as a conflict between sovereign nation states into something called the “war on terror.” In this new form of war, both the anonymous, ubiquitous, extra-national so-called “terrorists” and those who declare the “war on terror,” that is, President George W. Bush as the leader of the United States, make essential use of the new telecommunications devices, as well as other forms of “technicity,” for example passenger jet planes turned into missiles, cell-phones used to detonate roadside bombs, and elaborate technologies used unconstitutionally by the United States government to monitor telephone calls made by United States citizens.

The crucial element in all these features of globalisation, the common denominator, is the new communication technologies. Without those, globalisation in any of its forms would be impossible. No globalisation, at least in its current hyperbolic

form, without the cellphone, the computer, and the iPod. These have swept the world in a remarkably short time. I myself can remember the time, not so many years ago, when the first “browser,” Mosaic, gave you magical access to a handful of websites. Thomas Friedman has written a helpful and highly detailed book about the effects of new global technologies: *The World is Flat*.³ If he shows how the new technologies and a world-wide economy is penetrating more or less everywhere, he also shows how in the long run, and indeed already, this flat world or level playing field is likely to reduce United States power and give countries like China and India enormous economic and cultural power. Let us hope they use it wisely, for the benefit of mankind, more wisely than the United States is using its own power these days. We are using our economic, techno-scientific and military power in self-destructive as well as in outwardly destructive ways, for example by causing enormous environmental damage hastening global warming or by running up gigantic deficits that will sooner or later bankrupt our economy.

Globalisation of the new teletechnologies is making epochal changes in the way we live now. I have hinted at the transformation of scholarship and the university. Anyone anywhere now with a computer can have access to an enormous distributed database of scholarly information and online texts allowing authoritative research in almost anything. It is becoming less and less necessary to own that traditional basis of research and teaching in the humanities: printed books. It is not necessary, for example, to own hard copies, as they are called, of Henry James’s novels. They are almost all available online for free. I have cited the *Communist Manifesto* from an online version I obtained in a few seconds by way of Google. Collaborative scholarship can be carried on by teams that are made up of individuals spread all over the world, not just located in a single university, as I was in 2005-2006 involved in

³ Thomas Friedman, *The World is Flat: A Brief History of the 21st Century* (New York: Farrar, Strauss and Giroux, 2005).

an ambitious research project on narratology ostensibly located at the Centre for Advanced Study in Oslo, though I spent a total of only three weeks there during the year. Research essays are written on a computer and sent anywhere in the world instantaneously as email attachments. I write all my letters of recommendation in the computer and send most of them by email. Dissertation chapters are sent to me by email. I am learning to read, annotate, and comment on them on the computer screen. The whole minute to minute process of my professional life has been utterly changed by the computer in a few short years.

These new teletechnological devices have also made radical changes in ethical and political life, at least in my country and probably everywhere that globalisation has reached. The model of ethical interaction used to be the face to face encounter with my family member or neighbour, there before me in flesh and blood, as in Levinas's ethical theory of the visage, and even in Derrida's model of ethical life in *The Politics of Friendship*, *The Gift of Death*, and elsewhere. Most nineteenth and twentieth-century Western novels focus on the face to face encounter as the situation in which ethical confrontation and decision is carried on, though sometimes letters are important. Anthony Trollope's novels or Henry James's consist primarily of a succession of scenes in which two characters confront one another in the give and take of dialogue. One example is the moving scene in Trollope's *The Last Chronicle of Barset* in which Archdeacon Grantley's hatred of Grace Crawley as an unsuitable potential wife for his son, since her impoverished clergyman father has been (falsely, it turns out) accused of theft, melts into love and admiration in a moment when he actually meets her, and when she promises of her own accord not to marry his son as long as her father is not exonerated: "As he looked down upon her face two tears formed themselves in his eyes, and gradually trickled down his old nose. 'My dear,' he

said, 'if this cloud passes away from you, you shall come to us and be my daughter.' And thus he also pledged himself."⁴

Ethical life is radically different now from Trollope's representation of it. The most important ethical relations in an individual's life may be mediated by one or many of the new teletechnologies, by email, chatrooms, podcasts, computer games collectively played, and so on. A member of my own family is now happily married to a woman he first met online because they shared an interest in the same rather arcane website. She lived thousands of miles away.

If ethics have been fundamentally changed by globalisation, the change in political life is even more dramatic. A forceful paragraph in Derrida's *Specters of Marx* describes the way parliamentary democracy of the old-fashioned Western sort has been disabled by television:

politicians become more and more, or even solely, characters in the media's representation at the very moment when the transformation of the public space, precisely by the media, causes them to lose the essential part of the power and even of the competence they were granted before by the structures of parliamentary representation, by the party apparatuses that were linked to it, and so forth. However competent they may personally be, professional politicians who conform to the old model tend today to become *structurally* incompetent ... They were thought to be actors of politics, they now often risk, as everyone knows, being no more than TV actors.⁵

I add that since 1993, in my country at least, all the other teletechnological devices have intervened, for better or for worse, to disable traditional parliamentary democracy: electronic voting machines that may be easily altered, political online blogs that effect the way people vote, radio talk shows that have an enormous political effect, gerrymandering of

⁴ Anthony Trollope, *The Last Chronicle of Barset* (London: Penguin Books, 2002) 595.

⁵ Derrida, *Specters of Marx*, 80.

congressional districts on the basis of electronically gathered voting statistics, the instantaneous diffusion of public opinion polls gathered electronically, the obscene alliance of companies large and small with government, for example by lobbying, so that the federal drug coverage called Medicare Part D was written by and for the pharmaceutical companies, not for the good of the American people, the ownership and conduct of the media by politicians, for example the running of Fox News by an ex-head of the Republican National Committee, the hiring of a telemarketing firm, apparently under directions from the White House, to jam the telephone lines of Democratic get-out-the vote offices during the last presidential election,⁶ the apparent cooperation of the telephone company, AT&T, in the illegal electronic surveillance of United States citizens, "allowing the government to listen in on its customers' phone calls, read their e-mail and monitor their Web activity without the requisite legal showing," and so on and on. All these changes in ethics and politics depend absolutely on the new teletechnologies. It is even possible to call this new situation, as Thomas Cohen has done in an unpublished lecture, "post-democracy."

Globalised cultural studies seem at first to be a specifiable corner of globalisation, but "cultural studies" is a distressingly, or delightfully, vague word, depending on how you feel about it, or them. Nothing human is alien to cultural studies, to appropriate Terence's famous remark: *Homo sum: humani nil a me alienum puto*. (I found this citation in a few seconds on Google, which is a good example of the effects of the new globalising technologies on my own work. Google is amazing, as is *Wikipedia*, the online, collectively-written, constantly-updated encyclopaedia. Google and *Wikipedia* level the playing field. You do not need to be next door to a great library if you have a computer. Mossback professors tend to say this is too easy. Students no longer learn how to use the library, or to

⁶ See <http://www.nytimes.com/2006/04/17/opinion/17mon4.html?th&emc=th>

discriminate between good information and bad. Any library, however, contains a lot of bad or inaccurate information, whereas a volunteer army of specialists almost instantly corrects mistakes in *Wikipedia*. I can see no particular virtue in slogging around the library, as in the days when “scholarship was mostly legwork,” as my doctor-father, Douglas Bush, put it. He meant scholarship involved walking up and down miles of stacks in a research library looking for the books you want. Better ways exist to get exercise. End of parenthesis.)

You can, I was saying, make cultural studies mean more or less anything you like. The history of science, for example, including the story of how these new communication devices came to be invented, is a form of cultural studies, as is study of culinary and dress customs, advertising, the way people “play” the stock market, the “culture” of global corporations, as in Alan Liu’s wonderful book, *The Laws of Cool*, and so on.⁷ Cultural studies are actually closer to social sciences like anthropology and sociology than to what used to go on in traditional language and literature departments in the humanities. My university recently set up a new Centre for Ethnography in our School of Social Sciences. According to the press release, “The centre will explore social and cultural life from the perspective of those experiencing it. One of the centre’s first projects, funded by Intel Corp., will look at how technology changes people’s definitions of ‘public’ and ‘private.’” That sounds like cultural studies to me, as those in the humanities define it, though it will be practiced, in this case, in the School of Social Sciences, rather than in the School of Humanities, but with goals similar to those of humanities-based cultural studies. I have no objection to the way humanities departments are remaking themselves as forms of social science, though I do think courses training humanists who want to do cultural studies in the protocols of ethnography and sociology would be a good thing. It would perhaps even be a

⁷ Alan Liu, *The Laws of Cool: Knowledge Work and the Culture of Information* (Chicago: University of Chicago Press, 2004).

necessary thing, if cultural studies is to be carried on in a responsible way. I see no particular point in training people to read Shakespeare who are actually going to do a comparative study of dress customs in London, New York, New Delhi, and Beijing.

In practice, an emphasis on aspects of modern “popular culture” like film, television, video games, dress fashion, popular magazines, and popular music often holds centre stage in cultural studies when they are carried on in the humanities, especially since many practitioners of “cultural studies” were trained in more traditional humanities disciplines. It is only reasonable that young humanists should want to study such things, These cultural forms have far more power to determine ideologies and everyday life than does the once-dominant cultural form, literature. These new cultural forms are where the action is. The computer game industry has larger revenue than all of Hollywood. The computer game that my granddaughter, Jessica, a graduate student in neuroscience, habitually plays, *World of Warcraft*, by Blizzard Entertainment, had a million and a half subscribers in the People’s Republic of China the first month it came out in Chinese, in 2005.⁸ Already by late 2006 over three million Chinese were known to play *World of Warcraft*.⁹

These new prestidigitising machines magically create ubiquitous virtual realities, as in television news. Television news is in any country in the world carefully crafted to look like immediate reality. Television news is in fact in complex ways cunningly constructed as what Jacques Derrida calls an “artefactuality.”¹⁰ We are surrounded by such ghostly virtual realities. We live our lives in terms of them. What is most amazing is the rapidity with which these gadgets, for example cellphones and computers, have swept the world, just as have

⁸ See <http://blizzard.com/press/050720.shtml>

⁹ See <http://www.nytimes.com/2006/09/05/technology/05wow>

¹⁰ Jacques Derrida, “Artifactualities,” *Echographies of Television*, trans. Jennifer Bajorek (Cambridge: Polity, 2002) 1-28.

iPods, and movies. They seem to be irresistible. You might argue that if they Americanise everybody, this is only because nobody seems to be able to resist using them. No one is forcing people to use email, cellphones, or iPods. People everywhere have eagerly embraced their “Americanisation.”

Why is this? I answer that human beings apparently need virtual realities. They will therefore embrace whatever technology offers such artefactualities, from the printed book to the iPod. People take to spectral virtual realities as a duck takes to water. That is a truly amazing human propensity. These devices respond to that need, but so did literature in its heyday. Reading a novel by Trollope or Dickens (my habitual way of entering a virtual reality) is in this way like playing a computer game or watching the evening news on television or watching a film, in spite of the big differences among these various forms of entering an artefactuality. At bottom, however, they are just different forms of technological magic, what today takes the form of what I call prestidigitisation. All these magics require some material means, the words on the page, the images on the screen and the voices that accompany them, the sounds that reach my ear from the cellphone that I identify with my friend’s voice. The study of ideology is a spectrology, that is, the study of virtual realities. Ideology, as Marx’s argued in *The German Ideology* and as Jacques Derrida shows in detail in *Specters of Marx*, is fundamentally religious in nature. Virtual reality machines at any time are a way of transmitting ideological ghosts, spectres, spooks, like those images on a television screen or in a film, or like those ghosts that are raised when I read a novel: Trollope’s *The Last Chronicle of Barset*, or Toni Morrison’s *Beloved*, or Ha Jin’s *Waiting*.

On the one hand, the new teletechnologies are in a sense indifferent. They are just dumb machines. They do not dictate what use is made of them, though they certainly shape those uses. You can say anything you like in any language into a cellphone. A Chinese person on the street talking Chinese into his or her cellphone is making a significantly different use of

the device from the use an American person makes. Podcasting technology can be used in radically different ways. On the other hand, the devices do make radical changes in the way people live their daily lives, in their “culture.”

Another way to put this is to say that some theories of the bad effects of globalisation assume too easily that human beings are one single coherent thing. Ordinary people are, I claim, capable of being many different people at once, of having multiple identities. For example, they can use computers or cellphones while retaining many or most features of their traditional culture: ways of dressing, eating, forms of courtship and marriage, most important, perhaps, the specificities of a particular native language. An example of this would be those Chinese who work in call centres. They are trained to speak idiomatic English in several versions or accents, American, Canadian, Australian, or British. They work long hours at what seems to an American like an incredibly low pay scale. They then go home to eat Chinese food, to think and speak in Chinese, to be related to their families and friends in Chinese ways. They are hybrid creatures. But then each human being is, and always has been, a congeries of different heterogeneous persons. The present human condition is just an extreme example of the human propensity for each person to be a swarm of different incompatible people, all at once.

I have elsewhere said a lot about the virtues of keeping literary study alive in these days of cultural studies, about the fundamental differences between literary study and cultural study, and about the need to read philosophy and theory in order to understand literature. Literary study, I have argued, is, or should be, always specific, that is, an attempt to read this or that literary work, in all its uniqueness and singularity, whereas cultural studies, like anthropology and sociology, tend to be more interested in the typical, the average.

I want to end this brief discussion, however, by saying something apparently quite different. I think the most urgent task of a globalised cultural studies today is to make local and

then comparative, highly empirical, studies of just what effects on people's daily lives these essential requisites of globalisation, the new communications devices, are actually having. It is not so much popular music per se that should be studied, but popular music as transmitted from all over the world to anywhere in the world and then listened to on an iPod by specific people in specific cultural situations. It is not so much assuming films have a universal content, the same for all viewers, as studying the way films are seen and reacted to in quite different ways in different local cultures. It is not so much assuming cellphones have a universal effect, the same everywhere, as study of specific local uses of cellphones. It is not so much assuming that computers or search engines like Google have a universal effect, the same everywhere, as study of the different ways people in different cultures actually use these devices. What is the actual effect on people's personalities in different specific situations of playing computer games, or of using email, or of creating their own podcasts? That, in my view, is the frontier of a globalised comparative cultural studies today. If I had my life to live over, I would make such study my life work in teaching and writing. Such work would not just be objective description and analysis. It would take as its mission teaching people how best to use these new teletechnologies, how to be more than passive recipients of all those ghostly artefactualities, just as, in the old days when literature was the chief moulder of citizens' *ethoi*, disciplines like the New Criticism had as their goal to teach people how to read.

What skills will be necessary for these new disciplines, disciplines that hardly yet exist in coherent and institutionalised form? These skills will be quite different from the skills I was taught in college and graduate school to prepare me to teach and do research in literary history, literary criticism, and literary theory. Just what this new discipline will be like must be left to those who will invent it. I claim, however, that it should marry, in an unlikely alliance, the research procedures and protocols of ethnography with the analytical

acumen and resistance to old-fashioned hermeneutics of so-called deconstruction. Tom Cohen's admirable *Hitchcock's Cryptonymies*¹¹ offers, in film studies, a model for this new discipline.

¹¹ Tom Cohen, *Hitchcock's Cryptonymies 1: Secret Agents and 2: The War Machine* (Minneapolis: University of Minnesota Press, 2005).

Belinda Barnet

Do Technical Artefacts Evolve?

The reproducibility of the technical machine differs from that of living beings, in that it is not based on sequential codes perfectly circumscribed in a territorialised genome.¹

How does one tell the story of a machine? Can we say that technical machines have their own genealogies, their own evolutionary dynamic? The technical artefact constitutes a series of objects, a lineage or a line. At a cursory level, we can see this in the fact that technical machines come in generations; they adapt and adopt characteristics over time, one “suppressing the other as it becomes obsolete.”² Since the early days of Darwinism, analogies have been drawn between biological evolution and the evolution of cultural artefacts. It is obvious that technical artefacts in particular change over time; we can see these changes happening around us, and they appear to be accelerating. So are we to understand this dynamic from a biological, an anthropological or a sociological perspective?

* Parts of chapter 6 were originally published as an article in *Ctheory* as “Technical Machines and Evolution” (Article 319, 2004). The author would like to thank Niles Eldredge for his feedback and comments on this manuscript.

¹ Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. P. Bains and J. Pefanis (Sydney: Power Publications, 1995) 42.

² Guattari, *Chaosmosis*, 40.

I want to locate a dynamic in technics that stems neither from biology nor from human societies, which grants the technical object its own materiality, its own limits and resistances, which allows us to think technical objects in their historical differentiations. This calls for a new consideration of technicity, and a new consideration of the human being in relation to technics. The task will be difficult—"at its very origin and up until now, philosophy has repressed technics as an object of thought. Technics is the unthought."³

This essay will be a collection of notes towards such a perspective; it will be a prolegomena to the history of a technical machine, a history which is not included here and which has yet to be written. I will be exploring the work of Bernard Stiegler in relation to technicity and to human thought, but my task will not be to invert the history of philosophy itself, to imagine the human as what is invented by technics. I do not wish to put forward a theory of human evolution. Similarly, there has been a long and bloody Hundred Years War among cultural anthropologists over whether human culture can be said to evolve,⁴ a war that predates Darwin and continues to the present day. I will not be contributing to this debate, although I will be visiting some of its key arguments. My intention is much narrower, or perhaps more jaded; I am interested in the *technical artefacts* that accumulate around human culture, and how they change over time. I want to clear a space in which a technical object might evolve, and in which I might trace such an evolution.

³ Bernard Stiegler, *Technics and Time. Volume I: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998) ix.

⁴ Stiegler, *Technics and Time*, 134. See J. Fracchia and R.C Lewontin, "Does Culture Evolve?" *History and Theory* 38 (December 1999): 52-78.

Introduction

Niles Eldredge collects things for a living, and there are two great collections in his life. The public one is on display at New York's Museum of Natural History; its 1000 individual specimens stretch floor to ceiling for 30 metres across the Hall of Biodiversity.⁵ There are beetles, molluscs, rotifers and fungi, spiders, fish and birds, all arranged into genealogical groups. The other collection is private; it spans an entire wall in his home in rural New Jersey. This collection contains over 500 specimens, but of the "musical rather than the biological variety."⁶ He collects cornets, a type of musical instrument. There are silver and gold ones, polished and matte, large and small, modern and primitive. Ever the biologist, Eldredge has them arranged in taxonomic relationships of shape, style and date of manufacture. Much of the variety in cornet design is based on the way the pipe is wound.

Late in 2002, Eldredge's curiosity got the better of him. He decided to feed these specimens through the phylogenetic computer program he uses for his trilobites, to apply the "scientific method" to technical evolution for the first time. As usual, he asked the computer to come up with all the possible evolutionary trees and then make a "best guess" based on the existing specimens.⁷ The results were astounding. Compared to the phylogenetic diagram for trilobites, the diagram for a technical machine seemed much more "retroactive." Eldredge's musical instruments could defy the laws of evolution.

In the world of living things, there are basically only two ways creatures can obtain a characteristic: by inheriting it from a previous generation, or by evolving it in the present one. This last form of evolution is itself the subject of debate; an organism can't change its DNA in one lifetime (with the exception of certain bacteria). Biological organisms evolve gradually over hundreds of generations, subject to natural selection. They are

⁵ Gabrielle Walker, "The Collector," *New Scientist* (26 July 2003): 38.

⁶ Walker, "The Collector," 38.

⁷ Walker, "The Collector," 38.

dependent on the previous generation to acquire their characteristics (this is called “vertical transmission” or parents to offspring). If a species dies out—biological “decimation”—its accumulated characteristics die with it. But technical machines are different.

With cultural evolution comes the capacity to co-opt innovations at a whim. Time after time, when the cornets on one part of the tree acquired a useful innovation, designers from other branches simply copied the idea.⁸

In technical evolution, machines are not entirely dependent on the previous generation. They can borrow innovations from generations in the past (retroactivation) or they can borrow from entirely different branches of the evolutionary tree (horizontal transmission). As Eldredge put it in an interview with the author in 2004:

The key difference is that biological systems predominantly have “vertical” transmission of genetically-ensconded information ... the neatness of evolutionary trees in general in biological systems stems from the compartmentalisation of information within historical lineages.

In Eldredge’s diagrams, cornets that were relatively primitive seemed to co-opt innovations from different branches at a whim. If there was a particularly good innovation, then a “burst” of rapid evolutionary activity would appear. The lines in the cornet evolutionary tree were thoroughly confused. Instead of a neat set of diagonal V-shaped branches, a “cone of increasing diversity,” you would see flat lines from which multiple machines appeared.⁹ When this happens in biology, it implies explosive radiation—the appearance of multiple new species in a geologically short period. In the biological world it

⁸ Walker, “The Collector,” 40.

⁹ Walker, “The Collector,” 41.

is extremely rare, yet it appears to characterise Eldredge's cornets. In the cornet diagram, the gradual passage of time and generations does not precede the development of a particular characteristic. Innovations appear spontaneously, often with no physical precursor. This means that the cornet's relationship to time and inheritance is different from that of biological organisms.

Another striking feature of Eldredge's diagrams was that outdated or superseded machines could re-appear with new designs, as if they were held in memory and only needed a certain innovation to burst into activity again. This is what we mean by "retroactivity." Technical machines can reappear, borrow from each other across branches and then rapidly evolve in a single generation. In biological evolution, when branches diverge, they diverge irrevocably; similarly, when branches die out, they cannot reappear. Technical machines are different. There is no extinction; nothing is irrevocable. Technical machines can operate on the past.

Technical structures, ensembles and channels are static combinations in which phenomena of retroactivity appear: by using the steam engine, the steel industry produces better steel, allowing in turn for the production of more efficient machines.¹⁰

This raises the question of technical "memory," a topic we will explore in the next section. Why can technical machines retroactivate? What is the relationship of human thought to this? Is it humans that "remember" previous generations of technical machines and transfer their characteristics between branches? If so, how and where do they remember them? Memory, and in particular technical memory, bridges "not just past and present, but outside and inside, machine and

¹⁰ Stiegler, *Technics and Time*, 31.

organism”¹¹ Over 100 hundred years ago, a contemporary of Charles Darwin was also obsessed with “the substantial identity between heredity and memory.” In his book *Life and Habit*,¹² Samuel Butler argued that biological heredity was but one mode of memory, and that “all hereditary traits, whether of mind or body, are inherited in virtue of, and as a manifestation of, the same power whereby we are able to remember intelligently what we did half an hour, yesterday, or a twelvemonth since.”¹³ The question of memory and inheritance will be the leitmotif of this essay. It will be the question we pose to history. It will be the question that marks this theory of technical evolution.

Eldredge is also interested in memory and in technical evolution, but at this stage, he wants to warn against the indiscriminate use of biological metaphors.¹⁴ If innovations are taken from the past and spontaneously appear in another branch in which they have no physical precursor, this constitutes a break from genetic evolution. There is an evolutionary dynamic going on, but its rules of inheritance are not based on Mendelian genetics. Similarly, the kind of selection that operates on horizontally-transmitted characteristics is not Darwinian natural selection.¹⁵ We need another explanation for retroactivity and for horizontal transmission where there is no physical precursor. So I will be thinking the evolution of technical objects in terms of lineages and diagrams; but I will also be interested in precisely where this is different from biological evolution, where it exceeds the

¹¹ John Sutton, *Philosophy and Memory Traces* (Cambridge: Cambridge University Press, 1998) 4.

¹² Samuel Butler, *Life and Habit* (1878): <http://www.gutenberg.org/dirs/etext04/lfhb10h.htm>

¹³ Samuel Butler, *Luck and Cunning* (1878): <http://www.gutenberg.org/dirs/etext04/lckc10h.htm>

¹⁴ Eldredge, cited in Walker, “The Collector,” 41

¹⁵ M. Matteo, “Nongenetic Selection and Nongenetic Inheritance,” *British Journal for the Philosophy of Science* 55.1 (March 2004): 43.

biological.¹⁶ Technical machines are ensembles in which phenomena of retroactivity appear, where there is a different relationship to time and inheritance, where there are different material limits and contingencies.

So we need to recognise a limit to genealogical metaphors. But the question remains: what is the relationship between human thought and technics? If there is technical “remembering,” then there must also be a mode of transfer and storage, and a place where this occurs.

There is no archive without consignment in an external place which assures the possibility of memorisation, of repetition, of reproduction, of reimpression.¹⁷

Is this place inside or outside? If it is inside human memory, then how does it exceed our biological death as human beings? If it is outside, then where is it located precisely? The relationship between human memory and technics constitutes a tension, a tension that marks the break from genetic evolution. To explicate this tension, I will need to articulate a mode of passage, a logic. Eldredge does not provide one; as a scientist, he has simply pointed out that a dynamic exists, and that this dynamic is different to biological evolution. To articulate this logic, I will be using the innovative thinking of Jacques Derrida and Bernard Stiegler.

Derrida thinks the relation between humans and technics in terms of an “originary supplementarity”: human memory is a prosthesis of the inside. It is neither inside nor outside, but constitutes a “relative interiority.” Stiegler’s thinking may be seen as a radicalisation of this concept. Whereas Derrida is concerned to articulate the tension in terms of a “logic,” the logic of difference, Stiegler is concerned to articulate this logic

¹⁶ In this article I will be using the term evolution to mean the “fate of heritable information in an economic context,” Niles Eldredge’s personal definition.

¹⁷ Jacques Derrida, *Archive Fever: A Freudian Impression*, trans. E. Prenowitz (Chicago: The University of Chicago Press, 1996) 11.

in terms of its historical differentiations in different technical systems. The logic will only appear in its differentiation; the “interiority is nothing outside of its exteriorisation.”¹⁸ This is why Stiegler will be useful to any material genealogy of a technical machine. He will give us descriptive purchase on this logic as it is articulated in technical objects. We will unpack this concept in more detail presently.

For the moment, let us return to the problem raised by Eldredge; technical machines break the laws of genetics. From his perspective, this is because they are subject to intelligent design. Part of the reason Eldredge created these diagrams in the first place was to prove to the Creationists that intelligent design has its own dynamic, and this dynamic is radically different to what we find in nature. Technical machines are invented; this is what distinguishes them from biological organisms. As Aristotle puts it: “not one product of art has the source of its own production within itself.”¹⁹ Or rather, technics do not have the capacity for self-production. Silicon does not automatically rise up into a computer. As an object, it must first be thought in the mind of a human, and then created.

Created objects and artefacts are what most readily come to mind when the word “technology” is mentioned.²⁰ The domain of “technics” is even more restricted; in general, it designates “the restricted and specified domain of tools, of instruments.”²¹ These objects are not a fact, but the result of human thought. In this sense, technical objects might be taken as by definition human fabrications. Humans create technics; technics do not pre-exist or constitute the human.

This understanding dominates the contemporary thinking of technics, and consequently extant histories of technical

¹⁸ Stiegler, *Technics and Time*, 152.

¹⁹ Cited in Stiegler, *Technics and Time*, 1. Cf. Aristotle, *Physics*, II.1.25–30.

²⁰ Carl Mitcham, *Thinking Through Technology: The Path Between Engineering and Philosophy* (Chicago: University of Chicago Press, 1994) 161.

²¹ Stiegler, *Technics and Time*, 93.

machines.²² It is based on an opposition, an opposition as old as metaphysics. We must address this before any new theory of technical evolution can be discussed.

The Aporia of Origin: Thought and Technics

“At the beginning of history,” asserts Bernard Stiegler, “philosophy separates technē from episteme,” and to these two regions of beings two dynamics are assigned: mechanics and biology.²³ It is in the inheritance of this conflict that technical knowledge is devalued as mere supplement, and the human affirmed against the process of technicisation. Human thought (the philosophical episteme) is pitched against the sophistic technē (art or craft). At the time, these sophistic “arts” were primarily mnemotechnics and writing—techniques of memory. To the ancients, they were a form of bastardised anamnēsis, a mechanical incursion on thought. Human memory was “the noblest region of ... personality,”²⁴ an originary knowledge for which technē served as mere extension. Platonic philosophy was constituted on this opposition between human knowledge, which is transcendental, and technics, which lacks self-production. The reason it is separated is to account for the possibility of access to knowledge, or more precisely, an originary and purely human knowledge. It is the answer to an ancient aporia.

Aporia comes from the Greek, “meaning, ‘without issue,’ or ‘without way’ ... that which thought cannot resolve or untie without forgetting the undecidability which structures the aporia.”²⁵ It is a limit question, a question which is irreducible, and which will consequently reappear in every attempt at an

²² Stiegler, *Technics and Time*, 14.

²³ Stiegler, *Technics and Time*, 2.

²⁴ Cited in Darren Tofts, *Memory Trade: A Prehistory of Cyberculture* (Singapore: Stamford Press, 1998) 58.

²⁵ Richard Beardsworth, “Towards a Critical Culture of the Image—J. Derrida and B. Stiegler, *Echographies de la télévision*,” *Tekhnema* 4 (1988).

answer. This particular aporia—Plato’s *Meno* and the aporia of memory—is crucial to the history of philosophy²⁶ and also crucial to the history of technics.

What is human knowledge? Or more precisely, what is purely creative human knowledge? This would be the knowledge that humans draw upon to create technologies; it would not be inherent to the created object or artefact. So in a sense, it could not be acquired by experience, as this would accord the object itself knowledge, if not agency. It would need to be uncontaminated by technics at the beginning. But this presents a problem—a problem encapsulated in an address by Meno to Socrates in his discourse on the essence. The problem is that such knowledge is impossible. The question is actually formulated in response to Socrates’s attempt at founding a human value (Virtue) in the human, as opposed to something acquired in the outside world of objects and experience:

How will you look for something when you don’t know in the least what it is? How on earth are you going to set up something you don’t [already] know as the object of your search?²⁷

Socrates, in response, rephrases the aporia to highlight the problem:

a man cannot try to discover either what he knows or what he does not know. He would not seek what he knows, for since he knows it there is no need of the inquiry, nor what he does not know, for in that case he does not even know what he is to look for.²⁸

This aporia is taken up and resolved by Socrates through the myth of reminiscence.²⁹ Man has access to an originary

²⁶ Stiegler, *Technics and Time*, 98.

²⁷ Cited in Stiegler, *Technics and Time*, 97.

²⁸ Cited in Stiegler, *Technics and Time*, 98.

²⁹ See Beardsworth, “Towards a Critical Culture of the Image.”

knowledge, to an originary memory acquired before the fall. Man already knows what he does not know—it's just that he has forgotten it. Knowledge is an unveiling, a remembering. Human memory is transcendent.

Thus the soul, since it is immortal and has been born many times, and has seen all things both here and in the other world, has learned everything that is.³⁰

Consequently, argues Stiegler, the *aporia* is settled in terms of an opposition. Thought has the principle of its creation, of its movement, within itself, and this transcends the world of objects. The human being does not receive its knowledge from the outside world, from the finite world of objects, but finds it again and again within himself. The myth of reminiscence thus institutes metaphysical oppositions between soul and body, thought and technics, infinite and finite. For our argument concerning technical objects, this myth places the act of creation squarely on the shoulders of human beings who have access to an originary knowledge, uncontaminated by technics, and consequently by finitude, in the beginning. The history of a technical machine would thus be the history of pure invention, of human beings who have access to a transcendent memory.

This is precisely the divide that Stiegler, and also Derrida, problematise. Derrida argues that memory is always already contaminated by technics. The prosthetic already-there: this is what the myth of reminiscence “forgets.” Stiegler argues that the prosthetic already-there constitutes a break with genetic evolution; and not only this, it is a break which constitutes the human. Both philosophers put the idea of pure human memory into crisis, and consequently the idea of any access to a realm of thought uncontaminated by technics.

To return to our original question: how does one write the genealogy of a machine, and where would human beings figure in this diagram? It is impossible to deny the role of human

³⁰ Socrates, cited in Stiegler, *Technics and Time*, 99.

thought in the creation of technical artefacts. But where does the knowledge required to create these artefacts come from? Plato maintained that creative knowledge is transcendent, that it is uncontaminated by the world of experience (and by extension, the technical object itself). Creative knowledge doesn't come from the world of objects. To deny a transcendent human memory is to reinstate the ancient aporia: purely human knowledge becomes impossible.

So for now, we should rephrase our question.

It is impossible to deny the participation of human thought in the essence of *machinism*. But up to what point can this thought still be described as human?³¹

This, then, will be the subject of the next section. But we will approach it from a different angle, in order to question the relation of memory to technics, and also to question where these memories come from. Is it humans that remember previous generations of machines, and where are these memories stored? We will approach it from the perspective of evolution.

Epiphylogenesis and the Aporia of Memory

Humans die, but their histories remain. This is what distinguishes them from animals.³²

Death is the radical effacement of memory. It is the erasure of our personal experience, our personal histories—and it is an inevitability that we are aware of. We cannot take death away from each other, any more than we can take upon ourselves someone else's death. Death cannot be transferred, nor can we

³¹ Guattari, *Chaosmosis*, 36.

³² Bernard Stiegler, "Our Ailing Educational Institutions," *Culture Machine* 5 (2000): <http://culturemachine.tees.ac.uk>.

deliver ourselves from it. It is our “first and last responsibility,”³³ and it is this question and this awareness which mark us as human. We are finite beings.

Our awareness of death is what drives us to create archives, technologies of retention and storage. We leave traces of ourselves and our experience in other people’s memories, in the memories of our children; but also in the nonliving—in writing, in objects and artefacts, on cave walls, in woven rugs and on computer screens, in language and culture. We leave traces of our experience outside ourselves as individuals, traces that will not be lost when we die, but will remain.

Among these traces most have in fact not been produced with a view to transmitting memories: a piece of pottery or a tool were not made to transmit memories, but they do so nevertheless, spontaneously. Which is why archaeologists are looking for them. Other traces are specifically devoted to the transmission of memory: for example, writing [and] photography.³⁴

Bernard Stiegler argues that these inscriptions comprise a structure of inheritance and transmission, a structure that accumulates with each successive generation. It is a structure which exists outside our own genetic limitations, outside the finite lifetime of the individual, but which nonetheless carries in it our collective wisdom: the ideas and experiences that we have had, the techniques that we have learned, the tools and artefacts that we have created. For Eldredge, this is what we mean by the word “culture.” Culture is but a series of memorials. In fact, it is a gift to others—the gift of death.

Importantly, this structure of inheritance and transmission, the material it contains, is not inherent to us. We are not born with it; it is not a genetic memory. It is inscribed and transmitted outside our genetic programs. In other words, we

³³ Jacques Derrida, *The Gift of Death*, trans. David Willis (Chicago: University of Chicago Press, 1995) 44.

³⁴ Stiegler, “Our Ailing Educational Institutions.”

are born into it, we acquire it through experience. In is in this sense that Stiegler calls the structure epigenetic—it exists outside and in addition to the genetic, like a surrounding layer. This is a word in use by the scientific community as well, to designate “those characteristics inherited outside of genetic encoding and transmission.”³⁵ We will be using it in the same sense, to designate that which is not coded for in our genes, but which we acquire.

To acquire something outside our genetic programming, then, this thing must exceed the biological. The epigenetic structure must pre-exist us; it must exist beyond our short lives to be subject to inheritance and transmission. We are born into it; it was here before us and it will continue after us. This is what Heidegger calls the already there, this “past that I never lived but that is nevertheless my past, without which I would never have had a past of my own.”³⁶ Language is a perfect example. It is not genetic; it is acquired, and yet it has its own history, its own genealogy, its own memory that exceeds the individual. In entering into language, it creates a past for us, and we acquire this past, which we continue as our own. We might call this acquisition an “event.” It becomes the interface through which we enter into relation with the world. So when we are born, we acquire something that we have not individually created but which, nevertheless, shapes our experience of the world. And unlike the plant and animal kingdom, this acquisition, this epigenetic event, is not lost when we die. In the case at hand, observes Stiegler, life conserves and accumulates these events.³⁷ There is history, there is culture, and there are the artefacts which carry them beyond our death—technics.

Consequently, Stiegler demarcates a third structure, the structure which stores and accumulates our individual

³⁵ Philip Cohen, “You Are What Your Mother Ate,” *New Scientist* 4 (August 2003): 14.

³⁶ Stiegler, *Technics and Time*, 140.

³⁷ Stiegler, *Technics and Time*, 177.

epigeneses, which exists beyond our own central nervous systems, beyond our individual genetic and epigenetic memories. This contains what we are for the moment calling culture (past epigenetic events, lessons of experience), but also what we are calling technical artefacts. The structure is at once our own and also transcendental: it is larger than ourselves. It is a store, an accumulation, a sedimentation of successive epigeneses, a thing which evolves, which has its own historicity and dynamic.³⁸ Far from being lost when the individual human dies, it conserves and sediments itself. Stiegler calls this the epi-phylo-genetic structure, implying by that terminology a material genealogy proper to it.

So he distinguishes here between three types of memories out of which the human develops:

Genetic memory; memory of the central nervous system (epigenetic memory); and techno-logical memory [epi-phylogenetic memory].³⁹

Stiegler locates or amalgamates “language,” “technics,” “technique” and “technology” within this third type of memory, epi-phylogenesis. Not because they are of an essence, but because they are all forms of memory support; they are forms of inscription, transmission and ultimately, transcendence. They are larger than ourselves; they exceed our death as human beings. Technics, however is afforded a special place here; although in common parlance it designates tools and instruments, Stiegler also uses the term in the Greek sense (*technē*). In other words, it designates skill, art and craft. Technical objects are the result of the transmission of these operational chains, which are transformed in time as artefacts. Language itself is also a technique, a skill, a mode of transmission—and thus it is a form of technics.⁴⁰ Technics, for

³⁸ Stiegler, *Technics and Time*, 140.

³⁹ Stiegler, *Technics and Time*, 177.

⁴⁰ Stiegler, *Technics and Time*, 94.

Stiegler, are always memory aids—whether they have been created explicitly so (for example, language or photography, which are mnemotechnics) or not (pottery and rugs). This is what he means by epiphylogenesis.

Epiphylogenesis, then, designates a new relation between the human organism and its environment. It is technics, as the support of the inscription of memory, which is constitutive of transcendence. The biological human, with its genetic and epigenetic memory, dies. This is the paradox of Man: “a living being characterised in its forms of life by the nonliving,”⁴¹ by its relation to death. In other words, epiphylogenesis gives human beings access to transcendence, and thus to time. It is finitude, our constitutive finitude as biological humans (which the myth of reminiscence “forgets”) that propels man to invent himself within this structure. But at the same time, this structure transforms the human as much as it is transformed by it. In Stiegler’s terms, the “what” (technics) invents the “who” (humans) at the same time that it is invented. Neither term holds the “secret” of the other—neither term is originary. In this way, Stiegler develops Meno’s aporia into an inextricable relation; it is our inscriptions in the nonliving, in what is dead (technics) which constitutes transcendence.

I will retain several of these concepts in my nascent theory of technical evolution. Firstly, the concept that technics is a memory aid—and that, unlike pottery or woven rugs, there are certain forms of information storage, communication and display that are also mnemotechnical systems: like the internet, or writing. That this memory aid is in itself nonliving, that it exceeds the biological, will also mean that its description must be of a different order to the biological. There will be a limit to Darwinian metaphors, as Eldredge put it. Technics constitutes its own domain, it has its own relationship to time and inheritance, its own dynamic radically different to what we find in nature.

⁴¹ Stiegler, *Technics and Time*, 50.

Consequently, any genealogy of a technical machine will need to recognise that the “intellectual capital” of the societies in which particular technologies evolve belongs properly to this dynamic. The discourses surrounding the evolution of specialised techniques and procedures (for example, computer engineering), form a part of this system; they are not “purely” human, as they exceed the biological. They are systems which humans enter into and take on as their own, which are transformed in time as technical artefacts. Together, technics, technique and language constitute a third layer. This is what Stiegler means by epiphylogenesis.

Next, we need to ask how the passage to this “third layer” is effected. What is the process of “liberation” that memory pursues? And in an even more practical sense, how do particular elements of a technical system retroactivate or transfer themselves to other systems within this structure?

This emphasis on transfer and retroactivity will distinguish my theory of technical evolution from Stiegler’s; Stiegler recognises these two phenomena, but subsumes them back into the logic of epiphylogenesis, the preservation in technical objects of epigenetic experience. I wish to draw them out as the dynamic which distinguishes technical phylogenesis. According to Eldredge’s diagrams, the phenomena of horizontal transfer and retroactivity must be the basis of any theory of technical evolution, if we wish to capture the difference between technics and biology. In the following section I will look at how French anthropologist Leroi-Gourhan and Stiegler approach this dynamic. I will also look at a theory that has become quite popular in the last ten years, a theory which claims to account for the transmission of information by non-genetic means: memetics.

The Dynamics of Technical Evolution: Transmission and Innovation

To account for the passage from the genetic to the non-genetic, Stiegler draws on the work of Leroi-Gourhan. In his book

Gesture & Speech, Leroi-Gourhan proposes that the evolution of man is characterised by a “freeing of memory”—the exteriorisation of human capacities and genetic traits (what he calls “organs”) into technics. For Leroi-Gourhan, this process silently propels our evolution as a species.

The whole of our evolution has been oriented toward placing outside ourselves what in the rest of the animal world is achieved inside by species adaptation. The most striking material fact is certainly the “freeing” of tools, but the fundamental fact is really the freeing of the word and our unique ability to transfer our memory to a social organism outside ourselves.⁴²

From the appearance of Homo Sapiens, the constitution of this external social memory dominates all problems of human evolution.⁴³ Technology has, in this sense, created the human as a species; humanity is nothing but a process of “exteriorisation,” a process in which our access to time and culture is accomplished through external supports which transfer our memories. Tools are “exuded” by humans in the course of their evolution; they spring, literally, from the nails and teeth of primates, and in turn give us an non-genetic advantage over other species, who are condemned to hunt without weapons, to feel the cold against their skin without clothes. As a species, we are characterised by our physical and mental non-adaptation. Our memory is transferred to books, our “strength multiplied in the ox, our fist improved in the hammer.”⁴⁴ For Leroi-Gourhan, we can trace all contemporary technologies back to this process of exteriorisation. Tool and gesture are now embodied in the machine; operational memory

⁴² André Leroi-Gourhan, *Gesture and Speech*, trans. A. Bostock Berger (Cambridge: MIT Press, 1993) 236.

⁴³ Leroi-Gourhan, *Gesture and Speech*, 229.

⁴⁴ Leroi-Gourhan, *Gesture and Speech*, 246.

(technique) now embodied in automatic devices; the capacity to correlate recollections in the punched-card index.⁴⁵

Consequently, Leroi-Gourhan understands technological evolution as a relation of the human to matter, where the human exteriorises technical forms. Further to this, he contends that technics is itself in perpetual transformation; it evolves in its organisation. It is at once its own milieu, separate from that of the human animal. This evolution is parallel to the evolution of the human, but it also organises itself. We can see here the inspiration behind Stiegler's concept of epiphylogenesis; there is a systematicity to the evolution of technics, a kind of technologic which is not entirely human. For Leroi-Gourhan, there is an inherent dynamism to technics, itself productive of new lineages and machines. When we look at particular machines in retrospect, it would appear that they were inevitable in some sense; as if they were guided by "archetypes":

Everything seems to happen as if an ideal prototype of fish or of knapped flint developed along conceivable lines ... from the fish to the amphibian, to the mammal, or to the bird, from form-undifferentiated flint to the knapped tool, to the brass knife, to the steel sword.⁴⁶

Everything seems to point to a universal technical "tendency." This tendency is the essence of technics; there is a necessity proper to it as a milieu. Consequently, the evolution of technics will have its own phylogenetic limits; as in the evolution of biological animals, there are only a given number of possibilities. Differentiation, the creation and development of new machines, artefacts and tools, is silently propelled by technical tendencies down certain lines. For Leroi-Gourhan, the human inventor is always guided by archetypes. He is but a combinatory genius,⁴⁷ selecting from and giving culturally

⁴⁵ Leroi-Gourhan, *Gesture and Speech*, 264.

⁴⁶ Leroi-Gourhan, cited in Stiegler, *Technics and Time*, 45.

⁴⁷ Stiegler, *Technics and Time*, 36.

specific embodiment to these archetypes. Technical continuity, its evolution as a milieu, is transcendent. This continuity, and its presence as archetypes, excludes “pure invention, ex nihilo.”⁴⁸ So the human has a particular relationship to technics—that of exteriorisation—but at the same time, the technical milieu has its own dynamic which guides the process of invention itself, which exists beyond and before the inventor. The inventor is moved by technical tendencies.

The concept of allocating technics its own tendency is not new. Numerous theorists have explored technology from this perspective; among them, Guattari, De Landa, and even earlier, Simondon, whose concept of the progressive “concretisation” of technics is important for the development of Stiegler’s argument.⁴⁹ For Simondon, the technical artefact constitutes a series of objects, a lineage or a line; at a cursory level, we can see this by the fact that machines appear across generations. At the origin of the lineage is a synthetic act of invention, constitutive of a technical essence.⁵⁰ This essence is recognised by the fact that it remains stable throughout the evolutionary lineage, and not only stable, but productive of new structures and functions by progressive saturation. Machines speak to machines before they speak to man, as Guattari puts it,⁵¹ and the language is not human.

But Leroi-Gourhan’s technical tendency is universal; it is transcendent. And if there is a universal logic driving the evolution of technics as a system, how can we explain technical diversity? Evolution is all about diversity; it is in fact only in the process of differentiation that the logic of evolution is discovered. Similarly, Stiegler maintains that it is only in technical differentiation that the logic of epiphylogenesis can be

⁴⁸ Leroi-Gourhan, cited in Stiegler, *Technics and Time*, 61.

⁴⁹ Félix Guattari, *Chaosophy*, ed. Sylvère Lotringer (New York: Semiotext[e], 1995); M. DeLanda, *War in the Age of Intelligent Machines* (New York: Zone, 1992); G. Simondon, *Du mode d’existence des objets techniques* (Paris, Aubier, 1958).

⁵⁰ Stiegler, *Technics and Time*, 77.

⁵¹ Guattari, *Chaosmosis*, 40.

discovered. For Stiegler, there is no “ghost” in the machine, no platonic essence we are striving towards. “The organising principle of the technical object is in this object qua tendency, aim and end.”⁵²

Confronted with diversity, Leroi-Gourhan posits two other dynamics at work at the lower, “ethnic” level, which diffract or instantiate the technical tendency: invention and borrowing. Invention, of course, does not occur in a vacuum; it is guided by technical archetypes. The inventor is really just combining the best technical forms for its realisation. Similarly, borrowing—from other cultures, from existing technical forms—is guided by archetypes. In fact, as Stiegler points out:

Whether this evolution occurs by invention or by borrowing is of minor importance, since this ... in no way contradicts [the] systemic determinism in its essence.⁵³

What is important for Leroi-Gourhan is whether or not the invention is acceptable and necessary to that group of people. Human societies have a characteristic capacity to “accumulate and preserve technical innovations,”⁵⁴ and also to discard or forget them. This is connected with his concept of the social memory. To put it simply, technical objects are either taken up by human society or they are forgotten. In a sense (and here I am diverging from Leroi-Gourhan’s thesis) society constitutes an “adaptive pressure” on the technical lineage. Technical objects are not a fact, but the result of human need and human choice.

But how far can we take this essentially zoological analogy? For at base, technical evolution marks a break with genetic evolution. At some level, and at some point, the analogy must stop. For Eldredge, as we have seen, it stops at intelligent design. So how are we to understand this dynamic—from a

⁵² Stiegler, *Technics and Time*, 79.

⁵³ Stiegler, *Technics and Time*, 52.

⁵⁴ Leroi-Gourhan, *Gesture and Speech*, 10.

biological, a zoological or a social perspective? For Leroi-Gourhan, the dynamic is essentially zoological.

Stiegler wants to abandon the zoological metaphor altogether. He wants develop a theory of technological evolution which is not the “partner” of human beings or human society. It is not the partner of any other system. For Stiegler, the technical object lays down its own laws; its logic is entirely and radically its own, and it is to be discovered only in its historical differentiations. The inventor, for Stiegler, is not even a “combinatory” genius; he is but a passive observer, reading a message that already exists in the technical object.

But before we come to Stiegler’s thesis, I would like to conclude this section by briefly exploring the popular science of memetics. Given its origins in the work of evolutionary theorist Richard Dawkins, memetics has been heavily influenced by evolutionary biology.⁵⁵ It uses a biological analogy to explain the transfer of non-genetic information between human beings, and between human beings and technical artefacts. Based on the concept of the gene, it postulates the existence of another evolutionary agent—a replicator—to explain cultural change over time. This agent is called the “meme.” Like many of the theories we have explored (and, Stiegler would argue, philosophy itself), memetics “forgets” the material substrate that contains this privileged entity.

Dawkins defines a meme as a “unit of cultural inheritance,” a piece of information propagated through imitation, undergoing a process of selection where the most efficient, rapid and successful replicators survive. Common examples include TV jingles, recipes and religious beliefs. The meme stands for a process of selection in any given human population to benefit *itself*, not the host, which is also the basis for Dawkin’s selfish gene. Like the cybernetic concept of information as a “ghost-like, disembodied entity that can flow between carbon-based organic components and silicon-based

⁵⁵ See Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1989).

electronic components,"⁵⁶ the meme is a theoretical construct; it cannot be seen or touched, although its effects, memeticists would argue, can be observed.

Everyone has had the experience of someone else expressing opinions similar to their own or behaving like they do. [To memeticists] this suggests that there are multiple copies of the information underlying that belief or behaviour in the population.⁵⁷

Memetics is useful for explaining how intellectual capital is inherited over time, and even more importantly, as Aunger observes, for explaining cultural similarity. Memetics is not good at explaining how the great body of human knowledge has *accumulated* so rapidly over the last few centuries.⁵⁸ I contend that it also ignores, or at best downplays, the role of material technical artefacts in human culture. As I have been arguing in this essay, this is understandable; for over two thousand years, philosophy has repressed technics as an object of thought. Like many of the theorists we have explored here, memeticists assume that technical artefacts are not *agents* in the evolution of human culture; human beings cannot *learn from* technical artefacts; and at base, that technical artefacts are not a fact, but the result of human thought (or in this case, memes). In the literature on memetics, material cultural artefacts like books, pots and computer screens are referred to as "environmental contingencies" (Boyd & Richerson), "containers" (Blackmore) and "vehicles" for selfish replicators (Dawkins). Human culture has evolved so rapidly due to a disembodied entity that we transmit to each other like radio signals—the meme.

⁵⁶ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (Chicago: University of Chicago Press, 1999) 1-2.

⁵⁷ Robert Aunger, "Conclusion," *Darwinizing Culture: The Status of Memetics as a Science*, ed. Robert Aunger (Oxford: Oxford University Press, 200) 205-32.

⁵⁸ See R. Boyd and P. J. Richerson, "Memes: Universal Acid or a Better Mouse Trap?" *Darwinizing Culture*, 143-162.

That which is preserved and transmitted in cultural evolution is *information*—in a media-neutral and language-neutral sense.⁵⁹

This media-neutral and language-neutral agent has been used to explain the rise of civilisations, of consciousness, culture, and even the concept of “self.”⁶⁰ The transmission of memes between generations occurs predominantly by what may be called “social learning”—teacher to learner, master to apprentice, from human brain to human brain. Technical artefacts like computers and books are temporary way-stations.

Most culture is information stored in human brains—information that got into those brains by various mechanisms of social learning.⁶¹

As has often been observed in the literature, memetics is itself a successful meme. There are numerous criticisms of memetics that I have not explored here; the interested reader should start with Dennett and Auger. I simply wish to observe that memetics will not be useful to any project which seeks to account for the differentiation of technical artefacts in different technical systems. It assumes from the outset that humans cannot learn *directly from artefacts*—reading from the text of matter—and that technical artefacts have no causal or productive role in human evolution. Humans invent technics; technics does not pre-exist or constitute the human.

To return to our original diagram, and the break from genetic evolution—for a memeticist, retroactivity and horizontal transfer are processes that take place within human thought, and human thought alone. From Leroi-Gourhan’s perspective, and also from the perspective of memetics, the inventor is a “combinatory genius,” someone who recombines and blends different memes in an innovative way, or as Leroi-

⁵⁹ Daniel C. Dennett, *Darwin’s Dangerous Idea: Evolution and the Meanings of Life* (New York: Simon and Schuster, 1995) 353.

⁶⁰ See S. Blackmore, *The Meme Machine* (Oxford: Oxford University Press, 1999).

⁶¹ Boyd and Richerson, “Memes: Universal Acid or a Better Mouse Trap?” 143-4.

Gourhan might put it, selects from different technical archetypes. The technical artefact is the *product* of a recombinant thought process.

Anticipation and the Technical Object

But does this capacity of anticipation not itself presuppose the technical object, asks Stiegler?⁶² Think of the discourses describing and explaining technical processes (engineering discourse, for example)—do these not presuppose the technical object?

In fact, they not only presuppose the object itself; they presuppose its past, its current state, its limits and its possibilities. Technical objects belonging to different “branches” of the evolutionary tree and “dreamed-of” technical objects are part of the same evolutionary structure. Invention, in this sense, is not purely human. Anticipation is itself a technique, acquired like any other. As Guattari puts it, technico-scientific thought, the ability to use or create technical artefacts, presupposes a “certain type of mental or semiotic mechanism,”⁶³ and this mechanism is itself inherited. For example, the invention of the first third generation computer language presupposed not only the computer itself, but an extant machine language, an extant assembly language, an extant “natural” language, the limits and the logic for combining these, and the technical necessity for combining them.

As Eldredge put it in an interview with the author (2004):

One of the craftsman I have used to restore my old cornets started out as an apprentice in the German company Alexander Gebr. For the first year, he got there before dawn, lit the fire, swept up and, I guess, made the coffee. He wasn't allowed to touch anything for that entire first year—and then was given the simplest of tasks. By degrees he was taught all the intricacies of

⁶² Stiegler, *Technics and Time*, 81.

⁶³ Guattari, *Chaosmosis*, 36.

how to make a trumpet from sheets of brass—and by the end of his five year apprenticeship, he was a master trumpet builder. Put another way, the best cornetist who ever lived never heard of a cornet, much less saw or played one. You have to live in a place where cornets have already been dreamt up and manufactured, and music conceived for cornetists to play.⁶⁴

Knowledge of technical objects—how to use them, how to create them, and how to “improve” them—is itself inherited.

Stiegler takes this argument further: if it is explicitly as technical consciousness that man invents himself, and it is within this consciousness that anticipation of the technical object occurs, then the technical object is anticipated by none other than itself. This is what he means by epiphylogenesis. The epiphylogenetic structure is not engendered by the human subject in the course of its evolution, as it is for Leroi-Gourhan, it is “engendered by the object in the course of its evolution.”⁶⁵ Technics has engendered its own milieu, and this milieu both describes its past and circumscribes its future.

To return to our argument from the last section: retroactivity and transfer appear as none other than anticipation itself, the process of invention within circumscribed trajectories. They are not a “problem” for technical evolution; they are its mode of inheritance, a techno-logical maieutic. Stiegler, then, is pushing this concept further; the ability to anticipate presupposes the technical object in that anticipation is itself a discourse, an acquired technology. This calls for a new definition of technology; technology is:

therefore the discourse describing and explaining the evolution of specialised procedures and techniques, arts and trades—either the discourse of certain types of procedures and techniques, or that of the totality of techniques inasmuch as

⁶⁴ Eldredge, interview with the author 2004.

⁶⁵ Stiegler, *Technics and Time*, 78—emphasis added.

they form a system: technology is in this case the discourse of the evolution of that system.⁶⁶

The definition necessitates, in my hypothetical genealogy of a technical object, an appreciation that the discourses describing and explaining specialised techniques and procedures (engineering discourse, for example) both anticipate and mark a limit to the technical object. It also necessitates an awareness of what has already come to pass, and how this past circumscribes any future object. In our theory, we will keep the inventor's role, but it will be qua an actor listening to cues from the object itself, "reading from the text of matter."⁶⁷ The inventor will be situated between heterogeneous Gillean systems: economic and political discourse, industrial discourse; but most importantly, the inventor will be situated within the evolution of technology itself.

De Landa has a similar project: to explore the history of intelligent machines from the perspective of the machines themselves, to trace the externalisation of mental or semiotic processes which are themselves already techno-logical. This transfer will take place within an extant technical system. He posits the figure of a "robot historian" tracking the machinic phylum for "bifurcation" points:

[the robot historian] would, for example, recognise that the logical structures of computer hardware were once incarnated in the human body in the form of empirical problem-solving recipes ... these may then be captured into a general-purpose, "infallible" recipe (known as an "algorithm"). When this happens we may say that logical structures have "migrated" from the human body to the rules that make up a logical notation (the syllogism, the class calculus) and from there to electromechanical switches and circuits.⁶⁸

⁶⁶ Stiegler, *Technics and Time*, 94.

⁶⁷ Stiegler, *Technics and Time*, 75.

⁶⁸ Manuel De Landa, *War in the Age of Intelligent Machines* (New York: Zone Books, 1994) 4.

This concept of a “traceable” migration path from humans to technical objects is quite similar to Leroi-Gourhan’s concept of exteriorisation, the freeing of memory. Yet De Landa does not offer a logic for the human drive to invent ourselves in the technical; nor does he offer a specific explanation of how technical phyla are different from biological phyla. It is precisely these differences which will be of interest to us, and it is precisely these differences which have in fact given us the logic of technical remembering (epiphylogenesis).

So we have established a logic to articulate the evolution of a technical object. But one question remains—what is a technical object? For both Eldredge and Stiegler, this is a crucial question.

Defining the Technical Object: Form, Function and Operational Process

In both biology and material cultural systems, history is indeed staring you in the face when you look at a wombat or a cornet. But there is no way to divine that history unless you compare a series of objects that you assume a priori are related.⁶⁹

Niles Eldredge demarcates lineages for his trilobites on the basis of shell shape. Certain shapes emerge at certain points in time, and these shapes diverge irrevocably into different branches of the phylogenetic diagram. This technique is called comparative anatomy, and it works under the assumption that similar morphological structures in different organisms have a common evolutionary origin. Aside from comparative anatomy, there are several other ways to determine evolutionary relationships: comparative embryology, molecular, behavioural, physiological, chemical and fossil data are also used. A particularly popular technique involves DNA sequencing, which compares the precise sequence of nucleotides in two samples of DNA.

⁶⁹ Eldredge, interview with the author, 2004.

This is how biology builds the concept of a species. It locates certain recurrent and inherited characteristics that distinguish it from other species. For example, human beings have 46 chromosomes, we have an upright posture and a pronounced temporal cortex. This distinguishes us from chimpanzees, who have 48 chromosomes and a smaller brain. For certain biologists (Eldredge and Stephen Jay Gould in particular) you can hence call the resulting species an “entity”—a large-scale system. The individual is nothing outside of its history and its inherited characteristics.

What we’re saying is that species are entities. They have histories, they have origins, they have terminations, and they may or may not give rise to descendent species. They are individuals in the sense that human beings are individuals, albeit very different kinds of individuals. They’re large-scale systems that have an element of reality to them, and that’s a big departure in evolutionary biology.⁷⁰

But to regard a species as a large-scale system, biologists must necessarily assume that particular morphological or genetic characteristics constitute its unity. These characteristics are inherited by each generation, they become “entrenched,” they constitute a lineage or a line.

The analogy cannot be so easily transferred to technical machines, however. If we define technical lineages by their form (as Eldredge has done by collecting a particular kind of musical instrument based on the way the pipe is wound) then the lines become tangled. The form is simply not maintained in any sensible fashion over time—it jumps around and changes depending on the technical innovations available to it. The bell jumps from right to left, the valves change from the earlier Stolzel form to the later Perinet form. It becomes difficult to “rank them in any sensible order of ancestors and

⁷⁰ Niles Eldredge, “A Battle of Words,” *The Third Culture*, ed. John Brockman (New York: Simon & Schuster, 1996) 121.

descendants.”⁷¹ The same applies to computing, for example. If we define a computer by its form—an electronic machine conveying information encoded as binary logic across silicon circuits, then the analogue computers from the late ‘30s and early ‘40s seem completely unrelated. They used neither silicon nor binary logic, and were based on brass gears, wheels and shafts that had more in common with Eldredge’s cornets.

If we define a technical lineage based on function, the problem recurs. Let’s return to computing as an example. At the end of the nineteenth century, the word “computer” meant a human operating a calculator. Early in the twentieth century, these “computers” became large group of mostly female humans performing mathematical calculations by hand or on slide rules, housed in large warehouses.⁷² At the time, these groups were organised for one express purpose: to perform calculation-intensive operations for the military, primarily ballistic analysis and the creation of artillery ranging tables. The “function” of a computer was to produce mathematical data for the military. This changed radically over the next 50 years, going through several stages I do not have time to elaborate here. The result today is that a computer has a multitude of different functions—the very least of which is the production of artillery ranging tables. For a start, computers are personal devices that manage and create our everyday working environment. They are nodes in a greater network—the internet. They are the engines of a new form of capitalism, and arguably, a new social order. The list goes on, but the fact remains: the function of the “computer” has changed beyond recognition since the turn of the twentieth century. To trace a phylogenesis based on human function would result in a greater mess than Eldredge’s retroactive cornets.

So if we can’t trace a lineage based on form or function, how can we distinguish one technical system from another? As

⁷¹ Eldredge, cited in Walker, “The Collector,” 41.

⁷² P.E. Ceruzzi, *A History of Modern Computing*. (Cambridge, MA: MIT Press, 1998), 2.

Eldredge himself discovered by applying the scientific method to technical evolution for the first time, there is an undeniable evolutionary dynamic going on. Technical machines come in generations, they transform themselves in time, they adapt and adopt characteristics. We have established that this dynamic is not genetic, that its mode of transfer in fact constitutes a break from genetic evolution. We have established that this break revolves around transfer and retroactivity. We have demarcated a “third milieu” to which both the technical artefact and techno-logical memory belong, based on Stiegler’s concept of epiphylogenesis. But the problem remains: which entity, or which group of “characteristics” are we tracing here?

For Gilbert Simondon, we need to understand the genesis of technical objects independently of the human functions which establish use behaviour. For if one seeks to establish a lineage based on use “no set structure corresponds to a defined use.”⁷³ The object will invent itself independently of any fabricating intention. For example, while Tim Berners-Lee invented HTML to organise the text documents of CERN (Centre Européenne pour la Recherche Nucléaire), it has since become the lingua franca of a global mnemotechnical system. It has adapted and evolved, and it has both incorporated and engendered new functions and new material technologies in the process.

The uses and functions of a technical object can never be known, these will only be realised in the evolution of the object itself. The technical object is not concrete, it is not determined in its uses. This is why the influence of “working prototypes” on the engineering community is so important; the fabricating intention has little relationship to the object itself, and it is the object as a working prototype that will engender new structures and functions. Technical machines, maintains Simondon, evolve by a process of functional overdetermination. After they have been given a materiality, after the “synthetic act of invention” has taken place,

⁷³ Cited in Stiegler, *Technics and Time*, 69.

each component in the concrete object is no longer one whose essence is to correspond to the accomplishment of a function intended by the constructor, but a part of a system in which a multitude of forces operate and produce effects independently of the fabricating intention.⁷⁴

Subsequent evolution is accomplished by a process of “concretisation,” the condensation of various functions in a single structure oriented toward efficiency: the base of a light bulb must seal it for operation within a certain range of temperatures and pressures while also fitting in standard sockets.⁷⁵ But we are still left with a problem: how do we identify the lineage of machines themselves? How do we identify their family resemblance?

In evolving, the technical object constitutes a series of objects, a lineage or a line. This lineage, of which the synthetic act of invention is the ancestor, cannot be identified by a particular material form or human use. For Simondon, it can only be identified by a group of procedures or processes that remain stable throughout the evolutionary lineage. It is these procedures, implemented in the most diverse domains of use, that constitute the unity of the lineage. This is why there is a more real analogy between “a spring engine and a crossbow than between the latter and a steam engine.”⁷⁶ Both are implementations of procedures to work with tensile forces, both are the externalisation of an originary heuristic. There will be a variety of such procedures embodied in any given object—it is not a matter of locating one. Nevertheless, that which resides in machines is certainly only “human reality, the human gesture set and crystallised into functioning structures.”⁷⁷ To demarcate

⁷⁴ Cited in Stiegler, *Technics and Time*, 75.

⁷⁵ Andrew Feenberg, “Heidegger, Habermas, and the Essence of Technology,” talk given at the International Institute for Advanced Study, Kyoto 1996: <http://www-rohan.sdsu.edu/faculty/feenberg/kyoto.html>.

⁷⁶ Cited in Stiegler, *Technics and Time*, 70.

⁷⁷ Cited in Stiegler, *Technics and Time*, 67.

a technical object or family of objects, one must first locate these procedures and processes.

So where does this leave us in our prolegomena to the history of a machine? After Eldredge, we have established that technical objects transform themselves in time, they engage in horizontal transfer and retroactivity. After Stiegler, we have established that this dynamic constitutes a break from genetic evolution, and that this break in turn constitutes its own milieu. We have defined the technical object based on a group of techniques or processes that have remained stable throughout its evolutionary lineage. And after Leroi-Gourhan and De Landa, we have suggested that these techniques originate in human processes, human processes which are themselves already technological. The family resemblance will only be seen in the workings of the technical object itself, and not its intended human function. However, any technique, once externalised into a technical artefact, will engender new structures and new techniques. If a technique may be defined as itself a technical being, then its incarnation qua material artefact may be seen as "the being passing out of step with itself,"⁷⁸ a becoming individualised.

What remains to be created is a practical example of this theory, the story or the diagram of a particular technical machine. This story has yet to be written.

⁷⁸ Gilbert Simondon, "The Genesis of the Individual," *Incorporations* eds. Jonathan Crary and Sanford Kwinter (New York: Zone Books, 1992) 314.

Darren Tofts

What was I? When did it Happen? What am I Becoming?

I remember when it happened. It was a revelation of time as much as technology. I had been accustomed to delays of up to two weeks to communicate with academic colleagues overseas. The postal system, as second nature, was the manifestation of a certain tolerance of duration. We happily waited, in anticipation of a response. But as if in an instant things changed. Electronic mail shrink-wrapped duration. Professional communication with colleagues not only became faster, but enabled different formations to take shape, academic communities of remote individuals that engaging with ideas in a common time out of time, beyond datelines and geography (*fibreculture* being a recent example of the fruit of these early orientations into the new frontier).¹ It was an amazing elision of time and space, captured in an equally suggestive ellipsis of language, "email." The new postal technology of electronic mail offered a counter-time, a dramatic intervention into the problem of delay, of *having to wait* for presence to arrive.

* This text is an extended version of an essay originally published in *Transformations* 12: "Rethinking Regionality" (December 2005).

¹ *fibreculture* was formed in 2001 by, among others, Geert Lovink, Danny Butt, Ned Rossiter and Anna Munster. It was conceived as an online forum for the critical discussion of the kinds of issues I am exploring here. See www.fibreculture.org.

But what crept through unnoticed as we entered this new portal of the postal? What were we forgetting about ourselves as we embraced the new metaphysics of online identity? Cyberculture is the name that we have given to what we have become in the process of forgetting what we were. While the term has stuck as a sign of the times, like Modernism, it is nonetheless a formation, a discourse, a way of living in the world. But it is not the only way. To say as much, as we shall see, suggests that we have not forgotten everything about its constitution. But cyberculture has impacted upon what it means to be in the world, to be present in it differently. Cyberculture is, as Bill Mitchell has argued, an economy of presence, a fluctuating exchange of states of being here *and* there. As a consequence it has unavoidably modified our interactions with community, of what it means to be present with absent others. This technological turn has left its traces in the very language with which we describe it, as we continue, enthusiastically, to alt.tab from f2f to cspace, from IRL to URL & bond.

But I can also remember that same liminal moment, with a difference. I can remember when impatience with one form of postal delay strangely coincided with absolute tolerance of another. With the intervention of the world wide web as a graphic user interface, download time was a spectacle of wonder, a revelatory time, an evocative portal to that "other place." Watching an image gradually reveal itself on the screen using Mosaic or Netscape 1, or waking up the next morning in anticipation of the 60 second Quicktime movie that downloaded while you slept, revealed a fundamentally different relationship to space, to the "no there, there" zone of the network, conceived as an elaborate, contemporary theatre of memory. The fact that this something was coming from "there" made the wait worthwhile. I remember vividly the experience of sitting with Swinburne multimedia and animation students, their contagious excitement that the page tantalisingly scrolling into presence was akin to receiving our first indisputable contact from outer space.

But tolerance, like remembrance, is fickle in the context of technological progress. How quickly did we become impatient with the gift of CGI and the otherzone of the web. As imperceptibly as a screen refreshes itself, there was an abrupt transition when a tolerable degree of delay morphed with lightning speed into the interminable world wide wait. Like acceptable levels of background radiation or asbestos in the environment, our threshold of patience shrunk as the invocational capacity of the web became more streamlined. The pleasure of discovery transformed seamlessly into a need for speed.

This recollection of what seems to me another time is suggestive of other fin de siècle moments of techno-cultural change throughout history, such as the end of the fifteenth and nineteenth centuries. In the title of this essay I have tried to capture the idea of technicity as change in the allusion to Paul Gauguin's painting *Where Do We Come From? What Are We? Where Are We Going?* (1897-1898). Gauguin's much celebrated exile to the tropics was an exercise in willful amnesia. It was an attempt to forget, to rid his consciousness of the disease and artifice that characterised civilisation. But it was also an act of remembrance, of a lost experience of the world. Becoming one with nature in the idealised primitivism of Tahiti was more attractive and vital to Gauguin than belle époque France and its rehearsal of the modern world to come.

Unlike Gauguin, I'm not yearning for a pre-technological notion of identity and community. Rather, I want to pause and slow the culture machine down to idle, to reflect on the speed with which we have traversed the cybercultural path. But like Gauguin I am interested in collective notions of identity and community and, in particular, the displacement of "we" to "I" in contemporary discussions of technicity. Previous fin de siècle formations such as the Enlightenment or Modernism had the advantage of lingering for a while before their assumptions were subjected to critique. Late twentieth century cyberculture, on the other hand, is little over two decades old and its grand

narratives of virtual community are already looking frayed at the edges. There is already a robust body of criticism of the promises and possibilities of cyberculture, a healthy scepticism towards singing the body electric, or philosophising the metaphysics of digital being and homesteading on the virtual frontier. Perhaps this is a lesson of the postmodern to be explained to our children; a hangover of the critique that dismantled the progressive narratives of modernity and a reluctance to embrace progress in advance as the only possible outcome of social, cultural and technological change. In my own writings on cyberculture going back to the early 1990s, I have been mindful of falling into the alluring conceptual trap of defining cyberculture as an emergent rather than convergent phenomenon. It was predictable that publications such as *Mondo 2000* or *Wired* would invoke novelty and new age metaphors to describe the world taking shape at the time. But it was not so predictable and it was certainly disappointing to encounter invocations to paradigm shifts and information revolution in scholarly and critical writings from authors as diverse as Arthur Kroker and Manuel Castells. The mediation of presence did not come bundled with Microsoft-enabled computers.

For example, as I have indicated in an essay on Australian net art, I'm really tired of the military-industrial-complex creation story of the internet.² You know the idea, the reassuring grand narrative that in the event of a nuclear holocaust the network will have, always already, dispersed information and power, command and control to myriad peripheries, each of which is a centre.³ Far from dispelling or

² Darren Tofts, "Cyphers of the virtual: Australian Net art and the metaphysics of telepresence," *Virtual Nation: The Internet in Australia*, ed. G. Goggin (Sydney: University of New South Wales Press, 2004).

³ Paul Baran of the Rand Corporation is credited with devising the networked concept of military command and control in the event of a nuclear strike. The idea of a diffusion of centralisation, or "distributed communications," to multiple peripheries was the key concept that eventually led to the development of the internet. See <http://www.rand.org/about/history/>

dissolving hierarchical models of centre and periphery, such a model actually sustains the binary logics of self and other, passive and active agency, town and country, city and region, me and you, I and we. Whose command and whose control is being dispersed? Under such conditions are we really distributing difference or merely invoking a different way of thinking about distribution? As we shall see, the very idea of cyberspace is predicated on a binary rather than distributed logic that sustains, rather than dissolves distinctions between here and there, local and remote.

I want to critically review the myth of the internet as a paradoxical space of centre *and* periphery to offer some thoughts on its associated concepts of telepresence, connectivity and virtual community. In what follows I want to argue that the intervention of the internet and other media of mobility, user-orientation and personal choice are in fact contributing to the diminution of the concept of community, not facilitating it. The shift from face to face to cyberspace gave rise to a prevailing spatial preoccupation with the possibilities of community, offering alternative e-environments (shouldn't that be simply environments?) for new forms of congregation. In fact the reverse now seems to be true. Community is increasingly being re-defined and compromised by a preoccupation with the temporal dimension of networked culture, with interactivity as a special form of individualised or privatised time, in which the very idea of communing with others is very much an optional extra. What was I? When did it happen? What am I becoming?

Cyberspace

The spatial conception of the internet is most evident in its initial fascination with imaginary built environments in which

baran.html. Military history, though, was blithely ignorant of the fact that the conceptual model for distributed communications had already been postulated by a veritable tradition of network thinkers, such as Alain de Lille, Giordano Bruno and Blaise Pascal.

community can flourish. Think of the text-based MUDs and MOOs of the early 1990s, such as Hypertext Hotel and LamdaMOO, or more recent graphic, multimedia environments such as Habbo Hotel and the Palace, as well as massively multi-user online games, such as *Everquest*. Theorists such as Bill Mitchell were emphatic in their attempts to square the circle, to resolve the paradox that while the internet was anti-spatial (“there’s no there, there” remember), telepresence was nonetheless an imaginary state of being somewhere, in the city of bits, the electronic agora, the virtual chat room, the customised dungeon. In other words, networked presence was heralded as an ambience lacking meaningful distinctions between centre and periphery, here and there. The virtual community, in this sense, implied an intermediate space that was neither here nor there, your place or mine, centre or periphery, but was rather an ambiguous middle ground, a utopia or nowhere, in the literal meaning of the word. Hence the concept of telepresence gained ground as a way of situating physically and geographically embodied individuals in a disembodied virtuality. It also purportedly resolved, for those who could be bothered with the abstraction, the paradox of a space being, at one and the same time, a centre and a periphery. As west coast US visionaries such as Howard Rheingold emphatically argued, life in the networked age was a seamless condition of dual being, in which one intuitively toggled between real and virtual lives, local and remote communities.

In the context of a networked world, then, the notions of centres and peripheries have supposedly imploded. Cyberspace was less a terrain than an inflection of a general perception of what it means to be somewhere, online, offline, or riffing between the two, like the characters in the *Matrix* films. Most critical attention to connectivity over the past decade reinforces this perception by focussing on discussions of globalisation, of a homogenised internet space/time that can be accessed from any point in different geographic space/times. Critics rediscovered forgotten but nonetheless conceptually robust ideas such as

Pierre Teilhard de Chardin's "noosphere" or collective thinking layer of the world,⁴ or Gregory Bateson's "ecology of mind," to concretise the concept of a networked global culture in which the local individual can partake of a displaced community of belonging that can only be made possible by technology. There is an assumption at work here that technology facilitates community by dissolving distance and geographical coordinates. While this is of course accurate, it is problematic in that it regards distance as an a priori condition to be overcome for community to happen when media technology are involved. How, for example, does such a model work in the context of regional rather than global communities? Does the intervention of technology, in advance, have to resolve a problem of distance, of difference, between the local and the remote? To answer this question I want to briefly revisit an important moment in Australian history to do with the relations between community and technology that by-passed altogether the centre/periphery model and offered a different way of thinking about the relations between the local and the remote as a continuum, rather than a delay to be overcome, a space to be filled.

The Warlpiri Media Association was established in 1983 as an independent, not-for-profit television and video production/broadcasting initiative for the Warlpiri people in the Central Western Desert of the Northern Territory. Based in Yuendumu, north of Alice Springs on the edge of the Tanami Desert, the Warlpiri Media Association is an example of indigenous media autonomy, a community-driven initiative that preceded the Federal government's introduction of national television programming to remote regional

⁴ See Pierre Teilhard de Chardin, *The Phenomenon of Man*, trans. Bernard Wall (London: Wm. Collins Sons & Co., 1959). For a discussion of the application of de Chardin's "noosphere" to cyberculture, see Philip K. Dick's essay, "Man, Android, and Machine," reprinted in *The Shifting Realities of Philip K. Dick. Selected Literary and Philosophical Writings*. ed. Lawrence Sutin (New York: Vintage, 1995).

communities with the launch, in November 1985, of Australia's first satellite, AUSSAT. As the late Eric Michaels famously wrote of Yuendumu television, it was "unauthorised, unfunded, uncommercial and illegal" and was "probably Australia's first public television service."⁵ Produced locally by and for members of the Warlpiri community, it documented and preserved traditional ceremonies and local stories told in the Warlpiri language. In his important monograph on the introduction of media to Yuendumu, Michaels emphasises the crucial distinction between non-indigenous advocacy of the Warlpiri people's introduction to video and the autonomy of a traditional culture using broadcast media to connect and communicate with remote members of an extant community. In other words, here was a regional community bolstering itself as a networked community, reinforcing important existing ties with local lands, stories, languages, dreamings and histories. The binary model of centre and periphery had no relevance in the Yuendumu region, since the concept of community was not in any way problematised by remoteness. The important conclusion to be drawn from Michaels's *For A Cultural Future* (1989) is that broadcast media didn't facilitate community among remote peoples, but rather consolidated a timely sense of self-determination, of the periphery pre-empting the centre in using technological connectivity to promote local culture. Here was a concept of community where the remote was another instance of the local, in which distance was not something to be resolved or overcome by introduced media technology. As Michaels argued, Warlpiri people "are continually positioning themselves in both social and geographic space" as expressions of kin and landscape.⁶ Broadcast media was an extension of existing practices of

⁵ Eric Michaels, *For Cultural Future: Francis Jupurrurla Makes TV at Yuendumu* (Sydney and Melbourne: Art & Text Publications, Art & Criticism Monograph Series Volume 3, 1989) 9.

⁶ Michaels, *For Cultural Future*, 28.

mediation between the two in the form of ceremonial events, in which such ties are enacted and renewed.

The emphasis here, then, is on a unified conception of locality and remoteness that, more so than the internet, is in keeping with the implosive model of centre *and* periphery. The example of the Warlpiri Media Association is important in the context of this discussion in a number of ways. First, it evidenced the galvanising potential of media as “social software,” to use a very contemporary term. In advance of the hyperbole to do with mediated communities in the 1990s, the Warlpiri Media Association foregrounded the connection between social need, adaptability and the local implementation of media, as means of concentrating both the idea and the reality of community. It also underlined the notion that in the context of community, media are not in advance spatial, nor are they always concerned with responding to distance. The temporal dimension of media and the age of the internet has been the focus of sustained discussion in recent years, such as Robert Hassan’s *Chronoscopic Society*, a book that critically engages with the “accelerated life that has emerged through the processes of globalisation and the ICT revolution.”⁷ I’m actually more interested in the local rather than global dimension of acceleration, of the speed with which telecommunications, mobile telephony in particular, can connect remote individuals within the same city or region, thereby re-defining space as a concept of mobility.

Consider the phenomenon of Flash Mobbing. Flash Mobbing is a global phenomenon which involves the planning and staging of ephemeral events, coordinated via the internet and SMS messaging. According to the Flash Mob Website, flash mobbing involves “sudden gatherings of people at a predetermined location at a predetermined time. People in flash mobs usually perform according to a written script, then

⁷ Robert Hassan, *The Chronoscopic Society: Globalisation, Time and Knowledge in the Network Economy* (New York: Peter Lang, 2003) 6.

disperse quickly.”⁸ On Thursday 28th August 2003 about seventy Melbournians congregated at precisely 5.24 p.m. on the steps of Flinders Street station, donned yellow rubber dishwashing gloves and pointed to the sky. They then disappeared into the peak hour traffic from which they had emerged. A cross between dada street theatre and Fluxus happening, such events are grounded in the rhythms of everyday life and are carnivalesque celebrations of the trivial, the absurd and the ephemeral. With their suggestions of speed and concentration of individuals in one place, they offer us a different way of thinking about the relations between technology and community. Communities in the traditional as well as virtual sense imply some basis of shared common interest and ground, a sense of locality, proximity and identity. Flash Mobbing to some extent embodies these characteristics, in that for a time a group of people congregate in the same place at the same time to perform a unified, consensual event; unified in their enthusiasm for the Flash Mob concept itself. However the difference here is that they meet *for a time*. There is no sense of continuity, longevity or community development when they meet and the location of the event is secondary to the event *having taken place*. Space is a mobile, shifting or nomadic occasion for a time-based event. The kind of instructions to be found on Flash Mob websites are indicative of this sense of the *having taken place* of the event, as they establish or plot a set of coordinates for a group of people to meet *for a time*. For instance, the Flash Mob UK website posted the following information in October 2004:

On the 24th of October, at 11am, there will be a flashmob pillowfight taking place under the Jubilee Clock (outside Vodaphone) in Swindon. Rules and more details at <http://www.pillowfightclub.tk/>. Will David Brent turn up?

⁸ See <http://www.flashmob.com/>.

Whether or not David Brent turns up hardly matters. What matters is the way in which the web has been used as a portal to bring people together IRL rather than URL, precipitating a temporary, autonomous community that will dissolve as quickly as it was constituted. In this sense Flash Mobs invert the usual translation of presence into telepresence associated with the internet. They also reveal something about the ways in which people relate to new or emerging technologies, finding unexpected uses for them in the context of the social.

Flash Mobbing underlines the point I have made about the effects of media technologies not always being spatial, as having to overcome distances for community to be constituted. In the context of this discussion Flash Mobbing is illustrative of the idea of communities and networks as phenomena of mobility and distribution. Distributed networks of ephemeral communities transform the very idea of what a community can be by re-interpreting the centre/periphery model. The whole point of a Flash Mob is actually to bring people together in material space, not to simulate presence or intervene telepresence into the distance separating potential members of its community. But more importantly it is the temporary, ephemeral nature of the Flash Mob event that heightens what I am interested in moving on to now, the contemporary preoccupation with “real time” and its implications for the very notion of community.

Real Time

In the context of virtual communities there is a sense of shared time, a common telepresent time that transcends the local time differences of remote participants. Telepresent time assumes a smoothing out of myriad different times, an overlap of actual times and represented time within the particular virtual space. This approximation of actual and represented time in virtual environments is part of a more pervasive fascination with the concept of real time in contemporary media cultures. From

reality television and game-shows, to live web cams, video streaming and interactive digital television, media cultures prioritise the immediacy of direct engagement with and participation in mediated events taking place in real time. The Melbourne writer Daniel Palmer has recently drawn attention to the parallels between the popularity of reality entertainment television (such as *Big Brother*), 24/7 satellite news (CNN), digital media art, online gaming and web cam streaming (Jennifer Ringley's *Jennicam*, *GroundZero* cam). Palmer asserts that what all these media phenomena have in common is liveness, the provision of participation in mediated experience that is happening now, in real time.

Contrary to the public logic of broadcasting as a mass medium that delivers limited options to many, the cultural imperative of real time has contributed to a more profound sense of massive privatisation, a proliferation of available viewing times and discretionary options to individuals. Individualisation has led to a formation of time as something that is user-oriented and user-driven, customised and customisable. The emphasis on interactivity and user choice in digital media (whether on or offline computer-based media, digital television, mobile phone content) is a sign of what Richard Sennett has called the "tyranny of intimacy." Participation, once the province of community, of social interaction, is the new currency of individual engagement with real time media. Participation has become shorthand for an individual interacting with their media. Take, for instance, the rhetoric of Foxtel Australia's subscription drive for its digital service:

FOXTEL Digital will change the way you feel about television forever. You've never seen anything like FOXTEL Digital before. It's a whole new experience and best of all FOXTEL Digital is available on your existing TV.

FOXTEL Digital gives you the ultimate choice and an enhanced viewing experience ...

In just the few months FOXTEL Digital has been available we've already taken steps to give you even more options, even more choice, and even more up-to-the minute information. Just look at these improvements available now and coming soon!

New Weather Active: No need to wait anymore. With the new Weather Active function you can access weather reports and forecasts for your suburb instantly.

Timeshift Channels: ensure you'll have more than one chance to catch your favourite programme at a time that suits you.

Here is the commodification of individual taste. Interactivity facilitates agency which, in the context of broadcast media, is significant in that it affects outcomes in real time, fulfilling fantasies of control over content being viewed in real time, a control akin to our experience of video or computer-based media. The appeal to individual choice in digital television recalls an earlier, more sublime model of consumption, of which Foxtel's advertising copy is an uncanny palimpsest. "Anything Instantly" for "The World of You" were the advertising slogans of Ted Nelson's elaborate but never built project Xanadu. The conceptual precursor of the world wide web, Xanadu was designed as a kind of information age take-away franchise; an on-demand content shop tailored exclusively to personal choice. Nelson's idea was that anyone could access and download whatever they wanted in the way of image-music-text from digital kiosks called SilverStands. Nelson's SilverStands were to be the information age equivalent of ATMs, offering the individual fast and immediate access to, well, everything. What really mattered to Nelson, though, was that Xanadu was also an alternative publishing as well as content-delivery model. The idea that anyone could be both author and publisher appealed to Nelson's quixotic sense of technological possibility. The idea of an author with a capital A, as a kind of Romantic spokesperson for the rest of us, was an outmoded concept for Nelson. In a spirit more in keeping with Marcel Duchamp than Samuel Taylor Coleridge, everyone was

an author and publisher to boot in Nelson's schema; the legacy of which, of course, can be seen in the rapid emergence in recent years of blogging and other social software such as YouTube and customised publishing interfaces or wikis.

But Xanadu is still vapourware and won't do any more as a concept. And anyway, it's so nineteenth century. Welcome to iPod culture, a self-determined and individually contoured archive of experience. What is real is real for me, now, at the moment of my viewing. At stake is the very notion of a viewing or interpretive community, in the sense that Ien Ang and Stanley Fish have theorised these concepts in relation to television and reading, respectively. As Palmer has persuasively argued, the effect of customised time in media cultures is that "no two people will see the same program at the same period." The exception to the rule, he argues, is that ceremonial or apocalyptic television, global media events such as the funeral of Princess Diana or the World Trade Towers collapsing, may be the only shared televisual experiences left to us. Such out of the ordinary televisual anomalies are instances of what McKenzie Wark has called "weird global media events":

"Events" in the sense of singular irruptions into the regular flow of media. "Global" in that there is some linkage between the sites at which they appear to happen and the sites where we remote-sense them. Some kind of feedback across national and cultural spaces takes place.⁹

This feedback is the concept of real time.

For Palmer, then, we are witnessing a "privatisation of the public."¹⁰ The emphasis on private space as the interface with public media has resulted in the privileging of subjective rather

⁹ McKenzie Wark, *Virtual Geography: Living with Global Media Events* (Bloomington: Indiana University Press, 1994) vii.

¹⁰ Daniel Palmer, *Participatory Media: Visual Culture in Real Time*. Unpublished PhD dissertation (Melbourne: University of Melbourne, 2004) 126. See eprints.unimelb.edu.au/archive/00000125/.

than collective time. As he suggests, the world unfolds at home, “without us having to leave the television or computer screen.”¹¹ On the basis of Palmer’s analysis we can advance that the concept of community is under threat. “Otherness,” he asserts, “entails a confrontation with the non-self – the time of others, other places and other times beyond the here and now.”¹² His critique is consistent with American writer Jonathan Franzen’s sense of a broader and more alarming crisis of the social. In an essay originally written in 1996, with the suggestive title of “Why Bother?”¹³ Franzen transfers his despair to do with the state of the American novel on to a broader meditation on the relations between the personal and the social. Franzen identifies what he calls a “breakdown of communitarianism”¹⁴ in contemporary American society, the absolute lack of an ability to consider any interest beyond your own. For Franzen this enclosure in the private world of the self is most notably manifest in the fate of manners and social etiquette. “Rudeness, irresponsibility, duplicity, and stupidity are hallmarks of real human interaction,” he asserts. Furthermore,

the only escape from bad manners is the refuge in an atomised privacy. And such privacy is exactly what the American Century has tended toward. First there was mass suburbanisation, then the perfection of at-home entertainment, and finally the creation of virtual communities whose most striking feature is that interaction within them is entirely optional—terminable the instant the experience ceases to gratify the user.¹⁵

¹¹ Palmer, *Participatory Media*, 126.

¹² Palmer, *Participatory Media*, 204.

¹³ Jonathan Franzen, “Why Bother?” was originally published in *Harper’s* magazine in 1996, entitled “Perchance to Dream.” It was re-written and published as “Why Bother?” in *How to be Alone: Essays* (London: Fourth Estate, 2003). Further references given in text. I am grateful to Lisa Gye for drawing my attention to this essay.

¹⁴ Franzen, *How to be Alone*, 71.

¹⁵ Franzen, *How to be Alone*, 69-70.

In a later essay on the theme of privacy, Franzen highlights a “privacy panic” in American society that is grounded in the constitutional “right to be left alone.” Franzen identifies the American desire for privacy in its architecture, landscape, transportation, communication and philosophy.¹⁶ At stake, he argues, is the public sphere. “A genuine public space,” he suggests, “is a place where every citizen is welcome to be present and where the purely private is excluded or restricted.”¹⁷ In the previous year Wark published an essay in *21C* magazine on the Republican victory in the 1994 US election that, in hindsight, reinforces Franzen’s assertion. Wark was not so much interested in the result of the election as in Newt Gingrich’s use of the emerging vectors of information to communicate directly with “‘target audiences’, be they voters, political leaders, cultural elites or whatever.”¹⁸ Wark’s point was that the Republican campaign by-passed the public sphere of open debate and analysis and instead exploited computerised direct mail campaigns, computer bulletin boards and cable access TV channels to privatise or individualise the Republican cause. For Wark this campaign signaled the end of the public sphere and the ascendancy of the anti-public sphere, a degradation of the principle of negotiation and discussion of competing interests. The anti-public sphere is a place where the private is actively avowed, solicited and gratified. Prime Minister John Howard’s personalised phone calls to the homes of members of his electorate during the 2004 federal election is a worrying trend for the status of public debate in Australian politics. Isn’t it enough that we have to put up with dinner-time interruptions by telemarketers without the Prime Minister calling to pitch his wares?

How do Franzen’s and Palmer’s emphases on privacy and individualism relate to my earlier remarks to do with technology and community? They evidence that we are a long

¹⁶ Franzen, *How to be Alone*, 48.

¹⁷ Franzen, *How to be Alone*, 50.

¹⁸ McKenzie Wark, “The Price is Right,” *21C* 2 (1995) 22.

way from the democratic e-topia promised by internet narratives of the 1990s. The techno-cultural imperatives of user-orientation, interactivity and choice are in danger of obliterating our peripheral vision altogether. The social avatar of the virtual community has its other in the internalised solitude of Gottfried Leibniz's "monads"; the self-sufficient networked being which "pursues its appetites in isolation from all other beings, which are also solitary." As Michael Heim has written of the concept of the monad as the subject of interface culture, "Monads never meet face-to-face."¹⁹

"What's it got to do with Me?"

I want to tease this out a bit more and explore some possible links between the rise of a new individualism and our habitual use of portable or ubiquitous media; media, such as blue-tooth enabled PDAs and mobile phones, media that have made electronic communications wearable, attunable to lifestyle and, ultimately, no longer fixed in relation to a particular space and context of use (such as a networked desk-top computer or land-line telephone or fax). I want to do this by way of a brief anecdote, a meta-anecdote, as will become apparent. It concerns the rise of a new sensibility among students in tertiary education in Australia, a user-oriented, user-pays sensibility. The increasing shift towards fee-paying university courses, at both the undergraduate and postgraduate level, is dramatic in so far as it compounds an extant system of government-managed student contribution to their education. As an academic I have been living with this sensibility for some time now, like many other colleagues throughout the country. However in the last couple of years there has been a marked increase and stridency in its enunciation. Its motivation is a sense of consumer choice akin to that of deciding which cable TV provider you will subscribe to. There is an increasingly

¹⁹ For a discussion of Leibniz's work in this context see Michael Heim, *The Metaphysics of Virtual Reality* (Oxford: Oxford University Press, 1993) 97; 98.

aggressive attitude of individual discretion with which students will determine whether or not it is worth coming to a particular tutorial or enrolling in a particular subject on the grounds that, in advance of any study, it is already irrelevant to their particular needs. This attitude is commonly articulated in the perception that learning is expendable and selective, a perception disclosed in the repertory statement, "I couldn't come to class last week. Did I miss anything important?" Why, not at all, we do nothing of importance in this subject.

However I recently heard of an even more alarming example of this attitude, which not only reflected an utter distaste for the principle of knowledge as a social conversation, of exchange and collective participation, but also an intense retreat from the communal world into the hyper-inverted solipsism of the world of "me." My Swinburne colleagues Lisa Gye and Esther Milne teach a subject called *Issues in Electronic Media*. It deals with ideas akin to the theme of this paper, with the ethical and social consequences of technology, virtual communities, surveillance and its problematic tensions between public security and invasion of privacy. Important ideas, one would think, to do with technicity, such as the place of technology in our lives, especially in the context of a world that has seen, for example, mobile phones shrink in size, accessorised and eventually affixed to the body in the form of hands-free prosthetic headsets in just a few years. Anyway, in the midst of discussions of such issues one particular student groaned in a sustained performance of ennui for both tutor and classmates alike: "Oh, this is soooooo boring." But it gets worse. The same student, when asked why the topic was boring replied in the vernacular of the new individualism, "well, what's it got to do with me?"

What's it got to do with me, indeed. Such remarks are, I hasten to add, not indicative of the student experience of education. But they are common enough to suggest that the kinds of crises in the social identified by Palmer and Franzen are real and not the product of a jaded and irascible academia

feeling the squeeze of too much strategic thinking, key performance indicators and not having enough international students. I have my own catalogue of symptoms of the new individualism, from impatience, incivility and rage on the roads (where red is now the new amber), to rampant, proud and undisguised anti-intellectualism. And I'm talking about universities, not society at large. Consider the outrageous and appalling negativity and disrespect that characterised many of the journalistic obituaries for Jacques Derrida in 2004, particularly Jonathan Kandell's insulting contribution to the *New York Times*. As Judith Butler so eloquently asserted in her response, "Why would the NY Times want to join ranks with American reactionary anti-intellectualism precisely at a time when critical thinking is most urgently required?"²⁰ In the context of the theme I am developing here, though, I want to restrict my observations to the ways in which media such as mobile phones have perhaps contributed to the breakdown of particular kinds of communication and respect for the social, a breakdown of a sense of belonging, a sense that it matters to belong to something bigger than the self, beyond the privatised individual immersed in their own world of me.

The imperative to be always connected, to be here and there simultaneously, to simply be on the phone, is a conspicuous feature of the culture of mobile telephony. Of course I'm not in any way denying that there is a value and use in actually using mobile phones. They do have a function and use-value as an important means of communication, of keeping in touch. But there is a sense in which the mobile phone is simply a fetish, the sign of absent and indeterminate presences that can be contacted from wherever we are, simply because they can be (such as at the swimming pool, where the phone can be neatly attached to one's Speedos). This indifference to the need for a specific addressee, for the absolute anonymity of the other, was beautifully exemplified for me a number of years ago when I

²⁰ For the full text of Judith Butler's letter to the *New York Times*, see http://www.humanities.uci.edu/remembering_jd/butler_judith.htm.

was walking through a park in inner suburban Melbourne. A couple of blokes had come from the pub with a slab of beer and were settling down on a bench for a few quiet ones when one of them found a mobile phone. After taking a sip of his stubbie and reflecting on the situation, his mate said to him, decisively, “phone some cunt up on it.” And so he did, though the motivation was not the need to actually speak to someone, but the singular convenience of simply being able to speak to anyone without having to find a phone, or even have an occasion to phone.



Society of Phoneurs (2005), Larissa Hjorth

Nowhere, though, is this imperative better illustrated than in the anti-social disease of driving a vehicle and being connected elsewhere at the same time. Sure, it’s another form of co-presence, of parallel life in the actual and virtual world, à la Howard Rheingold. It’s even, arguably, another instance of an imploded centre and periphery, being mobile and completely immersed at one and the same time, aloof to distractions beyond mobile mediation. But in the context of the tyranny of

intimacy, it is an anti-sociality that hasn't the slightest cognisance of being anti-social. A similar scenario involves the battle for hegemony within acoustic space. A while ago I was sitting quietly in a quiet Japanese take-away waiting for my lunch. The not uncommon spectacle ensued of someone walking into a public place and talking loudly on their mobile; an abrasive, all too common seeping of private into public space that Sadie Plant has accurately called "enforced eavesdropping."²¹ Presumably they had come in to either order lunch, once they had finished their call, or perhaps it had already been pre-ordered as they were approaching the restaurant by car. I was patiently waiting until the end of the conversation, as we all do, unavoidably drawn into its sonic slipstream, like everyone else in the place: the speaker blissfully unaware that sound is ambient and therefore public, standing as he was in the middle of the tables among people eating their lunch. This went on for at least five agonising minutes when the person finished the call and walked out of the restaurant. They neither approached the counter to place nor collect an order. Slowly, with mounting mobile phone rage, it dawned on me. He had come into the restaurant to escape the sound of the busy road traffic outside and complete his conversation in peace, without distraction. Beam me up Scottie.

The immersion of mobile telephony, in such instances, is in fact a form of a-sociality. I really had the impression that this guy did *not* care that his presence had an impact on others. He was totally oblivious, in his immersive mobility, to anything beyond the situation of himself speaking on the phone. This a-sociality is also glimpsed in the strange ritual of the person transfixed to the screen, texting with an intuitive facility and speed that resembles a kind of autism. Or the even more bizarre invocation of the spectre, the person standing next to you and talking loudly and animatedly to no-one, an unseen other. In

²¹ Sadie Plant, "On the Mobile. The effects of mobile telephones on social and individual life," commissioned study by Motorola: http://www.motorola.com/mot/doc/0/267_MotDoc.pdf.

this bizarre mime, speech, inflection and gesture are all signs of an absent presence. Contrary to what this may suggest, in the context of telephony as a dialogic medium, communication is the last thing that is brought to mind. What stands out is the spectacle of the individual alone with technology, absorbed in solitary acts of a-social immersion.

The great American critic Hugh Kenner once wrote that the image of a man riding a bicycle was an emblem of the human-machine interface, a hybrid body that ironically recalled the classical image of bodily perfection, the Centaur. For Kenner, Samuel Beckett's bike-riding character Molloy was a tragicomical emblem of the philosophical dialectic of the mind and body in co-operative harmony, a Cartesian Centaur, "mens sana in corpore disposito."²² The Cartesian Centaur suited an intellectual climate in which existentialism posited a different conception of the isolated self. In our time it is the image of self-absorbed, prehensile SMS dexterity—an image of social myopia that extends into networked mobility the abject portrait of William Gibson's cathetered and desk-bound character Case in *Neuromancer*, feverishly punching deck with the blind eyes of a man whose mind is elsewhere.

This image of mobile phone autism has been explored in the work of Australian photomedia artist Larissa Hjorth. In her 2005 series *Ring Tones*, Hjorth captured vernacular images from the streets of Tokyo that crystallised the intensely personalised and solitary nature of mobile telephony when glimpsed from outside its intimate transactions. In one arresting tableau a group of commuters stand on a platform waiting for a train. Anticipating the arrival of one form of mobility, they are simultaneously lost in the solitude of another, transfixed by their screens. In another, a woman absorbed in her book is flanked by two mobile phone immersants; an image, appropriately in miniature, of a new silent revolution.

²² Hugh Kenner, *Samuel Beckett: A Critical Study* (London: John Calder, 1962) 121.



In-between a Kimono & Keitai (2005), Larissa Hjorth

Another consequence of the effects of practices such as texting using a telephone is the status of the speech act itself. Telephone etiquette is a speech act in the strictest sense of Austin and Searle's theoretical frameworks, or Roman Jakobson's model of discourse. However from my own experience at least, telephone etiquette seems to be a thing of the past, well certainly among the friends of my fifteen year old daughter who regularly call the house to speak to her. I don't mean by this that they are in any way rude or impolite; quite the contrary, they are not. But rather that they speak with a blunt directness: "Can I speak to Lucy?" or "Is Lucy there?" While clearly perfunctory in a typically teenage way, this kind of address assumes a kind of *in medias res* flow, of a communicative act that has already, for them anyway, begun before they speak. They have no sense of having to establish a social contract, of having to identify who they are as a speaking subject engaging with another speaking subject, in a mediated context where identity is not a given but has to be established in terms of a particular speech act. This directness is for me not so

much a sign of a lack of understanding of this contract, but the overriding trace of another context in which it is not necessary. In other words, it is the trace of an abbreviated discursive mode precipitated by the conventions of text messaging. As the poststructuralist question of enunciation goes, who is this I that says "I"? Apart from the abbreviated expedience of SMS text (its economy and speed, the impatience with elongation), there is no need to establish a context for the message, to construct a framework of addresser and addressee. In text messaging, preliminaries, such as indicating who is sending the message, are not so much expendable as simply not necessary, since the identity of the addresser is always already implicit in the delivery of the message. In the context of Jakobson's theory of discourse, the establishment of the dialogic contract is important from a semiotic as well as a social perspective. The temporal dimension of speech requires elongation, appropriate enunciation for the dialogic contract to be established for the addresser and the addressee. However the micro-writing space and foreshortened memory of the mobile phone screen means that the elongation of spoken conversation must be restricted, abbreviated and therefore codified for the communications requirements apposite to the medium and the contexts of its use. Text messaging, in this sense, is an instance of what the late Father Ong would call a *nonce invention*, a communications convention developed as an expedience to suit a particular occasion, but one that is not readily adaptable to other contexts. Text messaging doesn't translate so well to a phonetic medium, such as having to speak on the phone. However the habitual use of such a codified system of exchange seems to have modified another mode of address, such as telephone etiquette, in which the terms of the contract have to be established first.

Living with the Free Range Rude

Now contrary to what you might be thinking I'm not working up to some kind of Eric Idle inspired tirade, hyperventilating as

I trot out my most annoying stories of mobile phone outrages. Nor do I want to sound totally negative or cynical. And no, I am not a technological determinist, as some would have it. I'm not placing the new individualism at the door of mobile telephony or the internet or digital television. In returning to my opening remarks, I have attempted in this discussion to disentangle the skeins of our collective amnesia, to retrieve and identify the terms of the new contracts we have signed in the name of cyberculture. These contracts are social rather than technological, manifestations of particular uses of technology, of particular habits of consumption. And when it comes down to it, it is our sense of the fragile economy of self and other, of presence, that really matters; which probably means that while I don't blame mobile phones for rudeness, I do have a low opinion of many of the people who use them. For this reason I suppose I identify with Hannibal Lecter rather than the Dalai Lama when it comes to tolerating a-social and anti-social behaviour. And short of replacing sushi with mobile phone monads on my menu, I have decided to temper my impatience with what the good Doctor calls the "free range rude" and trust that their dictum, "To thine own self be true," the distorted appropriation from a previous age of individualism, loses its currency very quickly. In the name of a renewed and re-negotiated concept of the social in the economy of presence, we should heed William S. Burroughs's call to arms in *Nova Express* and "Storm the reality studio. And retake the universe."²³

²³ William S. Burroughs, *Nova Express* (New York: Grove Press, 1964).

Geert Lovink

with Kenneth C. Werbin

Critique of Ranking & Listing: An Email Exchange

Since the early nineties I have been engaged in email-based mailinglists. In the beginning it was a tool for communicating and exchanging texts and arguments with a growing group of people. I hesitate to use the word “community” as I never saw lists as safe areas for identity-building but as arenas of contestation. To me, email lists were primarily discursive machines, essential in the making of a networked digital public domain. As it happens things started to get complicated. Group psychology kicked in, there was “symbolic capital” created and people’s time and emotions had to be rewarded. Five or ten years ago the study of list cultures emerged. You could refer, for example, to Howard Rheingold’s classic *Virtual Community* study from 1993 if you wanted to understand group dynamics online. Most of this research is not technical, even though many complained about the technical limitations of list software such as Majordomo, Listserv and Mailman. It was the limited complexity of the dialogues, the lack of overview of threaded discussions, that irritated common users who had no emotional investment in the project. As Web technology improved over the years, the “egalitarian” position of email, and lists, decreased and was taken over by instant messaging, blogs and

eventually social networking. Even though email-based mailinglists still exist, they no longer form the spill of Internet culture. However, it is too early to close the chapter and remove mailinglists to Bruce Sterling's "dead media" collection. Lists are ideal case study objects and will help us in the years to come to get a better understanding about the Will-to-Noise and the "networking" aspect of electronic communication.

The first study I published about list culture, in *Dark Fiber* (2002), dealt with *nettime*—the "net criticism" project that I founded with Pit Schultz in 1995. In this history I described the dialectics between meetings in-real-life and virtual controversies. I also discussed the classic topic of how fast and how large a group can grow until it falls apart. There is the magic number of 500 that is often mentioned, after which conversations no longer happen that easily because list members no longer know each other. In a subsequent extensive piece that appeared in my study on critical Internet culture, entitled *My First Recession* (2003), I wrote about the rise and fall of the Syndicate list, a European exchange forum for new media arts and culture that tried to link Western and Eastern Europe after the fall of the Berlin Wall. The list spectacularly exploded during the Kosovo war in 1999 and then died two years later after ongoing attacks of net.artists and other "trolls." In that same book I also wrote about the "streaming media" list Xchange and its "sovereign media" attitude, and the equally inward-looking debates at the German "free software and society" Oekonux list. Elsewhere, Sydney scholar Jon Marshall wrote an entire PhD thesis about the life of the Cybermind mailinglist, an example of 1990s alternative cyberculture.¹

Even though I had a particular interest in contemporary studies of German fascism, I never made the link between electronic mailing lists and the bureaucratic efforts of Eichmann's assistants to list Jews, gypsies and others. The computer aspect of listing deportees had been described by

¹ See <http://www.geocities.com/jpmarshall.geo/T2/contents.html>.

Goetz Aly and Karl-Heinz Roth in their brief but excellent 1984 book *Die restlose Erfassung* [The Nazi Census], which, at the time, made a big impact on me. As Michael Kater writes in his review of that book,² order is the premise of destruction. We all somehow know that “Ordnung by punchcard” prepared the path to Auschwitz. But to read all the details, and then remember, and implement its consequences in everyday politics is something else. In particular if you’ve made computing your passion and profession, as happened to me. Edwin Black’s *IBM and the Holocaust* from 2001 provided us with the complete history. Despite being more detailed, this booklet lacks the analytic clarity of Aly and Roth, while at the same time being more politically engaged, since it was part of a political campaign against organising a census in West Germany at the time. The collective memory of why authorities had, in the past, gathered data of entire populations, and of why a broad resistance had still been alive, vanished so rapidly, particularly after 11 September, 2001. The resistance in 1970 to a census in the Netherlands is one of the first campaigns that I remember. My parents, and in particular my mother, refused categorically and explained the protest to me. The burning of Amsterdam’s population register was one of the many heroic acts of the Dutch resistance whose legacy I had grown up with. However, the attack in March 1943 came too late, and the question of why the deportation of Jews was so systematic, so successful, particularly in my birth town, so proud of its Nazi resistance, could only be posed in the nineties, and is still a matter of fierce debate.

Hailing from a long-line of Marxist thinkers and activists, as well as Shoah descendants, Montreal-based Kenneth C. Werbin works as a PhD student in the Department of Communication

² Review of Goetz Aly and Karl-Heinz Roth, *Die restlose Erfassung* (Berlin: Rotbuch Verlag, 1984): <http://motlc.wiesenthal.com/site/pp.asp?c=gvKVLcMVIuG&b=395053>. See Goetz Aly and Karl-Heinz Roth, *The Nazi Census: Identification and Control in the Third Reich*, trans. Edwin Black and Assenka Oksiloff (Philadelphia: Temple University Press, 2004).

Studies at Concordia University. His nearly completed dissertation, *The List Serves: Bare Life in Cybernetic Order*, probes questions of list culture, arguing that the Third Reich's engagement of a conjunction of early Hollerith/IBM computing technology, listing practices, and discourses of surveillance, identification and control, represented the first cybernetic feedback system for maintaining social order around bare life. In addition, the dissertation investigates how this conjunction continues to resonate and reverberate in today's increasingly cybernetic order. Also a part-time lecturer, Kenneth participates as a moderator/event coordinator for the University of the Streets Public Dialogue Series, and is a student researcher with the Canadian Research Alliance for Community Innovation and Networking. I came into contact with Kenneth Werbin in 2005. The context of this exchange was the June 2006 debates on the nettime list concerning moderation and the growing limits of email lists in an era when most users primarily hang out on the Web, play games on their mobile phones and no longer care about their over-spammed email inboxes.



GL: Could you give a short history of the list? I am only familiar with the sociology of the cue, a mass practice in Eastern Europe.

KCW: When I first began my work on how lists serve, I was very narrowly investigating email lists, or listservs. However, in historicising the use of lists in power/knowledge, I ended up going much further back to ancient times, discovering that the majority of early writings were constituted in lists, and much of early social organisation revolved around listing practices. While there is little research that explicitly treats these questions, I am grateful that I stumbled across the work of the anthropologist Jack Goody who studied early Sumerian, Mesopotamian and Assyrian documents, and provides a rather compelling argument for ancient list culture; arguing how on

the one hand, lists establish boundaries and encourage hierarchies, but at the same time, call into question the very lines in the sand they draw.³ In this way, list culture involves dialectic operations; at once carving out knowledge, and at the same time opening up questions about the constitution of knowledge by virtue of placing items together. The contradictions that lists bring to the development of knowledge and how they help organise experience makes them powerful intellectual technologies. But despite this power, our use of lists has remained very much taken-for-granted, deeply burrowed into our social woodwork.

So where a history of list culture could easily start in ancient times, today, I find myself far more interested in and compelled by the intersection of list culture and computer-based technologies, which sees my historical analysis begin with the moment when the Nazis first used early Hollerith/IBM punch card technology to identify, isolate, round up, and control threats to social order. Here I am not only grateful for Edwin Black's book *IBM and the Holocaust*, which revealed the ties between IBM and the Nazis, but also for a book you recommended, Goetz Aly and Karl-Heinz Roth's *The Nazi Census*, which provides an in-depth analysis and examination of the 1933 and 1939 German censuses, and how such practices significantly contributed to identification and control in the Third Reich.

Building on such work, I contend that the "Nazi listing moment," constituted in the conjunction of lists and computing Hollerith machines, initially populated with census data, represents the first cybernetic feedback system in which discourses of security and surveillance of social threats as social order took root. Indeed, this conjunction of listing practices and computer technologies, coupled with enabling discourses of identification and control, efficiently and effectively exposed what Giorgio Agamben calls "bare life"; meaning life that no

³ Jack Goody, *The Domestication of the Savage Mind* (Cambridge: Cambridge University Press, 1977).

longer deserves to live, but cannot be martyred; life that cannot be sacrificed, yet may be killed; the Mussulman that violence is wholly permitted against; the body exorcised of humanity.⁴ Like Agamben, I believe that bare life is the fundamental political unit—it is the foundation of political life—our lives are political from birth, in their very capacity to be exorcised of humanity, to be isolated, rounded up and/or exterminated. And despite whether we come from a western liberal society, or a brutal dictatorship, we are all born into this same bio-political order; where social control hinges on the exposure of bare life.

And for me, the conjunction of list technologies, practices and discourses of security and surveillance that expose bare life to the ends of social control and order continues to expand in today's increasingly global cybernetic order, albeit deeply recessed in our socio-technological woodwork. Despite our advancements in computing technology, or more aptly, because of them, the establishment of such boundaries continues to resonate from Nazi times; calling into question the nature of social threats through the very fact of placing people together in lists. These are very real boundaries and questions arising from "list culture" that we continue to negotiate today.

GL: How does the electronic mailinglist fit into this wider history of the list? At first sight one would think that the list, so to say, gets "dissolved" in the electronic environment of the computer.

KCW: I would say the list not so much dissolves in electronic environments, but rather further recedes into the socio-technical woodwork. Consider nettime in light of the preceding characterisation of list culture; how on the one hand lists establish boundaries and encourage hierarchies, and on the other, how they lead to questions about the nature of the grouping through the very fact of placing items together. I

⁴ See Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998).

wonder if this does not sum up all of the controversy, contradiction and struggle that have raged around articulating nettime's identity since its inception? The act of establishing a boundary called nettime, gave immediate rise to questions about the nature of nettime, through the very fact of placing people together in a list. To my mind, this is the culture that is very much alive today on nettime! I wonder what your thoughts are about such a characterisation of nettime?

GL: So far I never perceived electronic mailinglists as lists, for the simple fact that they grow organically. You do not start with a list of people; your initiative becomes a list. In the beginning there is only a small collection of email addresses of the founders and immediate collaborators. Usually one sends out a letter of invitation to join the new list to friends and those interested in the topic. Later on, one started to send those announcements to other lists, websites and then blogs. But often a list starts with five, not more, email addresses. This, in my opinion, is one of the main obstacles for the insiders, to see lists in the way that you do. In the case of nettime, and many other lists, the beginning of the project lies with the Event, a series of meetings in real life. This also complicates the picture. The list, if you wish, echoes the Event, it is a by-product, a memory. Only much later it starts to develop a life of its own. Governance issues are not dealt with from the start, and this is perhaps the main reason why ownership and moderation controversies arise many years later.

KCW: Yes, lists echo events; events in the case of lists being the decision to form the collection. So don't all lists grow organically in this way, mailinglist or other; initially populated by a small set of items, or data, or people, or email addresses, wherein subsequent additions of items, or data, or people, or email addresses, call into question the nature of the list/grouping itself? While it might seem to be a big leap from Nazi listing practices to nettime, the underlying practice

associated with list culture holds; collecting items/people to the cause of organising knowledge/experience/life but to the effect of calling into question the nature of the collection itself.

Think of how census statistics were initially leveraged by the Nazis in the decision to first list desirable/undesirable, normal/abnormal people; and how this relatively small set of data, and the decision to create lists from it, called into question and further refined the kinds of identification and lists that were needed for social control that began with sterilisation projects, and eventually led to complete identification, isolation and exposure of millions of bare lives to death. This conjunction of listing practices, Hollerith/IBM machines and discourses of identification and security were in fact, an open-ended cybernetic feedback system wherein control took increasing root and was further refined with every new piece of data that was coded for feedback. Now consider, with such a resonant legacy, how each and every digital trace we leave behind today, including messages and email addresses attached to listservs, can equally be leveraged to manifest such lists, efficiently and effectively exposing bare life to such identification and control. I would say, we have just become very accustomed to this way of life, and as such, these practices have receded deeply into our taken-for-granted social reality.

We need look no further than today's "no-fly lists," and/or security certificate cases here in Canada, and/or equal measures in the UK and US that have spawned practices like rendition, and places like Guantánamo. In the last years we have seen infants, priests, the infirm, and more innocents than not, denied of or restricted in their right to fly, or worse, reprimanded to dire places, as traces and data, beginning with names, are increasingly left behind and continually mined to shape, refine and expand profiles and lists of threats. In this respect, and in terms of identification and control, not much has changed since the Nazi's first leveraged this conjunction; if anything today's cybernetic order continues to revolve around and expand such practices globally. What has changed is the ability of everyday

people to engage these same practices for the sake of communication and connection in the form of listservs, blogs, websites, etc. And of course this has clear and massive benefits to the development of knowledge and community, but enough celebratory talk has transpired vis-à-vis our technological prowess, and I will not further fuel such techno-euphoric myths.

Indeed, to my mind, it is time that such techno-euphoria is placed in its proper context. It is but a single component in a triple bind that “list culture” situates us in: on the one hand, we want to share our stories, insights, ideas and discoveries—this is a necessary and fundamental part of human existence and the development of knowledge—and lists and networked digital technologies do serve this, very efficiently and effectively—but at the same time, each and every digital trace we leave behind further exposes our bare lives and bodies to control, and equally, contributes to entropy and inertia by way of information overload, ultimately leading to increased reliance on quantitative reductions, like ranking lists for navigation in the blogosphere; all at the expense of critical engagement! What is required is more awareness of this triple bind, with the aim of fostering increased critical engagement with “new” technologies, and the identification, control and entropy that are a fundamental part of their historic and contemporary use.

GL: Making lists is a popular activity that also found its equivalent on the Internet like the Listable site, 43things and other to-do sites. Also, users vote on a variety of topics and occasions, creating lists of the most popular band, film, song and so on. Is this urge to list something worth studying? Has it got to do with a desire to create a pecking order?

KCW: It seems clear that since the earliest forms of communication, people have had the desire to list. People have demonstrated desire time-immemorial to not only create pecking orders, but also to reward them. At the same time,

since early literacy, we have also been engaged in a never-ending battle to manage never-ebbing flows of information, or entropy, as von Neumann, the renowned computing mathematician imagined it. And increasingly, these never-ebbing global flows of information make quantitative-based intellectual technologies, like ranking lists, a necessary part of navigating our ever-increasing information landscape.

But where it has been clear since the emergence of Marxist critique that bottom-line quantitative reductions fuel decision-making in capital order, this has not been so evident in cybernetic order, nor in the development of knowledge, specifically around questions of navigating never-ebbing information flows. The emergence of the blogosphere's ranking lists are not only another attempt in our never-ending quest to wrangle in information/entropy through efficient and effective quantitative means, but also, would seem to further cement capital order's hegemonic use of such reductions in decision-making, rewarding and further cementing people's desires to neatly package life into the materialisable. Indeed, a recent problogger.net "group writing project on lists" offered up cash and product rewards to random participants willing to post all manner of lists, from short lists, to long lists, to funny lists, to rant-like lists, etc. And CNN has recently incorporated "ranking lists" in their news coverage, ranking and covering top stories by who is clicking through to what on their website. Tonight's top story: Mel Gibson's guilty plea, followed by Jon Benet's killer's confession ... while dire struggles in Lebanon and Israel barely round out the top ten.

And while there is little that is surprising in people's inclination and fascination with reducing, measuring and competing in such ways, at least in western societies, where our earliest experiences in school and sport encourage things like "ranking" from the get-go; ultimately preparing us for life in global capital competitive order, where quantitative effects-derived reductions, like "ranking lists," are consistently privileged over qualitative affective "positions" of ascribed

human value; there is cause for great concern and reflection to be given to our increased reliance on quantitative reductions for navigating information/entropy, such as ranking lists, specifically surrounding the development of knowledge. The tendency I see is an increasing emphasis and reliance on connection, specifically, quantitative connection over critically engaged reflection.

Identity wars aside, I have noticed in the last years an increasing preponderance of forwarded (fwd:) information on nettime. It seems to me that as information swells towards infinity, peoples' desire to critically reflect, and in turn, take positions, wanes. More and more information is forwarded; fewer and fewer views are taken. I wonder what you think of this in terms of nettime?

GL: Forwarding gets more prominent when community involvement goes down and moderators no longer take initiatives and instead only see their role as administrators. That's the main reason of nettime's decline for me. Until 2000 people were invited to post to nettime, debates were arranged. There is a lot of work happening behind the scenes to have an entertaining conversation happening. Things have now moved to the iDC list, run by Trebor Scholz. Why? Because he invites people off-list to post material or respond to certain statements. And because he bans announcements and forwards. One could say though that iDC can put itself into such a luxurious position because other lists are already providing these services, such as Spectre, nettime, and Fibreculture. But yes, it is interesting to interpret forwarding as a symptom of decline, as you suggest: I am active, I forward.

Don't you think it is useful, when it comes to ranking, to differentiate between blogs and listservs? In the case of lists rankings is informal and subjective. Let's look into the case of Frau Mustermann who posts a lot on this or that email list and works on her visibility, even though search engine statistics show that this might not be the case. Most of her postings are

responses to threads. The “listing” that happens here is only visible later on. I suppose one can measure who is posting on the list most frequently but I have actually never seen anyone doing this type of research. I also do not know if there are software tools to do that kind of research. The point is that inside email-based list culture reputation is not ranked in a quantitative matter. One could perhaps only measure “reputation” if the research would interview community members. Now, if we switch to blogs, the situation is quite different. RSS feeds and tags are there explicitly to get you higher up in the ranking. Everyone on the Web can follow these competitions amongst the blog elite members. Technorati is all about that, and their statistics also have a financial dimension.

KCW: Yes, there is clearly a technical difference and practice (or lack thereof) between blogs and listservs that explicitly involve the use of RSS feeds and tags to establish ranking lists. And for me, it is precisely this practice—the privileging of “quantitative” statistics for ranking “quality” of information; measures of value and worth reduced to number of RSS feeds and tags—rife in the blogosphere, that I believe poses dire threats to critical engagement in a society increasingly marked by information/entropy. Indeed, the closures established by leveraging RSS statistics to materialise “ranking lists” of ascribed human value not only continue to perpetuate capital order’s inherent and hegemonic bias towards quantitative reductions of value, but also further hinder and limit critical engagement in an increasingly entropic social order.

In the case of Frau Mustermann, despite her best attempts to work on her visibility on the listserv, the quantity of posts she sends to the list will always be measured invisibly, in the minds of her audience, based on their own critical engagement with the material. If the knowledge is to be ranked, it will be thus; critically and individually. Indeed, an abundance of posts on the part of Frau Mustermann could very well work to the detriment of her “invisible ranking” on the listserv, and in turn

the frequency of her material being consumed by its subscribers. If the quality of the information she posts is critically and continually judged to be poor in the minds of subscribers, no matter how many posts she makes, she will achieve no greater “ranking” in their minds, and certainly no greater audience through forwarding. So despite whatever intentions Frau Mustermann has on a listserv to be #1; there is no #1, no way to be it, no way to rank it, and no way to research it. Who would want to anyway? Frau Mustermann, maybe; corporations, for sure.

Now let’s set Frau Mustermann loose upon the blogosphere, where suddenly, the quantity of connections to her blog results in a numerical value ascribed as to the quality of information she provides, materialised in a “ranking list.” To what ends might she now strive to increase RSS tags and feeds to her blog? Might she set-up dummy blogs, endless ports on RSS streams that lead us further into critically-defunct nowhere? Might she also cement agreements with corporations who value such numbers and ranks and now have a way of leveraging and “researching” them? Have we not seen such nefarious practice the internet over? Do we not see how ranking further distracts and limits our critical engagement in entropic cybernetic order? As for Frau Mustermann; her rise to the top of the blogosphere’s ranking lists heralds a troubling trend; our waning critical engagement. And if that’s what Technorati is all about—how information and knowledge quantifiably and materially rank; I want no part of it.

In this way I think of listservs and nettime as more productive closures that foster and promote critical engagement. If we understand the internet as cybernetics would have us—as a social experiment in controlled complexity—then we also understand that closings, like listservs, are as important as openings, like blogs; and perhaps the qualitative nature of the closures associated with listservs, specifically, the filtering out of quantitative noise, like ranking lists, might very well be a key to re-awakening critical

engagement in a society increasingly plagued by the inertia associated with information overload.

GL: Let's extend on this resistance as there is, to my knowledge, little critical knowledge about Technorati and its cynical logic. What I see around me is an ill-informed reluctance amongst activists, but also artists, to start a blog and buy into the PR logic to present one's persona within this limited, pre-formatted interface. Yet, we also know that this reluctance may as well be a result of ignorance, not being able to keep up with the pace of change. How can we raise awareness of the logic of blogging and ranking and the politics of search engines? How much knowledge should people have about the tools they use? To what extent is it justifiable to distract them from what they do, dealing with issues, producing art works? And then there is the generation question: whereas young people use all these tools without any hesitation, the old generations are hesitating, without really knowing why.

KCW: On the generational question, one thing that has struck me profoundly lately is how "uncritically" willing people have become to subject themselves to research, analysis and experimentation. I remember very clearly an older generation, in the 1970's, who were extremely sceptical and critical of "scientific" human research and experimentation. Yet with the rise of digital technologies in the last 30 years we have come to accept human "guinea pig status" almost unconditionally in our everyday lives. This is attested to in "agreements" struck daily by individuals the world over to "license" all forms of online software tools. One of the first releases in Google's privacy agreement stipulates: "We may also use personal information for auditing, research and analysis to operate and improve Google technologies and services."⁵ Indeed, such "experimental" releases are prominent in almost every end-user

⁵ See <http://www.google.com/privacy.html>

software licensing agreement I have ever perused, which is logical, given the cybernetic imperative to mirror, model, and research life in wide-open society.

So, I believe the hesitancy you are observing in older generations, whether conscious or not, is in fact a remnant of more ecumenical times, when closures besides those of science, such as religion, were privileged far more in everyday life, fostering scepticism of technology and the iterative research and experimentation inherent in technological practice. And I believe that a return to “scepticism” is what is required now, more than ever; meaning a reinvigoration of people’s critical engagement with “new” technologies and a heightened awareness of the control inherent in their use. People need to think more deeply about what aspects of their lives they choose to mirror them in digital realms. In this respect, to answer your question, people, specifically young ones, need a lot more knowledge about the technological tools they are currently and uncritically using, specifically, a critical awareness of how they contribute to identification and control in cybernetic order, which begins with mass acquiescence to research and experimentation. People need to be critically aware that this is happening, and the more they willingly and unconditionally choose to mirror their lives in cybernetic order, the more subject they are to its control.

GL: How could such a suspicion against technology be revived, and wouldn’t it be a step back? Asked about MySpace and why millions of teenagers put intimate data about their private lives online, social networks expert Danah Boyd explained that the surveillance in real life of parents is worse and restricts kids to a far greater extent compared to the Web, which is, still, seen as space of freedom to escape into. How would you convince these teenagers? Where to start? How to convince youngsters that control by the System is something they should object to? And don’t we have to include in such a debate the traps that Joseph Heath and Andrew Potter have listed in their book *The*

Rebel Sell? How can a subversive culture be established that is no longer buying into a rebel lifestyle element in order to promote their critical aims?

KCW: What I find particularly interesting in the idea that surveillance in cyberspace for youth pales in comparison to surveillance by parents is the foregone conclusion that youth see identification and surveillance as a fundamental part of everyday life; it merely being a matter of choosing between the lesser of evils. I hope and believe that ultimately a threshold will be reached; wherein youth lo-jacked by cellphones and MySpace will reach a limit in terms of their tolerance for and acquiescence to everyday-moment-to-moment surveillance. In his book *The Digital Sublime*, Vincent Mosco argues that “new” technologies and technological forms, have always carried with them liberating myths of increased freedom and democracy.⁶ Whether it was the telegraph, radio, television, or cyberspace today, it is only when such communication technologies, forms and practices deeply recede into the social woodwork, fundamentally becoming a part of our everyday lives, that their true power is revealed.

I wonder how youth will feel in the coming years, when updates to MySpace are required as a part of the school curriculum? I wonder if resistance to powerful GPS surveillance technologies afforded to parents through family-based cellphone plans has not already begun? Are youths tossing these technologies and practices aside, or are they already performing the unexpected with these devices and/or in these spaces, jerry-rigging them to achieve their own rebellious ends? I have little doubt that eventually resistant instincts to technological surveillance will begin to prevail amongst youth, at least once we all get past the mythic lore of these technologies, when youth, like everyone else, come to see and

⁶ Vincent Mosco, *The Digital Sublime: Myth, Power, and Cyberspace* (Cambridge, MA: MIT Press, 2004).

feel how efficiently and effectively bio-political technologies and spaces expose our bodies to an other's order.

In this respect, and somewhat facetiously, I look forward to the coming ubiquity of radio-frequency-identification (RFID) in everything we consume; from our shoes, to milk containers, cars and event tickets. Indeed, I wonder how adults with on-star equipped vehicles will react the first time they are summoned to court, familial or judicial, for a seemingly "unobserved" indiscretion in their auto? Or for that matter, how they will begin to resist when they are eventually taxed by the kilometre through such surveillance technologies? I believe and hope that such movements towards complete social mirroring, monitoring and surveillance will ultimately go a long way on their own towards heightening critical instincts and engagement around bio-political technologies and spaces in us all.

GL: Sounds like the world upside down to me, in which youth conforms to the norm and the grown ups stand up and rebel. The more wired, the more tired. The longer you're wired the more you wake up. Right? What interests me in your work is the "formative" aspect of network technologies. Many before you have pointed at the "formative" in the word "information." Why is the enlightening critical work exempted from this? If all information forms, then why bother? How can we escape such generalising depressing statements that border on techno-determinism?

KCW: Despite our ever-increasing use and reliance on bio-political-network technologies in a cybernetic order, I certainly do not believe us to be determined by them. But whether life's "formations" are understood as criss-crossing rhizomes; or we see the world as a cybernetic organism; or we understand life as a bio-political order: the universe, and information, will always tend towards entropy. That is undeniable. Indeed, the "formative" aspect of network technologies is entropy. And

despite this too, human beings continue to, and will always, embody distinct purpose and autonomy in the world. So although I am embedded in an open cybernetic social order in which communication and information flows freely and endlessly towards entropy, I am nonetheless in constant feedback with the world around me; capable of critiquing, making decisions, imagining other possibilities, acting, learning and growing with others. Far from being automatons, life is continual interaction with our environment and those around us and this is not technologically determined. But nor is critical thought a given in such wide-open cybernetic social order; it must be fostered and maintained and its demise must be guarded against vigilantly.

In *The Dream Machine*, Michael Waldrop sketches out the history of information theory and its direct ties to physicists' understanding of entropy, recounting von Neumann's insistence to Shannon that information and entropy were one and the same.⁷ In fact, Von Neumann actually insisted that "information" in Shannon's "Information Theory" be re-named "entropy." Indeed, entropy is understood by physicists as an indicator of the randomness of molecules; randomness, according to the 2nd law of thermodynamics, always increases, never decreases; and the more random something is at the molecular level, the "less information" we have about the arrangement of the molecules; entropy is, in this way, "missing information."

And it is this "missing information" that I think needs to be brought to bear on peoples' imaginations; how the molecules that constitute our networks are arranged for identification and control; how with every digital trace we leave behind, we not only contribute to further entropy, but also increasingly expose our bare lives to an other's order. With every passing moment, with every information nugget that is mined, with every trace individuals, groups and communities leave behind that expose

⁷ M. Mitchell Waldrop, *The Dream Machine: J.C.R. Licklider and the Revolution that made Computing Personal* (New York: Viking, 2001).

bare life to surveillance, identification and control, the diversity and variety of stories we tell and access about life also continue to open infinitely; forwarded in never-ending emails to never-ending lists, hyperlinked ad-infinitum in the blogosphere, reported on an infinity of broadcast channels and websites. And the more stories and information we are exposed to, the more we tend towards critical entropy; meaning, the less we see how the molecules are arranged, the less inclined we are to take positions about the arrangements, and ultimately who arranges them. How could we when we know that there is so much more information, and so much more “missing information.”

In this respect, and to go back to where we started, our increasing emphasis on quantitative reductions, like ranking lists, at the expense of critically engaged qualitative thought, can be seen as a bottom-line strategy for efficiently navigating our increasingly entropic (sic networked) cybernetic order. Indeed, cybernetic order is marked precisely by such fundamental contradictions and ambiguities—above all in the deployment of information by way of ever-expanding global bio-political feedback systems; for the ostensible purpose of constructing an open society, but with the actual effect of bringing about a controlled one, plagued by information overload and waning critical engagement. Escape from here is in our imaginations, and I believe that exposing these contradictions and ambiguities, whether depressing or not, is certainly worth the bother.

McKenzie Wark

Topos (on *Civilization III*)

01/Of what use is the past to a gamer? Peter Lunenfeld: “For the most part, it’s blood, mischief and role playing that gamers revel in. They live in an alternative universe, a solipsistic one scripted by designers whose frame of reference extends no further back than *Pong*, *Pac-Man* and *Dungeons and Dragons*. The visual and storyline tropes that most of us bring with us as cultural baggage are ... all but forgotten ancestral memories, thrown off, on purpose, too cumbersome to be of any use.”¹ In this new world that appears indifferent to history, with only halls of fame for its champions, chronicles of its big battles and charts of its greatest hits, accounting for how this digital gamespace came into being presents something of a challenge. Perhaps it is best to approach it in its own style, as a series of levels, each of which appears to the gamer on battling through

¹ Peter Lunenfeld and Mieke Gerritzen, *User: Infotechnodemo* (Cambridge, MA: MIT Press, 2005) 57. See also Peter Lunenfeld, *Snap to Grid: A User’s Guide to Digital Arts, Media and Cultures* (Cambridge, Mass.: MIT Press, 2001). But where Lunenfeld wants to do “realtime” theory, it seems to me that being untimely is still one of the great theoretical virtues. Hence *Gamer Theory* concerns itself with a game aesthetic that is already slightly obsolete. C: ““No further back than *Dungeons and Dragons*’ suggests that *D+D* was not in itself a grand orgy of anarchically collected pasts; its popularity hinged on the very idea of reclamation and re-evaluation of these zones and events that were inhabited by real and fictional pasts smashing together like planes to form a cosmology.” N.B. All unsourced comments (e.g. “C” above) are from an earlier, interactive “networked” version of this text: <http://www.futureofthebook.org/gamerttheory/>

to the end of the last. If one is defeated, one starts over. But remember: these are the grind levels. The going is hard here, even a little boring. You may need to attempt it more than once. In gamespace, time is measured in discrete and constant units, and while one cannot always win a level, one can always start over and do it again.

02/Click to start. Here is a new world. The first level opens onto a topic (from the Greek “topos,” or place). Here a topic is a place both on the ground and within language. Jacques Derrida: “The themes, the topics, the (common-)places, in a rhetorical sense, are strictly inscribed, comprehended each time within a significant site.”² One can place one’s foot on a topic because one can place one’s tongue on it. Or one can point toward it and say: “there it is ...” All around the topic it is dark, unknown, unmapped, without stories. Move around a bit and you bump into others, from other tribes, other settlements. Via others one learns of still others. The topics start to connect. A map forms. Once there is a map, there is the topographic, which traces lines that connect the topics, and which doubles the topical with the space of maps and texts. These outline the contours in space and time of what was the topical, redrawing and rewriting it as a continuous and homogenous plane. The lines of the topic are traced into the page; the lines on the page are traced back onto the earth as topography. History is a story and geography an image of this topography, in which the boundaries are forever being expanded and redrawn. This play between the topical and topographic is the first level.

² Jacques Derrida, *Dissemination*, trans. Barbara Johnson (Chicago: University of Chicago Press, 1981) 69. This connection between topos (place) and topic (meaning) is very clear in Eric Michael’s account of Warlpiri culture and adaptation of video to its needs. See Eric Michaels, *Bad Aboriginal Art: Tradition, Media and Technological Horizons* (Minneapolis: University of Minnesota Press, 1994).

03/In the first level, every topical feature that resists inscription as a continuous space is erased and replaced. Impassable mountains yield their passages, joining once separate topics. Every recalcitrant people with its own indigenous topos is exterminated and forgotten. James Fenimore Cooper: "In a short time there will be no remains of these extraordinary people, in those regions in which they dwelt for centuries, but their names."³ The names persist, on maps, or in books with titles like *The Last of the Mohicans*. The first level is this dissolution of the topical into the topographic, where an oral lore is erased and replaced by inscription: lines on maps, lines on pages; lines that evolve from trail to rail.⁴ The first level is where the topographic unfolds as the line between what is charted and what is uncharted. (See Fig. 1) The storyline dwells between the autonomy of the topical and the authority of the topographical, always lagging behind.

³ James Fenimore Cooper, *Last of the Mohicans* (New York: Penguin, 1986) 20. See Georg Lukács, *The Historical Novel* (London: Merlin Press, 1962) 65: "Cooper portrays the enormous historical tragedy of those early colonisers, who emigrated from England in order to preserve their freedom, but who themselves destroy this freedom by their own deeds in America." Lukács then goes on to quote Maxim Gorky on Cooper's central character, Nathaniel Bumppo: "As an explorer of the forests and prairies of the 'New World' he blazes new trails in them for people who later see him as a criminal because he has infringed their mercenary and, to his sense of freedom, unintelligible laws. All his life he has unconsciously served the great cause of the geographical expansion of material culture ...". In both Lukács and Gorky the erasure of the indigenous presence indicates the extent to which their own writing is still part of the same process.

⁴ Niall Lucy: "The succession—from the oral to the inscriptive—is too absolute, helping to produce the absolute 'newness' of independent, ahistorical game-space. The presence of the 'new' here depends, I think, on a false succession."

Fig. 1

| | | | | |
|-----------|---------|---------|-------------|-------------|
| theorist | Lukács | Debord | Baudrillard | Lovink |
| auteur | Cooper | | Ford | Meier |
| character | captain | | director | manager |
| genre | novel | western | noir | strategy |
| form | book | cinema | television | game |
| war | tactics | | strategy | logistics |
| line | trail | | telegraph | internet |
| ethos | myth | | storyline | gamespace |
| topos | topical | | topographic | topological |

04/In the cinema, mapping and writing meet. The emergence of the topographic and its struggle to subsume the topical becomes the great theme of the western genre, above all of the director John Ford. Jimmy Stewart, the frontier lawyer, bringing the wild west to book, runs up against the outlaw gunslinger Lee Marvin. When Stewart shoots him in a showdown, Stewart becomes a legend, and a senator. Only it was John Wayne, the honourable outlaw, who really fired the fatal shot. In *The Man Who Shot Liberty Valence*, cinema functions as the form that can reveal retrospectively the workings of topography, its creation of a storyline that justifies the imposition of the thin blue line of the law. The completion of the topographic is the subject of film noir. Here the topographic has connected all of space in a loose network, and one cannot run beyond the frontier to escape it. One escapes within, looking for ill-lit, interstitial topics, like the rail yards and wholesale markets of Jules Dassin's *Thieves*

Highway. Here, on the “wrong side of the tracks” there is still a space for illicit desire, and an escape from boredom.

05/What closes the frontier for free action is the enclosure of the space of movement within a space of communication. The line splits, into one that moves objects and subjects, and another, faster one that moves information, the line of telesthesia, of the telegraph then telephone.⁵ In *High Noon*, Sheriff Gary Cooper learns through the telegraph that his lawless nemesis arrives on the midday train. In *The Naked City*, this power of telesthesia—perception at a distance—is everywhere. The police, forensics, the coroner are all brought together via the switchboard operator, enabling and overcoming a division of labour with the telephone, and compacting space into a temporal event. We see the policeman make a call, the operator making the connection, and the call being answered. Telesthesia allows the speeding up and coordination of movement along all other lines, setting the railway timetables by which vast armies of goods or soldiers may be mobilised. Telesthesia makes possible the completion of topographic space, where vast territories are coordinated within the bounds of the line. As telesthesia develops, from telegraph to telephone to television to telecommunications, topographic space deepens and hardens, but always with gaps and exclusions. Film noir dwells in a gap between the free act in an unmarked space and the imposition of the line. You can run but you can't hide.

06/Eventually, even the out-of-the-way topic within the topographic is mapped and storied. In Dassin's *Night and the City*, made in political exile in London, the whole of space has become telegraphic. There is no escape. This completes the first level. Topology begins when the topical ceases to have any autonomy, when the line along which communication flows

⁵ Adeola Enigboakan: “Let us not forget that telesthesia is not solely the domain of the police, but is also increasingly within the purview (or perhaps is becoming the condition?) of citizenship. See *Google Earth*.”

closes the gap between map and territory. The open frontier is enclosed in a field of calculation. History and geography cease to dwell between the topical and the topographical, always rushing to keep up. History and geography are subsumed within a topology, which tends towards a continuous field of equivalent and exchangeable values, instantly communicable everywhere. Where the topical was once bounded within the lines of the topographical, it is now connected along the lines of the topological. The fixed geometry of topography gives way to the variable forms of topology, in which the lines connecting points together lend themselves to transformation without rupture from one shape to another. The storyline of outward movement is complete; the gamespace of interior play commences. Welcome to the second level.

07/Film noir comes to an end when it is no longer possible to imagine anything great but evil lurking out of bounds. If something passes undetected for any length of time it is because it has no value. The era of the great openly declared villains is over. In topological times, the bad guys pass as normal or corrupt the law. Cinema as the machine for imagining the open space outside the line is consigned to the past. Topology announces its new ambitions through radio and particularly television, a signal for everywhere and nowhere, potentially interested in anyone or anywhere, a Candid Camera. The key genres for working out the subsumption of the topographic into the topological are the situation comedy and the game show. On a game show, anyone can be taken out of everyday life and brought into the magic circle of television; on a sitcom, television can extend itself to the everyday life familiar to the average viewer, anywhere. Sitcom and game show announce the coming of a topology in which all of space might be doubled simultaneously, without lag, by lines of image, lines of sound, which as yet still broadcast out of central nodes. The lines run only one way and indiscriminately, but incorporates anyone and anything of value. What is excluded,

from its point of view, has no value. The romance of the outsider is dead.

08/What completes topology and prepares it for the next—unknown—level is when the line splits again, into analogue and digital. The analogue lines of radio and telephone and television give way to digital lines, which reach back to the precedent of the telegraph, but extend its digital code to an increasingly flexible and all embracing web of communication lines. Gradually, the digital extends and expands to the whole of telesthesia. The internet incorporates text, sound, images, then moving images. The cyberspace of the internet becomes mobile and portable and turns into the cellspace of mobile telephony. This combination of the speed of telesthesia with the digital code is what makes possible a vast and inclusive topology of gamespace. This is the third level. Any and every space is a network of lines, pulsing with digital data, on which players act and react. In work and play, it is not the novel, not cinema, not television that offers the line within which to grasp the form of everyday life, it is the game. Julian Dibbell: “in the strange new world of immateriality toward which the engines of production have long been driving us, we can now at last make out the contours of a more familiar realm of the insubstantial—the realm of games and make believe.”⁶

⁶ Julian Dibbell, *Play Money; or, How I Quit My Day Job and Struck It Rich in Virtual Loot Farming* (New York: Basic Books, 2007) chapter 2. Dibbell’s book is a brilliant exploration of the brave new world of massively multiplayer games. I have excluded them from *Gamer Theory*, in part because it is too soon to see far beyond the hype surrounding them. The owl of Minerva flies at dusk: critical thought always appears with something of a lag. One way to avoid being caught up in the latest bout of cyberhype is to look to cultural forms that have already been superceded. This was in part Benjamin’s purpose in examining arcades in the era of the department store. Most of the hype about massively multiplayer worlds concerns the extent to which they appear to function as economies that are exactly like the “real world.” They thus function to naturalise economic behaviour and give it an appearance of inevitability. In this the utopian moment of single player games is lost. The game no longer functions as a more fair, more just version of gamespace, even on its own terms.

09/If the novel, cinema or television can reveal through their particulars an allegory of the world that makes them possible, the game reveals something else. For the reader, the novel produces allegory as something textual. The world of possibility is the play of the linguistic sign. For the cineaste, the world of possibility is a play of light and shade. For the gamer, the game produces allegory as something algorithmic. The world of possibility is the world internal to the algorithm. So: a passage from the topic to the topographic, mediated by the novel; a passage from the topographic to the topological, mediated by television; a passage, mediated by the game, from the topological to as yet unknown spaces, a point where the gamer seems to be stuck. Is it really the case that the gamer merely revels in blood mischief and role playing? Or is there a deeper understanding of the cave that can be had from gaming within it?

10/Start over with another new world. (This time with a little gamer theory.) Welcome to the first level: The novel is a line of a certain type, which opens towards certain possibilities, a storyline. It arises at the moment when topic gives way to topography. For Georg Lukács, what is to be valued is the historical novel and its ability to trace a line across an historical moment and reveal the forces at work in it. "It is the portrayal of the broad living basis of historical events in their intricacy and complexity, in their manifold interaction with acting individuals."⁷ The historical novel shows historical events through secondary characters, perhaps not unlike the reader, and an historical event as being at the same time a

The game is just as venal and corrupt as gamespace, indeed becomes of a piece with gamespace. This corruption of the atopian game is equivalent to the corruption of the utopian text, as too many lines weave their way into and out of its pages. See Edward Castranova, *Synthetic Worlds: The Business and Culture of Online Gamers* (Chicago: University of Chicago Press, 2005) and T. L. Taylor, *Between Worlds: Exploring Online Game Culture* (Cambridge, MA: MIT Press, 2006).

⁷ Georg Lukács, *The Historical Novel* (London: Merlin Press, 1962) 43.

transformation of everyday life. And yet the novel suffers from this paradox: to illuminate the topographic, the novel has to hide its own form. If it explores the possibilities of the line within its pages it opens itself to a “formalism” that leaves the reader behind.

11/The first level continues: cinema is a line of a certain type, which opens towards certain possibilities, an illumination of the dark corners of topography. For Walter Benjamin, what is to be valued is the “optical unconscious,” cinema’s machinic vision of a world that is itself machined with a dense grid of lines. Cinema can expand or shrink space, extend or compress time, it can cut together images of diverse scales or forms—intimations of topology. It creates a “Spielraum,” a playroom, for dividing up the machine world otherwise. Contra Lukács, Benjamin opens towards the formal properties of the line at the expense of its representation of an historical situation as a totality. But what doesn’t change is that the spectator, like the reader, is external to the line itself. Cinema can show how the world is made through its cuts and montages, an industrial process with the unique quality of showing itself as works. Yet there is still a separation between those making the cinema and those watching it.

12/The first level ends: The novel languishes. Cinema fails to realise its allegorical potential. Guy Debord: “But this life and this cinema are both equally paltry; and that is why you could actually exchange one for the other with indifference.”⁸ Boredom reigns.

13/The second level begins: Radio is a line of a certain type, which opens towards certain possibilities. For Brecht, what is to be valued in it is a certain unrealised potential for the line to point both ways: “Radio is one-sided and it should be two. It is

⁸ Guy Debord, *In Girum Imus Nocte et Consumimur Igni: a Film* (London: Pelagian Press, nd).

purely an apparatus for distribution, for mere sharing out. So here is a positive suggestion: change this apparatus over from distribution to communication. The radio would be the finest possible communication apparatus in public life, a vast network of pipes. That is to say, it would be if it knew how to receive as well as transmit, how to let the listener speak as well as hear, how to bring him into a relationship instead of isolating him.”⁹ Radio could be like a public telephony. But it is all analogue flow; it lacks a digital code. It radiates from one point to every other, without distinction. It lacks the transformational geometry of topology, where any three specific points could be connected, anywhere, and still make the same ‘triangle’ connecting sender and receiver and the third “line” — telesthesia itself.

14/The second level continues. Television expands the line of radio, but does it add much to it? Does it yield much by way of a space of possibility? Fredric Jameson: “The blockage of fresh

⁹ Berthold Brecht, “The Radio as an Apparatus of Communication,” *Radiotext(e)*, ed. Neil Strauss (New York: Semiotext(e), 1993) 15. Stephen Wright: “Remember CB radio? What a game that was! That invisible yet interactive sector of the public sphere—twenty-three slots on the Hertzian waves—that had its heyday in the mid seventies, in the wake of the Vietnam war, before being rendered obsolescent by the global technology blitz beginning in the 1980s, that spearheaded the new post-Fordist economy. This ‘Citizens’ Band’ was a horizontally organised network, and as such the symbolic forebear of the Internet forums of today. CB is something of a case study of how and why such and such a technology ‘makes it’ and some other doesn’t. For it is not merely a technical but also an ideological question as to why the collective banter of CB-space yielded to the individualism of portable phones. Although the sales pitch always presented CB as a user-friendly informational tool—warning people about traffic jams and similar hazards of consumer society—it actually had far less to do with content than with pure talk; it was always more about networking and communicating (truckers keeping each other awake at night) than about the message communicated—though it had the potential for content. Unlike the cell phones that replaced it, CB was inherently about group communication: everybody was on the same 23 channels; strictly private conversations were not for the airwaves. And unlike ‘Ham’ radio, the licensing scheme was very open (no test of Morse code, for instance), so it was open to whoever could spring for the \$200 set at the local radio shack.”

thinking before this solid little window against which we strike our heads being not unrelated to precisely that whole or total flow we observe through it.”¹⁰ Television generalises the line of communication as an analogue flow. The digital has not yet prevailed.

15/The second level ends: The tension between the topographic and topological is also one between a declining sphere of representation, will and interest, and one of a new topos that is statistical, digital, simulated—algorithmic. The topographic is incomplete. It can project its lines across space and annihilate time, but it cannot effectively mark or measure out the space it encloses. It has some feeble mechanisms—the opinion poll, for example. Through the laborious means of seeking out and recording opinion, topological space can be given the appearance of agency. Jean Baudrillard: “It is, paradoxically, as a game that the opinion polls recover a sort of legitimacy. A game of the undecidable; a game of chance ... Perhaps we can see here the apparition of one of these collective forms of the game that Caillois called *alea*—an irruption into the polls

¹⁰ Fredric Jameson, *Postmodernism; or, the Cultural Logic of Late Capitalism* (London: Verso, 1991) 70. The concept of television as flow comes from Raymond Williams, *Television: Technology and Cultural Form* (London: Routledge Classics, 2003). For an attempt to apply and extend Williams to the computer game, see Stephen Kline, Nick Dyer-Witheford and Greig De Peuter, *Digital Play: The Interaction of Technology, Culture and Marketing* (Montreal: McGill-Queens University Press, 2003). This book is best read in conjunction with Henry Jenkins, *Fans, Bloggers and Gamers* (New York: New York University Press, 2006). Between them, Kline et al and Jenkins reproduce the dichotomy between the power of the culture industry versus the agency of its consumers. Henry Jenkins, *Convergence Culture* (New York: New York University Press, 2006), provides some reason to believe that the new “user-created content” approach is breaking down that dichotomy. However, one could see this as just another version of “outsourcing,” by which consumers even have to produce their own entertainment, while still paying the culture industry for the privilege. The stand-off between active agents and oppressive industries in cultural studies is the result of certain methodological choices.

themselves of a ludic, aleatory process, an ironic mirror for the use of the masses."¹¹

16/The third level begins. Where the topographic develops one dimension of telegraphy—its flow of information across space—the topological develops the other—its intricate coding and addressing. Where the topographic is an analogue flow; the topological is the digital divide. It is a line of another type. It is a line that, for a brief, burning moment, reignited the dreams of a new topos. But the cycle accelerates. If it took twenty years to get from Brecht or Benjamin's optimism to Debord's boredom, the same cycle in net time took perhaps five years. Geert Lovink: "Cyberspace at the dawn of the 21st century can no longer position itself in a utopian void of seamless possibilities."¹² What topology yields is not a cyberspace but a gamespace. The idea of cyberspace is still too linked to images from the world of radio and television, of flow and "seamless" movement, of access and excess, of lines running anywhere and everywhere. Topology is experienced more as a gamespace than a cyberspace: full of restrictions and hierarchies, firewalls and passwords. It is more like a bounded game than a free space of play. Once again: if it is free, it is valueless. Those odd lines within topology where anything goes are the ones of no consequence.

¹¹ Jean Baudrillard, *Selected Writings*, ed. Mark Poster (Cambridge: Polity Press, 1988) 212. In one of the few essays on Baudrillard worth reading, Adilkno write: "In order to pose the problem of media, we must abandon the classical view of their social function as that of informing the masses. We must prevent our media theory from becoming a lower form of energy of the media themselves. That is why it does not try to ascribe all sorts of (subjective) intentions to the media, but rather allows them their own moment, seduction, or fatal strategy." Adilkno, *Media Archive* (New York: Autonomedia, 1998) 202.

¹² Geert Lovink, *Dark Fiber: Tracking Critical Internet Culture* (Cambridge, MA: MIT Press, 2002) 338. See also Geert Lovink, *My First Recession: Critical Internet Culture in Transition* (Rotterdam: V2, 2003). These two works chart the rise—and the eclipse—of cyberspace, cyberculture and cyber studies.

17/The third level continues. Games have storylines like the historical novel, which arc from beginning to end. Games have cinematic cut scenes, pure montages of attraction. Games subsume the lines of television just as television subsumed cinema and cinema the novel. But they are something else as well. They are not just an allegory but a double form, an allegory and an algorithm.¹³ Appearances within the game double an algorithm which in turn simulates an unknown algorithm which produces appearances outside the game.

18/Stuck again. Start over. Another new world. Welcome to the first level. Let's loop back to Lukács, and ask: rather than insist on the possibilities of the technicity of the line itself, perhaps there's something to be said for the possibilities of a certain genre that makes use of it? Bonus points! Skip straight to the third level: the strategy game is a genre of a certain type within a line of a certain type, which opens towards certain possibilities. Click on the Government pull down menu and choose Revolution. Your Republic turns to Anarchy. Certain parameters shift. You are playing Sid Meier's *Civilization III*.¹⁴ It is not so much an allegory for world history as an algorithm for gamespace itself. Everything here is a relation between quantifiable processes. Everything is a question of the allocation of resources. There's a perverse sense of base and superstructure. You can change the form of Government but there's not much you can do to change the underlying form of production. Invest in science and qualitative technical changes accumulate, which in turn expand military, cultural and political possibilities. Invest in culture to keep the plebs from revolting. Interestingly, civil disorder comes from below, but revolutions come from above, but these are just two functions

¹³ I have borrowed the term "algorithm" from Alexander Galloway, *Gaming Culture* (Minneapolis: University of Minnesota Press, 2006).

¹⁴ Sid Meier's *Civilization III*, developed by Firaxis Games, published by MacSoft, and designed by Jeff Briggs and Soren Johnson, 2001.

within an algorithm: a small variable with a big effect; a big variable with a small effect.

19/Gamespace turns descriptions into a database, and storyline into navigation. Sid Meier, known as a voracious reader, turns history and anthropology books into strategy games. *Civilization III* even comes with its own *Civilopedia*, a reference work for a parallel world. But this is more than the remediation of old forms into new. Rather, the algorithm consumes the topographic and turns it into the topological. In the database, all description is numerical, equivalent in form. In principle everything within it can be related to or transformed into everything else. A new kind of symmetry operates. The navigation of the database replaces a narration via description. The database expands exponentially. Rather than a politics of allegory, an economics of algorithm operates, selecting and reducing possibilities.

20/This is how the world appears to a gamer playing *Civilization III*: there are dependent and independent variables. Gamers, through trial and error, will work out which are which. They change over time. In the first stage, you explore, pushing back the inky black shroud to make a map. Then you grow the population, a vast army of farmers and miners. You have to maximise useable space. Once your continent fills up with cities and their hinterlands, expansion becomes qualitative rather than quantitative. It's all about knowledge and technology. The quality of warfare changes along the way. It expands in space, digs deeper into reserves of resources, then becomes a qualitative race for bigger and better lines along which power can reticulate. The gamer is a manager, confronting uncertainly with an inventory of resources. It's a hard game to win at first, but after you have beaten it, you play it again, and again. Glen Fuller: "It has a complex array of logics for warding off boredom." It draws the gamer's attention not to the storyline

but to the combinations of elements from which any given storyline might be selected.

21/In *Civilization III*, time is essentially of a piece. It is homogenous, empty, but it can be divided into equivalent units, just like space. Thus time can be configured and reconfigured, producing endless variations on the cascading sequences of cause and effect. History is indeed absent from the game, absent as something finished, as a storyline in the past tense. What replaces it is a history workshop, a model of history as the intuition of algorithms and their consequences. The gamer is a designer. Designers, like all managers, operate within given limits. This is how the world appears to the game designer: there are dependent and independent variables. Designers, through trial and error, will work out which are which. They will choose cultural, business and technical options that maximise long term advantages. If it doesn't work out, they will do it over. Time is essentially of a piece. It is homogenous, but it can be divided into equivalent units, just like space. *Civilization III* models not so much "civilisation," as the game design business, which in turn models gamespace, or topology as it presently exists.

22/This is how the world appears to gamer theory: seen from the point of view of topology, with its dense databases and navigating tools, the topical world with its loosely connected topics was a world of limited data and few possibilities. Transformations of one thing into another were purely magical. The topographic—and telegraphic—flattened out the differences between topics while describing them in much more detail. A tension arises between enriched description and the poverty of storyline, bursting to contain it. The expansion of description nevertheless opened towards allegory. Accumulations of images burst out of their storyline bounds. It opened towards a politics of allegory, of the writing and mapping of the world, and also towards utopia, arresting the

flux of the world in ideal form. Topology closes the frontiers of space within its lines, and expands the dataset again, but by reducing data to equivalent calculable points, it is able to break with storyline as the principle of temporal order, replacing it with the algorithm. Storyline becomes gamespace.

23/Strategy games such as *Civilization III* present an algorithm of topology as gamespace and the gamer as its manager. It subsumes the text, audio, images and movies into the database, while the algorithm calculates the moves of all its elements relative to the gamer. It collapses the difference between the everyday and the utopian. It embraces all differences by rendering all of space and time as being quantifiable. Topical times resound with the myth of the tactician. Topographic times inscribe stories of grand directors of strategy. Topological times call for managers of strategy. History appears, retrospectively, as not only the expanding frontier of war's theatre, but also its qualitative transformation. It is the unwinding of a line which divides everything into manageable chunks of data. The actual disposition of resources is doubled by a database which maps not fixed locations but measures of fungibility. The algorithm can produce every possible combination of the resources mapped in the database—and a few impossible ones as well. The possible and the actual reverse positions. It is the possible that is real. If the algorithm can produce it as an outcome from the database, it exists. The mystery is why the recalcitrant debris that litters the actual sometimes refuses to get out of the way. This insistence on the reality of the possible, on what resides within resources, is the American dream.

24/Finally, the next level appears: the expansion of topology outwards, beyond America, to make America equivalent to all of time and space. America itself, as a construct, as a structure of feeling, is always only available via particular mediating lines, which may do more than merely represent a pre-existing

America. The form of the line may itself participate in the creation of America.¹⁵ There may well be an America that resides successively in the novel, in the cinema, in television and the game, and is shaped by each. Each, in turn, presents history itself as a passing on of memory from one form to another. *Civilization III* recapitulates not only world history but media history. Its ambition is not only to embrace the recording of the world but the world of recording. In *Civilization III*, the transformation of space and time, from topic to topography to topology, is an effect of the development of the lines with which to mark and manage it. This double development, which at one and the same time deepens and proliferates lines of the possible and the actual, can be called America. It is what is both desired and feared under the rubric of that name, which no longer marks a particular topic, but stands for the very capacity to mark and manage space itself, as topology.

25/The line makes its way across the world, making it by marking it. The line passes across valleys, pages, mountains, rivers, tracing trails, roads, railways, highways, doubling itself with telegraph, television, telecommunications, doubling itself again as the code of the letter migrates from text to telegraph and explodes into the myriad lines of the digital. The line makes topics, maps them into the topographic, then folds the topographic into a digital topology. The line does something else as well. For every line drawn are an infinite number undrawn. Every line is an allegory of the possibilities for a line of its type. The line may also intimate the possibilities of lines of another type. But the possibilities of a given type of line are not infinite. Allegory always touches the virtual—which one might define as the possibility of possibility—via a particular line. At each level of the actual unfolding of the line across the world, it offers a glimpse of the virtual in its own image. This is the limit

¹⁵ Dominic Pettman: "Sorry to bring this back to level one, but Thomas Pynchon's *Mason & Dixon* (New York: Picador, 2004) is a great example of geo-cultural line drawing, especially in terms of 'America.'"

to allegory. If allegory yearns for something ahistorical, a topos beyond all particulars, it does so over and over in the most particular and mediated way.

Donald F. Theall

The Rediscovered Marriage of Art & Technology in the Founding Moments of Culture

In the 1950s Heidegger's exploration of what he called "originary technicity" arose in the context of a coming of age of "modernism" in the arts. Practitioners of all the contemporary arts as well as the emerging "popular" arts were all engaged in the rediscovery of the profound significance of the interrelation of science and technology with the birth of the arts, of culture and of civilisation throughout the very earliest moments of the evolution of the human. Technological consciousness was grounded in the earliest moments of human expression—on one hand, in the discovery and use of tools, and, on the other, the development of early modes of communication and the recording or preservation of the fruits of communication. It is well recognised that from the very first use of gesture, its development into language and early writing systems, that the technological thrust was associated with the arts as well as the various crafts of making and constructing. By the Hellenic period this association was reflected in the term for art itself, including the verbal arts as well as physical arts of making things: τέχνη. Consequently, the early commentators on the arts that constituted the trivium spoke of grammar and rhetoric as also concerned with "technic."

The recognition of the foundation of not only communication, but the entire forward movement of the evolution of technological civilisation is set forth by twentieth century artists such as James Joyce in *Finnegans Wake* when he quips: "In the beginning was the gest" (468.5);¹ and such as Stanley Kubrick at the opening of *2001* when the ape becomes transformed by discovering that a bone can be a tool and a weapon and then, gesturing with it, throws it in the air, an act which takes us into the future of space flight. The *Wake* is a work that involves a "designed" language, which Joyce declares is not English, because as his text points out, "in the Nichtian glossery which purveys aprioric roots for aposteriorious tongues this is nat language at any sinse of the world" (83.12).² The uniqueness of Joyce's last two productions—*Ulysses* and the *Wake*—is their utilisation of the eighteenth century vision of Giambattista Vico's *Scienza Nuova*, by embracing aspects of: the history of the most ancient times; the history of the liberal arts and drama from Greece to Augustan England; and those of the recent history of the arts and poetry from Blake and Poe to the 1930s.

Joyce's "new science" in *Finnegans Wake* weaves together such themes as the contemporary space-time debate and its relation to dream and virtuality with a return to the mutual birth in the ancient world of humanity, art and technology. Besides encompassing such artistic motifs as Proust's "remembrance," or Wyndham Lewis's and the Vorticists' artistic concerns with space-time (that become the subject of a satiric section of twenty pages [148 to 168] in the *Wake*), Joyce's work embraces early ancient knowledge such as the arithmetic which constructed the pyramids and their connection with art as technē and hence also ancient technology: "the hieroglyphs of engined egyptians." With this linking of ancient

¹ James Joyce, *Finnegans Wake* (New York: Viking Press, 1958) 468.5—all subsequent citation to the *Wake* appear in-text, following the standard form used by Joyce scholars indicating page and line number.

² "Nat" in Danish is "night," but pronounced as "not."

technologies, modes of knowledge and the arts (e.g. architecture, image-making) to the contemporary situation, it is significant to note then that *Finnegans Wake* was published just before World War II, nearly thirty years after the publication of the *Principia Mathematica*, eight years after the first articulation of Gödel's theorem, and three years after Turing described his "machine" for computing numbers. With the process of composition taking seventeen years, beginning in 1922, the *Wake* was finally completed in 1939 just at the dawn of the digital age. Joyce's major works—*The Portrait of the Artist* and *Ulysses* as well as the *Wake*—spanned the entire period from the appearance of Bertrand Russell's *Principles of Mathematics* (1904) to Turing's discovery of his abstract mathematical machine (1936), so that while Joyce does not directly address the birth of digiculture or cyberculture, his last book emerges during a key moment of transition in their pre-history. This does not only come about through Joyce's techno-scientifically and mathematically informed writing, nor through his deep knowledge of the era in which he lived; but more the way the *Wake* explores major historical moments in the juncture between art, on one hand, and science and technology, on the other.

One of these is: the birth of the waking dream produced by the convergence of art with science and technology in the ancient poetry, art and ritual of Egypt, the Middle East, Greece and Rome; the theorising of that phenomenon in the development of grammar, logic, rhetoric and poetics; and its transmission through the Middle Ages into the Renaissance. Another is the transformations of that dream as part of its realisation becomes technologically possible in a eighteenth and nineteenth century post-Enlightenment world in which thermodynamics, electricity and modern mathematics emerged. Plato, Aristotle and other commentators in ancient Greece and Rome reveal the founding moments of this history responsible for shaping its progress through the middle ages and early Renaissance, (In subsequent centuries, the work of classicists, of

archaeologists and of scholars of Egyptology and the mid-East confirm it.) A later phase of this history begins with John Dryden, Alexander Pope, Blaise Pascal, Jonathan Swift, and moves through William Blake and Edgar Allan Poe (often building on medieval and Renaissance models) probing the developing sciences and technologies, commencing with the beginnings of mechanisation taking command. This launched a conscious exploration of key aspects of the early vision of a “waking dream” or disembodied virtuality—the perennial thrust for the integration of the arts and the consciousness of the codification of communication through hieroglyphs, codes, writing and other symbolic systems.

These two moments—along with others, such as the high Middle Ages with the building of cathedrals, the poetry of Dante and the humanistic theology of some aspects of scholastic theology—are an immediate and persistent presence in the *Wake* and are also present in Joyce’s earlier text *Ulysses* as well as many of his theoretical and historical statements. Still what is the most surprising (though to some often off-putting) aspect of his writing is that it encompasses essential aspects of those histories which are not usually discussed in relation to their emergence from simultaneous roots in the history of poetics, the arts and the trivium (grammar, logic and rhetoric) in the remote past as well as from the reconstruction of the ancient concepts of integration or orchestration of the arts, of synaesthesia or the interplay and interchangeability of the senses and the early recognition of codification in gestures, runes, hieroglyphs and the like to their amplification and transformation in the electric era. Simultaneously, these works link those concerns to the popular culture and media of their day and point towards an emerging relationship between older arts, newer “lively” arts and the evolution of the “language of new media.” Joyce’s world, as the *Wake* tells us, is a universe where “flash becomes word and silents selflood” (267.16-17)—a “languo of flows” (621.22) producing a merging of a pre-Mosaic and a post-telegraphic (Morse code) mode of communication:

“language this allfare for the love of Marses which is ambiviolent about it” (518.2-3). The core of this creative universe is technicity—the co-presence of the expressive and the poetic with the technological in the act of creation.

Earlier in the 1920s other artists such as Paul Valéry, László Moholy-Nagy, Guillaume Apollinaire and George Antheil had extensively explored in their writings and/or their creative practice this more recent history. From the aspect of literary theory and criticism Valéry covered most of its major figures with the possible exception of Blake. T.S. Eliot also explored some of the major figures in his historically important essay “From Poe to Valéry.”³ Poe had thought of the artist as an engineer; Joyce saw himself as a techno-scientist and engineer—in fact, as designer of the *Wake*, the greatest engineer, declaring that: “Sifted science would do your arts good” (440.19). Meanwhile Valéry had argued that the role of the contemporary poet or artist was to be: “a cool scientist, almost an algebrist, in the service of a subtle dreamer.”⁴ Valéry’s view of the “poet,” which occurs in a discussion about Poe and Charles Baudelaire, easily includes a wide range of early twentieth century and more contemporary artists: Marcel Duchamp, Paul Klee, Arnold Schoenberg, Hans Richter, John Cage, Jorge Luis Borges and Joyce as well as numerous other musicians, artists and poets of the first two thirds of the twentieth century. The techno-scientific poetic vision of all these artists comes to a particular focus in their anticipation of the integration of the arts in an approximation of the total work through the impact of science, mathematics and technology on their practice. This should be viewed with the caution that the effects of later technological media ought not and cannot be reduced to older forms, although their development may be a response to meeting the desire in earlier arts and transforming

³ T.S. Eliot, “From Poe to Valéry,” *Hudson Review* 2 (Autumn, 1949): 331.

⁴ Paul Valéry, “On Literary Technique,” *The Art of Poetry*, intro. T.S. Eliot, trans. Denise Foliot (New York: Random House, 1958); *Collected Works* (New York: Bollingen Foundation, 1970) 7.315.

them in view of new possibilities opened up by technological developments.

The major international expositions, through the last half of the nineteenth and beginning of the twentieth centuries, dramatically represent how the most advanced techno-artistic worlds are always returning to their ancient roots in the beginnings of the arts and poetry. When we think of keywords such as intermedia, convergence, and immersion, it would be wise to remember that for the Greek audience attending the great dramas the same phenomena were present, but not backed by either the electronic and digital technology or the PR promotion and media hype of the twentieth century. Intermedia is not new, nor does it begin with Richard Wagner's conception of the Gesamtkunstwerk (Total Artwork), for the very beginnings of the arts in rituals in the ancient caves and in drama in the classical world exhibited most of the generally accepted characteristics of intermedia: integration (or convergence of the arts), interactivity (audience participation in the ritualistic character), immersion (of presence or illusion; an impression of being-*there*; the equivalent of hypermedia in any given period), and narrativity.

It is the seeds of the contemporary thrust towards blending and mixing the modes of expression, which was first already forcefully advanced by the late nineteenth century in the theory and practice of Wagner—a major influence among the early modernists, including James Joyce. In 1849 Wagner introduced the concept of the Gesamtkunstwerk in an essay called “The Artwork of the Future,” in which he declared that: “Whereas the public, that representation of daily life, forgets the confines of the auditorium, and lives and breathes now only in the artwork which seems to it as Life itself, and on the stage which seems the wide expanse of the whole World.”⁵ Wagner's description of the Gesamtkunstwerk is one of the first attempts in modern art to establish a practical, theoretical system for the

⁵ Richard Wagner, *The Art-Work of the Future and Other Works*, trans. William Ashton Ellis (Lincoln: University of Nebraska Press, 1994 [1849]) 185.

comprehensive integration of the arts. While Joyce had a complexly mixed attitude towards Wagner's music, he did play with it in relation to his own use of Tristan and Iseult and other operatic materials from the *Ring* cycle (and elsewhere) in *Ulysses* and the *Wake*. Along with Nietzsche he realised the importance of the emphasis on the new concept of the "total theatre" to the extent that he strove to find such an equivalent in the complex, chaotic, polysemic auditory, visual and intersensory play in the *Wake*, producing the work which Cage would later describe as a musical circus. A recent anthology on Multimedia (*Multimedia: From Wagner to Virtual Reality*) in fact argues that Wagner had, by 1849, already laid out the necessary evolution of a total theatre—an art that would encompass a multitude of media (which perhaps suggests that this recent anthology's title probably ought to have been "Intermedia" instead, since this became the key term of those in the 1950s and 1960s who moved towards this conception of a "total theatre").⁶

Joyce's totalising object, like that of many of the avant-garde, is an *excessive* totalisation which leads to the multiplicity of flows—fluidity—Deleuze and Guattari's "exponential line of flight." The *Wake* concludes with a vision of: "The untireties of livesliving being the one substance of a streamsbecoming. Totalled in toldtold and teldtold in tittle-tell tattle" (597.7-9)—suggesting that Joyce shared an avant-garde vision of convergence or multimedia as expressed by Moholy-Nagy (1924): "The Theatre of Totality with its multifarious complexities of light, space, plane, form, motion, sound, man—and with all the possibilities for varying and combining these elements—must be an ORGANISM."⁷ The entire movement of the avant-garde during this period is directed towards the creation of "new languages" of such totalisation or convergence

⁶ See Packer and Jordan, *Multimedia: From Wagner to Virtual Reality* (New York: Norton, 2002) xxx-xxxii; and for immersion, Oliver Grau, *Virtual Art: From Illusion to Immersion* (Cambridge, Mass.: MIT Press, 2003) 6-7.

⁷ László Moholy-Nagy, "Theatre, Circus, Variety," *Theatre of the Bauhaus* in Packer and Jordan, *Multimedia*, 22

which would be various blends of multiplicity of different modes—gestures, sounds, images, words and their movement. This is certainly part of what was implicit in the symboliste and avant-garde interest in Rimbaud’s “alchemy of the word” that conveniently adapted to the Dadaistic fascination with the new science—an alchemy which about five decades later had been partly co-opted by the post World War II advertising industry.

The simultaneous inter-relationship of all these writers and artists with such motifs as linguistic ambivalence, engineering, science, technology, the occult (alchemy) and the intuitive modes of daydream and vision, are in many ways rooted in the histories of science itself and its connections with the histories of memory, expression and the occult. But the history of a thrust for totalisation and virtuality is rooted in the very remote past, which is why Giedion’s interest in “cave painting” in *The Eternal Present* is linked to the interests that he has in *Space, Time and Architecture* and *Mechanization Takes Command* (books which later had a profound impact on Marshall McLuhan, just as Giedion himself and his wife had had on Joyce). In the first volume of *The Eternal Present: The Beginnings of Art*, Giedion associates many of the qualities sought by the modernist avant-garde with the Perigordian-Aurignacian cave art of the Magdalenian period. Before turning to some of the specifics, or even this specific art form, it is useful to note Joseph Campbell’s description of these magical spots—these temples that are “the projection into earthly space of a house of myth.” These consciously fashioned mythological realms are “conceived as units, with outer and inner chambers of increasing power.” They are so constructed that “before reaching them one has to experience the full force of the mystery of the cave itself. Their absolute, cosmic dark, their silence, their unmeasured inner reaches and their timeless remoteness ...”⁸ For Campbell these caves are the first cathedrals, temples, “the upbeat to *The Divine Comedy*”—and to play with our own terms a product of

⁸ Joseph Campbell, *The Masks of God: Primitive Mythologies* (New York: Viking Penguin, 1976 [1959]) 397-8.

“originary technicity” or a “virtual hyper-reality,” since contemporary productions of the convergence of media yearn for the same type of confrontation with the “chaosmos.”

Giedion’s work shows the strong affiliation of this type of mythopoetic vision with the relationship between the work of twentieth century artists, musicians, architects and poets, and the designers of the Magdalenian caves at Périgord and elsewhere throughout the region. This hyper-linguistic alchemy—a language-oriented modality of chaos—simultaneously lays the groundwork for the ongoing transformations of media, since it underlines the fluidity of modes of communication linking them with transitions in science and technology. It leads to Joyce’s speaking in the *Wake* of “chaosmos”—the world as cosmos transformed in a multi-dimensional earth—which became a key word in later discussions in Eco, Deleuze, Guattari, Baudrillard and many others since complexity and chaos emerged as ruling theoretical principles—a phenomenon reflected throughout popular culture. Simultaneously it lays the groundwork for a growing acceptance of the quest for hypermedia, since it presents the probes which provide the linguistic fluidity and the synaesthetic consciousness that are requisite to understanding the accelerated convergence of modes of expression that had earlier been intuited by film makers, photographers, typographers and many others.

All of this is grounded within the satiric exposure of the ecological problems of media that permeated the work of avant-gardistes, especially Duchamp, Pound, Wyndham Lewis and Joyce. Joyce’s work, aided and abetted by the possibilities of multiple meanings in the real world, links hieroglyphs, runes, ideograms and oghamic script with print, the alphabet, and oral production both to a multiplicity of media from stone inscriptions to newspaper, telegraph, phonograph, radio, film and TV as well as with the range of art forms from poetry to dance. Joyce’s “Book of the Dark,” with its hieroglyphs of “engined Egyptians,” is “this new book of Morses” (123.35)

[Moses + Morse's invention of the telegraph] in which he establishes that the "dream monologue" (474.4) becomes "drama parapolylogic" (474.5)—an "auradrama" (517.2), linking aurality with aura, the ear with breath as a breeze or subtle emanation.

I am primarily using the insight gained from such associations as an exemplum of how all the arts—the traditional fine arts; what were then in the 1930s called by Gilbert Seldes the newer "lively arts"; and subsequent pop arts and media—were throughout the last century and a half developing a vision of newly transformed paraoral and paraverbal languages with varying degrees of consciousness (I am coining these terms to indicate that the new, potentially primary language would exist beyond, beside and above existing oral languages). What is at stake here is that the major insights into how to develop the most powerful aspects of the rapidly evolving, electric, electronic and digital world arose in the arts in a complex combination of reaction, fascination and approbation of the potentialities of a newly emerging convergence of media, which quite interestingly also became a preoccupation in the new genre of sci-fi in film, art and literature—a sci-fi that had fed upon the radical modernist avant-garde and writings such as those of Joyce. The work of Giedion is a key to this, since his whole work was devoted to a probing and discussion of new modes of perception and the generation of new feeling at the heart of the new arts—a program which places the percept of art on a plane with the concept of philosophy and the functive of science, thus achieving what much later Deleuze in *What is Philosophy?* explicated when he justified the role of the percept as equivalent to that of the concept and the functive. These new arts in all their various guises do not replace individual modes of expression and communication, but blend them in a new, integrated mode which closely approximates the ancient dreams of a poetic language.

In achieving this blending anew in the contemporary period, the arts also were once again pursuing the dream of integrating

with science and technology that the classical world had asserted and which was practised in the Renaissance by such a figure as Leonardo da Vinci, who came to mark a transition point by embracing the process of the integration of mathematics, science and technology with poetry and the other arts at the very moment it was once again beginning. It is noteworthy that Giedion stresses this in relation to his discussions of da Vinci's interest in town planning. For his part, Duchamp whose interest in electro-mechanisation has been noted earlier often associated the integration of science and art, as well as his commitment to art as a "mental activity" with what da Vinci had achieved at that moment of transition in the Renaissance. Other radical avant-garde modernists, including Klee, Léger, Dalí, Max Ernst and Le Corbusier, also mention Leonardo as a significant model. While Joyce hardly ever mentions Leonardo directly, his early interest in Walter Pater (who had written extensively about da Vinci in *The Renaissance*) later reinforced by his knowledge of the writings of Valéry, his commitment to the artist as engineer and his inclusion of the sciences in the *technē* of the artist, clearly affiliate his project with the same integration of the arts with technology and science.

So early in the twentieth century, as the world moved towards the new millennium, da Vinci's name had become a symbol of the ever rapidly increasing interaction between the arts, science and technology. In 1894, just before the turn of the century, Valéry wrote the first version of his "The Method of Leonardo da Vinci" in which he relates Leonardo's vision to the fact that mechanisation is taking command. He went on to develop this theme about Leonardo in various theoretical-critical essays relating contemporary art with technology.⁹ Valéry was not alone in his fascination at the turn of the century, since, as already mentioned, Pater was also fascinated

⁹ See Paul Valéry, *Leonardo, Poe, Mallarmé*, trans. James Lawler and Malcolm Cowley, *Collected Works in English*, vol. 8. (Princeton: Bollingen Foundation, Princeton University Press, 1972) 3-110.

with Leonardo's projects, although he did not so directly associate it with what was to become Giedion's theme of "mechanisation takes command." The turn of the century marked the beginning of an increasing preoccupation with, and commitment to, Leonardo's vision of the arts, which is marked by the fact that in 1968, *Leonardo* was adopted as a title for the then avant-garde and now authoritative MIT journal, which explores the themes of "art, science, and technology" (and naturally mathematics).

Paradoxically, the image of Leonardo—as such a "Renaissance man" marrying technology, science and the arts—runs counter to a view of the later Renaissance as having given rise to those divisions which, for a short time, superficially separated the arts into rigid categories and also divorced the arts from the sciences. Still it is the figure of Leonardo and his work which dominates the aesthetic theories of many modernists like Valéry who considered the career of this artistic polymath to provide a corrective to a contemporary dilemma resulting from the apparent split between art, science and technology during the nineteenth century. Our sense of the contemporaneity of Leonardo, which only increased during the second half of the twentieth century, dramatises the fact that the early Renaissance artists and thinkers were also aware of the need for a marriage of art and technology which partly grew out of their fascination with the culture of the classical world of Greece and Rome. In the early Renaissance the history of ideas and religion brought out in high definition the traditional links between magic, science (conceived as the foundation of knowledge) and technology: the arts, crafts and assemblage of practical strategies.

Although now in the early twenty-first century, contemporary artists and designers may, through technological mediation, creatively reproduce their visions within a physical "virtual reality," this early Renaissance world experienced an imaginary "virtual reality" *intuitively*. Some well-known lines from Shakespeare's *The Tempest* clearly reveal the Renaissance

sense of the arts—the technē producing a “virtual” world which reflects the everyday world:

Our revels now are ended. These our actors,
As I foretold you, were all spirits and
Are melted into air, into thin air:
And, like the baseless fabric of this vision,
The cloud-capp'd towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep.¹⁰

This motif of the “waking dream” has always been and still is one of the persistent major goals of the arts aiding and abetting the contemporary desire to produce “virtual realities” and hence, “virtual” worlds. This Renaissance vision is echoed with a modernist twist by Valéry in his essay on “The Method of Leonardo”:

At some time in the process of observation, this double life of the mind that reduces ordinary thinking to something like the dream of a wakened sleeper, it appears that the sequence of the dream—with its mass of combinations, contrasts and perceptions, either grouped around some project, or moving forward indeterminately at one’s pleasure—is developing with perceptible regularity the obvious continuity of a machine.¹¹

It is noteworthy that the foundation of Joyce’s *Finnegans Wake* is based on the centrality of the vision of the “waking dream” in traditional poetic practice. In the conclusion of the *Wake* (the “Coming Forth by Dawn”), in terms that echo Valéry’s remarks, Joyce describes his book as an electromagnetic machine, “a

¹⁰ William Shakespeare, *The Tempest*, IV.i.148-58.

¹¹ Paul Valéry, “Introduction to the Method of Leonardo da Vinci” [1894], trans. Thomas McGreevy, *Selected Writings* (New York: New Directions, 1950).

wholemole millwheeling vicociclocrometer” in which: “It will remember itself from every sides, with all gestures in each our word” (614.20-1). The earliest moments of thinking about integrated forms of human expression (e.g., ritual drama) as creating “waking dream(s)” go back to the very beginnings of history for such a craving had already been recognised by Pythagoras and later by Aristotle, who while still writing in a new literate world appreciated the roots of drama in the mysteries and understood that drama was a blending of a multiplicity of modes of expression (media). While Aristotle favoured drama with its intermixture of modes—visual art, architecture, music, dance, song, gesture and speech, etc.—over other poetic forms, he still, with his view of the literate world, reluctantly argued that reading the play through the written word must be a superior experience for it enabled reflective intellectual examination and meditation—a more interactive participation for the time. Yet ancient drama, even in Aristotle’s account in the *Poetics*, provides a significant glimpse into the human desire for an evolutionary vision of an integrated mode of expression, a “coenaesthetic language”—moving beyond speech, beyond writing, beyond verbal language itself.

This is a dream that did not die, since besides being preserved in some forms of drama, it also lived on in liturgies, particularly the Roman Catholic liturgies. There the concept of the origin of the Word as logos, the expression of the inward thought through the embodied individual’s expression, results in an integrated and embodied wisdom—the Word made Flesh through the ritual of the Mass—or as Joyce would put it “Where flash becomes word and silents self-loud” (267.16-7). Simultaneously, versions of an embodied word permeated some modes of the various occult and hermetic traditions, such as alchemy—traditions which were to play their role in Enlightenment developments in science and technology. In the fascination of Renaissance magic with such phenomena as those clockwork, robotic figures emanating from Rosicrucian Bohemia, complement the more familiar traditions of the

alchemist and the astrologer. Within these traditions a tension developed between those pursuing the embodiment of human communion and those yearning for the purely abstract, informational environment characteristic of the superhuman nature of the angelic—an early prefiguring of part of the debate currently going on with respect to the nature of the posthuman.

These seemingly esoteric concerns have become of major importance now at the beginning of the twenty-first century since they are not only relevant to the evolution (biological and technological) that is occurring with respect to the processes of human communication, expression, memory and the mastery of information, but to robotics and genetic engineering also. To understand the significance of these developments it is important to remember the close inter-relationship between speech, writing and the various artistic modes of expression as techniques and hence as, technologies. What is at stake here in this convergence and integration of the various artistic, and thus also technological, modes of the arts of expression (usually subsumed under the term *media*) is a revolution with respect to language as it has been generally understood since the late Middle Ages and the Enlightenment; essentially a restoration of “language” as embedded in the body and its interactions with its environment. The ascendancy of the dialectical division between orality and literacy in discussions of the manuscript, the book, the media and human communication generally, confines the notion of the “Word” (the logos) to a spoken word and thus suggests some type of “purity” in the spoken word. Whereas what drama or liturgy (and later film and TV) does is to embody the message, so that the medium and message become one.

The art and architecture of the great cathedrals is then revealed as an integral part of the total performance of the liturgy. This is something that Henry Adams intuited in the early moments of the rise of modernism with his book *Mont-Saint-Michel and Chartres*. That book complements a chapter entitled “The Dynamo and the Virgin” in his previous work,

The Education of Henry Adams, which focuses on “the great [Parisian] exposition of 1900,” exhibiting an early recognition between the social role of the great cathedrals in the past and the relatively recent celebrations of the new faith in technology—the great international expositions that began with London and the Crystal Palace in 1851. For Adams, the newly developed electro-dynamo (circa 1890) provided the technological miracle of the Paris Exposition of 1900, which showcased visions of the future extensive uses of electricity, particularly in illuminating the city. As Adams saw it, the energy produced by faith in the Virgin was being transmuted into a new faith in the electric generator, the dynamo. Adams’s insight suggests the great exhibitions in Paris in 1855, 1867, 1878, 1889 and 1900 became new kinds of “sacred” places for the public affirming and reaffirming a multitude of messages advancing the new hegemony of science and technology.

While these phenomena may seem to be based primarily on the transfer of data and information, this in itself can create modes of participative communication that run quite counter to the relatively simplistic information and/or data orientation of those who seek an identification between the evolution of the human and patterns of information, or with the abstraction of a pure mind independent of its embodiment. If the “language” of ritual drama excelled as a poetic practice for Aristotle, then today people technologically interacting with a multiplicity of senses through full bodily participation are participating in what is potentially a high-level poetic process. One familiar possibility that has evolved from contemporary virtual technologies permits a form of interaction in which a sense of place and space can be simulated. (As an example, Disneyland in some ways seems to achieve this, since it is necessarily a place and therefore situated in space.) Moreover, the ever increasing sophisticated computer simulations create new virtual places and spaces without there necessarily being any actual change of location in space on the part of the participant-observer as well as providing a greater interactive participation.

In such a process, what occurs *technologically* in real time *virtually* transforms the space in which the simulation occurs.

Interacting with a technology, often together with other participants, creates through the artistically crafted technological process an alternative sense of place, which is apparently why William Gibson coined his term for virtual realities produced in the imaginary global place and space of the Internet as “cyberspace,” so as to emphasise that people were still involved in space and in a place even if the nature of the place could not be defined in terms of Euclidean or Newtonian space. Since these situations can actually be controlled by participant consumer-producers as well as by others to a much greater extent, they differ from the Disneyland phenomenon and build on the visions of some of the earlier major international expositions, such as Expo ‘67 in Montreal. The post-Gutenberg, post-electric potentiality for interactive integrated communication (phatic communion) is now a rapidly increasing possibility. This brings about a totally new mode for realising the pre-Socratic vision of a poetic (a *technē*), which in its highest forms (earlier examples of which, for the post-Socratic Aristotle, were the Greek drama and for others, later, the Elizabethan playwrights, the masques or liturgies) blends and integrates all modes of expression through the interaction of technology with people by in-forming expression and communication so as to provide embodied humans with a seemingly total participation in the process.

As we move towards such an evolution in communication, a multitude of new, unsettling phenomena associated with this evolution—Artificial Intelligence (AI), Artificial Life (AL), Virtual Reality (VR)—have in recent years promoted our sense of foreboding of some sort of transformation of the human accompanied by a too rapid acceleration of the digitalisation of the arts. Yet within the arts and other modes of cultural production this new integrated convergence has risen from at least two earlier patterns of development—one from the classical world with its development of poetics and rhetoric; the

other beginning in the very late eighteenth century when mechanisation takes command and electromechanisation becomes a possibility. A major factor in the growth of technologies concerned with the production, reproduction and dissemination of cultural products, has been the increasing interaction throughout the twentieth century between the arts (in particular architecture), literature and the popular arts with science and technology.

This alliance of art, science and technology has also been a major, though often less recognised, aspect of the pre-history of digitalisation and of the developing interest in Virtual Realities and Artificial Life. What is still little understood is that this pre-history goes back not only through the nineteenth century to the Enlightenment—as it is related to the technological uses of electricity, magnetism and photochemistry—but also well beyond that time span to the very beginnings of poetry, art and architecture in the primitive and ancient world. Many of those who have confronted the implications of this transformation have spoken about it as the inception of the posthuman. Nevertheless, they may disagree on whether the posthuman will be an embodied person or an assemblage of abstract information that might be stored in a computer. But what is actually occurring, if one attends to the long and varied history within which these problems are embedded, might better be denominated as “parahuman,” since “post-” in posthuman—as often in postmodern, poststructural and other such compounds—always already seems to imply an end to history, whereas the prefix “para” permits a simultaneous ambivalent inclusiveness of beyond, beside, and before without the sense of a “coming after.”

While I can accept a vision of our moving beyond what has been regarded as the human, it is only in a sense which also embraces “before”—suggesting the historical continuity of the evolution of expression of being human – and which further encompasses the evolving human existing within the embodied person within the context of these newly emerging integrated

languages. Speaking of the “posthuman” does not really do this! For as Giedion, writing in *The Eternal Present*, copiously illustrates, the marriage of art and technology has always been a presence, just as the road to digitalisation had always already been implicit in the earliest uses of gesture and in the discovery of tool-making—a theme which marks the opening of Stanley Kubrick’s *2001* when that ape ecstatically discovers a bone can be both a weapon and a tool.

Joyce, and later Borges (texts from which Derrida, McLuhan and Eco derived some of their ideas about exploring the potentialities of communication, technology and language for the emerging cyberworld), most clearly manifest how practitioners of semiotics and the poetics of language, which the new technologies had so dramatically complicated, anticipated the cyberspatial synthesis of media and its complex relations with the sociopolitical world. Derrida, McLuhan and Eco as well as Borges all identify Joyce’s “counter-poetic” in *Finnegans Wake* as one of the key texts for their differing understandings of what has primacy within the oral, the written and various non-verbal modalities of human communication. This enigmatic book is not only a polysemic, encyclopedic book designed to be read with the simultaneous involvement of ear and eye, but it is also a self-reflexive book about the very role of “the book” in the electro-machinic world of the new technology. The *Wake* is one of the first and the most comprehensive explorations of the ways in which these new modes created a dramatic crisis for the arts of language and the privileged situation of the printed book.

Niall Lucy

The New Journalism: A Report on Knowledge

From earliest times until Plato the word *technē* is linked with the word *episteme*. Both words are names for knowing in the widest sense. —Martin Heidegger

In the beginning, on Heidegger's account, ways of knowing weren't divided into mutually exclusive "technical" and "poetic" forms of understanding. Both ways led to knowing "in the widest sense."¹ The modern distinction between impersonal, universal knowledge, then, which is associated with science, and the sort of knowledge we associate with poetry or art, which is contextual and fragile, didn't hold. That distinction isn't natural or transcendental, but historical; hence it can be undone. While *technē* refers to an applied technique or a sort of detached knowledge ("the activities and skills of the craftsman," say), it also refers to "the arts of the mind and the fine arts." Like *poiēsis*, *technē* "belongs to bringing-forth."²

Now without having to buy into some kind of longing for a so-called return to the non-oppositional origins of technical and aesthetic modes of revealing, we can agree with Heidegger (at

¹ Martin Heidegger, *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper and Row, 1977) 13.

² Heidegger, *The Question Concerning Technology*, 13.

least with the Heidegger of the middle years) that knowledge today is defined on the model of the physical sciences. As Derrida might put it, this relegates “aesthetic” knowledge to the function of a supplement that is often seen as dangerous. But for Heidegger the real danger lies in the loss of human Dasein’s world-disclosive understanding of the fourfold (earth and sky, people and gods). The epoch of technicity threatens to turn human beings into standing-reserve (Bestand) or raw material, in the interests of productivity. “Everywhere,” Heidegger writes, “everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering.”³ The mediatisation of an event like 9/11, for example, could be said to have turned people—individuals with proper names and personal histories, whose individuality didn’t matter—into so much raw material for the networks to make over into news. This helps to show that “the essence of technology,” as Heidegger reminds us, “is nothing technological”⁴; it has to do instead with a certain will to order or configure the world according to a notion of coherence. Again, the model is the modern scientific approach to nature:

Because physics, indeed already as pure theory, sets nature up to exhibit itself as a coherence of forces calculable in advance, it therefore orders its experiments precisely for the purpose of asking whether and how nature reports itself when set up in this way.⁵

Today, then, an all but all-pervasive will to coherence, which defines the logic and the epoch of technicity, dominates our understanding of knowledge. Certainly it seems to dominate what counts as knowledge in authoritative or official senses, outside as well as within the sciences. So, for instance, the seemingly non-scientific profession of journalism could be said

³ Heidegger, *The Question Concerning Technology*, 16.

⁴ Heidegger, *The Question Concerning Technology*, 35.

⁵ Heidegger, *The Question Concerning Technology*, 21.

to know the world by setting it up “to exhibit itself as a coherence of forces calculable in advance,” turning journalists into would-be forensic scientists who are prevented from experimenting with other possible world-disclosive ways of knowing. When it comes to assessing the kind of knowledge this leads to, the outlook (on Heidegger’s reckoning) is unequivocally grim:

The forester who, in the wood, measures the felled timber and to all appearances walks the same forest path in the same way as did his grandfather is today commanded by profit-making in the lumber industry, whether he knows it or not. He is made subordinate to the orderability of cellulose, which for its part is challenged forth by the need for paper, which is then delivered to newspapers and illustrated magazines. The latter, in their turn, set public opinion to swallowing what is printed, so that a set configuration of opinion becomes available on demand.⁶

By present standards this is a very naïve theory of media audiences, which we no longer think of as gullible and passive. But of course this is not to say that audiences aren’t regarded by the media today, certainly the commercial media, as standing-reserve for generating profits from advertising. Equally, and somewhat reassuringly, it is not to say that media professionals are condemned to relate to audiences as dehumanised raw material for delivery to newspaper editors and network executives to “sell” to advertisers; nor is it to say that journalists have available to them only a single world-disclosive way of knowing. Yet to the extent that journalism as a profession in the image of the natural sciences is driven by the will to coherence, any attempt to privilege *difference* over coherence, say, or to disclose multiple worlds, must be seen as “unprofessional.” A journalist who might agree with Michael Zimmerman, then, that “local styles and practices remind us that we *are* disclosive beings, precisely because things show up differently in

⁶ Heidegger, *The Question Concerning Technology*, 18.

accordance with differing styles and practices,”⁷ would risk losing his or her professional accreditation, if not their credibility. To be a journalist, it is necessary to forget the pre-Platonic meaning of *technē*:

From earliest times until Plato the word *technē* is linked with the word *epistēmē*. Both words are names for knowing in the widest sense. They mean to be entirely at home in something, to understand and be expert in it. Such knowing provides an opening up. As an opening up it is a revealing.⁸

Far from being encouraged to report on subjects from an intimate perspective (“to be entirely at home in something”), the journalist’s way of knowing is tied to an ideal of professional detachment that is itself detached from *technē* in the widest sense. On this restricted or professional understanding, knowledge is defined as what may be acquired only *away* from home, in the anonymity of the public sphere, perhaps, or in a general realm of independent forces and events. Hence the authority of journalistic knowledge, swayed by the force of technicity, derives from a detached and impersonal way of knowing. By contrast, the value of home-based knowledge is precisely that it is *based*. Home-based or local knowledge, as it were, comes from somewhere, from somewhere in particular, and is therefore grounded, situated and contingent, if not also “personal” through and through.

This doesn’t mean that journalism schools should be setting Heidegger as required reading, or that henceforth journalists should work only from home. But it could mean that for journalism to define knowledge only on the model of science as the arbiter of truth is to constrain it not just from knowing the world in different ways, but from knowing different worlds.

⁷ Michael E. Zimmerman, “The End of Authentic Selfhood in the Postmodern Age?” *Heidegger, Authenticity, and Modernity*, eds. Mark A. Wrathall and Jeff Malpas (Cambridge, Mass.: MIT Press, 2000) 129.

⁸ Heidegger, *The Question Concerning Technology*, 13.

While knowledge of general abstractions—economic trends, global market forces, electoral campaign forecasts and the like—is no doubt useful, such seemingly rational and disinterested explanations of the world do not amount to all there is to know. In the same way, moreover, as the individual characteristics of scientists are thought to have no place in the scientific value of their work, so is the truth value of journalism seen as having nothing to do with what journalists are like at home. No less than scientists, journalists aren't seen to come from anywhere at all; and in both cases the knowledge they produce depends on it. In this placeless techno-fantasy, local knowledge is denied any world-disclosive authority and is relegated instead to the status of a quirky, incidental supplement to the news.

But it hasn't always been this way. In such eighteenth-century British periodicals as *The Spectator* and *The Gentleman's Magazine*, Augustan "homeboys" like Joseph Addison and Samuel Johnson wrote about what was going on in the 'hood. They took up positions on local issues of the day and responded to them in a variety of forms, un-enframed (as it were) by any need to comply with a single, controlling genre of writing or thought. What might be called an originary journalism began (almost) at a time before there were genres, when something like a general writing took the place of what would come much later—the increasing specialisation and professionalisation of the world of letters and ideas. And for a short while not so long ago, in the US in the 1960s and '70s, it was as if that originary journalism was being re-invented by the likes of Tom Wolfe and Hunter S. Thompson, and other so-called "new" journalists of the time. While their work didn't constitute a school, what marked it as "new," perhaps, was a desire to know or interact with the world beyond the limits of thinking that everything in it must be made to conform to an idea of order or cogency. From a position of "letting-be,"⁹

⁹ Martin Heidegger, "On the Essence of Truth," *Basic Writings*, ed. David F. Krell (New York: Harper & Row, 1977).

things don't always have to make sense—at least not as the epoch of technicity defines this to mean only what is rational and objective.

For Heidegger, of course, technicity is not a problem in itself. The problem lies in technicity's occlusion of other ways of knowing or revealing. The problem isn't related to anything that might be seen as essential to technicity, but rather with a dominating will to order the world and make it cogent. Under this regime it is necessary to distinguish between fact and fiction, say, which is what most journalists would claim to do, as if the distinction were produced by "a coherence of forces calculable in advance." This *is* a mode of revealing, but one that doesn't proceed from an encounter with *technē* "in the widest sense"; and to this extent it typifies the conventional journalistic—and technological—disclosure of the world as always already coherent and calculable. There could be no hope of wholesale resistance to this (since that, too, would be totalising), which is not to infer that the new journalism sought to oppose, and therefore to replace, conventional journalism as such. Certainly (as we'll see) the new journalists wanted recognition as *journalists*, even if they also wanted to expand the possibilities of what a journalist could be. In a sense they sought a more home-based or human-centred (and, yes, a more sentimental) response to things in the world, which allowed them to write from somewhere other than the perspective of a professional function or a dehumanised resource. In this refusal to be cast as standing-reserve, the new journalists struck out against the world-disclosive limitations of technicity in search of other ways of knowing—and what they might be said to have brought back (or brought forth) was a knowledge of the *incoherence* of difference. Today, when viewed from a broadly conceived "postmodern" perspective, this hardly seems contentious or sensational. But at the time it hardly counted as "knowledge" at all.

Introducing Postmodernism

The new journalism of the 1960s and '70s in the US can be seen to continue a discontinuous tradition in "literary" nonfiction, or as an expression of the idea that life in postwar America was turning weird beyond orthodox description—"an outrage on the imagination," as it were.¹⁰ A sense of the sublime disorder of the times made it all but impossible for writers to "make credible much of the American reality," as the novelist Phillip Roth put it in 1961. "It stupifies, it sickens, it infuriates, and finally it is even a kind of embarrassment to one's own meagre imagination."¹¹ On this latter view the new journalism could be said to begin in 1965, say, with the publication of Truman Capote's *In Cold Blood* and Tom Wolfe's *The Kandy-Kolored Tangerine-Flake Streamline Baby*. From the other viewpoint, a sort of proto-new journalism could be traced back to 1566 (Thomas Harman's *A Caveat for Common Cursitors*) or at least to 1722 (Daniel Defoe's *A Journal of the Plague Year*).

Each of these positions makes a different claim on behalf of what's new about the new journalism—as a publishing phenomenon only or as a distinctive mode of writing with its own aesthetic features and social concerns. The former view is put by Ronald Weber in his almost reluctant study of the subject, *The Literature of Fact*. "Above all," Weber writes in his introduction, "I want to avoid any suggestion that the work I am looking at is somehow radically innovative."¹² Against this Tom Wolfe claims the new journalism as "the first new direction in American literature in half a century," having "no traditions, no pretensions, no promises to live up to."¹³

No doubt there is something fanciful about Wolfe's romantic affirmation of an absolute break with tradition, just as Weber's

¹⁰ See Immanuel Kant, *The Critique of Judgement*, trans. James Creed Meredith (Oxford: Clarendon Press, 1952).

¹¹ Phillip Roth, "Writing American Fiction," *Commentary* 31 (March 1961): 224.

¹² Ronald Weber, *The Literature of Fact: Literary Nonfiction in American Writing* (Athens, Ohio: Ohio University Press, 1980) 1.

¹³ Tom Wolfe, "The New Journalism," *The New Journalism: An Anthology*, eds. Tom Wolfe and E. W. Johnson (London: Pan, 1980) 15; 29

absolute refusal of it may seem churlishly conservative. In a sense, however, the alternatives presented by Weber and Wolfe take us to the limits of thought: it is not easy to think beyond or against them. It's hard to think of anything as "new" which isn't absolutely so; yet it is no less difficult to think of something we regard as "new" outside of its relations to other things that came before. One way gestures to the promise of the radically unexpected, while the other points fatalistically to nothing more than the necessity of incremental repetition. Now of course these were not the terms that Wolfe and Weber used at the time, simply because they were not yet available for use in 1970s America (and not only there) in a widespread or popular sense. "Postmodernism" hadn't happened yet, at least not at the level of public discourse. But in other ways—for example, in the form of the new journalism—postmodernism could be said to have been happening long before the term was used to define a "condition" or an "era." Indeed, on Lyotard's account, the postmodern would always be inseparable from a notion of the "future anterior," such that the past would always be "proto-pomo" and never simply "pre-postmodern."¹⁴ This could be to say that Wolfe and others were "doing" postmodernism before it had a name, by trying to do journalism differently or otherwise (through a return to *technē* in the widest sense). In today's terms, given the dissemination of Heidegger's thought across the postmodern humanities, it could be that what the new journalists were doing was trying to find a "reflective" response to the epoch of technicity, which defines the limits of conventional journalism and constrains what it may hope to know.

Like any specialist or professional discourse, conventional journalism abstracts a certain set of limited features from the total mass (or mess) of potential features that make up the world—and constitutes the world in the image of that

¹⁴ See Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (Manchester: Manchester University Press, 1986).

abstraction. In this way journalists seek to provide rational representations not of the world as such, but of their abstract version of it as given to them by the rules and procedures of their profession; and whatever doesn't conform to that abstraction, they cannot or refuse to see as significant. It may be that it's this "whatever" that the new journalism tries to acknowledge and to find ways of writing about (in deference to the integrity of incoherence), by opening itself to a more embodied or participatory understanding of the world than conventional journalism allows or would be capable of comprehending. As an opening to or a letting-be of the unexpected, the new journalism accords significance to such things as the personal views of journalists, which have no significance from within a professional discourse dedicated to the production of "disinterested" knowledge. In its refusal of the institutional and professional imperative to report only the independent "facts" of the matter, the new journalism sought new idioms for reporting the "feeling" or "atmosphere" of an event. In its affirmation of the unexpected and the everyday, it may even be that it sought to re-think the very *concept* of an event.¹⁵

This doesn't mean that its reflective approach was wholly successful, and certainly not that it was fully unified. The point of returning to the new journalism here is neither to judge its effectivity nor to construct it as a "school." Instead, I think, the new journalism is worthy of reconsideration for reminding us that "embodied" knowledge is irreducible to the "embedded" knowledge that constitutes the "new" within the field of journalism today. Wanting to understand the world in all its messy, even senseless detail, as opposed to analysing it from a position of detached observation, the new journalism opened itself to questions that conventional journalism cannot ask. This caused Wolfe and others to be seen as incompetent outsiders from a professional point of view, although of course on

¹⁵ See Jacques Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning, and the New International*, trans. Peggy Kamuf (London: Routledge, 1994).

Heidegger's reckoning it would have given them a unique perspective in-the-world from which to develop understandings as opposed to rational explanations.¹⁶ In this refusal of the force of technicity, the point was not to enable a retreat from the world but to arrive at a deeper, more authentic or "realistic" experience of it—even, if not especially, an experience of the incoherent or the unrepresentable. Yet in so far as Wolfe and others wanted to be seen as journalists, while also wanting to be seen as doing something "new," their refusal was never total. They still wanted to be seen as getting the "facts" straight, even if what they understood to be factually significant was often unconventional. As journalism, in other words, the new journalism could never hope to entirely escape the professional demand for producing rational, independent knowledge, however much it may have wanted its reflective tendencies or attitude to be seen to resist that demand. Try as it might to give a sense of authentic experience through innovative or experimental modes of expression, the desire of the new journalism to be "new" was compromised by the need to conform to sense-making practices and communicative protocols whose authority derives from the epoch of technicity. Such practices are not essentially "wrong" or "bad," of course, but simply limiting. They enframe knowledge to mean only what can be collected and stored as objectified data, to what is thought to be determinable and "present":

the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of *poiēsis*. The revealing that rules in modern technology is a challenging [*Herausfordern*] which puts to nature the unreasonable demand that it supply energy that can be extracted and stored as such.¹⁷

¹⁶ See Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (Oxford: Blackwell, 1962).

¹⁷ Heidegger, *The Question Concerning Technology*, 14.

Such authority cannot hope to be opposed through “pure” reflection, any more than that authority itself is pure or absolute. So it’s not as if the new journalism should be seen as “new” in the sense of being completely different, or that any assertion of its difference should be discounted out of hand because the force of technicity is unopposable. By not quite adhering to the rules and procedures of conventional knowledge-production, then, albeit without quite refusing them, the new journalism set out to know the world by other means. On some accounts it sought to do so through a new or “authentic” realism, while others claimed that there was nothing new in this at all. For some, the new journalism provides what might be called a kind of realist phenomenology (a non-interpretative description) of the world; for others it imaginatively constructs the world that it describes. These have tended to be the four broad contexts in which discussions of the writing of Wolfe and others have occurred, though not always along the lines of “postmodern” ideas on knowledge and representation. But while early commentators on the new journalism (including Wolfe himself) may not have been fluent in “continental” theory, it doesn’t mean they had nothing worthwhile to say.

The New Realism

The strategy of defining an emerging form in terms of an established one isn’t new. As long ago as the early eighteenth century, Henry Fielding stamped a certain authority on the incipient picaresque style of his *Joseph Andrews* by calling the book “a comic epic poem in prose.”¹⁸ Fielding sought a certain credibility for his prose experiment, then, by associating the new form with a venerable one—epic poetry. Facing a similar problem two and a half centuries later with the publication of *In Cold Blood*, Truman Capote hit upon a similar solution. Having

¹⁸ Henry Fielding, Preface to *Joseph Andrews* in *Joseph Andrews and Shamela*, ed. A. R. Humphreys (London: J. M. Dent, 1975) i.

written a book that was like a novel from the point of view of technique, but unlike a novel in as much as it was supposed to be made up of transcripts of actual conversations and reconstructions of actual events, Capote hedged his bets and began referring to the book in trade interviews as a “nonfiction novel.”

An instant critical and commercial hit, *In Cold Blood* helped to re-establish Capote’s reputation as one of America’s literary heavyweights of the time. Interviewed by George Plimpton at the height of the book’s success, Capote claimed to have written it out of a need to escape his “self-created world for the everyday objective world we all inhabit.”¹⁹ He saw, in other words, an important distinction between what might be called his former solipsistic writing and this new form of the nonfiction novel that represented a world not made (“self-created”) but given, a world “we all inhabit.” Working from the assumption that reality is external and knowable, he reasoned that “the everyday objective world” could be represented through the construct of omniscient narration that defines the point of view of *In Cold Blood*. This of course had been the defence of the realist novel ever since the publication of Samuel Richardson’s *Pamela* in 1740.

But Capote was no friend of the new journalists. When Plimpton asked him to comment on “the so-called New Journalism,” Capote replied: “If you mean James Breslin and Tom Wolfe, and that crowd, they have nothing to do with creative journalism—in the sense that I use the term—because neither of them, nor any of that school of reporting have the proper fictional equipment.”²⁰ All the same, in his 1973 introduction to *The New Journalism* anthology, Wolfe himself cites the runaway success of *In Cold Blood* as proof that the new journalism was flourishing:

¹⁹ George Plimpton, “The Story Behind a Nonfiction Novel,” *Truman Capote’s In Cold Blood: A Critical Handbook*, ed. Irving Malin (Belmont: Wadsworth, 1968) 26.

²⁰ Plimpton, “The Story Behind a Nonfiction Novel,” 27.

It was a sensation—and a terrible jolt to all who expected the accursed New Journalism or Parajournalism to spin itself out like a fad. Here, after all, was not some obscure journalist, some free-lance writer, but a novelist of long standing ... whose career had been in the doldrums ... and who suddenly, with this one stroke, with this turn to the damnable new form of journalism, not only resuscitated his reputation but elevated it higher than before ... and became a celebrity of the most amazing magnitude in the bargain. People of all sorts read *In Cold Blood*, people at every level of taste. Everybody was absorbed in it. Capote himself didn't call it journalism; far from it; he said he had invented a new literary genre, "the nonfiction novel." Nevertheless, his success gave the new journalism, as it would soon be called, an overwhelming momentum.²¹

The new realism of the nonfiction novel was enough, on Wolfe's account, for the form to qualify as new journalism, the whole point of which was "to give the full objective description, plus something that readers had always had to go to novels and short stories for: namely, the subjective or emotional life of the characters."²² As Wolfe tells it, then, the new journalism was new for having appropriated the techniques of characterisation associated with realist fiction in order to get inside the minds and feelings of the real-life people in real-world situations that were the subject of the new journalism. Indeed a whole apparatus of verisimilitude was adopted by the new journalists, according to Wolfe, in the form of scene-by-scene construction of the narrative, the use of point of view (other than the author's), the inclusion of dialogue and the notation of what he calls "status details" related to social standing.

Curiously, though, Wolfe's own work as a new journalist doesn't really match what he says about the form here, just as there are many other examples of the new journalism that don't fit his generic description either. As John Hellmann notes, Wolfe's attempt in the 1973 essay to define the new journalism

²¹ Wolfe, "The New Journalism," 40-1.

²² Wolfe, "The New Journalism," 35.

“in terms of a single mode” is misleading since “the major works reveal a much more diverse and innovative range of experimentation.”²³ Or as Wolfe himself says of his own writing, it mixes realist devices “with every other device known to prose.”²⁴ But if there was never any formal or necessary relation between the new journalism and realism, why insist on defining the new form as realist through and through? Perhaps this had to do with what Lyotard would later come to call a “crisis of legitimation” that was not only professional, in Wolfe’s case, but also epistemic. How else could a working journalist with “literary” aspirations claim that something new was going on in journalism, without at the same time insisting that journalistic “objectivity” remained intact? The justification for the experimentalist nature of Wolfe’s writing, then, had to be that it enhanced his reporting. Far from compromising the underlying *realism* of what he was reporting, his writing served only to bring that reporting to life. But of course while his reporting—or his *writing*—may have “come alive” through the use of self-conscious literary devices, this is not at all to say that *what* he was reporting came alive as well. Still it was the objective nature of the new journalism, despite the new form’s trademark stylistic innovations, that Wolfe had to insist on if he wanted the new journalism to be seen as good journalism rather than bad writing. This led sometimes to outlandish claims, such as that the “passion for technical brilliance” of the new journalists somehow produces “a strange sort of objectivity” in their work.²⁵ Here “objectivity” is turned into a textual effect, the product of a certain aesthetic proficiency, a *way* with words, which of course sits oddly with the sort of science envy that a notion of journalistic detachment harbours and according to which *technē* and *poiēsis* are opposed.

²³ John Hellman, *Fables of Fact: The New Journalism as New Fiction* (Chicago: Illinois University Press, 1981) 22.

²⁴ Wolfe, “The New Journalism,” 49.

²⁵ Wolfe, “The New Journalism,” 66.

But if Wolfe tried to win respect for the new journalism by defining it as “readerly,” others have taken this to be the very mark that disqualifies it from being “new.” The new journalism’s readerly or “non-interpretative” relation to the real, in other words, defines it not in terms of innovation or rupture, but rather in the context of a tradition of literary nonfiction, albeit a discontinuous one—a “tradition” that rests on the opposition of *technē* and *poiēsis*.

The Old Realism

There have been several attempts to whitewash the “newness” of the new journalism by imposing a history on it. “What happened in the sixties,” as Ronald Weber puts it, “was a rather noisy revival of the tradition of literary nonfiction in American writing under the inspiration of Capote’s well-publicised demonstration that documentary journalism could yield a work of art.”²⁹ According to Weber, at any rate, the fanfare was short-lived. “We hardly ever hear about the “nonfiction novel” anymore,” he quotes someone as saying.³⁰ But while Weber doesn’t give examples of the sort of writing the new journalism is supposed to have revived, other critics, working from a more broadly conceived “tradition of literary nonfiction,” have sought to make a strong case for seeing Defoe’s *Journal of the Plague Year* as a formative instance of what the new journalism was trying to achieve in the 1960s.

Published in 1722, Defoe’s book purports to be the true recollections of one “H.F.,” presented as a London tradesman who lived through the Great Plague of 1665. Opinion is divided as to where the book sits generically, but there is no doubt that Defoe got his facts from talking to survivors of the Plague. (The author himself was barely five at the time and could scarcely have been a reliable eye-witness some fifty years later.) Early readers certainly did take the book for a first-hand account of

²⁹ Weber, *The Literature of Fact*, 4.

³⁰ Weber, *The Literature of Fact*, 3.

the pestilence that had ravaged London more than half a century before, and clearly its author went to great lengths to create that illusion:

the usual number of burials in a week, in the parishes of St Giles-in-the-Fields and St Andrews, Holborn, were from twelve to seventeen or nineteen each, few more or less; but from the time that the plague first began in St Giles's parish, it was observed that the ordinary burials increased in number considerably. For example: —

| | | | | | | |
|-------------------------------|------------|----|-------------|----|-------------|------------------|
| From December 27 to January 3 | St Giles's | 16 | St Andrew's | 17 | | |
| " January 3 | " " | 10 | St Giles's | 12 | St Andrew's | 25 |
| " January 10 | " " | 17 | St Giles's | 18 | St Andrew's | 18 ³¹ |

The critic A. R. Humphreys regards the *Journal* as a “novel”³² while for Northrop Frye it's one of those “occasional hoaxes in which fiction is presented, or even accepted, as fact.”³³ Somewhat akin to Frye, Mas'ud Zavarzadeh argues that the book is “a bi-referential narrative with two fields of meaning: the external and the internal” and goes on to claim it as an early example of the nonfiction novel because “Defoe does not use facts as a means for endorsing a totalisation of experience.”³⁴ On Zavarzadeh's account, Defoe's book is made over into a transcription of the actual by virtue of its “non-interpretative” stance—statistics (like those above, for example) quote the real. Hence the *Journal's* authenticity is an effect—a textual effect—of the credibility of Defoe's research; its textuality rests on a bedrock of seeming facts. At any rate this could be how the book ideally wants to be seen, and certainly it's the basis of

³¹ Daniel Defoe, *A Journal of the Plague Year*, eds. Anthony Burgess and Christopher Bristow (Harmondsworth: Penguin, 1981) 24.

³² A.R. Humphreys, “The Literary Scene,” *The Pelican Guide to English Literature: From Dryden to Johnson*, ed. Boris Ford (Harmondsworth: Penguin, 1977) 76.

³³ Northrop Frye, *Anatomy of Criticism: Four Essays* (Princeton, New Jersey: Princeton University Press, 1973) 135.

³⁴ Mas'ud Zavarzadeh, *The Mythopoeic Reality: The Postwar American Nonfiction Novel* (Urbana, IL: University of Illinois Press, 1976) 103; 104.

Wolfe's defence of the new journalism in the 1973 essay. As John Hellmann says:

One of the crucial problems for a new journalist is to find the fictional methods by which he can shape his narrative without destroying its journalistic status. His apparent success or failure must be considered basic to the criteria by which we judge his work.³⁵

The historical accuracy of Defoe's book is not in dispute,³⁶ but if rational verification alone were the measure of the new journalism there wouldn't be anything new about it. All the same, far from being non-interpretative, *A Journal of the Plague Year* is constructed as readerly by seeming to be merely descriptive—the re-presentation of “a coherence of forces calculable in advance.” The reliability of the narrator plays a crucial role in this regard. Repeatedly, the narrator is made to say that he will return to a particular incident or provide further documentation in due course, giving readers the impression that H.F. is both in possession and control of “the facts.” By such means the illusion of “a discourse full of learned simplicity”³⁷ is built up, based on the narrator's trustworthy powers of observation. It's precisely this persona that modern journalists adopt, of course, in order to be seen to be “in touch” with media audiences. Certainly this is the persona Michael Leigh takes on in *The Velvet Underground* (1963), for example, a book that describes with Defoe-like candour an underworld of partner swapping, transvestism, paedophilia, bestiality, pornography and sado-masochism in mid-'60s suburban America. “I am the fellow next door,” he tells us, in an uncommonly pure statement of the role; “a little more curious, a little more probing, but that is all.”³⁸

³⁵ Hellman, *Fables of Fact*, 19.

³⁶ See Zavarzadeh, *The Mythopoeic Reality*, 108.

³⁷ Defoe, *Journal*, 93.

³⁸ Michael Leigh, *The Velvet Underground* (London: Annihilation, 1991) 15.

Leigh's book was published around the same time as Wolfe's *The Kandy-Kolored Tangerine-Flake Streamline Baby* and Capote's *In Cold Blood*, but I have never seen it referred to as new journalism. This might suggest that whatever the new journalism "is," it isn't reducible to writing that produces an objectivity-effect engendered by omniscient narration and associated with journalism as such. For the new journalism to qualify as new, it must unsettle standard notions of what journalism is supposed to be and at the same time expand the possibilities of what it might become. The problem facing Wolfe in the 1970s, perhaps, was that while he wanted journalism to be allowed to be imaginative, while he wanted to expand the concept or idea of journalism, he didn't want to undermine its most fundamental and uncritical assumptions. While he wanted journalism to side with *poiēsis*, he couldn't risk it being seen to abandon *technē* altogether.

This may explain why he dismissed the claims made on behalf of others who were said to have been writing new journalism before the 1960s—either for not having written nonfiction at all or for being traditional essayists who did very little reporting. None the less he does concede it's possible to draw up a list of what he calls "not half-bad candidates,"³⁹ beginning with the eighteenth-century biographer and columnist, James Boswell, whose publications include revised extracts from a personal diary in which he kept a record of the manners and morals of London society at the time. Charles Dickens, too, is included on Wolfe's list (not for his novels but for the articles he wrote for the nineteenth-century newspaper *The Morning Chronicle*), along with Mark Twain's *Innocents Abroad* (1869); also included are some parts of Anton Chekov's curious quasi-travelogue, *A Journey to Sakhalin* (1893-94), and some of Stephen Crane's work for a New York paper called the *Press* in the 1890s. Among more recent "not half-bad candidates," Wolfe cites John Reed's *Ten Days that Shook the*

³⁹ Wolfe, "The New Journalism," 60.

World (1922); George Orwell's *Down and Out in Paris and London* (1933), of which he says that "Orwell went through the experience in order to write about it (i.e., he approached it as a reporter)";⁴⁰ some "but not much" of Ernest Hemingway's journalism from the 1930s; and John Hershey's *Hiroshima*, which took up an entire issue of *The New Yorker* in 1946 and was later published as a book that had a great influence on other writers for *The New Yorker* such as Capote and Lillian Ross.

For all this, Wolfe is careful not to trace a line of continuity from Boswell to the new journalism of the 1960s. His "not half-bad candidates" are all exceptions and eccentricities, and can't be thought of as belonging to anything like a movement or a tradition. No doubt this is because it isn't really until after the Second World War that the magazine article—one of the primary modes of nonfiction—begins to acquire a certain gravitas, which Wolfe and others put down to a loss of faith in the novel. The scale and pace of change in the real world, it was argued, had become too much for the novel to interpret. The times called for a new response, by way of "zero interpretation." Or, as Deleuze and Guattari were arguing on the other side of the Atlantic in the late-1960s, what was called for was not a new aesthetics or interpretative system of any kind, but an affirmation of pragmatics—a way of describing cultural and political phenomena without relying on a totalising apparatus (a system) of description.⁴¹ Such a view could be said to owe something to the "attitude" expressed in the work of the American beat writers of the 1950s, a spirit that was kept alive in the 1960s and beyond not only through the work of French writers like Deleuze and Guattari, but also, for instance, in the "beat journalism" and "creative nonfiction" of Seymour Krim, a *New Yorker* who took his own life in 1989, only a few years before Deleuze.

⁴⁰ Wolfe, "The New Journalism," 61.

⁴¹ See Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem and Helen R. Lane (Minneapolis: University of Minnesota Press, 1983).

Zero Interpretation

"I began in the mid 50s to regard the novel as a usedup medium," Krim writes in *Shake It for the World* (1970), coming from someone who admits he had been "literally made, shaped, whetted and given a world with a purpose by the American realist novel of the mid to late 1930s."⁴² Before the rise of nonfiction in the 1960s, in other words, every young American writer wanted to be a novelist. "The novel," Wolfe says, "seemed like one of the last ... superstrokes, like finding gold or striking oil, through which an American could, overnight, in a flash, utterly transform his destiny."⁴³

Wolfe believes that novelists, and not the novel, gave up the '60s by default, but Krim's view is more representative of the period. For him and many others the novel *itself* was "usedup," its relevance exhausted or superseded by the new electronic media:

TV, movies, electronic communications of every sort were cutting into the time that people who were totally alive to their era could spend on prose fiction: if it was STORY you wanted in the old *Saturday Evening Post* sense, you could get that dramatised for you on the Late Late Show while you did a multimedia thing with your companion in bed, and it was only the specialists, critic-teachers, the people in the book trade, who seemed to me to hold out strenuously against admitting that the novel's dash had been taken away from it by the new media. These electronic whispers of tomorrow could in a momentary flash do what Flaubert and Conrad spent their lifetime trying to achieve with words: "Above all to make you see."⁴⁴

Krim's claim is that life left fiction "in the lurch" in the 1960s, and "isn't that what makes artforms change?"⁴⁵ But while it was

⁴² Seymour Krim, *Shake It for the World* (London: Allison and Busby, 1971) 16.

⁴³ Wolfe, "The New Journalism," 20.

⁴⁴ Krim, *Shake It for the World*, 17.

⁴⁵ Krim, *Shake It for the World*, 19.

common enough in that decade to hear that the novel was “dead,” still there were a lot of novels being written. “The sixties are as likely to be remembered,” as the critic Morris Dickstein remarked in 1976, “through novels as through anything else they left behind,” albeit the novels Dickstein had in mind (by the likes of Thomas Pynchon, John Hawkes and Richard Brautigan) are what might be called today fabulist or metafictional rather than realist in form.⁴⁶ What supposedly “died” or became “used up” in the ‘60s, then, was the realist novel only. “The sixties were a moribund period for the realistic novel,” Dickstein says. “Novelists who did sustain a realist method, such as Updike, Bellow, and Malamud, were weakest on the topical subjects where Wolfe’s journalists were strongest—when they dragged in blacks or hippies, or worried about the war, or unisex, or the future of the moon.”⁴⁷

At that time in the US, of course, almost no one was reading Deleuze and Guattari, or Lyotard, and the term “postmodernism” was a long way from being used widely. But still there was a feeling that the winds of epistemic change had swept through just about everything, including the concept of “writing.” As the critic Andre Le Vot argued (again, in 1976), the “new” fiction writers, “from Burroughs to Barthelme, from Hawkes to Coover,” came out of “a post-apocalyptic era when the end of the old dispensation has already taken place.”⁴⁸ Today we might say that such writers belong to the postmodern condition as defined by a loss of faith in metanarratives, but what Le Vot said at the time is that they constitute:

a new “lost generation” in a new waste land, who express in a far more radical way than fifty years ago their feelings of discovering a world with “all Gods dead, all wars fought, all faiths in man shaken.” Far more radical, because together with

⁴⁶ Morris Dickstein, “Black Humour and Black History: Fiction in the Sixties,” *Partisan Review* 43.2 (1976): 186.

⁴⁷ Dickstein, “Black Humour and Black History,” 185.

⁴⁸ Andre Le Vot, “Disjunctive and Conjunctive Modes in Contemporary American Fiction,” *Forum* 14.1 (1976): 45.

a set of values and patterns they reject the logic and the rhetoric in which they were expressed.⁴⁹

But if the concept of writing had been opened to include the possibility of new forms of fiction in the 1960s, it was opened up as well to the more radical possibility of allowing nonfiction to count as writing. For Wolfe, indeed, nonfiction in the form of the new journalism offered readers an experience they could never get from fiction:

it enjoys an advantage so obvious, so built-in, one almost forgets what a power it has: the simple fact that the reader knows *all this actually happened*. The disclaimers have been erased. The screen is gone. The writer is one step closer to the absolute involvement of the reader that Henry James and James Joyce dreamed of and never achieved.⁵⁰

What Wolfe and Krim see as the new journalism's superior actuality-effect, however, others denounce as fraud. "I have finally come to the conclusion that the New Journalism does not exist," Jack Newfield writes in the conservative *Columbia Journalism Review*. "It is a false category. There is only good writing and bad writing, smart ideas and dumb ideas, hard work and laziness."⁵¹ Nor was this the only time such a judgement had been expressed in that journal: in an earlier edition, Gerald Grant had cautioned against "uncritical enthusiasm for the New Journalism of passion and advocacy," which he argued "may cost more in the loss of the valuable skepticism of the traditional newspaperman than can be gained through the new involvement."⁵² On this view the new

⁴⁹ Le Vot, "Disjunctive and Conjunctive Modes in Contemporary American Fiction," 45.

⁵⁰ Wolfe, "The New Journalism," 48-9.

⁵¹ Jack Newfield, "Notes on the Art: Is There a New Journalism?" *Columbia Journalism Review* 11 (July-August 1972): 45.

⁵² Gerald Grant, "The 'New Journalism' We Need," *Columbia Journalism Review* 9 (Spring 1970): 41.

journalism is held to be less rooted in the world of fact—what Krim calls the everyday “smellable, libelous, unfaked dimension of sheer tornpocket reality”⁵³—than conventional journalism, because the reportorial status of the new-journalistic story is rendered unreliable by the transforming self-consciousness of the storytelling ... and sometimes the storyteller. Arborescence versus rhizomatics, Deleuze and Guattari might have said.

As an attempt to think and write past the limits of “tree logic,” another way of saying that it sought to push the concept of writing beyond the opposition of technē and poiēsis, the new journalism was bound to be attacked or patronised by the professional mainstream. But of course criticism is one thing, and vilification another. It’s difficult to tell which of these Wayne C. Booth had in mind when he put Hunter S. Thompson’s *Fear and Loathing: On the Campaign Trail ’72* (1973) under examination in the *Columbia Journalism Review* for its reportorial credibility, and failed it. He gives it a “B-minus” for entertainment value, but sees it otherwise as all but completely unsuccessful when judged according to a notion of journalistic standards or conventions:

How clear is his account, especially his treatment of causes? ... F
How does he know what he says?—another way of asking whether
he gives me grounds for believing him ... F
Does he provide a plausible or persuasive answer to the
question, “How did it happen that Richard Nixon was elected in
1972?” ... F

Thompson gets his only professional “pass” mark under Booth for answering the question, “*How was it on the campaign trail in 1972?*”⁵⁴ Here at least he concedes that Thompson catches something of the absurd drama of that campaign, even if what

⁵³ Krim, *Shake It for the World*, 16.

⁵⁴ Wayne C. Booth, “Loathing and Ignorance on the Campaign Trail,” *Columbia Journalism Review* 12.4 (1973): 7-12.

he really “owes us is not a compounding of confusions,” according to Booth, “but a serious effort, however limited, to discern patterns.”⁵⁵ This is the critical high point of Booth’s argument, though in the end it’s clear that Thompson himself has been the real target all along:

You’d think—since he is a bright youngish man—that he would make it. But when it was decided, somewhere back there, that a reporter talking about himself can be more entertaining than a reporter talking about events, somebody ought to have made it clear that it all depends on how interesting the reporter is.⁵⁶

The sort of immutability that Booth’s position imputes to a concept of journalism, let alone to a concept of writing, however, is precisely what the new journalism calls into question. Between the old concept and the new, between the received and the created concept, as it were, there is a differend. “Phrases obeying different regimens are untranslatable into one another,” as Lyotard puts it,⁵⁷ and this is why Thompson’s writing “fails” the test of journalistic credibility applied to it by Booth. Booth assumes that journalism is a homogeneous or monolithic concept—not a multiplicity, as Deleuze and Guattari might say,⁵⁸ but *one* unvarying regimen or genre—and for this reason even the so-called new journalism must submit itself to the authority of the genre of journalism proper. Such a genre might be called (after Deleuze and Guattari) “state journalism,” subsuming not a natural but a naturalised set of professional-institutional practices and presuppositions linked to the interests of power and government. State journalism, of course,

⁵⁵ Booth, “Loathing and Ignorance,” 12.

⁵⁶ Booth, “Loathing and Ignorance,” 12.

⁵⁷ Jean-François Lyotard, *The Differend: Phrases in Dispute*, trans. Georges Van Den Abbeele (Minneapolis: University of Minnesota Press, 1988) 48.

⁵⁸ See Gilles Deleuze and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987).

could never hope to explain Nixon's electoral victory in 1972 since it would always already be complicit in it.

The desire of state journalism is to produce cogency; by contrast, the desire of the new journalism is to open itself to the unexpected, the incalculable, the incoherent. Each desire is untranslatable into the other. For this reason Gerald Grant, siding with the professional-institutional regimen, accuses the new journalism of failing to understand the very nature of reporting:

We don't need a whole new breed of novelists in action; we need more cogent journalism that tells us about problems rather than sketching conflict, that gives us the arguments rather than two sets of opposing conclusions. We do not need more passion but more intellect, more understanding.⁵⁹

The demand for cogency presupposes that a world of seemingly chaotic facts can be made to reveal its underlying causal patterns if subjected to systematic inspection and analysis; through careful inspection, the world can be made "to exhibit itself as a coherence of forces calculable in advance." Today, this is what might be called the logic of the epoch of technicity. But long before the body bags started coming back from Vietnam, before the Kennedy assassinations and the Manson Family murders, not everyone in America believed there must be cogent explanations for the increasingly bizarre nature of the times. At the start of the 1960s, a decade before Watergate, Philip Roth was able to say that "the culture tosses up figures almost daily that are the envy of any novelist."⁶⁰ Who could have invented Richard Nixon, he asked back then, or Eisenhower? Showing little respect for available explanations, "what is particularly tough about the times," Roth said, "is writing about them."⁶¹

⁵⁹ Grant, "The 'New Journalism' We Need," 13.

⁶⁰ Roth, "Writing American Fiction," 224.

⁶¹ Roth, "Writing American Fiction," 227.

It wasn't only novelists, of course, who were wondering about the state of text-world relations in this period. One of the things that may be new about the new journalists is that they began to question, along with writers like Roth, the relations between writing and "facts." Among the earliest to do so was Gay Talese, a reporter for the *New York Times* who wrote a story for *Esquire* in 1962, "Joe Louis: The King as a Middle-Aged Man," which Tom Wolfe claims as the first fully-fledged example of the new journalism.⁶² Like Roth, Talese thought there was nothing more fantastic than the world of fact:

Those of us who were born in the 1930s came of age in the 1950s when fact was so much more fantastic than fiction. If we'd been 10 years earlier, we'd probably be writing fiction. But the world is so fantastic.⁶³

Everyday life in postwar America, many argued, had come to seem unreal. As Mas'ud Zavarzadeh puts it, a "loss of conviction" in unifying systems of belief and explanation brought about an epistemic shift:

The violence of nineteenth-century street life is "local" in the sense that the violence is seen as a temporary and limited violation of still-existent regulative forces in nature and society. But, in contemporary America, the loss of conviction is "global," pervading all levels of socio-cultural and emotional-familial life. The local-global distinction, in other words, marks the difference between the passing convulsive seizure and spastic paralysis.⁶⁴

A loss of faith in "regulative forces" cannot be reconciled with a desire for cogency. Zavarzadeh sees a very different world, that

⁶² Wolfe, "The New Journalism," 23-4.

⁶³ Gay Talese, *Fame and Obscurity: Portraits by Gay Talese* (New York: World, 1970); cited in John W. English, "What Professionals Say," *New Journalism*, ed. Marshall Fishwick (Ohio: Bowling Green University Press, 1975) 135.

⁶⁴ Zavarzadeh, *The Mythopoetic Reality*, 11.

is to say, from the one represented in the *Columbia Journalism Review*. For him the world of fact has turned into an “ongoing empirical fiction” with no outside. In a becoming virtual world made possible (in part) by new technologies of communication, there are only multiple points of view but no “encompassing visions,” “no single interpretive frame.”⁶⁵

The assertion of an epistemic shift from cogency to entropy might be said to anticipate without naming the “postmodern condition,” defined in terms of an ever-spreading dissensus resulting from the loss of faith in metanarratives. In the absence of what Zavarzadeh calls any “valuational stability” today, reality cannot be made to yield to rational interpretation. When the world of fact turns into an “empirical fiction” there is no point in trying “to neutralise the contingent nature of reality by transforming it into a safe zone of unified meaning.” Transcendental interpretation, as it were, must give way to “zero interpretation,” to what Zavardeh calls the “anti-symbolic” approach he associates with the nonfiction novel.⁶⁶

His prime example is Capote’s *In Cold Blood*. On Zavarzadeh’s reading, suspense in the book is not created but simply registered, since the drama is implicit in the pre-existing facts themselves. He calls this “inscriptional suspense” and certainly there is a great deal of it in the book. By the same token, it is not as though Capote hasn’t structured the facts, and generated suspense, by withholding the murder scene until he has sentimentalised the victims and their killers; when the murder scene is finally narrated in section three, much that came before is charged with irony. It becomes inscriptively ironic that one of the victims, Henry Clutter, “knew himself to be in first-rate condition” only weeks before his death, “as a result of a recent medical examination for an insurance policy.”⁶⁷ Similarly ironic is the fact that on the evening of the

⁶⁵ Zavarzadeh, *The Mythopoeic Reality*, 22; 7.

⁶⁶ Zavarzadeh, *The Mythopoeic Reality*, 41; 65.

⁶⁷ Truman Capote, *In Cold Blood: A True Account of a Multiple Murder and Its Consequences* (London: Sphere, 1981) 3.

murders another victim, Nancy Clutter, “made a date to go to the movies Sunday night” with her boyfriend, or that one of Mr Clutter’s neighbours says to him on the day before the murders, “I can’t imagine you afraid. No matter what happened, you’d talk your way out of it.”⁶⁸ While no doubt all of these statements are true, the point is that none of them is purely factual or non-interpretative, each of them belonging to a book whose subtitle—*A True Account of a Multiple Murder and Its Consequences*—gives away the ending from the start. Perhaps, then, the modality of “zero interpretation” is a feature of conventional journalism, but in any case what distinguishes *In Cold Blood* is not its “non-interpretative” stance towards reality but rather its narrative treatment of it.

Factual Fabulation

The new journalism differs from conventional journalism in its approach to textuality or poiēsis, which it refuses to separate from technē in the widest sense. “Almost by definition,” as John Hellmann puts it, “new journalism is a revolt by the individual against homogenised forms of experience, against monolithic versions of the truth.”⁶⁹ But if this makes the new journalism sound like a kind of heroic uprising, all the same it can be agreed that it’s the rejection of totalising systems (“homogenised forms of experience,” “monolithic versions of the truth”) that distinguishes the new journalism from conventional journalism. Those systems derive authority from being seen as independent from the text. In its affirmation of that authority, conventional journalism must denounce its own textuality.

This doesn’t mean that, by contrast, the new journalism is reducible to a pure aesthetics, as though it rejected totalising systems for the sake of making better art. It rejects them in order to make better journalism. The new journalism wants to

⁶⁸ Capote, *In Cold Blood*, 50; 35.

⁶⁹ Hellman, *Fables of Fact*, 8.

tell stories differently, because it wants to tell different stories. “Conventional journalism could no more reveal this war than conventional firepower could win it,” Michael Herr writes in *Dispatches* (1977), his book about the war in Vietnam. “The press got all the facts (more or less), it got too many of them. But it never found a way to report meaningfully about death, which of course was really what it was all about.”⁷⁰ Lyotard makes a similar argument regarding historical accounts of Auschwitz: no matter how comprehensive they might appear or aspire to be, there will always be something missing from “the facts.” Conventional history lacks a means for expressing the world-disclosive feeling of immeasurable horror that Auschwitz generates, and so “something which should be able to be put into phrases cannot be phrased in the accepted idioms.”⁷¹

What Michael Herr could be said to be searching for in *Dispatches* is a humanising idiom for writing about death. After all, as Heidegger points out, only man dies—animals simply “perish.”⁷² Herr wants to find a way of telling a story differently in order to tell a different story, and of course in this he runs the risk of being seen to write “subjectively” or unprofessionally. He risks being seen to have a point of view, of being seen to write from *somewhere* as opposed to writing from a placeless nowhere “outside” the text.

In conventional journalism, the only permissible point of view is one of transcendental indifference—the god’s-eye view of the objective reporter. It’s a perspective that Hunter S. Thompson delights in ridiculing. “The only thing I ever saw that came close to Objective Journalism,” he says, “was a closed-circuit TV setup that watched shoplifters in the General Store at Woody Creek, Colorado.” Objectivity is not a property of the world, for Thompson. It’s an idiomatic effect:

⁷⁰ Michael Herr, *Dispatches* (New York: Picador, 1977) 173-5.

⁷¹ Lyotard, *Differend*, 56-7.

⁷² Martin Heidegger, “The Thing,” *Poetry, Language, Thought*, trans. A. Hofstadter (New York: Harper & Row, 1975) 178.

With the possible exception of things like box scores, race results, and stock market tabulations, there is no such thing as Objective Journalism. The phrase itself is a pompous contradiction in terms.⁷³

Refusing the demand for cogency and objectivity, Thompson searches for a new idiom—a new mode of bringing-forth—in which to express a sense of the increasingly fictional or incoherent nature of the world of fact. But this doesn't mean he writes fiction, since fiction is simply another of the "accepted idioms" the new journalism rejects.

Gay Talese insists that the new journalism, "though reading like fiction, is not fiction. It is, or should be, as reliable as the most reliable reportage although it seeks a larger truth."⁷⁴ Part of this "larger truth," perhaps, is that the distinction between fact and fiction is less ontological than functional, so that all journalism is a form of fabulation, a way of telling stories about the world through the selection of symbolic images.

For Zavarzadeh, though, both the new and conventional journalism lack the transforming power of Capote's *In Cold Blood*. In the case of the new journalism, while it may have a "fictional texture" it does not have a fictive ontology. The new journalism, he says, is "a mono-referential narrative and thus is diametrically different from the nonfiction novel," which for him is uniquely "bi-referential."⁷⁵ By the same token, as John Hellman argues, all writing can be seen as bi-referential, pointing "in" to a self-verifying textuality and "out" to an external world of the seemingly extra-textual real.⁷⁶ But for Zavarzadeh only the nonfiction novel is truly bi-referential because the narrative is both self-verifying and inward-directed, like any narrative, and at the same time uniquely outward-directed since it is not "made up" in the imagination

⁷³ Thompson, *Fear and Loathing: On the Campaign Trail*, 48.

⁷⁴ Talese, *Fame and Obscurity*, vii.

⁷⁵ Zavarzadeh, *The Mythopoetic Reality*, 64.

⁷⁶ Hellman, *Fables*, 23.

but rather “found” in the world of fact. As Hellman points out, however, this distinction simply doesn’t hold for *In Cold Blood*:

While Capote claimed to have written a nonfiction novel, he manipulated his facts with an omniscient authority and interpretively motivated freedom that raises serious doubts about the book’s factual and thematic status. Determined to make the book assume the form of a traditional novel, he apparently placed facts in a consciousness in which he had chosen to locate the point of view of certain scenes, when the facts of those scenes had actually been derived from other sources ... The result is that, however factual *In Cold Blood* may be, Capote appears to have stretched the material in ways disturbingly close to the approximating illusions associated with realist fiction, while continuing to claim a journalistic contract.⁷⁷

Certainly the new journalists themselves were aware of the importance of being seen to respect the nature of that “journalistic contract,” even if sometimes (in Thompson’s case, especially) the observance was measured in the breach. As Talese remarks, “we do tremendous amounts of research and don’t want to be associated with those who are sloppy in their facts.”⁷⁸ Tom Wolfe gives the example of Jimmy Breslin, a former colleague on *The Herald Tribune* who was among the first to try to find another idiom in which to write a weekly newspaper column:

Among literary intellectuals you would hear Breslin referred to as “a cop who writes” or “Runyon on welfare.” These weren’t even intelligent insults, however, because they dealt with Breslin’s attitude, which seemed to be that of the cabdriver with his cap tilted over one eye. A crucial part of Breslin’s work they didn’t seem to be conscious of at all: namely, the reporting he did. Breslin made it a practice to arrive on the scene long before the main event in order to gather the off-camera material, the

⁷⁷ Hellman, *Fables*, 64-5.

⁷⁸ Cited in English, “Professionals,” 135.

by-play in the make-up room, that would enable him to create character. It was part of his *modus operandi* to gather “novelistic” details.⁷⁹

Typically, Hunter Thompson is less observant of the need to be seen as a responsible journalist. “Unlike Tom Wolfe or Gay Talese,” he says, “I almost never try to *reconstruct* a story. They’re both much better *reporters* than I am, but then I don’t really think of myself as a reporter.”⁸⁰

Michael Herr, too, has disclaimed that title. Recalling his first afternoon in Vietnam, he writes that a black sergeant tried to keep him from boarding a Chinook bound for a skirmish with the Viet Cong:

“You a reporter?” he’d asked, and I’d said, “No, a writer,” dumbass and pompous, and he’d laughed and said, “Careful. You can’t use no eraser up where you wanna go.”⁸¹

But Herr’s naivete is deliberately self-ironic, which may be true as well of Thompson’s criss-crossing between the roles of “writer” and “reporter.” At the beginning of *Fear and Loathing in Las Vegas* (1972), for example, the narrator invokes a conventional journalistic pretext for pursuing a story to its unforeseeable conclusion. “I was, after all, a professional journalist,” he says; “so I had an obligation to *cover the story*, for good or ill.”⁸² But the story he ends up telling is closer to a narrative of personal discovery (Capote’s creative writing of the self, as it were) than to the sort of story that a “professional journalist” is paid to write.

In its rejection of “monolithic versions of the truth,” the new journalism could be said to privilege private fables over public

⁷⁹ Wolfe, “New Journalism,” 27.

⁸⁰ Craig Vetter, “Playboy Interview: Hunter Thompson,” *Playboy* (November 1974): 88.

⁸¹ Herr, *Dispatches*, 138.

⁸² Hunter S. Thompson, *Fear and Loathing in Las Vegas: A Savage Journey to the Heart of the American Dream* (London: Granada, 1981) 11.

facts. This involves not only a search for new idioms, but also a related search for new sources of information. More often than not the principal source turns out to be the new journalist himself, as a participant—with Thompson, very often as a provocateur—in the story he narrates. (The gender here is not just grammatical.) There are of course exceptions. While Capote started doing research for *In Cold Blood* before Smith and Hickock, the convicted killers, had been arrested, nevertheless he didn't write the book until after the outcome of the case was known, and certainly he was never a participant in the events it describes. Similarly Wolfe wrote *The Right Stuff* (1979) almost two decades after the first US airforce pilots started training to become astronauts, and of course he was never a participant in the space program itself.

But in any case information sources tend to be non-standard or unofficial for the new journalism. In order to “reveal” the war in Vietnam, Michael Herr foregoes talking to generals and listens instead to the conscripted and enlisted men who have to find ways of living with death. “I'd never seen any point in asking generals heavy questions about anything; they were officials,” he writes, “and the answers were almost always what you expected them to be.”⁸³

Herr's desire for the unexpected—a desire that typifies the new journalism—points to a gesture of pure affirmation in refusal of the demand for cogency that defines conventional journalism and limits its imagination. Such refusal, or such a lack of adherence, might be expressed today as an assertion of the non-oppositional relations of invention and interpretation in the movement from work to text, or from a sort of pseudo-forensics to a more general concept of writing that opens the possibility of doing journalism otherwise.⁸⁴ What could be instructive here is that this shift occurs without any reference to “French” theory or “continental” philosophy.

⁸³ Herr, *Dispatches*, 121.

⁸⁴ See Roland Barthes, *Image Music Text*, trans. Stephen Heath (London: Fontana, 1977).

By refusing the authority of totalising systems, the new journalism set itself the task of finding new idioms for writing about new historical and new epistemological conditions. In its most radical or excessive forms (its most textually innovative or hybrid variations, perhaps), it shunned the cold omniscience of professional disinterest in favour of an understanding of the world through participatory reflection. Certainly in such nomadic, asystematic works as Thompson's *Fear and Loathing: On the Campaign Trail '72* and Herr's *Dispatches*, a desire for the unexpected seems to overwhelm any kind of conventional adherence to the logic of technicity; whatever counts as knowledge in these works—an understanding of the unrepresentable in politics and death, as it might be called—can't be held to conform to pre-existing modes of journalistic representation and experience. Those modes lead only to a limited or instrumental thematics of the world, overlooking the significance of whatever doesn't qualify as meaningful according to a scientific model of the truth.

The new journalism took a different view of things (as well as forces and relations) at a time when difference was putting paid to unifying structures of cultural experience. If those structures are reasserting themselves at present, in the technomilitary interests of a global war on terror, then perhaps the new journalism has got something left to say to us today—on the question of resistance in an era of order and control.

Postscript

Today, the war on terror demands allegiance and conformity to the technological goal of turning the Middle East—its people and its land—into a resource for the West. Challenged forth by the West's need for oil, the people of the Middle East are being re-made as standing-reserve in the form of "democratic citizens" with whom the West can bargain. In this exchange democracy is the loser, since it is possible to think that democracy can be imposed from without (or installed

somewhere overnight) on the basis only of reducing democracy to a placeless system of representative government. Such thinking typifies the logic of technicity, according to which knowledge is always systematic and orderly. We can know only what is out there already, waiting to be brought back but not brought forth. In this modern technological orientation to the world, knowledge is confined to an instrumental understanding of things (and what they can be used for) through the separation of *technē* and *poiēsis*. But while instrumental knowledge *is* a mode of revealing, on its own it cannot hope to reveal the incoherence of difference or respond to things that stupefy and sicken. To know (for example) that war is all about death, is to understand that war is not reducible to “casualties” or “collateral damage”; in contrast to the reproduction of coherence, there is always more to know than instrumental statistics and cold, hard facts can reveal. Who knows, then, what there is to know about what’s happening in the Middle East today? But this much at least is sure: the answer is not to be found in the mainstream media.

Laurent Milesi

Taste, Tastare, Tact: A Deconstructive Touch of Digital Theory

In the protracted dénouement to D.H. Lawrence's enigmatic short story "You Touched Me," Hadrian, the orphan protagonist after whom the story is officially titled, motivates his desire to ask for the hand of his elder "cousin" Matilda by recalling the night when she "touched his forehead" and woke him up in the mistaken belief she was reaching for her father—after which she had retired to her room and "stood holding up her hand that had touched him, as if it were hurt"¹:

"You put your hand on me, though," he said. "You shouldn't have done that, and then I should never have thought of it. You shouldn't have touched me."

"If you were anything decent, you'd know that was a mistake, and forget it," she said.

"I know it was a mistake—but I shan't forget it. If you wake a man up, he can't go to sleep again because he's told to."

"If you had any decent feeling in you, you'd have gone away," she replied.

...

"It's so *indecent*," she said.

¹ D.H. Lawrence, "Hadrian [You Touched Me]," *England, My England and Other Stories*, ed. Bruce Steele (Cambridge: Cambridge University Press, 1990) 99; 100.

“How?” he retorted. “You touched me.”²

Matilda’s triple-barrelled protest against decency echoes her first outburst when, in an earlier scene, her ageing father pops his shocking request that she should marry the adopted child: “It’s disgusting.”³ Leaving aside the overtly patriarchal framework of the story, in which the woman is handed over from father to spiritual son and heir as property, I would like to dwell on the contiguity of taste and touch which this emblematic tale plays on as an invitation to my argument.

According to Klein’s *Comprehensive Etymological Dictionary of the English Language*, the adjective “decent” is related to Latin *decus*, genitive *decoris*: (especially) dignity but also ornament (cf. decoration); what is proper is thus also, literally (and going back to Indo-European roots), what is “decorated” and pleasing, so that what is politically, ethically “on the right side” (via Latin *dexter*)—even “on the right hand” (Old Indian *dáksinah*)—is what looks and feels right (like Matilda’s spontaneous feeling that the young man’s brow “seemed fresh and smooth—very fresh and smooth”⁴). Hence the impropriety of marrying the Charity Home cousin—which would therefore be some sort of left-hand marriage, a “dis-gusting,” dis-tasteful, in-decorous breach of good taste or even social “tact.” What Matilda implicitly wishes Hadrian had known, and had tactfully acted upon, is that there are situations when one should not feel “touched” by a touch, that is when a touch is not a touch but a tact which should register an “interdiction” of touch, a “noli me tangere.” Or to put it differently, the act of touching (here, in the dark—i.e. when one is deprived of the strongly identificatory power of another sense, vision) may well have happened but its implications should have been construed as belonging to the realm of unactualised possibility, rather than the actual—the two sides of the real since “ancient”

² Lawrence, “Hadrian,” 106.

³ Lawrence, “Hadrian,” 102.

⁴ Lawrence, “Hadrian,” 99.

philosophy—or, as Wojciech Kalaga defines the pair, the virtual (or relational) as opposed to the actual (or material), even the virtual stripped of its relational potential here.

1. *Au doigt et à l'oeil I: From Optics and Haptics to Digitality and Virtuality*

What is now called “taste” seems to have meant originally both to feel, touch and taste (via French *tâter* [from *taster*], Latin *tastare*, then Middle English *tasten*); for example, *Tastsinn* (and the verb *tasten*) is how the German language designates the sense of touch, and in Spanish and Portuguese, *tastar* still means both to feel and to taste. (In *Indogermanische Forschungen*, Bloomfield suggests the hypothetical Vulgar Latin form *tastare*, which could have arisen as a blend of *gustare*, “to taste,” and *tangere* [which gave “tact”], “to touch” [Klein, s.v. “decent” and “taste”].) The enduring *contiguity* of taste and touch may also be envisaged within the larger framework of a *continuity* of senses as it was foregrounded in *synaesthesia*—or even its more global counterpart: *coenesthesia*, the “common sensation” of bodily organs or “sixth sense”—all of which fell under the category of the “aesthetic” as originally defined by Alexander Baumgarten around 1750, i.e. from Greek *aistheta*: what is given to the senses, hence sensible or perceptible, as opposed to the *noēmata* as what can be apprehended through knowledge and the conceptual power of the mind, hence intelligible. One such proximity—and potential dysfunctioning—is the one with the eye and the hand, between optics and haptics (from Greek *haptein*: to touch), which often presides over archetypal recognition scenes involving a blind protagonist, as in the two companion parables of Jacob and Esau, and Ephraim and Manasseh in Genesis. In the Jacob and Esau story, the blind old father Isaac mistakenly gives his blessing to the wrong, younger son after the latter, on his mother’s advice, wears his elder brother’s garments and a goatskin in order to counterfeit hairiness on his hands and neck:

And Isaac said unto Jacob, Come near, I pray thee, that I may feel thee, my son, whether thou *be* my very son Esau or not.

And Jacob went near unto Isaac his father; and he felt him, and said, The voice *is* Jacob's voice, but the hands *are* the hands of Esau.

...

And his father Isaac said unto him, Come near now, and kiss me, my son.

And he came near, and kissed him; and he smelled the smell of his raiment, and blessed him, and said, See, the smell of my son *is* as the smell of a field which the Lord hath blessed.⁵

The implicit assumption here is that one can impersonate somebody else by faking their voice but that touch confers an irrefutable proof of authenticity. In the next generation, a blind Jacob similarly chooses against the elder brother during a scene in which the crossing of right and left, right and wrong hands is used to swop identities:

Now the eyes of Israel were dim for age, *so that* he could not see. And he brought them near unto him; and he kissed them, and embraced them.

...

And Joseph took them both, Ephraim in his right hand toward Israel's left hand, and Manasseh in his left hand toward Israel's right hand, and brought *them* unto him.

And Israel stretched out his right hand, and laid it upon Ephraim's head, who *was* the younger, and his left hand upon Manasseh's head, guiding his hands wittingly; for Manasseh *was* the firstborn.⁶

⁵ Genesis 27:21-22, 26-27.

⁶ Genesis 48:10, 13-14. These parallel scenes are discussed in Jacques Derrida, *Memoirs of the Blind: Self-Portrait and Other Ruins*, trans. Pascale-Anne Brault and Michael Naas (Chicago and London: University of Chicago Press, 1993) 100, in terms of a divine vision and of the clairvoyance of two blind patriarchs guided by the hand of God.

One may also recall the allegory of an incredulous “doubting Thomas,”⁷ who will not trust his or the disciples’ eyes and believe in Christ’s resurrection until he can touch what he sees:

Except I shall see in his hands the print of the nails, and put my finger into the print of the nails, and thrust my hand into his side, I will not believe.

...

Then saith [Jesus] to Thomas, Reach hither thy finger, and behold my hands; and reach hither thy hand, and thrust *it* into my side: and be not faithless, but believing.⁸

Although various historical periods and cultures have come up with their own hierarchies of the senses, these ancient allegories testify to the fact that touch became very early synonymous with genuine, real presence predicative of immediate cognition: one would not want to see proof but “touch proof” since touch could not be mediatised, technologised or mechanised. A similar privileging is famously expressed by eighteenth-century encyclopaedist Denis Diderot in his letters on the blind and on the deaf mute (1749 and 1751 respectively), which can be postulated as distant precursors of the haptic redeployment of the other senses:

je trouvais que, de tous les sens, l’oeil était le plus superficiel; l’oreille, le plus orgueilleux; l’odorat, le plus voluptueux; le goût, le plus superstitieux et le plus inconstant; le toucher, le plus profond et le plus philosophe.⁹

Thus, in his book-length study of Jean-Luc Nancy, *Le toucher*, Derrida can claim that the haptic almost covers all the senses

⁷ John 20:24-29.

⁸ John 20:25, 27.

⁹ Denis Diderot, “Lettre sur les Sourds et Muets, à l’usage de ceux qui entendent et qui voient” (1751), *Oeuvres complètes de Diderot*, vol. 1, ed. J. Assézat (Paris: Garnier, 1966 [1875]) 352-3.

whenever these appropriate a proximity to themselves,¹⁰ and a more recent essay (“Justices”) has brought home how touch as proximity and auto-affection (that of a *se toucher*, already analysed in the book on Nancy) connects with taste:

One cannot imagine this affect [of feeling oneself—*se sentir*] without the figure of some contact with oneself, without an auto-affection of touching and, more precisely, without the kind of intimate tactile sensitivity that is enigmatically called *taste*.¹¹

What is taste?

The great question of taste thus precedes here, and by a long way, all its consequences in the literal or metaphoric experiences of the *langue* (tongue or language), from gastronomy to the aesthetics of the fine arts, to literature, plastic arts, and poetry. I regret not having reread this text of Hillis’s [*The Disappearance of God*, on Gerard Manley Hopkins] when I was writing *Touching, Jean-Luc Nancy*, for I would have learned a lot about the mysterious relations among taste, taste of self; the auto-affection that constitutes selfhood through the sensed experience of self, this auto-affection consists of touching oneself in taste, of tasting oneself in that “selftaste” that Miller

¹⁰ Jacques Derrida, *On Touching—Jean-Luc Nancy*, trans. Christine Irizarry (Stanford: Stanford University Press, 2005) 124; 122ff; 272 for haptics and optics. In a later discussion with Terry Smith entitled “In Blind Sight: Writing, Seeing, Touching...” he will likewise complicate the common assumption of knowing as seeing at the heart of Western thought by adding the sense of touch; see Jacques Derrida, *Deconstruction Engaged: The Sydney Seminars*, eds. Paul Patton and Terry Smith (Sydney: Power Publications, 2001), especially 17ff and 19 on the “touching eye” and the phenomenology of perception’s ignorance of virtualisation and digitalisation. In Patrick Süskind’s virtuoso novel *Perfume*, it is this distasteful proximity of the sense of touch which spares the abominable Grenouille from dying of strangulation at the hands of the other children in residence at Madame Gaillard’s, who cannot bring themselves to carry out their murderous intent because: “They didn’t want to touch him. He disgusted them the way a fat spider that you can’t bring yourself to crush with your own hand disgusts you” (24).

¹¹ Jacques Derrida, “Justices,” trans. Peggy Kamuf, *Critical Inquiry* 31 (Spring 2005): 690.

tells us is “inimitable” and, quoting now Hopkins, “unspeakable” ...¹²

To return to Lawrence’s paradigmatic short story, and its biblical valorising of the immediate authenticity of touch over sight, Matilda’s touch fails her as she is irrealily groping in the dark like a blind woman with a deficient mind’s eye. But this touch is also “digital,” since she will unwittingly bring about the blessing of the adopted sibling, to whom her own hand will be given, as if she had acted out her father’s command on some remote telekinetic impulse fulfilling a superior clairvoyance.

The connivance between touch and sight was put to fruitful critical use in the history of aesthetics and philosophy first by Alois Riegl (mainly in *Problems of Style: Foundations for a History of Ornament*) and Wilhelm Worringer (*Abstraction and Empathy*), then Henri Maldiney (in *Regard, parole, espace*), and finally by Deleuze and Guattari (in *A Thousand Plateaus* and Deleuze’s own *Francis Bacon. Logique de la sensation*). Riegl first developed the concept of the haptic eye and haptic space in his aesthetic treatise on the Egyptian bas-relief, half-way between sculpture (a “tactile” art—his first adjective in order to designate the manual function of the eye in an earlier work) and painting as an optical art. As Deleuze put it in *Cinéma 2: L’Image-temps*:

La main double sa fonction préhensive (d’objet) avec une fonction connective (d’espace), mais, dès lors, c’est l’œil qui double sa fonction optique avec une fonction proprement haptique, suivant la formule de Riegl pour désigner un toucher propre au regard.¹³

¹² Derrida, “Justices,” 698.

¹³ Gilles Deleuze, *Cinéma 2: L’image-temps* (Paris: Minuit, 1985) 22. Cf. also Maldiney 194 (n79 for Riegl’s terminological inflection): “Dans l’espace haptique la vision est en prise sur le motif à la façon du toucher dont elle constitue un analogon visuel.” A review of the critical trajectory of both concepts was given by Eliassen at the IAPL’s 25th Annual Conference (2001).

In the subsection of *A Thousand Plateaus* called "The Smooth and the Striated" dealing with the aesthetic model, Deleuze and Guattari oppose long-distance to close-range vision, optical space to haptic space, and note that haptic "is a better word than 'tactile' since it does not establish an opposition between two sense organs but rather invites the assumption that the eye itself may fulfil this nonoptical function" (492). Visual proximity turns the viewed object into a surface which the eye touches in order to apprehend its contours. The opposition-combination will be applied to the art of Francis Bacon by Deleuze, an art characterised by a haptic vision of colour as opposed to the optical vision of light. In the words of Daniel W. Smith in his serviceable introduction to the translation:

The tactile-optical space of representation presents a complex eye-hand relation: an ideal optical space that nonetheless maintains virtual referents to tactility (depth, contour, relief). From this, two types of subordination can occur: a subordination of the hand to the eye in optical space (Byzantine [optical] art), and a strict subordination of the eye to the hand in a manual space (Gothic [tactile] art). But what Deleuze, following Riegl, terms haptic space ... is a space in which there is no longer a hand-eye subordination in either direction. It implies a type of seeing distinct from the optical, a close-up viewing in which "the sense of sight behaves just like the sense of touch." Riegl argued that haptic space was the invention of Egyptian art and bas-relief, in which form and ground are experienced as being on the same plane, requiring a close vision. Deleuze in turn suggests that a new Egypt rises up in Bacon's work, this time composed uniquely of color and by color: the juxtaposition of pure tones arranged gradually on the flat surface produces a properly haptic space, and implies a properly haptic function of the eye ...¹⁴

This "aesthetic synergy" between eye and hand or finger is neatly captured in the French metaphor suggestive of blind

¹⁴ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: Continuum, 1988) xxvi-xxvii.

obedience: *au doigt et à l'oeil*, an idiomatic phrase which Jacques Derrida not infrequently resorts to in order to deploy the implications of the “digital,” as in the following extract from “Faith and Knowledge: the Two Sources of ‘Religion’ at the Limits of Reason Alone”:

Like others before, the new “wars of religion” ... struggle even today to control the sky *with finger and eye*: digital systems and virtually immediate panoptical visualisation, “air space,” telecommunications satellites, information highways, concentration of capitalistic-mediatic power—in three words: *digital culture, jet* and TV ...¹⁵

The passage juxtaposes “digital” and “virtual”—despite their difference, which I will briefly articulate later—in conjunction with what Derrida repeatedly calls tele-technology (or tele-technosciences, etc.) whose advent:

obliges us more than ever to think the virtualisation of space and time, the possibility of virtual events whose movement and speed prohibit us more than ever ... from opposing presence to its representation, “real time” to “deferred time,” effectivity to its simulacrum ...¹⁶

One of the recurrent suggestions of *Specters of Marx* is that such a prizing open of the actual-versus-virtual dichotomy—or, in “Faith and Knowledge,” “between event and possibility or

¹⁵ Jacques Derrida, “Faith and Knowledge: the Two Sources of ‘Religion’ at the Limits of Reason Alone,” trans. Samuel Weber, *Religion*, eds. Jacques Derrida and Gianni Vattimo (Cambridge: Polity, 1998) 24. Cf. also “Circumfession,” period 31: “she [Derrida’s mother] will no longer reply, nor soon to the eye at the end of blind fingers” (Geoffrey Bennington and Jacques Derrida, *Jacques Derrida*, trans. Geoffrey Bennington [Chicago: University of Chicago Press, 1993] 162); and Jacques Derrida, *Monolingualism of the Other; or, The Prosthesis of Origin*, trans. Patrick Mensah (Stanford: Stanford University Press, 1998) 65: “I digitise like a madman.”

¹⁶ Jacques Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning, and the New International*, trans. Peggy Kamuf (London: Routledge, 1994) 169.

virtuality of the event"¹⁷—should force us to rethink politics and how political action, but also what is called “representation,” is still dependent on a traditional conception of immediate presence in space whose former unity is being subverted by tele-technologies. For instance, the virtual environment of the World Wide Web reconfigures our sense of contiguity in space, as linear two-dimensional modes of navigation give way to the more reticular, anarchic activity of surfing by an avatar of the Baudelairian flâneur in the then nascent modernity: the *cyberflâneur*. Thus, in *Specters of Marx*, the attempt to reaffirm the heritage of Marx is carried out:

while according it or bending it to a thinking of the spectral that takes into account (in particular in the political apprehension of the *res publica* and its—more or less new—space) an irreducible *virtuality* (virtual space, virtual object, synthetic image, spectral simulacrum, teletechnological differance, *idealiterability*, trace beyond presence and absence, and so forth) ...¹⁸

Similarly, in *Archive Fever*, going against philosophy’s received conceptualisation of the virtual as opposed to the actual, even though the former is granted its own reality,¹⁹ Derrida muses on the necessity to extend “the *full and effective actuality* of the taking-place, the reality ... of the archived event” to the “*archive of the virtual*, in its greatest generality,” and then asks:

¹⁷ Derrida, “Faith and Knowledge,” 21.

¹⁸ Derrida, *Specters of Marx*, 190n12; also *passim*.

¹⁹ Cf. for example Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (London: Athlone, 1994) 208-9: “The virtual is opposed not to the real [unlike for Bergson who, in *Matter and Memory*, “proposed the schema of a world with two centres, one real and the other virtual” (101)] but to the actual. *The virtual is fully real in so far as it is virtual* ... Indeed, the virtual must be defined as strictly a part of the real object—as though the object had one part of itself in the virtual into which it plunged as though into an objective dimension,” and Philippe Lévy, *Becoming Virtual. Reality in the Digital Age*, trans. Robert Bononno (New York and London: Plenum Trade, 1998) 23: “In scholastic philosophy the virtual [from *virtus*: strength, power] is that which has potential rather than actual existence ... Strictly speaking, the virtual should not be compared with the real but the actual, for virtuality and actuality are merely two different ways of being.”

What will become of this when we ... indeed have to remove the concept of virtuality from the couple that opposes it to actuality, to effectivity, or to reality? Will we be obliged to continue thinking that there is no thinkable archive for the virtual? For what happens in virtual space and time? ... The moment has come to accept a great stirring in our conceptual archive, and in it to cross a “logic of the unconscious” with a way of thinking of the virtual which is no longer limited by the traditional philosophical opposition between act and power.²⁰

Piecing together these (and other) scattered reflections across several texts of the last decade, we can draw a tripartite opposition between specular / actual versus speculative / virtual, both still part of a “traditional” conceptual pair—though one too often ignored or forgotten by some fashionable, unproblematic views of the virtual in media studies—against spectral / another more primordial, archaic virtual as the utmost generalisable trace of the (im)possible event before a taking-place, or (*non-*)*lieu d'un événement (im)possible*, from which the couple act/power or actuality/potentiality would itself be derived. One of deconstruction's more ambitious, if somewhat half-articulated and therefore undetected moves has been to call for another logic of the virtual, of possibility-virtuality—for instance towards the end of *Monolingualism of the Other* (page 93, note 11, referring to “Avances”). I will return to this when I finally attempt to “deconstruct” touch and taste, as well as expose digital theory to a “touch of deconstruction.”

2. *The Desert and Truth of “Virtureality”: The Matrix*

Such a rethinking of the archive is implicit in Steven Spielberg's tantalising, action-packed thriller *Minority Report* (2002), based on a similarly titled story by Philip K. Dick, in which the intention to kill is prevented by a Pre-crime Unit thanks to the prescience of three related “Pre-cogs,” whose envisioning of the virtual future

²⁰ Jacques Derrida, *Archive Fever: A Freudian Impression*, trans. Eric Prenowitz (Chicago and London: University of Chicago Press, 1996) 66-7; see also 64.

is made tangible by a filmic archive which can be physically manipulated in order to reconstruct what will (not) happen and therefore forestall it, though the offender will still be arrested for a future crime they were eventually stopped from committing. Thus the virtual is or becomes “real” insofar as it is also “objectively accessible to cognition” (to use Kalaga’s minimal but accurate definition) as well as endowed with the actual potency of the possible. But despite the excellence and superiority of Spielberg’s tour de force, it is to the Wachowski brothers’ cult trilogy *The Matrix*, especially the more compelling first instalment, that I would like to turn to in order to approach the virtual.

Despite paying lip service to semi-apocalyptic, yet hackneyed visions of a future (close to 2199) dominated by a man-made turned rebel AI—“A singular consciousness that spawned an entire race of machines”—the success of a film like *The Matrix* is to have been able to provoke large audiences into questioning the boundaries between the “virtual” and the “real,” to such an extent that what characters mistake for the real is in fact the imaginary superimposition of a computer-generated world or machinic order aimed at keeping subjects happy and quiet, whereas the “really real” is what lies beyond or deep within the Matrix, and is foreclosed to the consciousness of the obedient majority. The following excerpt, soon after Neo finally meets Morpheus, introduces the spectator to the famous Matrix, popularised by William Gibson in his 1984 pioneer cyberfiction novel *Neuromancer*, where it refers to his other linguistic coinage and fictional invention come true, “cyberspace,” now widely accepted among VR technicians to name the interior space of virtual reality programs:

Morpheus

The Matrix is everywhere. It is all around us, even now in this very room. You can see it when you look out your window or when you turn on your television. You can feel it when you go to work, when you go to church, when you pay your taxes. It is

the world that has been pulled over your eyes to blind you from the truth.

Neo

What truth?

Morpheus

That you are a slave, Neo. Like everyone else you were born into bondage, born into a prison that you cannot smell or taste or touch. A prison for your mind ... Unfortunately, no one can be told what the Matrix is. You have to see it for yourself. This is your last chance. After this there is no turning back. You take the blue pill, the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill, you stay in Wonderland, and I show you how deep the rabbit hole goes ... Remember, all I'm offering is the truth, nothing more ...

...

Morpheus

Have you ever had a dream, Neo, that you were so sure was real? What if you were unable to wake from that dream? How would you know the difference between the dream world and the real world?

One such experience of the undecidability between dream and reality is the earlier sequence in which Agent Smith introduces a sensory spider into Neo's navel during what is retrospectively presented as a nightmare (Neo is shown waking up in a sweat), though the "bug" is subsequently sucked out of him in a "real" scene—similarly involuted layers abound once Neo has broken through the looking glass into the not-so-wondrous real, with the computer programme inside it. Interestingly the "anaesthetisation" of the real—"a prison that you cannot smell or taste or touch," yet in which objects procure deceptive sensations precisely to conceal an other, deeper truth—is matched by the genuine tastelessness of food in the "breakfast scene":

Mouse

How did the machines really know what Tasty Wheat tasted like. huh? Maybe they got it wrong. Maybe what I think Tasty Wheat tasted like actually tasted like oatmeal or tuna fish. That makes you wonder about a lot of things. You take chicken for example, maybe they couldn't figure out what to make chicken taste like, which is why chicken tastes like everything. Maybe they couldn't figure out.

And later on, after Morpheus has been captured, Agent Smith will likewise complain in an abhorrently sensory, human language:

Agent Smith

Can you hear me, Morpheus? I'm going to be honest with you. I hate this place, this zoo, this prison, this reality, whatever you want to call it. I can't stand it any longer. It's the smell. If there is such a thing. I feel ... saturated by it. I can taste your stink. And every time I do I feel I have somehow been infected by it, it's repulsive.

Another significant exchange between Morpheus and Neo takes place soon after the latter has been initiated into the "deeper reality," after entering the Construct:

Morpheus

This is the construct. It's our loading program. We can load anything from clothing, to equipment, weapons, training simulations, anything we need.

Neo

Right now we're inside a computer program?

Morpheus

Is it really so hard to believe? Your clothes are different. The plugs in your arms and head are gone. Your hair has changed. Your appearance now is what we call residual self image. It is the mental projection of your digital self.

Neo

This ... this isn't real?

Morpheus

What is real? How do you define real? If you're talking about what you can feel, what you can smell, what you can taste and see, then real is simply electrical signals interpreted by your brain. [*Switches on a TV.*] This is the world that you know. The world as it was at the end of the twentieth century. It exists now only as part of a neural-interactive simulation that we call the Matrix. You've been living in a dream world, Neo. This is the world as it exists today... Welcome ... to the desert ... of the real. [Baudrillard's famous phrase—early in the film, a close-up reveals Neo owns a copy of the French philosopher's book *Simulacra and Simulation*].

...

Morpheus

... The Matrix is a computer generated dream world built to keep us under control in order to change a human being into this [*shows a battery*].

Neo

No. I don't believe it. It's not possible.

Here again, in a scene in which the digital meets the virtual, the “real” is a matter of aistheta (feel, smell, taste, see), but since these are “simply electrical signals interpreted by [the] brain,” and therefore manipulable, not only does the opposition between the sensible and the intelligible break down but the imaginary or induced illusion may simulate the real in order to dissimulate it as the virtual—according to a variation on Baudrillard's own distinction between “to dissimulate” (“to feign not to be [originally: have] what one is [originally: has]”) and “to simulate” (“to feign to be [originally: have] what one isn't [originally: hasn't]”), but in contravention of his epigraph from Ecclesiastes, whereby “The simulacrum is never that which

conceals the truth—it is the truth which conceals that there is none. The simulacrum is true.”²¹

But perhaps the imagined scenario of *The Matrix* is such an instance of the grim truth that lies ahead: what if we *were* in a Matrix, watching what pretends to be a film to conceal the fact that this is happening around us, as virtual, immersive tele-technologies are evolving so fast that the prospect of the digitisation of thoughts (which, after all, are nothing more than brainwaves from an electronic standpoint) or software capable of generating a picture right on the optic nerve which would make it impossible for us to know that it is not the “real,” is not so far off ...²²

3. *Au doigt et à l’oeil II: From Digital to Virtual Technology; from Synaesthesia to Cybersthesia*

As Michael Heim summarises in his foreword to *The Metaphysics of Virtual Reality* (1993), the considerable technological advances of the last twenty years expanded human interaction with technical systems: “machines became appliances, appliances offered an interface, the interface opened to cyberspace, and cyberspace offered virtual worlds to explore.”²³ As the interpenetration of the human and the machinic intensified in sync with the shift from the digital to the virtual (not to mention the later shift from VR to AI or even AR, outside the scope of this paper), this further unsettled our cognitive and existential

²¹ Jean Baudrillard, *Jean Baudrillard: Selected Writings*, ed. Mark Poster (London: Polity, 1988) 167; 166.

²² One famous exponent of this line of thought is Nick Bostrom, now Director of the recently created Oxford Future of Humanity Institute. See for e.g. “Are You Living in a Computer Simulation?” and “Why Make a Matrix? And Why You Might Be In One.” More uncanny is the pioneer remote control technology based on bioelectrical interface documented in the November 2005 issue of *PC Gamer*, whereby a Japanese company “demonstrated a headset that could be used to remotely direct the movements of the person wearing it” (“Remote Controllers,” 13).

²³ Michael Heim, *The Metaphysics of Virtual Reality* (New York: Oxford University Press, 1993) xvi.

boundaries between material reality and mental projection, self and prosthetic identity (for e.g. the whole psycho(patho)logy of the avatar in forums, chat rooms or MUDs, i.e. online, mainly text-based role-playing games), “(syn)aesthetic” immediacy of the senses or even kinaesthesia and tele-immersion, phenomenological perception and noumenal apprehension, primary and augmented reality, two-dimensional and three-dimensional worlds, etc.

One such aspect is the extension of digitisation, from digital art which we more or less take for granted in its visual and musical dimensions in our everyday lives, to senses traditionally held to be more resistant to recoding: smell, touch and, perhaps one day, taste, or the digitisation of the Proustean anamnēsis of the madeleine. I would like to briefly review some such technologies before inscribing them within a larger critical framework.

a) iSmell [sic] Technology

Sometimes referred to as “scentography” in an up-and-coming offshoot from osmics (the science of smells) known as aromagenomics, or the application of molecular biology to the field of olfaction, DigiScents Inc.’s patented iSmell technology was touted to take our consumer nostrils by storm with promises of revolutionary e-commercial as well as edutainment application which, however, were largely a spent force by the end of 2002 (a mere three years after its inception). This was partly due to failed mass marketing—but possibly also to the offensive, “in-your-face” brand name chosen for the personal scent synthesiser—the synthesiser itself was triggered either by user activation (such as a mouse click or a mouseover effect) or a timed response (as with a DVD ScentTrack). A November 1999 article from *Wired* magazine entitled “You’ve Got Smell!”—suggestively echoing the avatar of email clients notifying the user that “you’ve got mail”—first reviewed the technological breakthrough which made it possible to generate a scent palette

of billions of odours by blending in different proportions some 128 “scent primaries”—just as a painter or visual artist works with a spectrum of colours mixed from a base range of primary colours. The ScentWare would encode smells as digital data which, just as digitised music can be downloaded or “streamed” and played through speakers attached to a computer, could be acquired online and played back through a peripheral device driven by ScentStream software, and as part of the global project was the creation of “the Snortal,” or the Internet’s first scent-enabled Web portal, from which the web surfer would have been able to send “ScentMail,” design and register their own ScentObjects, and create and share ScentTracks for favourite movies and music. By adding scents to multimedia CD-ROMs and Web sites, whether in virtual e-supermarkets with their aisles of digitised product smells or for the delivery of streaming media, this interactive technology was to give content and media developers the ability to enhance the user experience through a layer of customised scents. Thus, for instance (to paraphrase several descriptions and reviews), an e-shopper visiting a scent-enhanced cosmetics Web site could sample the newest perfumes before committing themselves to an expensive purchase; a travel Web site could add the spicy fragrance of Caribbean waters to promote an exotic vacation package; gourmet-food distributors could induce cravings for their products, while X-rated Web sites could crank the user’s libido by harnessing the olfactory power of pheromones; and gamers could experience the smell of gunpowder during a virtual firefight in an FPS or the otherworldly stench of a decaying zombie, the smell of gasoline or burnt tyres in racing sims, or else solve an interactive murder mystery using scented clues in a scent-enabled video game. Away from the marketing ploys of e-commerce into the private realm of personal(ised) relationships, digitised party invitations could set the tone and mood by carrying the aroma of food, wine, or more exotic stimulants; online dating could take a new, if potentially misleading turn, and kiss-off emails could smell rancid—or worse; “make money fast!” chain letters could turn

up in your inbox smelling of new-minted greenbacks; and spam could smell of ... Spam—or, perhaps more sneakily, emit a scent that is so irresistible that the recipient will be tricked into letting the text linger on their screen just to enjoy it and maybe act on it ... Steaming baked bread, freshly brewed coffee, apple orchards, newly mowed grass, mountain air, a light sea mist, etc.—or smelly socks: you name it, you smell it. On the downside, newly empowered hackers would be able to write their own iSmell software and viral engineers could design a new form of infection by circulating smell files capable of causing computers to crank out odious odours for hours on end that would plug into users' moods in unpredictably disruptive ways ...

The synergetic working of machine and man was well captured in the mock-solemn, semi-ritualistic tone presiding over the experience of this new technological advent as it was recounted in the above-mentioned *Wired* article, while recalling its pragmatic kinship with tried-and-tested superstore selling inducements:

Joel Lloyd Bellenson [co-founder and CEO of DigiScents Inc.] places a little ceramic bowl in front of me and lifts its lid. "Before we begin," he says, "you need to clear your nasal palate." I peer into the bowl. "Coffee beans," explains Bellenson's partner, Dexter Smith. "This is what they use in perfume stores. It's like the reset button."

Dutifully, I reinitialise my nose by sniffing the beans. I'm preparing for a sensory epiphany here, an epochal event in the history of art, smell, and computation.²⁴

Like all seemingly revolutionary technologies (such as the computer itself, which can be traced back to Leibniz's monadology and universal logical calculus, or discussions of the virtual to Duns Scotus's "virtualiter," which offered a bridge between formally unified reality, as defined by our conceptual expectations, and our diverse personal experiences²⁵), the idea of

²⁴ Charles Platt, "You've Got Smell," *Wired* 7.11 (November 1999): 1.

²⁵ Heim, *The Metaphysics of Virtual Reality*, 132.

this shake-up of our sensorial space had precedents—and indeed those banner ads in which online advertisers embed their smells which are triggered by mouseover scrolling can be seen as the digital avatars of print ads but also letter paper impregnated with scents.

In the late 1950's AromaRama and Smell-O-Vision! (the latter pioneered by Hans Laube, a Swiss professor of osmics) were brought to US cinemas, promising their audience an unprecedented immersion in movie illusion. *Behind the Great Wall*, a documentary employing the former, included 72 scent cues, ranging from nightclub smoke to Oriental spice, synched to scents pumped through the cinema's ventilation system, and Smell-O-Vision, dispensed from under each seat, was introduced in the 1960 film *Scent of Mystery*—and proved to be a repulsive fiasco despite its tagline trumpeting the technology as a landmark of film history: "First They Moved (1895)! Then They Talked (1927)! Now They Smell!" (The film was re-released years later under the title *Holiday in Spain* without the faintest trace of odour, as was "The Tale of Old Whiff," the odour-filled cartoon which accompanied it.) A brief "smellies" revival occurred in 1981 when schlockmeister John Waters paid homage to Smell-O-Vision! with scratch-and-sniff "Odorama" cards for his classic *Polyester*, whose hidden smells cinema-goers were instructed to release at specially designated moments. More recently the UK Cable company Telewest Broadband had plans to resurrect the surf-and-sniff technology and introduce "ScentMail" or Aromanet via unique "scent domes," which mix liquid smells and spray them into the air around the PC for a whole new "scentsorial" experience. Virtual reality had by then already used 3D displays and tactile feedback from data gloves, vests, and chairs (more anon), and odour would therefore have been a natural extension of this experience. However, in a 1999 paper delivered at the University of Washington, Martin Zyburá and Gunnar A. Eskeland discussed the challenges in "Olfaction for Virtual

Reality,” suggesting that merely wafting odours toward a VR user will not be enough because:

an olfactory interface would have to use head orientation and position tracking to present a localised smell. Further, a separate display for each nostril is required to provide inter-nasal time and intensity differences.

In other words, if digitised smell could be artistically all-important, because it bypasses our conscious brain and is directly processed by a group of brain structures involved in various emotions such as aggression, fear, pleasure and also in the formation of memory known as the limbic system—possibly the reason why, like taste (subordinated to smell) and, to a minor extent, touch, the ability to digitise it came later—a fully successful implementation would seem to depend on a more accurate spatialisation of the digital construct or a more complete virtualisation of the remapped “aesthetic” space. Thus, if bitmaps and jpegs caught the mind’s eye, MP3s made a lot of noise, and, as we shall see, haptic devices successfully took us by the hand, e-smells only managed to kick up a virtual stink, and the promise, reworking the old adage, that you could now smell your cake and download it—as a whiff, if not a .gif—never really came to pass.

b) From Digital to Virtual: VLKs and HMDs

Despite some terminological contamination, it is worth keeping an operative distinction between the digital and the virtual. This necessity is no more emblematically apparent than in the “breakfast scene” of *The Matrix*, when Mouse’s proposal to arrange a personalised encounter for Neo with “the woman in the red dress,” whom he has created as part of the computer programme of the Construct, is met with Switch calling him a “digital pimp.” Here “virtual pimp” would simply have oriented towards a radically different and inaccurate reading of the interface between aesthetic extension by coding and immersion

into another dimension of the “real,” within this reality-as-truth which the grim, AI-controlled universe stands for. Yet a working separation of categories ought ultimately to be based on a gradation of immersive technologies on a spectrum from the material, physical real to virtual reality via the digital, rather than on watertight boundaries, i.e. on perceptual experience rather than conceptual a priori, as a brief comparison between digital and virtual keyboards, haptic devices or even more complete and complex “cyberware” will make clear.

The VLK, according to its website at <http://www.virtual-laser-keyboard.com>, works by using both infrared and laser technology to produce an invisible circuit and project a full-size virtual keyboard on to any surface; direction technology based on optical recognition enables the user to tap the images of the keys, complete with realistic sounds, which then feeds into a compatible device (PDA, Smartphone, laptop or PC). The keyboard template is projected onto the desktop through a holographic optical element with a red diode laser. At the same time, there is an infrared plane of light that is transmitted across the surface of the desktop (and an image of which can only be captured with a night vision camera). When the user depresses a key that is part of the holographic image, the reflected light passes through an infrared filter and is imaged on to a CMOS image sensor in the sensor module. The sensor chip then determines what location the reflected light came from in order to generate the correct graphical sign or combination (see fig. 1).

While this is clearly a virtual device—not the digitisation of a keyboard, as in typing software, for instance—its virtuality rests on the traditional perception of a material keyboard, not only what it looks like but especially what it *feels* or rather *sounds* like (hence the “helpfully realistic” sound effects of hitting what the German and Italian languages, for example, call *Tasten* and *tasti*: keys [keyboard: *Tastatur*; *tastiera*]), and the only difference say from the various semi-digital, semi-virtual representations on a touch screen is that it effectively works as a separate hardware rather than being embedded in another

device (the monitor), though both rely on drivers and software in order to interface with the OS and other computer components.

Haptics, or the study of touch and tactile sensations, especially as a means of communication, was made popular to the mainstream user by the introduction of force-feedback technology for a range of gaming devices (gamepad, joystick, wheel, or mouse) and a software controller such as TouchWare, patented by Immersion (the company also behind the iDrive controls on the new BMW 7-series) to smooth out the relationship between the haptic peripheral and the game. The vibration is still linked to the sound card, but the additional software interface allows the user to program haptic sensations or even whole “themes” into game controller button presses, create settings for each game and save them as customised profiles. The most popular device was Logitech’s iFeel Mouse, soon followed by Saitek’s TouchForce, the first standard optical mouse to let the user experience haptic effects in games or elements of the GUI, and whose realism is achieved by varying the strength, timing and frequency of a little internal vibrating motor: for instance, tactile vibrations in the hand when the first-person character falls dramatically in games that support Immersion’s feedback technology, bouncing off desktop icons, etc.

A more radical crossing of the threshold between the projection of the material into the digital and absorption into a virtual environment is achieved by hardware which combines HMDs or head-mounted displays, 3D goggles with small LCD screens which link the user’s visual field with the computer-generated 3D images of a virtual world while shutting out the primary visual world, head trackers allowing one to use one’s head like a mouse (for example eyephones), and datagloves which enable the user to manipulate objects perceived in the artificial environment. Automatically generating stereo imagery through signal processing software and using force feedback technology linked to similar audio functionality—for e.g. totally

immersive gaming chairs which combine a sound system with tactile feedback surrounds from all angles—these more complex, often multi-part devices are not only separate peripherals but also function as prosthetic appendages to parts of the human body (the eyes and head, the hands and arms). The greater the technological adjuncts extending the spatial functionality of the human frame, the deeper the level of immersion into virtuality and the greater the substitutability or erasability of a supplemental or “augmentable” real.

In the wake of a growing body of evidence which suggests that consciousness is the phenomenon of a machine reflecting on itself, or of compelling arguments by scientists and philosophers alike (such as Marvin Minsky, Daniel Dennett, Richard Dawkins²⁶ and Steven Pinker) about the computational nature of the mind, the evolutionary outcome of man’s machinic extension was recently described by Andy Clark in *Natural-Born Cyborgs: Minds, Technologies and the Future of Human Intelligence*, for whom we humans are not just becoming one with the machine through such increasingly intimate biotechnological interfaces (e.g. datasuits and wearable computers; see www.vrealities.com) but are already and even always have been cyborgs on account of our cortical plasticity, for whom tools, including force and torque sensors buried in the arm (cf. *The Matrix*, or the bioport implanted in the player’s spine in David Cronenberg’s *eXistenZ* [1999]), become a prosthetic extension of not just the human hand and the sense of touch but the human brain as well. Ultimately the craze for VR, then the move to AR, of the last two decades paved the way towards a fully cyberspatial experience of the kind popularised by William Gibson in his fiction and Donna Haraway in posthumanist “cybercriticism,” whereby an all-too-human aesthetics of the material senses has gradually given way to the cyborg prosthetics or “cybersthetics” of virtual or

²⁶ See, for example, Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1989), in which Dawkins introduces the concept of self-reproducing ideas, or memes, which use humans exclusively for their propagation.

even artificial constructs, and an aesthetic “matter of taste” to a cybersthetic “taste of matter.” In a short conclusion we shall come back to the overstated claims of what the pioneer of VR, Jaron Lanier rightly criticised as “cybernetic totalism” and yet take on board a more modest, “realistic” version of its technocratic scenarios in order to point towards a critical “taste for the future.”

4. *Virtual Translations: Towards a Deconstruction of Taste and a Touch of Deconstruction in Digital Theory*

There are 10 kinds of people in the world:
those who understand binary and those who don't

While the digitisation and virtualisation of the five senses seems to blur the boundary between the aistheta and the noemata through the programming “translation” of immediate sensorial experience, this conversion of the physical into the metaphysical inaugurates a feedback effect as the digital encoding generates in return a new sensorial stimulus which can then be harnessed into further aesthetic creation and interaction (as in video games, especially the immersive FPS, but also, more mundanely, the ability to disinfect rooms via a digitised fragrance's disinfectant properties). Thus what is at stake is a generalised *contiguity* of the digital and the “virtureal” as a more general, archaic form of the real (“archē-real”), as well as of the five senses, whose diverse elements contagiously feed from one another in an interminable loop, albeit contingently or tangentially at times.²⁷

I would like to loop the loop of these critical attritions between senses, across the digital and the virtual, from the

²⁷ A more patient analysis here would need to recall the contiguity of “touched” and “moved,” sensual motion and e-motion, including in the modernist (especially Joycean) fascination for the kinship between dance, gesture and emotion understood as rhythmic e-motion. See for e.g. Laurent Milesi, “Joycean Choreo-graphies in *Stephen Hero* and *A Portrait of the Artist as a Young Man*,” *Hypermedia Joyce Studies* 7. 1 (2006): <http://hjs.ff.cuni.cz>.

aesthetic to the cybersthetic, by exploring the so far untravelled avenue of how the digital and the haptic, a certain “philosophical” as well as philological translation of the latter into the former, could point towards a deconstruction of the family of “taste,” “tact” and “touch” that would open them to a more archaic “virtureality.”

The “translation” of the Greek *haptēin* (to touch → haptic) into Latin *digitus* (finger, toe → digital) tacitly recalls what took place within the early history of metaphysics, when concrete, pre-Socratic attributes took a turn for the abstract in their Platonic afterlife—such as the *eidos* or image, which became “idea” or “*theōria*,” which originally meant spectacle, contemplation. If the haptic is to the sense of touch in the actual what the digital is to its abstraction or idealisation in the virtual, where it is mediated by the (mind’s) eye, digitisation could be metonymically extended to signify the trope of translation within ancient philosophy itself, from pre-Socratic to post-Socratic philosophy, as well as from the Greeks to the Romans.

More generally, such a process of translation would be required to articulate the necessity of a shift from a humanist conception of taste attendant upon the five physical senses to its posthumanist extension capable of accommodating the virtualisation and tele-technologisation of the *aistheta*, from contiguity (presence-as-continuity, touch) to contingency. And starting from Heim’s suggestion that: “To be touched, we need to introduce some sensory awareness. VR may develop a kind of feedback in which presence includes an openness and sensitivity of the whole body,”²⁸ this new taste of the future would be open to a more generalisable conception of the virtual as always already in any “aesthetic” experience. Just as posthuman man must be able to be “touched” and “moved” by non-first-person entities in the virtual world (including for instance projections of the self as avatars, hence the proven recent emergence of Alternate World Syndrome or Disorder)—

²⁸ Heim, *The Metaphysics of Virtual Reality*, 128.

and what is called “emotion” would have to be understood also according to the paradigm of e-mail—their taste will likewise have to accommodate non-physical experiences generated by the interaction or interface with VR or AR. Such an “invention,” not unlike the spirit of deconstruction, would also welcome the advent of simulation and of the simulacrum, of the “as if it were real” as the experience of the possibility of the impossible—the mighty power of the *en puissance* of an “as if” not only as potentiality (the “old” virtuality versus actuality) but also as potency.²⁹ This general revirtualisation of the sensorial space would thus preside over the emergence of a whole new conception of aesthetics and a remapping of its field (whose new artists would be the “digerati”), with the attendant notions of taste, but also, as we saw, representation, emotion, etc.

In the next fifty years, artificial intelligence, nanotechnology, genetic engineering and a complex growing range of up-and-coming (tele)technologies (including tele-immersion) will allow human beings to transcend the limitations of the body and presence in space-time.³⁰ Our senses and cognition will be enhanced and we will have greater control over our emotions, tastes and memory; our bodies and brains will be surrounded by, if not merged with, computer power, and we will harness these technologies to redesign ourselves and our children into the future “posthumans” or “transhumans,” in keeping with Jaron Lanier’s “Law of Eternal Improvement for VR,” according to which average human sensory perception will gain acuity over successive generations in tandem with improvements in media (tele)technologies.

²⁹ Jacques Derrida, *H.C. for Life, That is to Say ...* trans. Stefan Herbrechter and Laurent Milesi (Stanford: Stanford University Press, 2006) *passim*.

³⁰ One such breakthrough technology is Intravenous Catheterisation, the first in a series of simulation programs available for use with the CathSim Intravenous Training System, the Vascular Access Simulator from Immersion Medical. CathSim combines software, the AccuTouch Intravenous Interface and feedback device, and a PC to create training scenarios where the human patient and proxy devices exhibit realistic mass, feel, and natural reactions such as bleeding and resistance.

Yet, despite his ground-breaking work and involvement in such pioneer technologies, Lanier exposed, in “One Half of a Manifesto,” the fallacious beliefs of what he called “cybernetic totalism,” especially:

- ✧ that cybernetic patterns of information provide the ultimate and best way to understand reality;
- ✧ that people are no more than cybernetic patterns;
- ✧ that subjective experience either does not exist, or is unimportant because it is some sort of ambient or peripheral effect;
- ✧ that what Darwin described in biology is in fact also the singular, superior description of all possible creativity and culture.³¹

My own tentative cyberisation of taste via a deconstructive reinscription of touch and virtuality was in no way meant as a rude wake-up call to dispense with—or as a funeral wake for—the old order of cultural values and practices, the cognitive impact of subjective experience or even “reality itself.” Rather—and hence my digital rereading of Lawrence’s emblematic story at the beginning—such a timely reappraisal and remapping of our aesthetic categories and constructions could be fed back into more established artistic modes of creation (like literature), so that our good old tangible texts would not only be digitisable as hypertexts but their aesthetic force would find itself redeployed in such new readings, allowing them to acquire a new taste and to touch us anew.³²

³¹ Jaron Lanier, “One Half of a Manifesto,” *Edge* 74: “The Third Culture” (25 September 2000): http://www.edge.org/3rd_culture/lanier/lanier_index.html.

³² In this respect one precursor model could be found in James Joyce’s *Finnegans Wake*, which had somehow envisioned such a move (and the overall critical trajectory of this paper), from its well-known self-description as “*verbiuocovisual*” (341.18) hinting at the necessity of a sensorial layering of meaning in its linguistic coinages for identificatory purposes, to the text’s overall reticular construction and re-drawing of the boundaries between presence (reality) and absence (virtuality) via its portmanteau idiom. The intrinsically hypertextual feel of the *Wake* opens it up to a cyberspatial,

fig. 1. *The Virtual Laser (Bluetooth) Keyboard*



cybersthetic dimension, which in “HyperWake 3D” I defined as: “The random navigation by the Wakean cybernaut ... among organised strands of perceptual, sensorial data which shape new potential virtual realities with every new Wakean cross-fertilisation” (Laurent Milesi, “HyperWake 3D,” *JoyceMedia: James Joyce, Hypermedia and Textual Genetics*, ed. Louis Armand [Prague: Litteraria Pragensia, 2004] 69)—such as the “telesmell” (95.12), whose coinage felicitously anticipates the recent osmic technology and a parodic instance of which appears in one of Issy’s footnotes in the “Lessons” chapter (II.2): “Gee each owe tea eye smells fish” (299.F3), fleshing out George Bernard Shaw’s pointed remark that “GHOTI” spells “fish,” pronounced as in enouGH, wOMen, and naTIon: the distribution of sounds virtually at work in deceptive visual written forms “smells” fishy.

Michael Greaney

Suspended Animation: Futures of Technophobia

In this discussion I will read the implications of recent philosophical work on technology and subjectivity into a range of literary and cinematic texts whose fascination with technics is marked by a powerful vein of technophobia. My argument takes its cue from Gilbert Simondon's remarks, at the outset of *Du mode d'existence des objets techniques* (1958), about the adversarial relationship between culture and technics:

La culture s'est constituée en système de défense contre le technique; or, cette défense se présente comme une défense de l'homme, supposant que les objets techniques ne contiennent pas de réalité humaine.¹

Since the advent of the machine age, it seems, culture has sought to disqualify the technical objects that surround us from any share in the qualities—such as imagination, creativity and intelligent self-awareness—that we like to think of as definitively human. From Mary Shelley's *Frankenstein* through the hellish factories of Victorian fiction and dehumanised

* I am grateful to Arthur Bradley for his helpful comments on a draft version of this chapter.

¹ Gilbert Simondon, *Du Mode d'existence des Objets Techniques*, revised edition (Paris: Aubier, 1989) 9.

cityscapes of modernism to the science fiction dystopias of modern fiction and film, culture has found endless ways to classify the “mechanical,” “artificial,” “technical,” “inorganic” and “man-made” as inhuman and therefore ontologically second-rate. But the logic underpinning these attempts to preserve humanity’s monopoly on the human is vulnerable in two major ways. On the one hand, the astounding evolution of technology in modern times—the development, for example, of computing and information processing technologies that can massively outperform human capacities—is such that we can no longer simply discount technical objects as so many inert artefacts. On the other, recent philosophical work by Jacques Derrida, Bernard Stiegler and others on what has become known as “originary technicity” attributes the very emergence of human subjectivity to a certain negotiation with the technical. If the human subject cannot be present to itself without recourse to technologies of inscription, for example, then humanity’s gestures of cultural self-defence begin to seem like a very perverse kind of shadow-boxing. By the same token, the question of whether culture can be trusted to police the all-important frontier between human nature and inhuman technics is severely problematised by the fact that there can be no culture *without* technics, since culture is dependent for its very existence on technologies of inscription and representation—which is to say that culture is often a disguised manifestation of its own arch-enemy. Nowhere is this contradiction more vividly on show than in the hi-tech technophobia of science fiction movies like the *Terminator* and *Matrix* trilogies, where state-of-the-art special effects are deployed to articulate the most paranoid fantasies of a future dominated by murderously oppressive machines. A kind of hi-tech Luddite sensibility seems to energise these movies, one that repeatedly and compulsively fantasises the wholesale destruction of the very advanced technologies on which its narratives are formally dependent. Something of this paradox is captured by the title of Daniel Dinello’s recent study of science

fiction and posthumanism from *A.I. to The X-Files—Technophobia!* (2005)—where the jaunty exclamation mark injects a note of camp exaggeration into the whole business, as though to suggest that fear of technology may be nothing more than the lucrative recreational paranoia of a culture of closet technophiles who visit all manner of punitive violence on the machines they secretly adore.²

Before considering some examples of ambiguous technophobia/philia in more detail, I would like to dwell further on the value for cultural studies of the ideas of one of the most influential contemporary philosophers of technology, Bernard Stiegler. In the first volume of his monumental ongoing project, *Technics and Time*, Stiegler claims that “contemporary technics ... reveals itself at one and the same time as human power and as the power for the self-destruction of humanity,” and that modern technology threatens to “destroy some of the oldest ideas that humanity has of itself.”³ He is referring here partly to the very obvious threats of massive destruction posed by quasi-autonomous weapon systems, media-savvy terrorism and the ecological degradation that flows from industrial capitalism, and also to the possibility that developments in genetic manipulation and nanotechnologies may lead humanity at some point in the near future simply to upgrade itself out of existence. But there is an important philosophical sense in which it seems quite redundant to deliver humankind a collective memento mori of this kind, since according to Stiegler’s logic our pure or originary humanity has been contaminated by technology from outset—which is to say that the apocalyptic scenarios he sketches will never come to pass because they have always-already happened. Stiegler develops this argument in a detailed

² Daniel Dinello, *Technophobia!: Science Fiction Visions of Posthuman Technology* (Austin: University of Texas Press, 2005).

³ Bernard Stiegler, *Technics and Time 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1988) 85; 87.

consideration of the constitutive interplay between “human nature” and its various technical prostheses. Like Simondon, Stiegler points out that although “human nature” likes to think of itself as something pre- or non-technological, the very possibilities of self-reflection, self-expression and self-consciousness are dependent on technologies of inscription; without this technology there can be no continuity of self-awareness across time, no means of commemorating the past or anticipating the future, and no means of transmitting such knowledge from one generation to the next. In a powerful extension of a Derridean “logic of the supplement” into our anthropological pre-history, Stiegler thus shows how the very existence of our shared “human nature” is somehow logically dependent on the tools that we thought we created. If “humanity” is thus paradoxically defined by its own add-ons or optional extras, then it seems plausible, as Stiegler suggests, to think of “the appearance of man as his disappearance.”⁴ *Technics and Time* represents an extraordinarily wide-ranging attempt to fathom the implications of humankind’s inaugural vanishing-act, but I would like to tease out just two key strands of the argument: the ontological anxieties provoked by Stiegler’s prosthetic model of human nature; and the repressive hypothesis that appears to be operating in his celebrated re-reading of the Prometheus myth.

In pursuit of his argument that mortals are “prosthetic in their very being,”⁵ Stiegler observes that “pro-thesis,” in etymological terms, denotes what is placed in front of a given thing. But “if what is outside constitutes the very being of what it lies outside of, then this being is *outside itself*”; accordingly, if human subjectivity is constituted by interaction with its technological supplements, then being is necessarily “being-outside-oneself.”⁶ This inside-out model of human subjectivity confers an uncanny aura on those technical objects onto which

⁴ Stiegler, *Technics and Time*, 125.

⁵ Stiegler, *Technics and Time*, 198.

⁶ Stiegler, *Technics and Time*, 193

our subjectivity has been displaced; and because our sense of temporality is achieved through these technical objects, then prosthesis can be thought of, in post-Heideggerian terms, as representing not only being-outside-oneself but also “being-towards-death”:

Hence prostheses, when visible, frighten or fascinate, as *marks* of mortality: the knife that the *mageiros*, butcher and sacrificial killer, is reluctant to use and that he flings from himself as soon as the animal has been killed, ... the wooden leg, the nineteenth-century steam engine, the set of dentures at the bottom of the glass, the television hallucinating intimacy, the robot on the automated factory floor, the computer chess-champion, translating machines ... There is nothing but prosthesis: my glasses, my shoes, the pen, the diary, or the money in my pocket; and because they are frightening, their visibility is reduced.⁷

Stiegler here beckons us into a veritable curiosity shop of idiosyncratic prostheses, a captivatingly off-putting collection of quasi-human bric-a-brac that provokes an exemplary mixture of fear and desire. The superstitious dread that ripples through this passage is curiously at odds with the more general lesson of *Technics and Time*—namely, that human nature cannot meaningfully take up a stance either pro or contra the technicity that inescapably constitutes it. But when Stiegler contemplates the prostheses that surround and crowd in on him, it is as though technophilia and technophobia have become virtually synonymous reactions to the human subject’s shocking discovery of its origins in the inhuman. When Stiegler writes himself into the narrative (“my glasses, my shoes ... my pocket”) the shift from philosophical detachment to personal involvement seems to capture some of the force of this profoundly unsettling revelation. With its vision of a prostheticity that steals into the very “personal” space of the

⁷ Stiegler, *Technics and Time*, 199-200.

philosopher, *Technics and Time* at this point witnesses a disturbing violation of what Elaine L. Graham calls the “ontological hygiene of the human.”⁸ For all that “human nature” dreams of flourishing in splendid isolation from demeaning contact with sub- or inhuman machinery, Graham claims that we can longer rely on such ancient binarisms as agent/object, external/internal or organic/artificial to “demarcate the normatively ‘human’ as an enclave against the non-human”⁹ and argues for a new sense of hybridity and crossover between the human subject and its technological alter egos. Stiegler, on the other hand, points towards what has been a more traditional response to any threat to the ontological hygiene of the human: the repression of technology. If the butcher’s knife or wooden leg seem frightening or uncanny, the money jangling in your pocket is anything but exotic—and it is precisely by de-exoticising technology, by keeping it close and covering it up, that we have traditionally dismissed its unnerving claims on our attention. On a more general level it seems fair to say that, for Stiegler, there is an important sense in which the history of technology has been the history of its repression, and that *Technics and Time*—particularly in its re-reading of the Prometheus myth—represents a concerted attempt to lift that repression.¹⁰

When Stiegler revisits the Prometheus myth as it is recorded in Plato’s *Protagoras*, he makes Prometheus’s brother Epimetheus the unlikely hero of the piece, since it was Epimetheus’s oversight—he becomes so engrossed in granting other species appropriate powers and skills that he leaves

⁸ See Elaine L. Graham, *Representations of the Post/human: Monsters, Aliens and Others in Popular Culture* (Manchester: Manchester University Press, 2002) 11-2; 33-7.

⁹ Graham, *Representations of the Post/human*, 33.

¹⁰ Though it has been pointed out that whilst Stiegler reprimands metaphysics for its repression of technicity, he does so in the context of “a perfectly metaphysical narrative, with a pre-history, a catastrophic fall, and a need to overcome that fall.” Geoffrey Bennington, “Emergencies,” *Derridas*, eds. Timothy Clark and Nicholas Royle, *The Oxford Literary Review* 18 (1996): 183.

nothing for humankind—that left Prometheus having to steal fire and skill in the arts from the Gods. Epimetheus thus leaves humankind defenceless, and also confers on humankind a strange kind of ontological anonymity—people are set to go forth into the world “naked and unshod, without bedding or weapons”¹¹: unlike the creatures whom he endows with strength, speed or flight, the quality of humankind is to have no quality. For Stiegler, Epimetheus is the forgotten forgetter, and the fact that everyone knows of Prometheus but no one remembers his brother is entirely symptomatic of the repression of technicity by western philosophy. One intriguing upshot of this line of argument is that if Stiegler is offering a corrective to western philosophy’s long-standing amnesia about originary technicity, then he is constructing a version of intellectual history in which he gets to play Prometheus to everyone else’s Epimetheus, since *Technics and Time* is designed to supplement the gaps left in thought by those absent-minded philosophers who have managed to forget or ignore technics. Stiegler’s argument thus oscillates instructively between Epimetheus and Prometheus—he champions the former as the unsung hero or idiot savant of the story of humankind’s originary technicity, but he can only do so by repeating the salvage operation performed by the latter. But this oscillation, between the tragicomic absent-mindedness of Epimetheus and the canny foresight of his brother, crucially defines human subjectivity as a primal lack for which technological know-how abundantly over-compensates without ever wholly making good that originary deficiency. To borrow an analogy from popular culture, Epimetheus’s oversight leaves humanity in roughly the same vulnerable position occupied by James Bond at that moment in the film after he has been briefed by M but before he has been weaponised by Q: although he is in a position of ostensibly superior knowledge, 007 is still a “man without qualities” until he has been tricked out with the necessary

¹¹ Plato, *Protagoras* 321c, *Plato: Protagoras and Meno*, trans. Robert C. Bartlett (Ithaca: Cornell University Press, 2004) 17.

gadgetry—the handgun, customised car, miniature explosives, and so forth. And if “James Bond” is nothing but the sum of his lethal toys then he is exemplarily human in a scheme of things where being is definitively “being-outside-onself.”

It would not be too difficult for the post-Stieglerian critic to read the James Bond films as the saga of a sort of postmodern homo faber, a virtuoso of gadgetry who puts technology to the service of humanity in a battle against monstrously inhuman machines: Richard Kiel’s metal teeth in *The Spy Who Loved Me* (1977) and *Moonraker* (1979), for example, provide a gleaming illustration of the fear and fascination of the prosthetic as it is explored in *Technics and Time*. More generally the standard Bond plot finale—the race to defuse the doomsday weapon wielded by the crackpot tycoon or renegade master-spy in his missile silo or space station—seems to provide endless variations on the theme of humankind’s relationship with technology as a frantic search for the off-switch. But the idea of a Stieglerian reading of a science fiction or gadget-obsessed narrative does, nevertheless, need a little more preliminary justification. Though Stiegler’s work should make us think twice before trying to preserve some pre-technological essence of humanity from contamination by the technological, it seems legitimate to ask quite how the “repressive hypothesis” that seems to underpin his argument—the idea of technology as the forgotten or unthought “other” of philosophy—squares with the massive cultural visibility of technics in the modern world. On the one hand humanism has been chronically squeamish about thinking through its constitutive relation to the technological; on the other, now that our culture abounds in philosophically literate narratives about hyperintelligent supercomputers, uncannily lifelike robots and wraparound virtual worlds, it seems as though we can think of little else. It might be legitimate to argue, therefore, that culture has defended itself against technics not by ignoring or repressing it but by confronting it, fantasising obsessively over its power and potential, and sending us cautionary tales and scare-stories

from any number of dystopian technocracies of the future. The fate of “human nature” at the hands of ever-more-powerful technologies has unsurprisingly provoked some of the most paranoiacally technophobic science fiction narratives, many of which provide vivid illustrations of “being-outside-oneself.” Each of the narratives I discuss attempts to quarantine a pre-technological essence of humanity from any contamination by the technological—but they do so by imagining technology trying, cold-bloodedly, to purify itself of any trace of the human. In pursuing this argument I will focus on three imperilled subject positions carved out for “human nature” in the dystopian technocracies of the future. First, human subjects are positioned as *objects of mimicry* by machines that harbour quasi-human intelligence. Second, they are positioned as *sleepers*, frozen in suspended animation in environments where operational intelligence has been surrendered to computers. Third, they are constructed as *garbage*, disposable matter to be crushed and jettisoned by a system that is poised to emancipate itself from any dependence on organic life.

Imitation Games

“The only initial difference between man and animals,” says Stiegler, “is that man is inclined to mimic them all.”¹² This talent for mimicry would appear to be a necessary consequence of the ontological anonymity conferred on humankind when Epimetheus missed the opportunity to equip them with a definitive skill or power. In the absence of innate defining qualities, human beings are obliged to imitate the creatures they see around them; mimicry is thus a striking manifestation of “being-outside-oneself.” But it is a measure of the fragility of the category of “human nature” that the *only* difference between animals and human beings is the latter’s inclination to disguise that very difference as sameness: it is as though what

¹² Stiegler, *Technics and Time*, 121.

distinguishes humanity is a certain propensity to camouflage its own distinctiveness. But if to think of ourselves as nature's great impersonators seems to entail an emptying-out of human subjectivity, things are no less problematic when this model is reversed and human nature is constructed as the *object* of mimicry. In recent years debates about artificial intelligence have repeatedly broached the question of whether man-made technology will one day exhibit something resembling human intelligence or consciousness—or even pass itself off as human. Alan Turing's famous "imitation game," first proposed in 1950, has become the canonical test for the existence of artificial intelligence.¹³ Turing's question-and-answer scenario between a human investigator and an anonymous—possibly human, possibly mechanical—interlocutor has become a staple of philosophically literate science fiction films and novels where technical objects mimic their human creators; in particular, such films provide us with an imaginative gloss on the curious fact that in the Turing test the *imitation* of intelligence comes to substitute for intelligence itself.¹⁴ Near-future speculative fictions like Richard Powers's *Galatea 2.2* (1996) and Cole Perriman's *Terminal Games* (1994) have adapted the Turing Test to dramatise humanity's changing relationship with machines on the cusp of self-awareness. In Powers's novel, when scientists bid to create a computer that can fake a convincingly "human" response to Shakespeare, they find that its response seems to contain far more genuine emotion than that of its all-too-predictable flesh-and-blood competitor. In Perriman's novel an animated character in an interactive computer game acquires a mind of its own and thinks of the world outside the computer as entirely virtual; in a reversal of the Turing test, it refuses to

¹³ Alan M. Turing, "Computing Machinery and Intelligence," *Mind* LIX.236 (1950): 433-460.

¹⁴ For a perceptive discussion of the implications of Turing for philosophies of mimesis, see Timothy Clark, "Computers as Universal Mimics: Derrida's Question of Mimesis and the Status of 'Artificial Intelligence,'" *Philosophy Today* 29 (1988): 302-318.

believe that human computer-users are anything but virtual presences. In Philip K. Dick's *Do Androids Dream of Electric Sleep?* (1968), the Voigt-Kampff and Boneli Reflex Arc tests used by investigators to differentiate between androids and human beings are like affect-based Turing Tests with life-or-death consequences.¹⁵ Each of these novels represents an uneasy confrontation with the possibility that one day human thought might become all too successful at replicating itself in "inhuman" form. When a machine does finally pass itself off as human, it seems that human ingenuity will have scored a colossal Pyrrhic victory, since the intelligence on which it once enjoyed a monopoly will thenceforth be shared, however grudgingly, with the machines; at this point, "artificial intelligence" will have passed from being a oxymoron to a tautology.

A deep vein of anthropomorphic paranoia runs through cultural representations of artificial intelligence: from the murderous supercomputer in Stanley Kubrick's *2001: A Space Odyssey* to the indestructible cyborg assassins of the *Terminator* movies, science fiction continually warns of the sinister robotic impersonators who are poised to soak up whatever subjectivity is spilt when human beings are turned inside-out by the machine age. It is not tremendously difficult, however, to read these post-Turing expressions of technophobic paranoia as preemptive gestures of *mastery* over technology. For example, it is intriguing to consider the ways in which the Turing test actually shores up the human model of subjectivity even as it proclaims its imminent obsolescence. The Turing test, it is worth remembering, does not deliver knowledge but predicts an aporia: it predicts a moment when the judge "cannot decide" whether s/he is interacting with a human being or a machine. The Test thus focuses on *undecidability* in the relation between the human and the machine, but this undecidability is deferred

¹⁵ Philip K. Dick, *Do Androids Dream of Electric Sleep?* (London: Orion, 1999 [1968]); Richard Powers, *Galatea 2.2* (London: Abacus, 1996); Cole Perriman, *Terminal Games* (New York: Bantam, 1994).

until the future—which seems to imply that for the time being we can differentiate confidently between the human and the mechanical. And even if the gap between human and the mechanical might seem to be shrinking, the Turing Test, by positioning human subjectivity as the object of mimicry, preserves “human nature” as a ideal standard, something that any incipiently self-conscious entity would naturally wish to emulate; told in this way, the superficially alarming story of the becoming-human of the technical is still, at bottom, a comfortingly anthropocentric fable. But why does humanity flatter itself that technology might want to imitate it? What if inorganic matter were to organise itself in quite different forms, rather than obediently imitating the human? The hair-raising prospect of human beings being stalked by replicants is at least a *thinkable* future for technology, whereas the prospect of the technical object going its own way, developing wholly alien forms of existence rather than settling for the status of human manqué, represents a far more disturbing challenge to the limits of humanist thought.

The sheer unthinkability of modern technology has been a common theme in philosophies of technics ever since Karl Marx claimed that any culture’s self-understanding permanently lags behind the developments in its material base. According to Stiegler, technics has achieved a “new opacity”¹⁶ since the industrial revolution, with the replacement of hand-held tools with machines and systems whose workings are invisible to the naked eye and unfathomable to the non-specialist. Derrida has similarly commented that we all know how to operate our CD players, DVDs, fax machines or personal computers, but we have not even the most elementary idea of how they *work*—and that this unprecedented gap between “knowledge and know-how” is all too prone to be filled by new forms of superstition.¹⁷

¹⁶ Stiegler, *Technics and Time*, 14.

¹⁷ Jacques Derrida, “Faith and Knowledge: The Two Sources of ‘Religion’ at the Limits of Reason Alone,” *Religion*, eds. Jacques Derrida and Gianni Vattimo (Cambridge: Polity, 1998) 56-7.

One such form of superstition takes the form of a nagging suspicion that inscrutably complex technical systems might harbour some form of quasi-human intelligence deep within their mysterious inner circuitry. The crew of the *USS Discovery* in *2001*, for example, find it easier to think of their soft-spoken supercomputer HAL 9000 as an honorary crew-mate and wily chess opponent than as an impersonal machine.¹⁸ The disastrous events that follow, when HAL begins to kill off the crew one by one, reveal this machine as both recognisably human and murderously inhuman. With the example of HAL in mind, it becomes easier to appreciate why technology in science fiction narratives so frequently engages in a desperate bid to humanise itself. From Ridley Scott's *Blade Runner* (1981) to Gary Fleder's *Impostor* (2001) to Michael Bay's *The Island* (2001), the cinema of recent years has witnessed a veritable "attack of the clones," a spate of movies in which flesh-and-blood human beings are menacingly confronted by near-perfect replicas of themselves. Such films offer variations of the theme of the traditional human subject as an endangered species, one that is perversely accelerating its own obsolescence through creating new improved versions of itself. In this sense clone movies provide us with hi-tech corroboration of the notion—famously articulated by Freud in his paper on the uncanny—that to see your own double is to glimpse your own death.¹⁹ But there is no question that what these movies have to say about the future of technology is motivated by anything but a traditional humanist curiosity about the essential properties of the human. Cyborgs and clones are interesting precisely to the extent that they imitate or resemble human beings; and when cyborg intentions towards human beings are construed as violent or hostile then our technological adversaries have least provided an occasion for an eloquent last-ditch defence of the precariously unique value of human life.

¹⁸ *2001: A Space Odyssey*, dir. Stanley Kubrick (Warner, 1968).

¹⁹ Sigmund Freud, "The Uncanny," *Sigmund Freud: Collected Papers*, vol. 4, trans. Joan Riviere (New York: Basic Books, 1959) 368-407.

In Fleder's *Impostor*—which, like *Blade Runner*, is based on a Philip K. Dick short story²⁰—Gary Sinise plays Spencer Olham, a military scientist developing advanced weapons technology who is arrested on suspicion of being a cyborg impostor working for earth's alien adversaries, the Alpha Centurians. Initially, it seems as though Olham has been the victim of a paranoid futuristic witch-hunt led by inquisitors whose surgical instruments of interrogation will destroy him before he can prove his innocence. In the event, the fatal mistake committed by the cold-blooded security experts who arrest Olham is not that they were paranoid, but that they were not paranoid *enough*: their suspect has been murdered by the enemy and replaced by a booby-trapped clone identical in appearance and memories to the original Olham. In this film, the interstellar conflict between Earth and Alpha Centurai is thus little more than a minor skirmish on the fringes of an altogether more ferocious struggle between humanity and its own constitutive technicity. Like the Nexus-6 androids in *Blade Runner*, "Spencer Olham" is thus an Everyman—or Everyrobot—for the age of posthumanism, exhibiting all the pathos of the clone who cannot believe that he is not flesh and blood. Such desperate longing for human status is, of course, a recognisably "human" emotion, and it is a familiar irony of films like *Blade Runner* and *Impostor* that humanity is officially withheld by heartless experts from those who most ardently self-identify as human. A comparable version of this narrative is offered by Michael Bay's *The Island*, which extracts frantic "human" drama from the moment when a human subject finds itself re-classified as a technical object.²¹ In this film the "human" inhabitants of a near-future quarantined colony not only discover that they are in reality clones, but that they have been designed as walking, talking spare-part kits whose organs will be harvested when

²⁰ *Impostor*, dir. Gary Fleder (Miramax, 2001). Cf. Philip K. Dick, "Imposter" (1953), *Second Variety: Volume 2 of the Collected Short Stories of Philip K. Dick* (London: HarperCollins, 1987) 378-94.

²¹ *The Island*, dir. Michael Bay (Warner, 2005).

their human originals (and owners) ever need a transplant. Its heroes, the fugitive clones Lincoln Six Echo and Jordan Two Delta, are thus mutinous citizens of a dystopian technocracy in which there is genuinely “nothing but prosthesis.” When they escape from the colony, however, it as though they have become human—vibrantly, riskily alive—at the very moment that they have cottoned on to their own artificiality. If *Impostor* is about the becoming-technological of the human, then, *The Island* is about the becoming-human of the technological; but in both cases “humanity” is figured, paradoxically, as an effect of its own replicas, and for this reason the films’ “demonology of technology”—to borrow a phrase from Donna J. Haraway—is anything but secure in its humanist underpinnings.²²

Suspended Animation

If technology is the human operation of technical systems, Stiegler argues, then one of its futures is “the disappearance (or the replacement) of the operator.”²³ One of the most striking ways in which science fiction has imagined such a disappearance is in its fascination with the notion of sentient machinery piloting a human cargo of deeply sedated crew through space. Science fiction movies abound in serene images of the human body in suspended animation or “hypersleep” for the duration of long, uneventful journeys across vast interplanetary distances during which spacecraft navigation can be safely entrusted to the autopilot. On the basis of films like *2001* and *Alien*, one might suppose that the interplanetary vessels of the future will resemble nothing so much as futuristic sleep laboratories, where an atmosphere of antiseptic peacefulness reigns while the crew members drift through their benign comas to the reassuring background hum of technology

²² Donna J. Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” *Simians, Cyborgs, and Women: The Reinvention of Nature* (London: Free Association Books, 1991) 181.

²³ Stiegler, *Technics and Time*, 93.

quietly going about its business. Cinematic imagery of this sort, where supine human bodies are festooned with electrodes and encased in womb-like/tomb-like sleeping units while the camera dollies around the spacecraft at its own pace, uses the trope of “suspended animation” to pre-imagine a certain kind of disappearance—possibly temporary, possibly permanent—for the operators of technical systems. On the one hand, suspended animation provides us with a model of human subjectivity that has willingly entrusted its well-being to technology—a child-like surrender of operational intelligence and responsibility that places machinery in the position of vigilant, nurturing parental responsibility occupied by “Mother,” the shipboard computer in Ridley Scott’s *Alien*.²⁴ On the other hand, suspended animation narratives raise the unsettling possibility that technology may turn us all into Sleeping Beauties and Rip van Winkles, in the sense that “hypersleep” seems to grant machines both a new opacity and a temporality that is not limited by human clocks and calendars. In Iain M. Banks’s novel *Excession*, for example, the *Sleeper Service* is a self-aware interplanetary vessel that carries some 30,000 individuals in “Storage”—“undreaming, unaging slumbers” that will last in some cases for hundreds of years—until their “revival criteria” have been met.²⁵ The period of suspended animation, in this context, seems to point to a new relation between technics and time, one in which the structural gap or time-lag between human subjectivity and technology yawns ever wider. Prone to boredom, fatigue, impatience, distraction and ageing, the human subject seems to inhabit a different temporality from that of the unsleeping, unaging, indefatigable, infinitely patient and boredom-immune machine that does its own thing in an insomniac present that stretches towards infinity.

One of the technophobic anxieties that has preyed on the science-fiction imagination is the possibility that self-aware

²⁴ *Alien*, dir. Ridley Scott (20th Century Fox, 1979).

²⁵ Iain M. Banks, *Excession* (London: Orbit, 1996) 81.

technology may one day decide to dispense altogether with its sleepily backward operators. In *Alien* the crew of the *Nostramo* are woken up only to be slaughtered one after the other by the ferocious xenomorphic creature brought on board the ship by its science officer, Ash. Although the film's visceral bloodbath exhibits a powerful horror of the organic, it seems plausible to argue that the *Nostramo's* mild-mannered scientist, rather than its rampaging extraterrestrial, is the true "Alien" of the title, since Ash is unmasked as an android impostor who has been secretly charged with bringing an alien life-form back to earth. The revelation that man-made technology has been secretly in league with humankind's deadly alien adversaries seems to function, in this film, as one way for humanity to distance itself from the all-too-proximate inhumanity of technology. When the alien coils its tentacles around John Hurt's neck, however, it seems to restore him to the very technologically-induced state of "suspended animation" in which he starts the film. In *2001*, meanwhile, the three cryogenically frozen scientists on the *USS Discovery's* Jupiter mission are given no opportunity to wake up, because HAL 9000 simply pulls the plug on their life-support systems. Though it is possible to argue, as Charlie Gere has done, that *2001* is a text in which artificial intelligence promises to become "the last redoubt of humanness,"²⁶ it is equally possible to read the moment when HAL cuts off contact with mission control, deactivates the ship's radio transmitter and dispenses with its own sleeping crew as an unnerving premonition of the moment when technology will break out of the orbit of human experience and evolve in quite unthinkable directions.

The Wachowski brothers' *Matrix* trilogy offers what are probably the most luridly paranoid fantasies we have about technology conspiring against its sleeping creators.²⁷ The films envision a possible future in which the human body becomes nothing more a stockpile of potential energy to be exploited by

²⁶ Charlie Gere, *Art, Time and Technology* (Oxford: Berg, 2006) 163.

²⁷ *The Matrix*, dir. The Wachowski Brothers (Warner, 1999)

machines that have long since emancipated themselves from dependence on human operators. In this regard *The Matrix* and its sequels invite comparison with Heidegger's famous arguments, in "The Question Concerning Technology," about the extent to which humanity itself is challenged, ordered or exploited by the forces of technology that "enframe" the natural world in terms of its exploitability as a "standing reserve" of resources. Though Heidegger concedes that modern technology is "no merely human doing," he nevertheless asserts that "precisely because man is challenged more originally than are the energies of nature, i.e., into the process of ordering, he never is transformed into mere standing-reserve. Since man drives technology forward, he takes part in ordering as a way of revealing."²⁸ One way of reading *The Matrix* might be as an extrapolation of a possibility that Heidegger entertains but promptly rules out—namely that "technology drives man" rather than vice versa; the film's 22nd-century dystopia is one in which humankind has indeed been "transformed into mere standing-reserve," reduced to the status of a bioelectric power-supply for the machines that now dominate the planet. The film's central image for this loss of agency is that of sleep: the vast majority of humanity now lies encased in pods, floating in some quasi-amniotic fluid, hooked up to the system that they power while their residual brain activity flickers deludedly in an illusory late-20th century world conjured up by the Matrix. Sleep, in these films, thus represents a pandemic of false consciousness, an involuntary acquiescence in a purely technocratic regime that sedates humanity's critical faculties; as in *2001* and *Alien*, sleep also represents the gap that is opened up when human subjectivity is de-synchronised from the technologies that run ahead of its understanding and control. What is compellingly ambiguous about the image of "waking up in the future" that occurs so often in science fiction (Thomas

²⁸ Martin Heidegger, "The Question Concerning Technology" [1955], *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977) 18-9.

Anderson, groggily resurfaces from a deep sleep repeatedly during *The Matrix*) is that on the one hand awakening might represent the moment when the human subject snaps out of false consciousness and recovers its autonomy, but on the other it suggests that human subjectivity can only ever wise up belatedly and impotently to its own technological conditions of possibility.

Junk Futures

In Philip K. Dick's *Do Androids Dream of Electric Sheep?*, the radiation-damaged "chickenhead" John Isidore discourses briefly on what he calls "Kipple," which is his nickname for junk and clutter of any description. According to Isidore it is in the nature of Kipple—all the used and useless objects that constantly accumulate around us and that seem to proliferate when we are not around—to drive out "non-Kipple."²⁹ What is interesting about this observation is that Isidore seems to be commenting obliquely on his own position in a world where he has effectively become social Kipple—unvalued, disregarded, and consigned to the fringes of society. The possibility of redeeming that which has been trashed and discarded, of discovering value and permanence in that which has apparently out-lived its usefulness, is something that haunts Dick's novel—where the androids are ambiguously "humanised" by the painfully awareness of their imminent obsolescence—but also figures memorably in other garbage-obsessed science fiction narratives, not least the first two entries in the *Star Wars* saga.

Star Wars and its sequels locate themselves in a dilapidatedly futuristic world, one that is hugely in advance of late-20th century technology but where the machinery has evidently seen better days.³⁰ At the outset of *Star Wars*, having ejected themselves from Princess Leia's imperilled cruiser, the

²⁹ Dick, *Do Androids Dream of Electric Sheep?* 56-57.

³⁰ *Star Wars*, dir. George Lucas (Lucasfilm, 1977).

polyglot android C-3PO and his waddling sidekick R2-D2 crash-land in the wastes of Tatooine where they are scooped up by a rust-coated mobile junkyard piloted by the Jawa, the scavenger creatures who roam the planet. What this sequence establishes is a certain junkyard aesthetic that will define not only the movie's visual style but also its sense of cultural value. In *Star Wars*, whatever is ejected, excreted, or crushed by the imperial system is adduced as a source or embodiment of value: the technology of the film's rattle-taggle rebellion is scuffed and battle-scarred as against the juggernaut of imperial technology which is monstrously powerful and sinister in its uniformity. When Luke Skywalker first claps eyes on the *Millennium Falcon*, for example, he exclaims: "What a piece of junk!" but in *Star Wars* what gets classified as junk is never worthless, as Luke himself discovers when, alongside Han Solo, Leia and Chewbacca, he comes close to being crushed to death in a huge garbage disposal unit on the Empire's giant space station, the Death Star. What this scene memorably dramatises is a certain anxiety about the position of human subjectivity in a technological system that has become virtually autonomous. Once upon a time it seems that machines might wish to emulate human beings; less reassuringly, it is possible to think of machines doing their own thing in their own time while humanity sleeps; but in the scrap-heaps and garbage-crushers of *Star Wars* we might see a new fate for humanity as just so much organic waste to be excreted by an impersonal technological system. The implications of such a position might be glossed with reference to Scott Wilson's Bataillean discussion of popular culture's visceral, impotent rage against the "machine" of techno-capitalism: "'Authenticity' is a continually mobile, lost object that resides nowhere and in nothing other than the 'shit' that is expended, expelled, or repelled by the Machine. But, at the same time, it is in such repellent detritus that the newest most desirable products might be found."³¹ Of

³¹ Scott Wilson, "Writing Excess: The Poetic Principle of Post-Literary Culture," *Literary Theory and Criticism: An Oxford Guide*, ed. Patricia Waugh (Oxford:

course, there is no denying that one example of the commodification of “repellent detritus” might be the unprecedented merchandising bonanza associated with *Star Wars* that transformed the “throwaway” images of popular culture into must-have products. But in the films themselves, “garbage” is also a subject position that human subjectivity finds itself taking up strategically, as when Han Solo’s ship escapes the pursuit of the imperial fleet in *The Empire Strikes Back* by floating away with the trash it has ejected.³² This strategic camouflaging of humanity as junk invites comparison with *The Matrix*, where the freedom fighters led by Morpheus pilot their ship through the labyrinthine subterranean tunnels of the machines’ old waste system (the system is old, presumably, because the machines believe they now possess a perfectly efficient, waste-free system, and have reckoned without the undisposed/undisposable “garbage” of the human). Michael Thompson has described rubbish as a “covert category” that lies between or behind the “overt categories” of “transient” and “durable” to which we assign objects, and it seems possible to think of “human nature” in *Star Wars* and *The Matrix* as a “covert category” in a system that will not officially tolerate its existence.³³ When a totalitarian regime reaches into every corner of the galaxy and invasively probes the inner space of the human mind, it seems as though the garbage chute or disused sewer provides one possible route to the “outside” of that limitless expansionist system. By visualising its heroes’ stories in terms of a certain aesthetics of junk, *Star War* thus provides a surprising reversal of the humanist science fiction narratives discussed by Elaine L. Graham: whereas it is common for science fiction to fuss neurotically over the

Oxford University Press, 2006) 566.

³² *The Empire Strikes Back*, dir. Irving Kershner (Lucasfilm, 1980)

³³ Michael Thompson, *Rubbish Theory: The Creation and Destruction of Value* (Oxford: Oxford University Press, 1979) 7-9. Thompson further argues that: “Rubbish is a consequence of the impossibility of ever fully specifying the relationship between a process and its cognition from a position which must always be contained by such a relationship” (88).

“ontological hygiene of the human,” *Star Wars* and *The Empire Strikes Back* both call into question the ontological hygiene of technology, and represent organic subjectivity as an ineradicable and irrepressible presence on the borders of supposedly inhuman systems. It is nevertheless clear that the redemption of junk in *Star Wars* is the corollary of much more familiar kinds of technophobia. Key moments in the film and its sequels occur where machinery is deactivated: when Luke switches off his ship’s targeting mechanism at the end of *Star Wars*, for example, or when he throws away his light sabre during his final duel with Darth Vader in *Return of the Jedi*, the films celebrate a triumphant disengagement of the organic from the technological. The crucial example of such disengagement would be the liberation of the body of Annakin Skywalker from the shell of Darth Vader at the end of *Return of the Jedi*, which leads in turn to the liberation of the spectral presence of the young, pre-Vader Annakin from his ravaged corpse. This double liberation—of the organic body from its armour-plated life-support system and of the benign ghost from the deadly machine—represents the culmination of the central fantasy of *Star Wars*: a de-prostheticisation of human subjectivity that entails a triumphant re-discovery of being-*inside*-oneself.³⁴ So whereas Graham has plotted (albeit sceptically) a certain evolution in contemporary sci-fi discourses of “*Homo sapiens* or *Homo faber* into *Homo cyberneticus*,” the great fantasy of *Star Wars* is the dream of *Homo sapiens* being rescued from the battered shell of *Homo cyberneticus*.³⁵

³⁴ In terms of merchandising and spin-offs, the *Star Wars* saga has of course managed to sell its viewers huge quantities of the very prosthetics it officially despises. See Donna J. Haraway, *Modest_Witness@Second_Millennium. FemaleMan@Meets_OncoMouse™: Feminism and Technoscience* (New York: Routledge, 1997), for a brief but incisive discussion of science fiction sagas like *Star Wars* and *Star Trek* as a “planetary pandemic of multisite, multimedia, multispecies, multicultural, cyborgian entertainment events ... embedded in transnational, U.S.-dominated broad-spectrum media conglomerates” (13).

³⁵ Graham, *Representations of the Post/human*, 36.

In effecting this transvaluation of junk as human value, and of technology as disposable junk, *Star Wars* might also provide us with ways of thinking about the status of science fiction as a certain kind of cultural “junk” that is most commonly encountered on the fringes of respectable canonical literature. Science fiction is easily caricatured as nerdy, adolescent and cold-bloodedly gadget-centred, squeamish about flesh-and-blood people and more interested in human beings’ relationships with machines than with each other. In the light of the work of philosophers like Stiegler, however, it has become easier for us to see how such caricatures might represent a reproduction at a canonical or disciplinary level of the age-old division between the vitally human and the merely prosthetic. Banished to the margins of canonical respectability, science fiction is the junk or kipple from which we might salvage possible answers to the questions of originary technicity that have been quietly repressed or forgotten in other fields of cultural enquiry, even if the texts I have examined here often seem anything but Stieglerian. One key area of common ground, however, seems to lie in the tension, in Stiegler’s argument, between technics as *unthought* and technics as *unthinkable*; his ambition to construct a theory of technics—that is, to think the unthought—seems fundamentally at odds with his perception that technics is the unthinkable condition of thought. A comparable tension is evident in science fiction, which the post-Stieglerian reader might now regard as a cultural discourse that purports to “think” technology whilst investing everything in a massive repression of its unthinkability; it is a discourse whose impossible job it is to get us on “human” terms with technicity by persuading us that “originary technicity” has not happened—yet. If one of the lessons of *Technics and Time* is that posthumanism is older than humanism, then science fiction’s lurid cautionary tales of human subjectivity variously impersonated, sedated and excreted by technology represent a concerted attempt to re-imagine our “originary posthumanity” not as part of a

constitutive past that we have repressed but as part of an unthinkable future that we can avoid.

Mark Amerika

Technicity, StyleTime, & the Loop: A Gertrude Stein Remix

In the world there is technology, in technology there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is playing, in feeling, anything is enframing, in feeling there is autonomy, in feeling there is epistemology, in feeling there is harmony and entirely situated there is unfolding. All the beings have heartbeats and all the writers have knowing and all the structure has partitioning and all the machines have machining. This makes technicity.

In the world there is technicity, in technicity there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is being, in feeling, anything is embodying, in feeling there is achievement, in feeling there is knowledge, in feeling there is thinking and entirely fabricated there is enframing. All the players have instincts and all the computers have processing and all the narratives have casings and all the filters have filtering. This makes style.

In the world there is style, in style there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is spacing, in feeling, anything is disseminating, in feeling there is proprioception, in feeling there is autocannibalising, in feeling

there is gorging and entirely caffeinated there is speeding. All the robots have instincts and all the people have processing and all the stories have frameworks and all the investigations have investigating. This makes research.

In the world there is research, in research there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is connecting, in feeling, anything is reverberating, in feeling there is acknowledgment, in feeling there is transformation, in feeling there is locating and entirely butchered there is spending. All the consumers have cravings and all the animals have instincts and all the data has lucidity and all the dreams have dreaming. This makes culture.

In the world there is culture, in culture there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is concocting, in feeling, anything is reeling, in feeling there is bombardment, in feeling there is devastation, in feeling there is targeting and entirely slaughtered there is liquidating. All the bankers have musings and all the detractors have arrows and all the rhetoric has spin and all the money is moneyed. This makes currency.

In the world there is currency, in currency there is language, in language there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is constituting, in feeling, anything is pursuing, in feeling there is happiness, in feeling there is tranquility, in feeling there is lawfulness and entirely shredded there is annihilating. All the fanatics have posturing and all the children have brainwash and all the doctrine has poison and all the drugs have drugging. This makes sedation.

In the world there is sedation, in sedation there is sleeping, in sleeping there is meaning, in meaning there is feeling. In meaning there is feeling. In feeling anything is conducting, in feeling, anything is reacting, in feeling there is methodology, in feeling there is abstraction, in feeling there is truthiness and entirely personified there is fiction. All the artists have facility

and all the venues have possibility and all the expression has capacity and all the transmissions have transmitting. This makes information. In the world there is information, in information there is peddling, in peddling there is selling, in selling there is feeling. In selling there is feeling. In feeling anything is selling, in feeling, anything is peddling, in feeling there is demographics, in feeling there is marketing, in feeling there is religion and entirely encapsulated there is living. All the workers have subjecting and all the economies have ruses and all the institutions have sickness and all the bickerers have bickering. This makes socialism.

In the world there is socialism, in socialism there is meddling, in meddling there is relating, in relating there is feeling. In relating there is feeling. In feeling anything is technicity, in feeling, anything is eventualising, in feeling there is interruption, in feeling there is mapping, in feeling there is code and entirely enfolded there is dying. All the technologists have innovating and all the up-and-comers have futurity and all the trends have history and all the makers have making. This makes too.

Contributors

Mark Amerika has been named a “*Time Magazine* 100 Innovator” and has had four digital art retrospectives. His major works include *Grammatron*; *Codework*; *PHON:E:ME*; and *Filmtxt*. Publications include *META/DATA: A Digital Poetics* and *29 Inches: A Long Narrative Poem*. He lectures in the Department of Art and Art History at the University of Colorado, Boulder.

Louis Armand is Director of the Intercultural Studies Programme in the Faculty of Philosophy, Charles University, Prague. His books include *Literate Technologies: Language, Cognition, Technicity*; *Technē: James Joyce, Hypertext and Technology*; and *Incendiary Devices: Discourses of the Other*.

Belinda Barnet lectures in Media and Communications at Swinburne University of Technology, Melbourne. She has also worked as Service Delivery Manager at Ericsson Australia. Her research focuses on the philosophy of technology and new media.

Arthur Bradley is Senior Lecturer in Contemporary Literary Studies at Lancaster University. He has published widely on continental philosophy and is the author of *Negative Theology and Modern French Philosophy* and *Derrida's Of Grammatology: An Edinburgh Philosophical Guide*.

Michael Greaney is Senior Lecturer in Contemporary Literary Studies at Lancaster University. He is the author of *Conrad, Language, and Narrative* and *Contemporary Fiction and the Uses of Theory: The Novel from Structuralism to Postmodernism*.

Christopher Johnson is Professor of French at the University of Nottingham. He is the author of *System and Writing in the Philosophy of Jacques Derrida* and *Claude Lévi-Strauss: the Formative Years*. He is a member of the editorial board of *Paragraph: A Journal of Modern Critical Theory* and a founding member of the Science Technology Culture group at Nottingham.

Geert Lovink is Director of the Institute of Network Cultures within the Interactive Media School at Amsterdam Polytechnic and Associate Professor at the Media & Culture Department, University of Amsterdam. His books include *Dark Fiber; Uncanny Networks;* and *Zero Comments*. In 2005-2006 he was fellow at the Berlin Institute for Advanced Study.

Niall Lucy is a Research Fellow with the Australia Research Institute at Curtin University. His books include *A Derrida Dictionary, Beyond Semiotics: Text, Culture and Technology* and (with Steve Mickler) *The War on Democracy: Conservative Opinion in the Australian Press*.

Laurent Milesi teaches in the Centre for Critical and Cultural Theory at Cardiff University and is a member of the Joyce ITEM-CNRS Research Group in Paris. He is the editor of *James Joyce and the Difference of Language*.

J. Hillis Miller is Distinguished Professor of English and Comparative Literature at the University of California, Irvine. His books include *Fiction and Repetition; The Linguistic Moment; The Ethics of Reading;* and *Deconstruction and Criticism* (with Harold Bloom, Paul de Man, Jacques Derrida, Geoffrey Hartman).

Bernard Stiegler is Director of the Département du Développement Culturel at the Centre Georges-Pompidou and founder of the political group *Ars Industrialis*. His many books include *La technique et le temps; Passer à l'acte; De la misère symbolique;* and *Mécreance et discrédit*.

Donald F. Theall is University Professor Emeritus at Trent University (Canada). He is the author of *The Medium is the Rear View Mirror: Understanding McLuhan; Beyond the Word: Reconstructing Sense in the Joyce Era of Technology, Culture and Communication; James Joyce's Techno-Poetics;* and *The Virtual Marshall McLuhan*.

Darren Tofts is Associate Professor of Media & Communications, Swinburne University of Technology, Melbourne. His publications include *Memory Trade: A Prehistory of Cyberculture* (with Murray McKeich); *Parallax: Essays on Art, Culture and Technology*; *Prefiguring Cyberculture: An Intellectual History* (ed. with Annemarie Jonson and Alessio Cavallaro); and *Interzone: Media Arts in Australia*.

McKenzie Wark is the author of *Virtual Geography: Living with Global Media Events and Dispositions*. His *Hacker Manifesto* was published by Harvard University Press, 2004. He currently lectures at the New School in New York City.

Kenneth C. Werbin is a researcher at the Canadian Research Alliance for Community Innovation and Networking, and is a PhD student in the Department of Communication Studies at Concordia University, Montreal. He is also a moderator for the University of the Streets Public Dialogue Series in Montreal: "Technology, Culture and Power."

Hartmut Winkler teaches media theory and media culture at the University of Paderborn, Germany. His books include *Switching / Zapping*; *Der filmische Raum und der Zuschauer: Apparat, Semantik, Ideology*; and *Docuverse*. His most recent publication is *Diskursökonomie*.