

The Book and its Discontents:

Truth, Information, and the Deathing of the Book

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A DISSERTATION SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN HUMANITIES

YORK UNIVERSITY

TORONTO, ONTARIO

November 2020

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Abstract:

Since the late 1980s numerous writers, both popular and academic, have eagerly engaged in a rhetorical phenomenon titled “the death of the book” or, alternately, “the book is dead.” The frequent, ongoing repetition of these two headlines indicate something of the anxieties brought about by the sudden imposition of a radically different communications technology, along with the profound effects it has rapidly imposed on the practice of every-day living. This study seeks to comprehend and significantly deepen this now commonplace trope, and to examine the reasons and logic behind its sudden appearance and its prevalent use during the digital age. It opens with an investigation of a similar nineteenth century discussion known as “the end of the book,” and identifies and historicizes the origins of a sustained and masculine dissatisfaction with the book that begins most noticeably with Thomas Edison. In the following chapters it undertakes what is an initial in depth history of the ‘death of the book,’ interrogating the many technologies that appeared following the 1870s, all of which sought to divorce the written word from the material instantiations of ink and paper and to forcibly divert textual matter into metal-based, often electrically-driven machines. Along with the trope of “the death of the book,” this dissertation critically maps the century-long construction of a techno-positivist media narrative that has sought to unseat the book from its extraordinarily privileged and perhaps impregnable position in the culture, history, and every day life of Western societies. This narrative is coupled with the popular ‘death of the book’ narrative in order to interrogate and suggest how both seek to domesticate,

normalize and effectively conceal the devastating consequences of manufacturing and disposing of electro-digital technologies, techno-trash, cloud dirt and digital debris. Consequently, the frequent and ongoing appearance of “death of the book” or “the book is dead” headlines are investigated here as strategic tactics that serve to effectively cover up the death of computer technology, and the destabilizing social effects that have followed in the wake of its imposition. Finally, this work locates the ‘death of the book’ rhetoric within a cultural shift between ‘truth’ with all of its epistemological freight, and ‘information’ which is understood to be free of such freight, and is routinely presented instead as objective, and even ‘raw.’ It explores how these varying conceptions are contributing toward a repositioning of the book, not as a dead or superannuated technology, but as a guerilla technology, an outsider, a tool of resistance, rebellion and insubordination, and as a medium that is capable of existing outside the power and the surveillance capabilities of a global digital empire.

Acknowledgements:

Thanks to my wife Deborah Clipperton for her unstinting support and for the many hours when she put aside her own work in order to assist me with mine. Her love and assistance were crucial. My daughters Dorothea and Alicia both faithfully and without question tolerated and supported me through the years of study and writing, and I thank them. My supervisor, Professor Scott McLaren, from the day I walked into his office, provided welcoming and warm guidance without which I could not have proceeded nor completed this research. I want to thank Professor McLaren for his unerring insights, for his deep interest, for countless office visits, emails, careful edits, his astute observations, discussions, and friendship that eventually led to the completion of this work, and made the effort so enjoyable. I could not have done it without him, and I will miss those office hours. I want absolutely to thank Professor Monique Tschofen for her always exacting acumen, for her continued support and guidance, for her commentary and efforts with this dissertation, for her warmth and insight through many years. Professor Steve Bailey always provided a warm and inviting environment for this research, and I am grateful for his support, his astute insights, and his always interesting and thoughtful feedback. Thank you to Professor Margaret Schotte for her much-valued presence on my defense committee, for her generous investment in this work, and for her careful scrutiny of this manuscript. With his own research, my external, Professor Simone Natale, was influential in shaping the origins of this dissertation. Consequently his presence on my defense committee was not only much valued, but ensured a historical credibility for me that extended from the beginning to the end of this research. Thanks also to Professor Victor Shea for being a valuable resource, and for his expert and much appreciated facilitation of both my comprehensive exams, and my final defense. Thanks also to the incredibly helpful people at the Department of Humanities at York. Finally, I want to acknowledge the Social Sciences and Humanities Research Council whose support significantly aided this project.

Table of Contents

<i>Abstract</i>	ii
<i>Acknowledgements</i>	iv
<i>List of Figures</i>	vii
<i>Preface</i>	xii
<i>INTRODUCTION</i>	1
<i>CHAPTER ONE: Re-engineering Text in the Age of Edison</i>	23
Reading With the Eyes Shut.....	26
Edison’s Electric Pen and Duplicating Press.....	45
Reforming the Written Word.....	51
Reading Up: <i>The Rise of Silas Lapham</i>	57
Conclusion: The End of the End of the Book.....	64
Notes.....	67
<i>CHAPTER TWO: A Machine to Think With:</i>	
Machinating the Book.....	69
“Simplicity and compactness personified”.....	71
“A pre-silicon Kindle”	75
“Smash em up words”: Bob Brown and the ‘readies’	81
Manning Up: Vannevar Bush and the Memex.....	90
Angela Ruiz Robles and the Mechanical Encyclopaedia.....	103.

Conclusion.....	109
 <i>CHAPTER THREE: Discoursing the Book to Death.....</i>	 112
“The physical forms which mediate meaning”.....	116
Analyzing the Trope.....	120
“Vague forebodings” and the “reconformed book”	126
Metaphor, agriculture and the edible book.....	129
Moving Beyond the Book.....	135
Users, Consumers, Readers.....	138
The Frozen Static Fixed book.....	143
The No Longer Fluid book.....	146
The Body of the Book/ Bookish Bodies.....	150
Wake Up and Smell the Book.....	153
Information. and “the living speaking...bleeding book.....	160
Conclusion.....	165
 <i>CHAPTER FOUR: Book Destruction and the Death of the Digital</i>	
<i>Part One:</i>	
Reading the Book to Death.....	167
“The only visible change which changes no further”	171
Burnings and Death by Exposure.....	178
<i>Part Two:</i>	
Digital Death, Censorship and Digidice.....	189

Burning the Kindle Fire	192
The Digital is Dead; Long Lives the Death of the Digital.....	196
Conclusion.....	208
 <i>Chapter Five: The Future of the Death of the Book</i>	217
Bar code: the Book as Cyborg.....	219
Contemporary Reading and the Zombie Cookie.....	225
Garagebook	227
Approaching Samizdat: the Book as Dissident Technology.....	232
The Internet and the Book <i>Imaginaire</i>	237
Consequences.....	244
Consequences II: Marginalizing the Margins.....	247
 <i>Conclusion</i>	258
 Works Cited	281
Notes.....	314

List of Figures

Introduction:

Fig. 1. Agbobloshe, Ghana 2019, Wikimedia Commons,
https://commons.wikimedia.org/wiki/File:Agboglobshie,_Ghana_2019.jpg.
Accessed: 30 April 2020.

Fig. 2. Everyday Science Everyday Science and Mechanics Magazine, 1935.
<https://www.smithsonianmag.com/history/the-ipad-of-1935-115653218/>. Accessed:
30 April 2020.

Chapter One:

Fig. 1. “The phonograph at home reading out a daily novel.” From “the Papa of the Phonograph, *Daily Graphic*, New York, 2 April, 1878, The Western Reserve Historical Society, https://www.researchgate.net/figure/The-phonograph-at-home-reading-out-a-novel-From-The-Papa-of-the-Phonograph-Daily_fig2_324569696.
Accessed: 1 May 1 2020.

Fig. 2. Robida, Albert. “Phonographic Literature for the Promenade.” [=robida+phonographic+literature+for+the+promenade&tbm=isch&source=iu&ictx=1&fir=Q86ckGPuGp6nLM%253A%252CHFCQZp71nWTHM%252C_&usg=AI4_kRTtSxlGLWnBadR83Q3GEkCykGw&sa=X&ved=2ahUKEwizxJL1s7PfAhXIqFkKHbRCCj0Q9QEwAHoECAYQBA#imgrc=Q86ckGPuGp6nLM](https://www.researchgate.net/publication/324569696/figure/fig2/324569696/Robida-Albert-Phonographic-Literature-for-the-Promenade). Accessed: 1 May 2020.

Fig 3. “Improvement on Phonograph or Speaking Machines,” patent application, 19 Feb. 1878.
<https://patents.google.com/patent/US200521?q=edison%27s+phonograph>.
Accessed: 1 May 2020

Fig. 4. The manual printing press component of Edison's electric pen ca. 1875. https://zog.typepad.com/annotated/2004/08/1876_the_mimeog.html. (Accessed 1 May 2020).

Fig. 5. The Printing Press. Jost Amman. In: Meggs PB (1998) *A History of Graphic Design*. Toronto: John Wiley & Sons, p 64. Image available at https://commons.wikimedia.org/wiki/File:Printer_in_1568-ce.png. Image cropped by the author. Accessed 31 October 2018.

Fig. 6. The first electrical binary code transmission, 24 May, 1844. Screen capture from "Today in Science History" https://todayinsci.com/M/Morse_Samuel/MorseSamuel-WhatHath-Code.htm. Accessed: 1 May 2020.

Fig. 7. "Book as a constituent of literary architecture." Screen grab, <https://www.gutenberg.org/files/154/154-h/154-h.htm>. Accessed: 1 May 2020.

Chapter Two:

Fig. 1: Fiske's Reading Machine circa 1922. Library of Congress. <https://www.loc.gov/pictures/resource/hec.31633/>. Accessed: 1 May 1 2020

Fig 2. Bob Brown's Reading Machine, 1930s Post Digital Publishing Archive <http://p-dpa.net/bob-browns-reading-machine/>. Accessed: 1 May 2020.

Fig. 3. "Supersecretary of the coming age. Life, 1945. <https://polyarch.co/16-predictions-of-future-living-from-the-past/> Accessed: 1 May 1 2020.

Fig. 4. Vannevar Bush. <https://picclick.com/1950-1959-Yousuf-Karsh-Vannevar-Bush-Engineer-ORIGINAL-312536874385.html#&gid=1&pid=1>. Accessed: 1 May 2020.

Fig. 5. The Memex, *Life* 1945. <https://historycomputer.com/Internet/Dreamers/Bush.html>. Accessed: 1 May 2020.

Fig. 6. Robles with her mechanical encyclopedia. https://codepen.io/cris_bcn/pen/gxrWWr. Accessed: 1 May 2020.

Fig. 7. Close up of Mechanical Encyclopaedia showing numeric counters. <https://www.theguardian.com/world/2018/feb/25/madrid-names-street-after-female-inventor-of-mechanical-ebook>. Accessed: 1 May 2020.

Fig. 8. Close up of Mechanical Encyclopaedia showing scrolls, hand-written. <https://www.theguardian.com/world/2018/feb/25/madrid-names-street-after-female-inventor-of-mechanical-ebook>. Accessed: 2 May 2020.

Fig. 9: Ángela Ruiz Robles: “The teacher who created the eBook ” <https://www.mundiario.com/articulo/sociedad/angela-ruiz-robles-maestra-rural-ferrolana-precursora-libro-digital/20130810112740007872.html>. Accessed: 1 May 2020.

Fig. 10: Google doodle commemorating Angela Luis Robles 121 birthday. <https://www.google.com/doodles/angela-ruiz-robless-121st-birthday>. Accessed: 1 May 2020.

Chapter Three:

Fig. 1. “No one is going to read a book on a twitchy little screen.”

<https://www.theverge.com/2019/3/1/18245079/best-e-reader-amazon-kindle-kobo-ebooks>. Accessed: 2 May 2020.

Fig. 2. A Clockwork Orange” (Albright College Edible Book Festival, 2008)

<https://www.pinterest.ca/pin/33706697181199205/>. Accessed: 2 May 2020.

Fig. 3. The next time you find yourself squinting, recognize the sign and get a Kindle.” <https://www.flickr.com/photos/tebates/4579069138>. Accessed: 2 May 2020.

Fig. 4. The Smell of Books: 52.25 Years of Innovation! <https://durosport.com>. Accessed: 2 May 2020.

Fig. 5. Google Ngram charting “truth, information.” June 1, 2019.

Chapter Four:

Fig. 1. Darnton’s communication circuit

<https://openreflections.wordpress.com/2014/06/16/framing-the-debate-i-historical-discourses-the-struggle-for-both-the-past-and-future-of-the-book/>. Accessed: 2 May 2020.

Fig. 2. “*The fountain pen is the plow. The paper is the land.*”

[https://www.google.com/imgres?imgurl=https://gsp.yale.edu/sites/default/files/images/figure2\(1\).jpg&imgrefurl=https://gsp.yale.edu/literacy-and-education-under-khmer-rouge&docid=o3zEkoJBew2foM&tbnid=MwbmsR4VY02p7M:&vet=1&w=503&h=482&source=sh/x/im](https://www.google.com/imgres?imgurl=https://gsp.yale.edu/sites/default/files/images/figure2(1).jpg&imgrefurl=https://gsp.yale.edu/literacy-and-education-under-khmer-rouge&docid=o3zEkoJBew2foM&tbnid=MwbmsR4VY02p7M:&vet=1&w=503&h=482&source=sh/x/im). Accessed: 2 May 2020.

Fig. 3. Kindle Fire Print ad. <https://ejborchardt.wordpress.com/2015/10/22/kindle->

[fire-print-ad/](#). Accessed: 2 May 2020.

Fig. 4. “Writing spaces,” <https://www.vox.com/world/2017/3/7/14828272/apple-congo-cobalt>. Getty images. Accessed: 2 May 2020.

Chapter Five:

Fig. 1 Reading Time: 6 hrs 9 min left in book

<https://www.techjunkie.com/reset-remaining-chapter-book-time-kindle/>. Accessed: 8 May 2020.

Preface

There comes a time when you realize that everything is a dream, and only those things preserved in writing have any possibility of being real.

James Salter, 2013

An embodied communication is more like a dance than a word. The flow of entangled meaningful bodies of time—

Donna Harraway, 2013

*The reader became the book
and summer night
was like the conscious being of the book*

Wallace Stevens, 1954

what is written in no book, books may still be able to record.

Friedrich Kittler, 1999

In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message.

Marshall McLuhan, 1964

Introduction

This dissertation was brought to its conclusion at the height of a pandemic. Consequently, its writing was surrounded by a language of infection, contamination and virus, a language matching the terminology of contagion, infection and contamination that has become routinely associated with an understanding of “new media.” The SARS-CoV-2 virus brought forth a sobering reminder that a virus is not merely something that happens to computers, that is born within and spreads through its global networks, but rather something that has a living, that is to say non-virtual dimension. It demonstrates that rather than being merely an annoying techno-digital glitch, a virus is also a matter of life and death, and that this life and death extends beyond the largely—but not exclusively—metaphorical life and death with which this research is concerned. In the midst of this virus, writing these words during a government-imposed quarantine, the ‘death of the book’ has become refracted through a lens that was difficult to image when I started this research, and impossible to ignore now that it has come to its conclusion.

That a book can die, that it can be subjected to a media scrutiny insisting that “the book is dead,” that this headline, along with its companion “the death of the book” can routinely appear in major media outlets for more than thirty years, speaks to a fundamental and millennia-old understanding of the book artifact as something that is very much alive. This life, this *aliveness*, forms the core, even the pulse, of this dissertation, along with its putative *death*, long anticipated, or *seemingly*

anticipated, by a multitude of headline writers. Treating both the life and the death of the book, this dissertation is also about what is commonly called “the fate of the book,” as though the outcome of this “ancient technology,” as Kittler describes the book, is in the hands of the Gods which—according to many accounts of the origins of literacy—it is. “The first [characters] were divine” writes Vico (cited in Chartier, *Forms and Meanings* 6), a statement that seems to hold true for all literate cultures: it was the Gods who granted the written word to humankind. Being concerned with the book’s *life*, its, *birth*, its *fate*, and its *death*, this dissertation cannot help but be intimately involved in the *health* of the book. These terms are so familiar as to barely require the italics that are employed here. All highlight an acceptance of the book as a reading technology that is not so much a machine as a body, a human body, even a divinely human body, a technology that, as Thomas à Kempis put it, is to be taken into our hands with all the tenderness as “Simeon the Just took the Child Jesus” (cited in Holbrook 31).

The following chapters investigate how and if such an entity as the book can come to its “death.” Who would wish it, and why? It is possible? Has it taken place? If the book is dead, who or what, brought about its demise? This last question seems to have been answered decades ago by two towering and extremely disparate figures in media studies and two scholars who had a considerable interest in the book—the American pragmatist James Carey, and the German post-structuralist Friedrich Kittler, both of whom arrived at the same conclusion as to what brought the book to its terminal state. The culprit was the invention of the printing press. “From moveable type,” insists Kittler, comes “moveable electrons in silicon chips

(“Perspective and the Book” 50-51). For Kittler it is not the “more powerful image” with its ability to unite humanity that has caused the book to be “played out,” but rather the book itself that “has made its own technological outdoing possible in the first place” (39). Nearly two decades earlier James Carey sounded a similar argument when he stated that the electronics revolution was “unthinkable without the habits of mind, scholarship and social organizations made possible by the printing press” (“Paradox of the Book” 104).

By locating the demise or the “playing out” of the book within book technology itself, both scholars contribute to a possible understanding that is developed in the following chapters, that to present communication as a evolutionary and strictly chronological progression from a big four’ model of orality to literacy, to print, and then computer, is a model that inhibits meaningful understanding of how “media define our condition” (Kittler, *Gramophone, Film, Typewriter* xiii). This dissertation seeks largely to grapple with the very manner in which that is taking place, particularly in the aftermath of the transition, or collision, between the ancient technology of the book, and a powerful consortium of machines understood as the ‘computer age,’ the ‘digital revolution,’ the ‘digital age,’ et cetera, but is here often identified as ‘the digital imperium,’ or ‘regime,’ in acknowledgment of its influence and hegemonic implementation.

What follows emerges from a close, critical, historical and poetical interrogation of a commonplace trope—two headlines that appeared with increasing frequency throughout the 1990s; “the book is dead” and “the death of the book.” These tropes are examined here as an attention-grabbing bait-and-switch

counterarguments, and a rhetorical strategy that assures the public there is little to be worried about in the state of the book. In this way these two complimentary tropes further serve to normalize and domesticate the rapid and apparently unstoppable imposition of a digital regime by insisting it represents no threat to the book and, in fact, as Ted Striphas emphatically argues (2011), offer a hand up to this otherwise faltering technology. The unyielding appearance of these headlines, while serving to alleviate popular concern over a reduced and increasingly negligible cultural role for the book, also operate as crucial strategic narratives. They further conceal the largely untold story of the catastrophic ecological consequences occasioned by the manufacturing and disposing, of digital technology—what Jonathon Sterne has described as the “the public secret” (cited in Lebel 9).

By concentrating attention on the sentimentalized, long-standing, and even fetishistic cultural reverence for the book, the sustained ‘death-of-the-book’ counterargument has effectively diverted public scrutiny away from the ecologically and politically disastrous destruction and manufacture of digital technology. This aggressive cyclical accumulation of suddenly-deemed-obsolete high tech hardware, or “e-waste,” has led to what is now recognized as the fastest growing waste stream on the planet. As Jennifer Gabrys states, the highly-wired West is now using the developing world as a global landfill for digital trash (140). It has also troublingly replicated old colonial routes in which the raw materials of the digital regime are mined in developing countries often governed by unstable regimes, shipped on ocean routes to the West, declared obsolete within months, and reshipped back as ecologically toxic digital trash to places such as the notorious Agbogboshie

Dump in Ghana where “migrant workers and young children scavenge the rubble to earn a living” (Singh).



Fig. 1. Burning electrical wires to recover copper at Agbogbloshie, Ghana, 2010

This devastatingly destructive material dimension to the machines that laboriously and problematically manufacture “virtual reality” is the pivotal and defining point of the digital turn. Yet it has been consistently excised from the dominant narrative that surrounds the digital turn, which is a narrative of triumphalism and enablist and one that has elevated an understanding of new media into what Paul Duguid has termed “liberation technology” (73). To achieve and maintain the mythos of such liberation demands a constant, consistent and purposeful denial of the material realities of the technologies themselves. This denial has been maintained throughout a body of writing that has been frequently acclaimed in new media studies, an authoritative corpus of work that is often cited

yet rarely critically interrogated. This thesis therefore undertakes a long overdue and highly critical reading of texts that were once, and to some extent still are, considered influential in the “new media” field. They include academic studies such as Richard Lanham’s *The Electric Word; Democracy, Technology and the Arts* (1994); Nicholas Negroponte’s *Being Digital* (1996); Bolter and Grusin’s *Remediation: Understanding New Media* (1999); Jay Bolter’s *Writing Space* (2001); and George Landow’s, *Hypertext 3.0* (2006). This analysis extends to less scholarly works such as Sherman Young’s *The Book is Dead—Long Live the Book* (2007), and to trade publications by industry insiders such as *Print is Dead; Books in Our Digital Age* by Jeff Gomez (2008). By systematically denying any material dimension to the “digital revolution” such authors have unwittingly contributed to a dangerously skewed comprehension of digital communications technologies, whitewashing their destructive human and ecological dimensions and replacing them with a vision of the “cool clean electroworld” (Sterling 63). In this vision, digital technology is linked unfailingly to the future, and is viewed as an “agent of unprecedented social transformation...leading to “a new world order” (Carey, “Historical Pragmatism and the Internet” 445).

Such writings have also strained to establish a language that undermines the deep cultural veneration that underpins ink-on-paper technologies, the book in particular, creating a narrative that has come to coexist alongside the trope of the ‘book is dead’. In this narrative, the book is presented as static, lifeless, linear, frozen, constrained, and so forth; a damning series of descriptives allow the authors to discursively position digital technology as precisely the opposite of the suddenly

restrictive and fossilizing book. If any actual death-of-the-book narrative can be said to exist—that is, a narrative that is *not* a bait-and-switch counterargument as deployed by popular media’s ‘death-of-the book’ headlines—it is here, in a largely academic, new media studies’ critique of an ‘old medium.’

As an inquiry into the terminal point of media, both putative and actual, this dissertation reveals an absence of scholarship in this area in regards to both new media *and* the book. In dismissing the ‘death of the book’ as a premature, or baseless fad on the part of amateurs and mainstream pundits, book scholars (and pundits themselves) have paid scant attention as to how the object of their study meets its end. The lengthiest effort in this regard may well be represented by David McKitterick’s 2009 examination of *secondhand books*. While the author notes that what has been “thrown away” of books may be as useful to book studies as “what is kept” (635), the study, comprehensive as it is, represents but a stopping point on a path in which the final destination of the book remains remarkably obscure. Just how obscure is forcibly visualized in Robert Darnton’s influential diagram, the “communication circuit” (see 167). This pictorial representation of the movement of a book through society allows for no end whatsoever—the book simply does not end. That this startling omission has remained unnoticed, or at least largely without comment, indicates how deeply a belief in the book as a deathless and endless artifact has entered not only the popular imagination, but that of book historians as well.

Similarly, the ‘death-of-the-digital’ has received remarkably little attention, and has certainly not been elevated to the level of social panic that popular print

media has invested, and continues to invest in ‘death-of-the book’ concerns. Jennifer Gabrys’ substantial *Digital Rubbish* (2013) represents one of the few comprehensive attempts to map and theorize the hyper obsolescence of digital machines. Jonathon Sterne’s essay “Out With The Trash: the Future of New Media” (2007) offers an approach to new media that is actively pursued in this research. Such an approach maintains that the “constant disposability” of computer technology is one of the most distinguishing features of new media—that the newness of “new media” is based on the continuous and appalling off-shore disposal of machines that are suddenly deemed old, and that this cycle represents the core of digital capitalism. Jussi Parikka’s *Anthrobscene* (2014) offers a media archeological approach that situates digital trash within the “deep time” of media (Zielinski 2006), and involves media theory in the extended life span of geological extracts. These variant approaches of media archeology have been adopted in this dissertation, in particular their rejection of media history as something that progresses from the simple to the complex, the old to the new, along with their pursuit of diverse counter narratives, and willingness to pursue the “unsustainable, politically dubious and ethically suspicious practices that maintain technological culture” (Parikka 6). Media archeology’s disinterest, thus far at least, in considering the *book* as a communications machine that is, in itself, worthy of examination, has been addressed for the purposes of this research, and I have extended the concerns of media archeology to include this decidedly ‘un-new’ medium. In this way, and perhaps in others, this dissertation confronts the noticeable gap between the two distinct silos of media studies and book history. As result of this ‘siloization,’

Friedrich Kittler's (for example) exciting, insightful and provocative writings about the book have been largely shut out from book studies. Similarly, book historian Roger Chartier's exacting, even glacial, historicism can be missing from the practice of new media studies. To some extent, this research has attempted to place such scholars and their disciplines within the pages of the same manuscript in the hope of establishing a productive dialogue. In a like manner, this dissertation frequently examines the book from the perspectives of new media studies, and just as frequently examines new media from the that of book history, again, in the hope of establishing a productive cross talk.

In doing so, I have frequently circled back to a model common to both new media and the book. The 'container model' is one so deeply embedded in the very groundwater of both book and media studies as to go mostly unrecognized. It is perhaps too obvious to even be articulated. In this widely, even unconsciously held model, the book is conceptualized as a container, and *text* as a substance that exists *within* this container. It is a model that, as is discussed in chapter four, has actually become enshrined in law. It is also a model that is turned upside down by McLuhan's simple and unavoidable dictum that the "medium is the message." As with the epochal 'big four' approach to understanding media history (orality *to* literacy *to* print *to* the digital age) the following chapters scrutinize the unspoken acceptance of this container model as one that impedes a meaningful understanding of the book along with a meaningful understanding of electro-digital communications machines. In either case, to consider that information or so-called 'content,' is somehow "free of" or apart from the media that help to define it," as

Lisa Gitleman observes, “merely redoubles the structural amnesia that already pertains” (*Always Already New* 7). This understanding of media as *container* has proved essential to the domestication and normalization of computerized reading machines. If ‘content’ is regarded as happily and totally independent of the container that ‘stores’ it, exchanging that container for another type of modern hardware will produce no effect on the reception and interpretation of that content. Such ‘old wine in new bottles’ modeling has effectively allowed the wholesale re-materialization of text to pass with little critical scrutiny from ink-and-paper based media ‘into’ screen-based electro-digital media machines based on silicon and coltan.

From the onset, this dissertation investigates the book as a carnal and carnate entity, a phenomenon not only understood to be alive metaphorically but also, in many ways, physically alive. From the evolving and aging structures of the cellulose and fibre of its bodily makeup, to the myriad insects that feed off that cellulose and lay eggs within it, to the flowing capillary action that draws the ink deeper through “the pores” of the paper (Gwynne), ink on paper technologies, the book in particular, can be considered “first and foremost as [a] physical artifact [which] has its own peculiar mode of being” (Beal cited in Kowalchuk 5). It is this carnate dimension of “the human book” (Stevenson *x*) of the “bleeding book” (Hennessy 18) that stands in frank, and even somewhat shocking contrast to the putatively cool clean electroworld of electro-digital communications systems—post Gutenberg systems that McLuhan long ago identified as “discarnate” (370). The irreconcilable carnate dimension of the book object, to some extent, may account for the ire and suspicion directed at the book by numerous techno-utopic males writers from the 1990s and

onward.¹ This is most obviously on display in William Mitchell's frequently cited dismissal of books as "tree flakes encased in dead cow" (56). Here the materiality or "brute materiality" of the book (Price, *How to do Things with Books In Victorian England* 73), its intimate proximity to plant and animal matter, inspires a contempt that approaches disgust, and suggests a somewhat different location for what Wendy Chun has termed "the bleeding edge of obsolescence" (*Updating to Remain the Same* 1): in this case not a chronological point, but a point at which discarnate systems of communication are separated from the carnate, and the post human diverges from the human.

Despite the discursive gymnastics that have taken place to somehow rehabilitate the book into an "e-book," this dissertation argues that the frankly physical nature of the former has thwarted the technological drive of the digital age, just as the book thwarted a similar electro-mechanical drive in the age of Edison. This research argues that the book has yet to be incorporated within grand theoretical models such a "remediation" (Bolter, Grusin 1999) or "convergence" popularized by Henry Jenkins (2006). Nor has it been wholly subsumed within what Kittler has called "the data stream" (*Gramophone Film Typewriter* 23). What has been postulated by the authors examined here as a type of 'death of the book' —its static and fossilized nature *vis a vis* the fluid, multi-vocal, hyper democratic realm of "hypertext" is not, as this thesis argues, a failure of the book. Rather it puts on display the inability of the "digital revolution" to overcome the book's fiercely physical nature. Finally, then, this dissertation situates the book, not in a diminished space, a region frequently, and for the last twenty years, defined as "the late age of

print,” but in an historically new location, a new age of print, in which the book object, regardless of its so-called “content” has become a *de facto* subversive technology, a technology that cannot be subjected to the surveillance, (or dataveillance), the social controls, and the digital capitalism of a networked electro-digital communications system—a powerful means of human communication that remains defiantly, and almost inconceivably, both off the electrical grid, and *offline*.

In titling this dissertation “The Deathing of the Book,” I have taken liberties with the noun ‘death.’ Such a liberty is in keeping with other reworkings that have appeared with the use of the internet, and consciously mimics the way that social media has “transform[ed] the meaning and function of the word “friend” (Chun, “Network’s Now” 37). In the way that it is now possible to be “friended,” and “unfriended” and to engage in “friending,” so too is it possible for the book, to be subjected to its “deathing.” This term is practical here because it indicates that what has happened to the book is not a passive occurrence, but a series of actions, of narratives, of ways of thinking and writing, that have been actively directed *at the book*. Whatever is going on within a now decades old flashpoint popularly known as ‘the death of the book ’ it has little to do with structural changes occurring within the book itself. The artifact has remained largely unchanged. What has changed, and changed significantly, are the circumstances *outside* of the book. The rapid imposition of a digital regime has been accompanied by social, political, cultural corporate, global, and gendered forces that actively seek to challenge the book’s status as the reigning cultural engine, as *the* first and foremost communications

technology.

Chapter One locates the historical origins of contemporary ‘death of the book’ headlines in a similar narrative of the late nineteenth century titled, not ‘the death of the book but, “the End of the Book,”—a fictional story written by Octavio Uzanne and published by *Scribners* in 1894. This story was followed by Edward Bellamy’s “With the Eyes Shut,” published five years later in *Harpers New Monthly Magazine*. Together they form the nucleus of a male narrative that happily envisions a new world in which all textuality has been replaced by a “phonographic enunciator.” In the late 1870s such a machine, the phonograph, was patented and marketed by Thomas Edison, who harboured his own skeptical attitudes towards books, and envisioned his device, then frequently known as the “talking machine,” as a long-awaited replacement for the antiquated and inefficient technologies of ink and paper. Given what would become Edison’s grandiose and near mythological status as the Wizard of Menlo Park, his published disparagements of the book stand as a revealing example of the dissatisfaction with books that appeared throughout the nineteenth century. This chapter scrutinizes these dissatisfactions and the various efforts to re-engineer the book and the textual environment during this time, including the telegraph. Examined here is Samuel Morse’s reinterpretation of the alphabet into an electrically driven code, combined with telegraphic straight key technology. In his commanding 1983 essay, “Technology and Ideology: The Case of the Telegraph,” James Carey identified this technology as an understudied “watershed in communication.” This chapter addresses the neglect of this pivotal technology in new media studies, and offers a previously ignored dimension to the

telegraph: a technology that represents the first electro mechanical re-materialization of text as a zero/one symbol system—the long/short, dot/dash—and, as such, announces the appearance of binary code, nearly a century and a half before it is widely considered to have entered into communications history.

Another cultural and technological pressure that confronted textuality during this period was the rapid and aggressive introduction of Pitman shorthand. This system represented a further masculine drive to improve language itself, to make literacy better, faster, more efficient, to strip literacy of its befuddling poetics and rhetoric and pare it down to sheer facticity. Adding to Lisa Gitelman's penetrating work in this area, I have attempted to examine Pitman's shorthand system, and the widespread approval it received, within a larger cultural impatience with-ink on-paper technologies generally, an impatience that appeared to mount as the technologies and infrastructure of electricity gained ground throughout the century.

Despite the technological pressures put on the book during this period, and the rather wide assumption that an electro-mechanical rematerialization was not only possible, but imminent, the century was marked by a rather ringing endorsement of the book, and the appearance of something of a golden age within American literature. Using William Dean Howell's immensely popular novel, *The Rise of Silas Lapham* as a case study, this chapter concludes by indicating the yet enormous reach of the book into American society, a reach that provided its own social and moral order, negotiated the mating rituals between young women and men, mapped and organized the workings of the family, and that still held commanding sway as a revered and unquestioned cultural entity. The book maintained its preeminence and

authority in the face of new technologies. Nonetheless the book, and the paper and ink technologies that formed its architecture, would now exist as one and only one of an ever increasing number of inscription technologies.

Chapter Two engages with a frequently repeated definition of the book: I. A. Richards' 1924 statement that the book was "a machine to think with" (vii). This statement further accommodates the book to the machine age, attempts to blunt what is the decidedly non mechanical and non electro-mechanical nature of the technology, and prepares the book for a series mechanical re-engineerings that would take place in the decades following Edison's talking machine. These include the Fiske Reading Machine, an odd lens-based reading technology that failed to gain a foothold in the textual marketplace, yet was nonetheless accepted with great seriousness by both its inventor, and scientific writers and journalists of the time. This technology spoke to the age's new and growing desire to miniaturize, to make smaller, positioning books, newspapers, and journals as almost obscenely wasteful. It furthered an understanding of the book, not as a site of culturally constructed truth and knowledge, but a location in which information was stored, and as such, anticipated a similar overwhelming urge to assemble more and more information, in smaller and smaller spaces. This drive was made even more urgent in Vanaver Bush's celebrated, but imaginary technology, the Memex. The Memex and the essay that promoted it "How We May Think" (1945) has gained considerable circulation among new media enthusiasts for its apparent anticipation and description of "hypertext." This chapter interrogates Bush's essay not as a prescient look forward into the future of technology—and thus the future itself—but as a reactionary

cultural document that seeks to further fetishize the miniaturization of ever increasing amounts of information, and to significantly privilege data, facts, and information over intuitive, creative or non-technological approaches to human existence and experience. It also recasts Bush's widely-read essay as an effort, undertaken at the close of WWII, to re-integrate women into traditional female-appropriate work, office work in particular, and examines the text not as an insightful media document, but an inadvertent, and revealing account of the sexual anxieties and gender concerns imbedded within the narratives of technology.

Between Bush's imagined Memex, and Fiske's reading machine, appears another imagined technology for reading. While there is uncertainty as to whether Bob Brown's machine, the Readies, was ever actually manufactured, even in prototype, his writings and his remarkable manifesto by the same name, (1930) have become sites of increasing and unavoidable interest to literary scholars and media theorists and historians. This chapter contributes to, and is part of, a growing recognition of *The Readies* as a seminal document within both literary and media studies. Imagining, and demanding, a reading machine that kept pace with modernity itself, Bob Brown advocated what was to eventually become the shape of digital textuality—electrically powered, screen based, fully technologized. Furthermore, this technology would carry out an iconoclastic Dadaist agenda, rid language of its left over Victorian "sausage words" and clear the future for the works of Breton, Stein, Hemingway, James Joyce, and nearly every avant garde artist of the time, almost all of whom Brown knew personally. This thesis positions Brown's imagined technology as the prescient model of what the dominant textual

form would come to be by the end of the century—no longer a print medium but, in fact, a broadcast medium, illuminated by back lighting and driven exclusively by electricity. Thus, by 1930, only some fifty years following Edison’s first attempt to compete with the book by marketing a mechanical talking machine, a screen based, electrically-powered mechanical reading device had been conceptualized and presented to the world as an alternative to book technology.

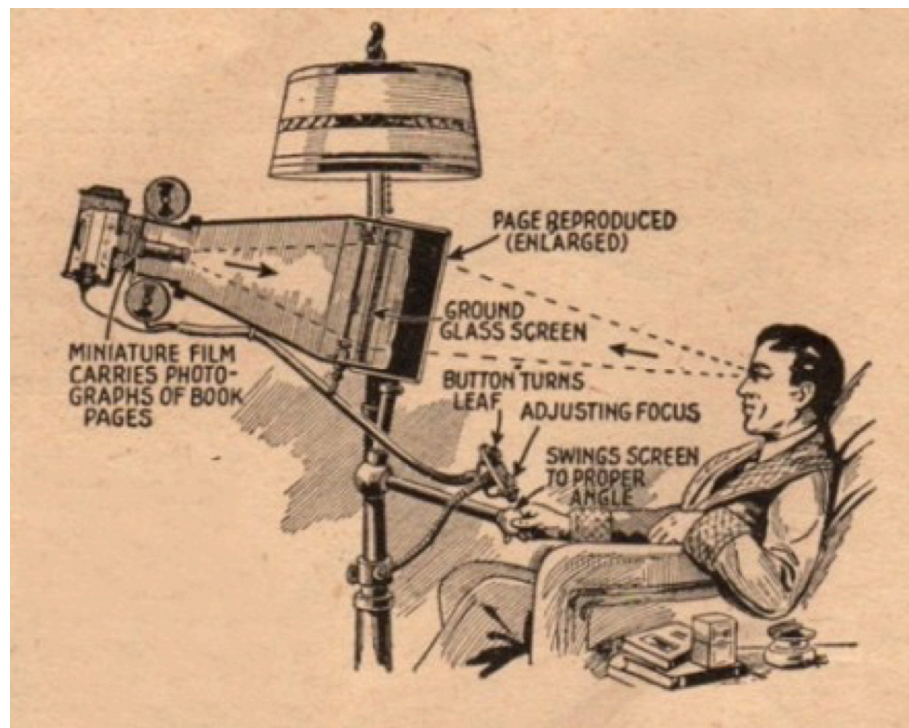


Fig. 2. Everyday Science and Mechanics Magazine, 1935

Chapter Two concludes with an attempt to divest the ‘history of death of the book’ from the exclusive grip of men. This section undertakes a more sustained critical examination of the Spanish schoolteacher and inventor Angela Ruiz Robles, a woman who has now been inaccurately and demeaningly sanctified as “the

inventor of a mechanical precursor to the electronic book”

(wikipedia.org/wiki/Ángela_Ruiz_Robles). In fact, this chapter argues that this woman’s remarkable invention, the Mechanical Encyclopedia, had nothing at all in common with the electronic book, and instead stood as a defiant rejection of the dominant direction of male-driven technology, and the digital turn in particular. Her recent appropriation by a technoculture narrative has served to diminish her radical contributions to pedagogy, to the education of girls, and to her subverting of the traditional simple-to-more-complex and old-to-new model of media thinking. Her radical contribution to communication technology is examined here not as a helpful and patronized stepping stone toward the digital word, but as a pivotal and even gendered alternative to digital capitalism and the networked regime.

Having concluded in Chapter Two an historical overview of the four inscription technologies that sought to replace the book, or at least occupy some of its much sought-after cultural territory, Chapter Three—“Discoursing the Book to Death,”—turns away from the machines themselves, and investigates the rhetorical structures that sought to deprivilege the book and destabilize its solid foundations as *the* cohering technology of Western civilization. It maps the creations of a masculine narrative that sought to appropriate the book’s cultural privilege and apply it instead to electrically-powered digital technologies. Consequently this chapter undertakes a critical reading of the keywords assembled in the creation of not only a discourse of “liberation technology,” as identified by Duguid (19), but a counter-narrative that seeks to demonstrate that the book is no longer a sufficient technology for negotiating everyday life, a life in which the future was assumed to have already

arrived. This narrative is subjected here to a close rhetorical analysis as a network of frequently occurring metaphors employed to cast book technology in terms of *something else*. Collectively this language invokes a new imaginary for the book, replacing long established conceptions of freedom, expansiveness and unlimitedness, with metaphors of closure, fixity, and fossilization. Ironically, this rhetoric, which sought to reveal and to aggressively expose the limitations of the book remains invariably book bound, appearing not only in the influential new media texts previously mentioned but in reviews of those texts, of publishers blurbs, of websites promoting those texts. This rhetorical attack on the book settled into a type of coda—a series of descriptives frequently paraded across the pages and screens of techno-utopic narratives. They describe the book in new terms, not as the book of life, the book of nature, and so on, but as a technology that was fixed, static, frozen, bound, covered, fossilized, imprisoning, and caged. Such an adjectival insistence on the fixity of book technology stands in frank opposition to book studies itself—which, conversely, insists that printed texts constantly change, evolve and exist in a state of ongoing mutability (Howsam).

This chapter further exposes a fictitious argument, long in the making, that Western society has been infiltrated by unnamed agents who actively believe the book to be “dead.” This claim is dated back to what is perhaps its first appearance in 1938, and has become increasingly taken for granted in both popular and academic writings, so much so that by the late twentieth century has asserted itself as an unquestioned fact by both book scholars and media theorists alike. In this chapter, I suggest that this argument is a straw man. It does not exist. It cannot be found or

attributed to any one person, or any particular age or decade. In other words, despite the ceaseless “death of the book/the book is dead” concerns perpetrated by popular publications, the concerns do not actually exist in print, are baseless. They merely serve as a strategic launching point to mock and diminish any belief that the book is a threatened technology. This feverishly maintained counterargument effectively eclipses the moral dimensions of the swift imposition of the digital regime. In this way a fabricated death of the book argument and counter argument has helped to keep the steep human and ecological costs of digital technology from becoming a dominant social issue. As a consequence the extended and repeated media discussion of “death of the book” has effectively served to divert public attention from the mass destruction of digital machines.

Chapter Four considers the “death” of the book beyond its discursive and metaphorical frameworks, and undertakes an examination of how books come to an end *physically*. This chapter investigates the realities of books’ daily and continual destruction, typically for corporate reasons, along with destruction for political, ideological and religious purposes. It explicitly positions this destruction alongside the ecologically consequential destruction of digital technology, and examines how this destruction is embedded in the obligation and fetish of newness that defines new media. The understanding of what I term “the death of the digital” is one of ecological devastation, whereas the overwhelming cultural understanding of books’ death and destruction is one of *moral* outrage against a perceived attack on truth, democracy, and even the human body. By elucidating the destruction of digital machines, this chapter seeks to make apparent the extreme material dimension of

virtual reality, dimensions that are purposefully disappeared by the industry, along with the seeming immateriality by which the virtual is experienced. This chapter concurrently investigates the difficulty in theorizing or historicizing the terminal point of books—a technology that is widely, and perhaps unconsciously perceived to be not only extremely long living, but even immortal. By examining the complex and understudied *terminal* reality of both books and digital technology together, this chapter links the terminal dimension of both technologies to the terminal circumstances of the twentieth century and the “death of” literature that appeared in many fields of thought, and includes such thinkers as Beckett, Barthes, Adorno, Foucault, and many others. Finally, this chapter seeks to understand both bibliocide and digicide as neglected but crucial practices in the existence of communications technologies, and examines how their study leads to a deeper understanding of media, and their evolving influence on the practices of daily existence.

Together these chapters elucidate a sustained effort on the part of engineers and inventors to replace or displace the book in favour of mechanical or electro-mechanical, and finally, electro digital machines. They examine a cultural shift from the privileging of meta concepts such as truth, knowledge and wisdom, to the privileging of data, data mining and harvesting, information and metrics, and link them to a perspicacious and historically sweeping observation made by a then little-known renegade of American literature who stated, nearly forty years ago, that the book was, and could only ever be, “dead as God” (Coover, “The End of Books,” *New York Times* 1). These chapters suggest how driving corporate and cultural concepts are unsuitable and fail to flourish within book technology and play a

driving role pushing the book to the “margins” of cultural significance (Bolter 6) In this way “the death of the book” trope, is examined as an historical phenomenon, and brought to the present day.

Chapter Five considers the book as it exists at the end of this historical movement. It questions the understandings implicit in what has been called “the late age of print,” (Bolter, Striplhas) and the thinking and writing that perceives the book as cultural technology that can be painlessly reconciled with a totalizing digital regime. Rather, it examines the book as what, in its extremely long history, it perhaps has never been before: an underground technology, a radical, dissident and suddenly revolutionary technology, a feminist technology that defies the overwhelming hegemony of an overwhelmingly male technology made of silicon, coltan and powered, without exception, by electricity. Rather than accepting the demise of the book, the end of the book, the death, or even the marginalization of the book, this chapter insists on the book as dissident and liberatory technology, as the new samizdat, not the *late* age of print, but a new age, a first, in which the technology of the book becomes not “a machine to think with,” but a living phenomenon that perpetuates its human dimensions despite the acceptance of post-human understandings and theorizings. Finally, this chapter positions the book at a moment in history where it has come to manifest a radical challenge to power by validating the ‘reader’ over the ‘consumer,’ and facilitating an un-networked, unsurveillable and, what may prove to be the greatest challenge of all—*offline* existence.

CHAPTER ONE

Re-engineering Text in the Age of Edison

Along with explosive growth and improvements in communication and transportation technologies, the latter half of the nineteenth century also witnessed the beginnings of a narrative that is today routinely understood as the “death of the book.” Sometimes tongue-in-cheek, sometime speculative, frequently self-serving, and often optimistic, there emerged during the late nineteenth and early twentieth centuries a masculine narrative that posited the book itself was a deeply flawed technology in need of being overthrown by a sudden and powerful electro-mechanical regime. Motivating this belief was a growing suspicion regarding the artificiality of the written word, and its inability to convey the truth inherent in the *spoken* word. Such suspicions regarding the book, and even text itself, were heightened by emerging social concerns that came to view reading as a health hazard, particularly to the young. These concerns and technologies, and the pressures they exerted, converged into a sustained attempt to materialize text in a new way, to disembody the written word from ink on paper, and to establish writing and reading as an electro-mechanical phenomenon in keeping with the technological turn of the era.

Four of these technologies, along with sudden and emerging cultural concerns related to them, are examined in the following pages. They include Edison’s phonograph or “talking book” as it was often called, a machine that would render text through an aural technical medium and bypass the act and experience of

reading altogether. In doing so, this technology would not only save the eyes of America's young, it would also filter out the invasive dialects of the foreigner. The talking machine appeared concurrently with Edison's electric pen, a stencil technology that concerned itself with the growing problem of the duplication of paper documents. Although this little-known device retained its connection to the ink and paper-based materiality of text, it sought to make possible the mass duplication of the *written* word, bypassing Gutenberg's press and the art of typesetting altogether, and yet preserving the uniqueness of an individual's handwriting, just as the talking book would preserve the precious individuality of the "reader's" voice. Another challenge to the practices of textuality was the ongoing and aggressively marketed Pitman shorthand writing and reading system that intended to rid the written word of its suddenly-perceived vagueness, its arbitrary spelling and human imprecision, and to replace traditional orthography with a new objective and fact-based code.

Behind all of this, as early as 1844, the supremacy, or at least the monopoly, of a visual ink-and paper-based textual system had been challenged by Samuel Morse's reconfiguration of the alphabet into an electrically driven binary code and the beginnings of telegraphy. This technology and the ensuing establishment of a telegraphic network across the continental United States coincided with the advent and promotion of Pitman shorthand, and introduced electricity into textual communication for the first time. The electrical current would have its own influence on the status of the book, and the technologies of literacy.

Collectively, these four technologies represent a mid-to-late-nineteenth century expression of a stated and emerging dissatisfaction with ink on paper textualities, books in particular. Each seeks to overcome newly perceived problems with the book, and to invest the book with a new potency, a potency, in the case of Pitman shorthand and Edison's talking machine, based on the original power of the human voice. Similarly, the electric pen and the telegraphic straight key sought a new text, one that rejected Gutenberg's press entirely, and enlisted the aid of the new dynamo of electricity, aligning the book to the great driving force of the times. Aside from numerous mimeographic and chemical based advances that sought, like the electric pen, to cheaply and effectively duplicate text, the machines and writing systems examined here represent all of the technologies that emerged as potential challenges to the book's monopoly as *the* textual machine, and the dominant inscription technology

What appears in these years, for the first time since the adoption of the codex in the second century, is a determined effort by an emerging technical class to wrest the book from its long standing material state, a state that Umberto Eco has usefully described as "vegetal" (*Vegetable and Mineral Memory*). From this vegetal or agricultural basis, the book would be rematerialized into an object made of iron and steel and, most significantly, powered by electricity, the emerging dynamic force of modern times. These efforts sought to both redefine the material basis of the book, to re-engineer it into a machine that would coincide with the technical and financial interests of a new and emerging elite, and a new corporate structure increasingly based upon electricity and the development of electrical networks.

Building on the works of Lisa Gitelman, Carolyn Marvin, David Nye, Leo Marx, Roger Chartier, James Carey and others, this chapter examines the nineteenth-century origins of the contemporary ‘death of the book’ discussion. By investigating the vigorous technical climate of the late nineteenth century, it challenges the widespread assumption that links the book’s putative death to the digital turn and the rapid appearance of personal computers in everyday life. Instead it locates the origins of the contemporary ‘death of the book’ trope within the robust technical ecology of the nineteenth century and the accompanying cultural forces that collectively served to destabilize the authority of the book as *the* dominant cultural engine. Collectively, these forces produced a short-lived narrative concerning the status of the book, and its potential “end” as a communications technology. This chapter thus pursues the ‘end of the book’ as ideological narrative that served both to manage the anxieties that accompany invasive technological change and, secondly, as a cultural tactic that sought to legitimize and domesticate such change, and to normalize its consequences. Instead of positioning the book as victim of Silicon Valley and the ‘digital revolution,’ what follows examines earlier sustained attempts to rid the book of its traditional codex architectures consisting of ink and paper, and to bring book technology within the authority, and ownership, of an emerging male class of self-identified electrical experts.

Reading With the Eyes Shut

In 1657 Cyrano de Bergerac published a short novel, *The Other World: Comical History of the States and Empires of the Moon*. In it, the narrator, while visiting the moon, encounters a book that

had neither Leaves nor Letters. In fine, it was a Book made wholly for the Ears and not the Eyes. So that when any Body has a mind to read in it, he winds up the Machine with a great many little Springs and he turns the Hand to the Chapter he desires to hear, and straight, as from the Mouth of Man, or a Musical Instrument, proceed all the distinct and different Sounds which the (Moon men) make use of for expressing their thoughts. (195)

This brief text reveals what is perhaps the first appearance of the book as a technology re-imagined entirely in aural terms, a book made “for the ears and not the eyes.” It was this re-imagining that came to shape the late nineteenth-century efforts to conceive and promote the book as an *off-page* and *off-ink* technology, that is an electro-mechanical machine to be comprehended aurally rather than visually. In this short novel, de Bergerac had intriguingly conceived a device that would both mollify Plato’s suspicion of the written word and also anticipate the efforts and even the *patents* of another historical figure possessed of a distrust of reading—Thomas Edison. While it would take slightly more than two centuries for de Bergerac’s “book” to take shape in Edison’s phonograph, it would, by some accounts (Edison’s in particular), take considerably less time for the phonograph, the new and celebrated “talking machine,” to bring the millennial-old technology of the book to

its 'end.' "The advantages," Edison wrote, "of such an innovation upon the present slow, tedious, and costly methods [i.e.; ink on paper] are too numerous, and too readily suggest themselves to warrant their enumeration [...]" ("The Phonograph and Its Future" 532). Warranted or not, Edison immediately enumerated twelve advantages, the second of which would accrue to books. The inventor was confident that the phonograph would lead to "greater enjoyment" than the book, largely because it will now be read by a trained "elocutionist" rather than "by the average reader" (533). With this prediction Edison articulated the late Victorian age's growing investment in the trained professional, an age that was concerned as much with inventions as with "inventing the expert" (Marvin 9). As Carolyn Marvin has observed, this culturally-freighted investment in the expert required a concurrent and growing suspicion of the amateur, the non-specialist, and the non-professional. Suddenly in Edison's time the act of reading, rather like the profession of 'electrical engineer,' was in danger of being compromised by the non-professional 'average' practitioner.

As a mechanical reading device, Edison's "talking machine" or "phonographic book" never got off the ground. A whirring gizmo of revolving mechanical parts, the device, intuitively enough, was soon being sold, not in bookstores, but out of bicycle shops – a telling indication of Edison's misapprehension as to what exactly the machine was meant to do (Chew 30). Beyond a single verse of "Mary had a little lamb," recited by the inventor in front of the editors of *Scientific American*, and recorded on a tinfoil strip, the invention was incapable of coming anywhere close to meeting the technological affordances long

offered by the book. Even a decade after Edison's whimsical demonstration, the phonographic industry achieved a top playing time of only three minutes (Camlot 38). While this proved long enough for Tennyson to record "The Charge of the Light Brigade" and for Browning to attempt, and flub, a live recording of "How They Brought the Good News from Ghent to Aix,"² it fell far short of Edison's stated ambition to bring *David Copperfield* or *Nicholas Nickelby* into the spoken "book" library. Not until the 1930s did phonographic technology achieve the sophistication that allowed it to record, and play back (read), a novel-length recording. Even then the recording of Hugo's *Les Miserables*, recorded at the much slower 33.3 revolutions per minute, required 104 discs, double faced, to accomplish this task (Camlot 6).³

Despite its abject failure in dislodging the book from its elevated cultural niche, the phonograph was nonetheless instrumental in precipitating a minor literary genre that speculated on the subject of the "end of books." Edward Bellamy, writer of the immensely popular 1887 science fiction fantasy *Looking Backward*, would substantially contribute to this field with his speculative short story "With the Eyes Shut," published in *Scribner's Magazine* in 1898. This story followed Octavio Uzanne's short story "The End of Books" published four years earlier in "Harpers" and illustrated by Albert Robida. "With the Eyes Shut" envisions a society where books, all textual transmission, even reading the clock face, is rendered electro-mechanically and orally by "our new phonographic enunciator." Not surprisingly these "books" resemble a miniaturized Edison's phonographic device, and have come to replace each and every inscription technology deciphered by the eyes. As

the eager train porter proudly tells the narrator, “I can give you a book that you read with the eyes shut” (Bellamy).

What is apparent in the text, and in much commentary from the 1870s and onward is a self-evident pride in which the old ways are being overturned daily by the triumph of modern engineering, inventiveness, entrepreneurial spirit and, *primarily*, by electricity. During these years in which the end of the book is first contemplated there also emerges a celebratory narrative regarding the electric fluid. In a reference to Edison’s inventions, the electric pen in particular, a fawning 1879 biography declares, “*Edison has taught nature how to write*” (McClure 95). The satisfaction in having an American inventor teach reading and writing to nature itself is indicative of the unqualified delight in ushering in the future in which the book and the whole scriptural economy would fall within the growing domain of electricity. As Carolyn Marvin has observed, the unlimited potential of electricity was a “staple of nineteenth century discourse” (158). The book, with its somewhat embarrassingly vegetal, hidebound and agricultural origins, stood outside this discourse. For the first time the book could now be perceived as the outsider, a mutineer resisting the new command of electricity, resisting the direction of the ship itself. The late Victorian age entertained, with considerable approval, the idea that electricity would bring the recalcitrant technology of the book onboard with it. Thanks to the “electrical fluid” or “omnipotent agent,” as the *New York Times* described electricity, people would soon be able to “drink, build our houses, plow our fields and manure them, sail our yachts, propel our steamers and trains, *print our books and perhaps write them by the aid of electricity*” (italics mine 3). While the

act of reading is absent from this list, it indicates that the electrical fluid had already been widely presumed to be applicable to the technology of the book, and was on the verge of interpellating it within the emergent technological and social order in which electricity was assuming increasing importance. Given that like the book itself, electricity was coming to be understood as “both a physical and spiritual force” (Gilmore, cited in Hayles, *How We Think: Digital Media and Contemporary Technogenesis* 105), it is not surprising that the bibliophile narrator of Uzanne’s 1884 story the “End of Books” can easily imagine the one supplanting the other:

If by books you are referring to our innumerable collections of paper, printed, sewed, and bound in a cover announcing the title of the work, I do not believe (and the progress of electricity and modern mechanism forbids me to believe) that Gutenberg’s invention can do otherwise than fall into desuetude as a means of current interpretation of our mental products (224)

Noticeable here to a contemporary reader acclimatized to the variously dismissive, indignant, and sometimes contemptuous “death of the book” stories as they would appear in the late twentieth and early twenty-first century, is the sanguine manner with which Edison and his contemporaries contemplated the book’s demise, its ‘end,’ as an artifact. As the illustration below indicates, the new talking book would be painlessly domesticated for use by the bourgeois family with no consequences whatsoever.



Fig. 1. Machine readable

Uzanne's story, in fact, details a somewhat jubilant response to the book's demise:

Hearers will not regret the times when they were readers; with eyes unwearied, with countenances refreshed, their air of careless freedom will witness the benefits of the contemplative life.

Stretched upon sofas or cradled in rocking chairs, they will enjoy in silence the marvelous adventures which the flexible tube will conduct to ears dilated with interest (Uzanne 226).

The story's appearance in *Scribner's Magazine Illustrated* in 1884 coincided with the publication of a short doggerel by the American poet Henry Hanby:

We're rid of pictures, rid of books,
Editions large and small;
For now the Phono-click-o-theque
'By Dibdin' does it all.
No cutting leaves, no lending books

And having more to buy;
In 1900 Edison
Knocked printing into pi.

By knocking printing into pi, the phonographic “talking book” or the “whispering machine” would wrest the technology of the book away from the insular societies of typographers and typesetters with their ancient and obfuscating terminology (a type of “technospeak” *avant la lettre*). It would de-privilege an artisanal and decidedly non-electrical technology that, while improved upon by steam presses, stereotyping, machine-made paper, binding machines, etc., had remained conceptually and materially similar since the time of Gutenberg and Fust, and it would re-locate that power, along with the power of the book itself, into what Carolyn Marvin has called a “self-conscious class of technical experts seeking public acknowledgment, legitimation and reward” (61). Despite the poet’s doggerel acknowledging the emergence of the electrical fluid as an everyday social practice, the book lay resolutely outside the influence of this steadily growing caste of new and often self-proclaimed professionals. Such a male figure, suddenly known as the “electrical engineer” was “the man of action, the man who executes plans...the builder of our material progress....” This description from *The Man of Tomorrow*, a popular vocational book for boys, concludes with the ringing declaration that “without them our civilization could not be” (cited in Nye 160). Until this time such rhetoric had been typically reserved for the moveable type, the press and for Gutenberg himself.⁴

In contrast to the man of action as the builder of material progress, reading, by Edison’s time, was becoming framed as a somewhat problematic behaviour and, at

the least, a looming health hazard. From Homer to Milton the link between reading, writing and visual impairment has been there to assert. Milton himself as Mathew Rubery observes “was often invoked as cautionary tale for those who expressed a suspicious fondness for reading” (221). Even writing, or rather writing on *paper* had assumed sinister health implications. A 1908 *New York Times* article ran the alarming headline “Want School Books All Printed Anew” detailing a special school report that categorically linked the wearing of glasses to reading and writing, and insisted “that in the first two years of school all writing be upon a blackboard” (12). The report further demanded that publishers immediately cease using glazed paper that, they claimed, caused severe eye strain, along with the ban of half-tone illustrations from all schoolbooks for the same reason. The report also required that the lines of a schoolbook should never exceed three inches, effectively transforming the book page into a textual format more aligned to the newspaper (12).

Rather than being an exclusive phenomenon of the United States, this sudden apprehension toward the written word was of a transnational nature (Groth 16). Balmer, was adamant that abandoning the book was crucial in order “to have myopia checked in its alarming increase” (Balmer 497). According to Balmer, Germany was awash with near blind students, “26 per cent in the gymnasium and 50 per cent in the highest classes” (497). It would even appear that a certain “Professor Evert Nymanover,” to whom Balmer attributed the original conception of the talking book, was himself, motivated by his own failing vision. A liminal and obscure figure by any measure, one of the few verifiable appearances of “Professor” Nymanover as an academic is found in the 1883-1884 calendar for the University of Minnesota

where a “Nymanover, Evert” is listed as “student.” The *St. Paul Globe* has him both managing and playing the piano for the “Christian festival of socialists” (3). The *American Bookseller* of 1885 was adamant that “Professor Nymanover of Sheboygan” was a “transparent pseudonym” (209). He appears in a peculiar article in the *Star Tribune* that makes no mention of any scholastic career, reporting rather that Nymanover had recently opened a boarding house on the corner of Eighth Avenue, after returning from a European voyage in which he had insulted King Oscar of Norway. The article further states that Nymanover was also well-known to the police (5). The *Lutheran Witness* of 1890 has the “fawn-eyed socialist” and “well-known figure in a half a dozen brawls,” giving up his ways as “an agitator, a disturber of the peace [and] a dangerous citizen,” and now “preaching the gospel to a new Scandinavian mission of his own founding” (31). On top of this rather colourful career, Professor Evert Nymanover is also said to be the first person to advocate for the metallic book of the future in an article addressed to the editors of the *Scientific American*, but never published (Rubery 42).

In a mocking, even excoriating appraisal of both Nymanover and his talking book essay, the University of Minnesota student newspaper in 1883 stated that Mr. Nymanover was compelled to conceive of a talking book “because Milton and Homer went blind and his own eyesight is not the best.” They concluded the article by dismissing the ‘whispering machine’ as “hysterical bosh,” and suggested that Nymanover be dealt with “by Gatling guns at eleven paces” (Ariel, 12). Writing two years after this dismissive piece, but decades in advance of the New York school report, Balmer too warns of the perils not just of glazed paper, but *any* paper, even

of blackboards and inks which, he states, are undergoing numerous technical changes in order to reduce the degree of damage they are inflicting on students' eyesight. In his brief essay, "Whispering Machines," which appeared in the *Nineteenth Century* (1885), Balmer is adamant that certain ruin awaits the human race unless the "outrage" of reading is curbed. In what might have been a familiar turn of phrase the author insists that because of reading "our noblest sense organ has been subject to the most infamous *drudgery* for centuries" (emphasis mine 497). Edison had employed this term 'drudgery' some five years earlier in his recorded phonographic advertisement impugning the book. Given that Balmer's polemic reads as a call to arms addressed to an un-named engineer or inventor, it is quite possible Edison is the very person the author was attempting to goad into action in regard to the talking book: "Where is the good genius—have we not a Gutenberg in our day?—who will take the thing in hand and add a new power to the world?" (499). In an accurate description of the early fate of the talking book, Balmer's expresses his indignation at the failure to realize the machine's true potential: "There lies the machine," he laments "unfinished and useless, at best a toy to play with" (499). It is easy to read Balmer's "Whispering Machines" as an impassioned plea to Edison to get the talking machine out of the bicycle shops and hotel lobbies, and into the libraries and reading rooms before Western civilization goes entirely blind—or is overrun by foreigners.

The decided sense of impending catastrophe that imbues "Whispering Machines" extends beyond a fear of "myopia." It is found in Balmer's breathless assurance that the widespread adoption of the whispering machine would provide

protection against the looming presence of the multi-racial, the polyglot, and non-Anglo 'other.' One of the attributes of the phonographic book, insists Balmer, is that by its "universal dissemination of a standard pronunciation," it would ensure the disappearance of "dialects and patois." "More hopefully" he writes, with this machine "we might dream of a time when all nations would speak one tongue" (498). It is noticeable that much of the contempt directed toward Nymanover, the presumptive originator of the "whispering machine," concerned his inability to speak American English without an accent. Matthew Rubery suggests that Nymanover's essay on the device was "made...an object of ridicule" by its "odd mixture of English, German, and Swedish" (42). Balmer was not the only late Victorian thinker concerned with the daunting promiscuity of non-English languages, patois and dialects. Henry James expressed his concern over "foreign brothers and sisters" and how they "play to their heart's content, with the English language, or in other words, dump their mountains of promiscuous material into the foundations of the American [language]" (42). To the foreigner, according to James, *vox Americana* is "just an another oilcloth they are preparing to lay down, for convenience on kitchen floor or kitchen staircase" (45). While Henry James does not offer the phonographic book as a panacea for what Amy Durham Strand calls the perceived "alien degradation of American speech" (174), the phonograph was presented as a technology "clean of pre-existing cultural accent" (Camlot 14). Balmer's essay eagerly offers a solution to the problem of linguistic contamination that so concerned James. This solution is a technological one, standardizing and civilizing world citizenry by the recitation of "invisible mechanical voices" (Groth

120). Having established the civilizing effect of the metallic book it was a small step for Balmer to suggest that the whispering machine would ensure “our intellectual classes would...have a greater fertility, and...would follow the evolution of the higher types of humanity” (497). This greater fertility would bring an end to the alarming “physical deterioration of our intellectual classes” (brought about by the sedentary life of the student) and deliver what Balmer, somewhat salaciously describes as “men themselves, with their strong lithe bodies, their perfect symmetrical forms” (499).

With the book’s sudden implication in both the blindness of the student population and the deterioration of what Balmer presents as a racialized Greco-Roman male physique, it is not surprising that an electro-mechanical substitute could be offered up as an antidote to the book’s pernicious effects on the civilized body. Uzanne’s bibliophile dinner guest in “The End of Books” is quick to lament the “enervated condition” caused by reading “as we practice it today,” (224) and insists that our abused eyes should “no longer wear themselves out in the reading of text” (224). Where Balmer berates the book, and reading itself, as an essentially sedentary activity that corrupts the strong lithe bodies of men, Uzanne’s narrator has already conceded modern man to be a “man of leisure who daily becomes more reluctant to undergo fatigue.” Thus an Edison-type phonographic book appeals to an over-burdened book reader, who is now gratefully “stretched upon sofas or cradled in rocking chairs ” where he is eager to “enjoy in silence the marvelous adventures [of] ... the flexible tube” (227). Equally, however, our bibliophile is also eager to

position the talking book as an antidote to Balmer's concerns over the destructively sedentary lifestyle of the book reader:

At home, walking, sightseeing, these fortunate hearers will experience the ineffable delight of reconciling hygiene with instruction; of nourishing their minds while exercising their muscles for there will be pocket phono-operagraphs, for use during excursions among Alpine mountains or in the fashions of the Colorado" (Uzanne 227).

Uzanne's prescient illustrator, Robida, in what is perhaps the first published representation of a post-book technology, represents the whispering machine as inextricably linked to the love of walking, to fresh air and the outdoor experience (even if that outdoors has already been somewhat infiltrated by the electrical poles and wires visible top right):



Fig. 2. Robida illustration of the talking book: “for use during excursions.”

Fear of blindness, along with the image of the exhausted man returning home from work to his weary wife, both unable at the end of the day to rise to the physical demands of reading were rhetorical levers Edison was quick to employ. The talking book would not only reinvigorate exhausted marriages and substantially reduce the risk of blindness, it would also eliminate an often-mentioned drawback of book technology; that it occupied both the hands and the eyes: “Books may be read...by

the lady or gentleman whose hands and eyes may be otherwise employed” (Edison 528). Much of the benefit claimed for the talking machine consisted of its ability to free up the ‘readers’ hands and eyes for more profitable functions than holding a book, smoking cigars for example, or needlework (see figure 1). Edward Bellamy’s famished train traveller in “With the Eyes Shut” is delighted to see that with the “trumpet” of the “phonographic enunciator” attached to his shoulders, his “hands were left free for knife and fork.”

Under attack as a potential cause of blindness, as an obstacle to eating, smoking, and needlework, suddenly the modern reader bowed down by the “labour of modern reading” was understood to be “sorely in need of the easy consumption that listening to a talking book, rather than scanning page after page, will provide” (Groth 118). According to Edison the advantages offered by the talking machine were too readily seen to need mention. Yet these advantages are not so readily seen at all and have more to do with elusive and subtle essences than Edison admits. Such essences touch upon what Camlot describes as a “well developed Victorian yearning for a technology that would make the reading experience more immediate; that would, in a sense, capture the character and subjectivity of the author without the mediation of the printed page” (2). R. Balmer, in his 1885 essay “Whispering Machines,” adds “no book is ever read as its author intended it should be read.” Unless the text is read out loud, Balmer states, “one half the power of literature is gone” (498). To Balmer the essentially elusive power of the spoken word did not just involve capturing the character and subjectivity of the author, but capturing also what he describes as “fine golden grains.” Such grains are to be distinguished from

the “pebbles and coarse sand” which slip through the “wicker basket” which is the book. In Balmer’s exquisitely tortured metaphor it is not only fine golden grains that slip the wicker basket of the book but also “the subtle fluid too.” This subtle fluid, apparently all but squeezed out of the printed word, “once bathed the pebbles and coarse sand and made them shine with a beauty we shall never see.” Retrieving this very same beauty, long stolen from the reader by the book and the printed page is, Balmer states, “the glorious mission of the phonographic reading machine” (498). Balmer’s revealing and impassioned little essay expresses what was perhaps a broader impatience with the failure of Edison’s much touted phonograph—that it had not yet actually delivered up the smooth metallic book of the future.

The inaugural issue of *The Phonoscope* (1898) was in general agreement that the written word was but a thin substitute for the spoken:

[I]t is by the voice that men communicate with each other in all the fullness of their individuality [....] At best these [paper and ink based]-records give but a poor reflection of the times and deeds they are intended to perpetuate. Like preserved fruit, however delicious, they lack the bloom of life: they are dry and difficult of digestion. (5)

A contemporary of Edison’s and future president of the United States, Woodrow Wilson famously stated (in one variant or another) “I would never read a book if it were possible for me to talk half an hour with the man who wrote it.” What appears suddenly in the mid to late nineteenth century are, as Gitelman puts it, “assumptions that utterance is the root of all writing, and that arbitrary signs are its bane: artificial,

unnatural, irrational, and imperfect” (*Scripts* 65). These assumptions seek an escape from the heavily-mediated bondage of the book and postulate a new imaginary; a new repository of wisdom, what Camlot terms “a repository of the pure voice of nature” (5). By collapsing a man’s fullness into the voice alone, advocates of the smooth metallic book of the future had almost overnight created an argument in which the fullness of the individual (male) had fallen outside the capacity of the book to express. What was once the book’s greatest triumph, its ability to mediate thought by permanently inking syllabic code to paper, was now being narrated as its most daunting failure. Needed now was a new technology of the book, a book that would employ emerging electro-mechanical breakthroughs to cure itself of the ills that plagued it, and those who read it.

As mentioned earlier, the first person to publicly envision this machine is said to be the so-called “Professor Evert Nymanover” of the University of Minnesota in his essay presumably submitted to the *Scientific American*. Whether it was actually ever submitted or not, this elusive article has become an unlikely, if perhaps non-existent, founding text in the narrative of the phonographic or talking book. In it “Professor Nymanover” is said to describe the new phonographic replacement for the book: a device that would be secured within a man’s hat and connected to his ears by “acoustic tubes” (Rubery 228). “The idea is to convey all literary instruction by means of small machines instead of books. These machines are to be placed in the hat of every lady or gentleman...” (Nymanover cited in *Ariel*, 1883). This purported essay was brought to a wider reading public by the somewhat mysterious R. Balmer in his 1885 “Whispering Machines” and would appear to constitute the origins of

Robida's illustration for Uzanne's 1898 publication of "The End of Books" (see figure 2). These two elusive figures, Balmer and Nymnanover, expose a noticeable feature of the 'end of book' narrative, and one that would become central to the 'death of the book' headlines a century later: the presumed originators of the story are very difficult to pin down, to locate, to verify, existing more fully as narrative phenomenon than actual people or events. Such presumed and ghostly eulogists of the book may well express a wide-ranging cultural anxiety regarding our rapid colonization by first, electric, and then by electro-digital technology, but they prove elusive when one attempts to locate them. They appear to exist as a social imaginary, crucial to the 'death of the book' and as difficult to locate as "Professor Nymanover" and his invisible article. Even R. Balmer (sometimes spelled "Bulmer") appears a very difficult figure to find, to position in history. Yet without them 'the end of the book' lacks much of its connective tissue.

Despite the dubious historical narrative surrounding both Nymanover and Balmer, there appears little doubt that the book as a technology in the late nineteenth and early twentieth century, insistently refused to swell the coffers or the cultural capital of the *technologist*. It proclaimed instead the defiantly non-electrical nature of the written word. By refusing to play second fiddle to the electrical engineers and their "special symbolic skills as experts" (Marvin 61), the book stood then, as it does even more so today, as a visible affront to the grand narrative of technological improvement, to electricity itself, and to emerging techno-cultural understandings of modernity. In this light, Edison's ongoing annoyance and dissatisfaction with the book as a communications technology appears to stem less from his expressed belief

that reading caused dandruff (Edison, *The Diary and Sundry Observations* p 11) than a realization that the still dominant cultural engine of the time, its supreme cultural artifact, existed entirely *outside* his monolithic patent network, even outside the growing empire of electric power generation on which he held no fewer than 424 patents (Katznelson, Howells 2).⁵ With all of his vested interest in the talking phonograph, the typewriter (for which he held a patent) his patented electric pen, the telephone on which he held a patent, and moving photography, on which he held numerous patents, the Wizard of Menlo Park appears to be a one man wrecking crew determined to overthrow the book, and replace it with various electro-magnetic devices for which he owned all patents and copyrights.

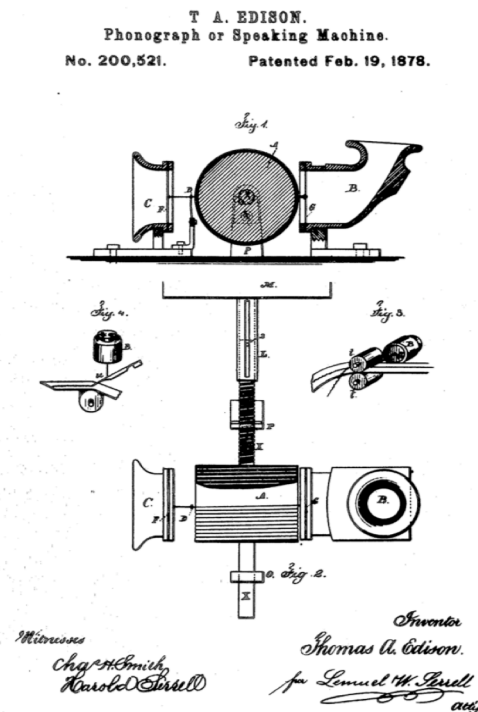


Fig. 3. The engineering of the book: Edison's patent for the speaking machine 1878.

Edison's Electric Pen and Duplicating Press

In the increasingly engineered age of the phonograph, telephony, X-rays, the electric light and a host of other electro-mechanical inventions, it was inevitable that books would come to be viewed by some as an antiquated holdover entrusted recklessly into the hands of average readers and dreaded amateurs. Edison's own comments about books reveal criticism directed by public figures at an otherwise revered cultural artifact. What Milton had insisted was "the precious life-blood of a master spirit," had now become, as Edison put it, just "clumsy methods of instruction at best" (*The Diary and Sundry Observations* 78) and only "2 percent effective" when it came to "stir[ring] up sluggish brain cells" (67). Edison's, and others, radical re-imagining of the book carried with it the assumption that something was inherently wrong with the book as a communications technology, that it was in need of significant technological overhaul and modernization. The "speaking machine" of Edison's time was presented as a technology that would so substantially improve the book that the disappearance of the paper and ink artifact was all but assured. "What ha[s] become of the printers," asks the narrator of Bellamy's "With the Eyes Shut." "Naturally," he is informed, "they have had rather a hard time of it" (Bellamy). Whether the book was a perfect technology or not, Edison himself was pleased to intone that the end of the book was nigh. In what may be the first orally "recorded" product advertisement, Edison insisted his phonographic scrolls would provide "a happy escape...from the drudgery of the pen" (cited in Camlot 10). Exactly when the pen became such a tool for drudgery is not clear, but by 1876 Edison had already patented his "Electric Pen and Duplicating

Press,” a battery powered stenciling device that, at least in his mind, would meet the increasing modern office demand for the duplication of documents.

Edison’s advertisement promoting the electric pen identified the mind-boggling variety of paper documents that in their singular importance were presumed to be in need of duplication, or as Edison was wont to put it, “reduplication” (cited in Israel 107). Just how wide-ranging these documents actually were indicated an emerging post reading-revolution environment in which, as Friedrich Kittler states, “compulsory education [had] *engulfed* people in paper” (italics mine, Kittler 8). Amid a thick and thickening flora of paper forms, the inventor had no doubt that his device

would be increasingly valuable for the cheap and rapid production of all matter requiring duplication such as Circulars, Price Lists, Market Quotations, Business Cards, Autographic Circular Letters and Postal Cards, Pamphlets, Catalogues, Ruled and Blank forms, Lawyers Briefs, Contracts, Abstracts, Legal Documents, Freight Tariffs, Time Tables, Invoices, Labels, Letters, Bill and Envelope Heads, Maps, Tracings, Architectural and Mechanical Drawings, Plans and Specifications, Bills of Fare, Music, Insurance Policies, Cypher Books, Cable and Telegraphic Codes, Financial Exhibits, Property Lists, Manifests, Inventories, Schedules, Shipping Lists, College and School Documents, Rolls, Examination Questions, Examples, Illustrations, Scholars’ Reports, Lecture Notes, Regulations, Blanks, Official Notices, Mailing Lists, Committee Reports, Sermons, Lectures, Pastoral Information, Manuscripts, Journals, Facsimiles of Papers, Drawings, Hieroglyphics, Programmes, Designs, etc (Thomas Edison Papers, Advertising Booklet 1876).

After such an exhaustive list it is not clear what the obligatory “etc.” could possibly stand for. This dauntingly dense barrage of paper-based forms constitutes a visual representation of textual control mechanisms that range from the office to the school, from the church to the lawyer’s office, from the opera house to the bank, from the trading floor to the postal station, with perhaps even a hint of the bedroom suggested in “Manuscripts” and “Journals.”

Whether aware of it or not, what Edison was envisioning here with his electric pen was not merely the quick and cheap duplication of office documents, but the marketing of a technology that would become central to how society negotiated itself, how it established, maintained and furthered its very structures. Elizabeth Eisenstein has made a similar compelling and contested argument for Gutenberg’s press (1979). Indeed one of the more audacious if not extraordinary components of Edison’s autographic system was that, in design and manufacture, it resembled a DIY desk-top version of the printing press. Once the stencil had been cut by the needle inside the electric pen, the writer then placed the stencil on top of a blank sheet of paper on a flat iron bed, and inked the stencil with a roller. From this point on, Edison’s electric pen would have been instantly comprehensible to Gutenberg and Fust and any pressman or typesetter from the late fifteenth century. More than comprehensible, the non-electrical end of the electric pen would have been

immediately recognizable for what it was —a miniature printing press:

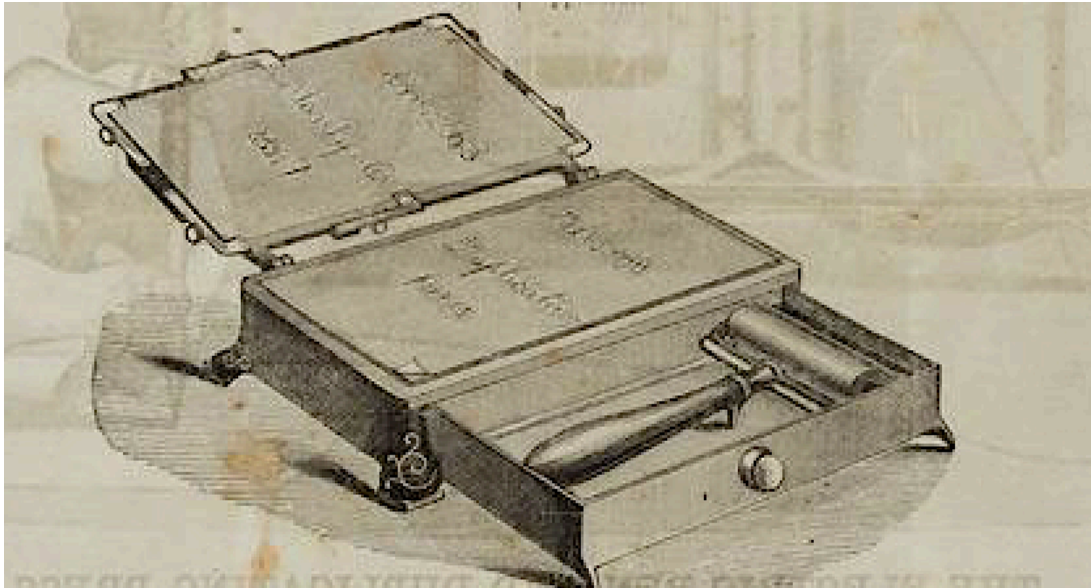


Fig. 4. The frame, or printing press components of Edison's electric pen, ca.

1876



Fig. 5. The printing press, ca.1568.

Edison's writing machine appears to have garnered barely a toehold in the modern office environment, and failed to secure any lasting position in the business of duplicating text. Regardless of this, by resisting the urge, as Carolyn Marvin has observed, "of every age to read history backward from the present," it is possible to perceive Edison's odd contraption as one moment in a "succession of distinct social visions, each with its own integrity and concerns" (154). Whether a failure or success, Edison's electric pen clearly located itself within an increasingly urbanized and monetized culture that saw itself as effective, versatile, fast, and economical in a way that the book was not. Unlike the typewriter (on which Edison held a patent) the electric pen inscribed and duplicated *handwriting*. It made *mass* that most individual and personal production: the author's own script. It was suddenly possible to endlessly duplicate what has always been understood to be entirely singular, that is, the unique ductus of strokes, repetitions, shadings and pressure points visible in any writer's handwriting, and historically invested with a plethora of cultural assumptions regarding individuality, personhood and the uniqueness of the self. Edison's device dramatically challenged these assumptions. By electro-mechanically rendering the individual uniqueness of a person's handwriting, Edison's electric pen exposed the tension and emerging threats that existed between the self-written individual and the machine-made product. By maintaining its connection to the scribal, the electric pen confirmed many cherished notions regarding the uniqueness of handwriting itself, while alarmingly linking those notions to the suddenly ubiquitous electrical fluid and the potential for mass duplication.

At the time that Edison's electric pen was introduced to the public, electricity was far from a common feature of the business office, or of business machinery in general. By electrifying handwriting for the purpose of creating stencils, Edison's autographic system is now often singled out by tech enthusiasts as the first attempt to attach an electric motor to a consumer item. More significantly it represents a watershed historical moment when the American office was about to fling open its doors to the 'wonders' of electricity. Not only the office door, but the household door was opening wide for a process that has since witnessed the attachment of electrical motors to every conceivable form of appliance. Suddenly, the phenomenon of electricity, "ubiquitous yet inscrutable" as David Nye neatly puts it (138) was now "inextricably bound up with ideas of social progress" (147). In his description of the electric pen, Charles Barnard, the technical editor of *Scribner's Monthly*, was quick to call Edison's invention a "wonder of electricity" (cited in Cooper 132). The evident satisfaction in having an American inventor teach writing to lightning through the wonder of electricity expressed an eagerness to usher in the electrical future, to be an active player *today* in the action that was coming.

Electricity, like the electric pen itself provided persuasive proof of the progress of society, and how the mind and even the body would operate in that society. (Nye 157). Like the seeming and well-rehearsed 'revolutionary' and epochal nature of the computer and its digital regime, Edison's electric pen epitomized an earlier and equally revolutionary period, a period of constant "rupture and transformation" (Gitelman, *Scripts Grooves Writing Machines* 220). It was in this age that, to use Kittler's dramatic term, Gutenberg's monopoly on the storage of

data was first “exploded” (*Gramophone, Film, Typewriter* 16). Such an explosion did not occur out of thin air, but in a climate of growing enthusiasm for electricity and its practical applications, and a thickening plenitude of inscription technologies, including the electric pen, each vying for favour in a rich field of commercial pressure and technical inventiveness. The narrative accompanying Edison’s electric pen, and even the young Edison himself, was one of evangelical enthusiasm provoked by the promise that electricity held for unlocking human potential (Marvin 1988). In heralding the new proximity between the written word and the electrical, Edison’s first biographer strikes an increasingly familiar note of rhetorical excitement in which the old and antiquated is swept away by the emerging presence of electrical technologies. As McClure puts it;

Electrical Science has suddenly flashed into general utility, and is now rapidly lifting, not only the veritable darkness from the earth, but everywhere in home and office, field and mine, on land and on sea, is demonstrating a scope of usefulness commensurate with the loftiest aspirations of man. (4)

Reforming the Written Word

The loftiness of those aspirations, and the ability of the written word to achieve or even express them had, for some time, been of great concern to the brother’s Ben and Isaac Pitman whose phonetic shorthand system found fault with the very alphabetic code itself. Pitman shorthand was brought to the United States in 1852 and sought to remove the endless rhetoric of the written word and replace it

with facticity. Unlike Edison's electric pen, the Pitman shorthand system did not seek to discard the materials of text and replace them with electro-mechanical ones. Pitman shorthand in fact, like the pen, was entirely dependent upon the ink and paper based architecture of textuality. In her revealing study of this phenomenon, Lisa Gitelman locates a growing nineteenth-century unease in regards to the written word and the role it was to play "within the rationalist and technocratic ideals of the mid- and late nineteenth century" (Gitelman, *Scripts Grooves and Writing Machines* 51). Isaac Pitman was adamant that the written word needed to shed "the old alphabetical style," and be reformulated "according to their natural sequence" (Pitman 9). These technocratic ideals were considered significant enough for Queen Victoria to grant Isaac Pitman a knighthood in 1894, largely for achieving the same results sought by the technology of phonographic books: re-materializing the written word into a phonetic phenomenon. What has long been referred to as "shorthand" was originally termed "soundhand," by Pitman and was eventually re-named "phonography or writing by sound." According to the *New York Times*, Pitman's knighthood was conferred to honour his "labors for the *reformation* of English orthography" (italics mine 5).

This contemporary unease with the complexities of written language, and an emerging cultural sense that the written word was in some need of reformation or least reconfiguration had been taken up earlier by the American artist and pro-slavery advocate Samuel Morse who, in 1844, converted the English alphabet into what was soon known as the "dits" and "dahs" of an electrically driven binary code. The significance of the invention of this system as James Carey has insisted, this

“watershed in communication,” (*Communication as Culture* 203) has remained singularly neglected in media studies. Carey identifies as part of this neglect the extreme importance of the telegraph as the technical and historical moment when communication was effectively separated from transportation. However, the telegraph has been neglected in another equally crucial way: it also represents the first appearance of binary code, the first electro mechanical re-materialization of text as a zero/one, two-symbol system, the dits/dahs mentioned above, more familiar to us as the binary code of the long/short, or the dot/dash.

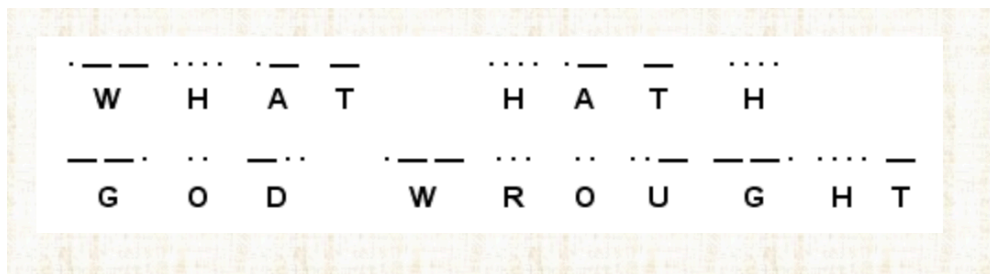


Fig. 6. Electro-mechanical binary code transmission, May 24, 1844.

Remarkably, the telegraph received no attention whatsoever within the ‘end of the book’ narrative of the late Victorian age, which was intent, instead, on a fascination with what today is routinely termed “new media”—the new medium of Edison’s phonographic machine. Similarly the telegraph has been entirely shut out from the contemporary ‘death of the book’ discussion by the widespread and presumptive agreement that ‘death of the book’ concerns are directly occasioned by the rapid appearance of, once again, “new media” in this case the digital communications technologies of the late twentieth century.⁶ Ultimately, the putative successor to the book has found its material form not in the aural technology of the phonograph, but

in digitally rendered sight-based symbolic code. The phonograph may have disclosed the possibility of what Bellamy's train porter called "a book you can read with your eyes shut," but the telegraph disclosed the origins of an algorithmic technology that would entirely rematerialize text while remaining steadfastly within the visual realm. A century and half before the term came into common usage, the telegraph was demonstrably generating 'electronic text.'

Eight months after the first telegraphic message, the knock-knocking and tap tapping of the telegraphic straight key resounded in Edgar Allen Poe's celebrated poem, "The Raven," in which there "suddenly...came a tapping/As of someone gently rapping, rapping at my chamber door." It is hardly surprising that this rapping and tapping took place while the narrator had become "weak and weary/over many a quaint and curious volume of forgotten lore." It was precisely these quaint and curious volumes, 'the drudgery of the pen' itself that were under attack by emerging technologies; whether Pitman shorthand, Morse code, the soon-to-be-phonograph, the electric pen, or the mass produced typewriter. Samuel Morse's taking up of the alphabet and re-inscribing it as a different set of symbols would be followed by the original public demonstration of the Fox sisters, who turned this sudden outburst of knocks and rappings into their first paid spiritualist demonstration at Rochester in 1849. Their tragic lives and the doomed enterprise of their spiritualist project 'reads' today as a singular female effort to enter this fray of textual upheaval and rivalries, to combat exclusively male control over reading and writing machines, and to present the female body, with its mysterious ectoplasmic resources, as a different form of textuality, as a last line of defence against the exclusion of women from

emerging and increasingly electromechanical communications technologies. Even though the metallic book technology had been conceived as an exclusively male preserve, R. Balmer was confident to note that such a machine would solve what he calls “the problem” of “women”—particularly the problem of their higher education. The metallic book, by resolving the bigger problem of “the higher education of mankind” would, take care of the woman matter as well (498). A writer for the June 4, 1885 edition of *The Mercury* newspaper was also hopeful that these future books, “printed on a metal cylinder” would make it possible to ensure that “the needlewoman and the house-wife may be read to while her hands and eyes are otherwise engaged [...]” (40).

What appears remarkable, even for the times, is the extent to which Edison and others willfully comprehended the book entirely within a masculinist framework of business, amusement and profit to be experienced not through reading, but listening to *someone else read* in a voice that was mediated by a machine: “Books may be read with... great *profit* and *amusement* by the lady or gentleman...or again because of the greater *enjoyment* to be had from a book when read by an elocutionist” (Edison, *The Phonograph and Its Future* 533, emphasis mine). In such comments Edison expressed no awareness of the technology’s extremely long history that linked reading to creation narratives, to relations of intimacy, to concepts of privacy and the self, contemplation, insight, community, truth and wisdom of the deepest order, to what, in short, Roger Chartier has conceptualized as “the order of books” (1992). Five centuries earlier, Thomas à Kempis had advised the reader to “take thou a book into thine hands as Simeon the Just took the Child

Jesus” (cited in Holbrook 31). This penetrating network of living and embodied metaphors, age old and already deeply imbedded in the Western imagination by the time of à Kempis, rendered the book a site of communion that had little in common with profit and amusement. It was these primary communal relationships, and powerful guiding metaphors that Edison and others seem to have been intent on ignoring or overturning. “Are we to have a new kinds of books?” asks the hopeful-sounding editor of *Scientific American*. “Will letter writing be a proceeding of the past? Why not, if by simply talking into a mouthpiece our speech is recorded on paper....” (2).

Noticeable in this eagerness to disembody the book, to erase the physical form that had defined it from the beginning, is the attendant refusal to consider how this would fundamentally alter the nature of the book and reading itself. Edison’s machine would return the book to its historical incarnation as “volumen” or scroll, and also prohibit the random access capabilities provided by the codex form. By conceptualizing the printed book as a single function artifact, advocates of the ‘talking machine’ ignored the complex social, cultural, historical, and even educational interactions that encompass the printed book, that is its symbolic function, and its discursive reach into language and life. They were attempting in effect to ‘close the book’ on the powerful metaphorical reach of the artifact as icon, along with its idiosyncratic relationship to female readers in particular, and the reading communities they constituted. As a man of science, an engineer, and an inventor, Edison’s approach to the book was one that parallels the approach of various digital enthusiasts a century later, an approach that Lisa Gitelman suggests,

tends to “distort the character and context of literacy and textuality in modern life” (*Scripts Grooves Writing Machines* 2).

Reading Up: The Rise of Silas Lapham

Despite the sustained efforts to challenge the supremacy of the book as a communications technology during these speculative years of the talking machine, American literature nonetheless entered the golden age of American Realism. What took place here to many American readers must have seemed a frontal assault on the novel. Stephen Crane’s *Maggie: A Girl of the Street*, or Henry James’ *Golden Bowl*, two vigorous re-imagining of the novel genre, and how it was now to be written and even read, both engendered a special caste of experts to help American readers negotiate both the tide of books being published, and the conflicting literary approaches to which they were suddenly exposed. These rich literary decades, following the introduction in the early-to-mid nineteenth century of factory-made paper, stereotyping, the steam powered press and double-sided printing, in the early-to-mid nineteenth century, indicate that the belief that an electro-mechanical speaking device could battle its way into this highly technical and heavily-patrolled environment was a profit-driven fantasy requiring serious wishful thinking. There is something equally wishful in the efforts of the male engineering elite that sought to establish itself in this culturally privileged terrain. Until the book was stripped entirely of its physical form, this privileged terrain would remain steadfastly in the hands of typographers and typesetters, authors, critics, editors, illustrators, librarians, bibliographers, bibliophiles and others associated with the print trade,

including Edison's feared 'average' readers. In fact, the book, the novel in particular, within the aesthetics of American realism, had become a bulwark against the swift and often drastic technological and cultural changes that electricity and the age of Edison were bringing. As Amy Kaplan has stated, American literary realism was itself "a strategy for imagining and managing the threats of social change" (10).

Despite the late Victorian age's conflicted opinion of the book, a technology, that according to Edison, was "only two percent efficient," this decidedly non-electric and non-mechanical technology flourished. By 1902, the increasing proliferation of book titles in the United States had reached such an alarming degree that *The Ladies Home Journal* expressed concern the reader could only find herself "dazed and swamped" (cited in Blair 1). This flood, as with the flood of new inscriptive and electrical technologies appearing at the same time, also fostered its own caste of privileged and self-proclaimed experts. Describing this new class of book experts as "canny advisors," book historian Amy Blair has mapped their emerging prominence as an expression of the era's push toward the professionalization of even reading itself:

Governed by a sense that there must be some meritocracy to reading and motivated by a culture of upward mobility, these readers turned to a willing group of elite cultural arbiters for advice on what to read and why (24).

These canny advisors parallel the swelling narrative of the "electrical engineer" who had quickly begun to publish specialized journals that elucidated their own prestige and authority. Carolyn Marvin employed very similar language to exemplify a

similar cultural drive toward professionalism and exclusivity that the newly minted ‘electrical engineers’ were eager to establish for themselves. She too describes how “certified interpreters” laid claim to public authority and sought to control both the narrative and the agenda of the electrical network as it spread throughout the United States (Marvin 12).

Despite the sudden appearance of canny advisors and “certified interpreters of scientific text,” in no way did the emerging technocratic impatience with the book command the day. The only impatience the unapologetically highbrow Edith Wharton directed toward the book was aimed at what she termed “sense of duty readers,” who, were a “menace to literature” (cited in Blair 140). Wharton even coined a term for such a person —“the mechanical reader”— a label that would have gained a new resonance had the mechanical book, promised by Edison and demanded by others, ever materialized.

Wharton’s contempt for a new class of readers whom she distinguishes from the classes already existing serves merely to indicate how deeply the book remained integral to U.S. society. Not only had Wharton’s 1905 novel *House of Mirth* sold 100,000 copies in less than a month and a half (Blair 138), even Longfellow’s ham-fisted translation of Dante’s *Divina Commedia* had managed to sell 10,000 copies by 1891 with sales remaining high into the 1920s (Verduin 34). Edison may have pronounced the talking book a *fait accompli* in 1888 with the publication of his article “The Perfected Phonograph” but three years earlier, William D. Howells’ enormously popular *The Rise of Silas Lapham* offered a blueprint as to how the book itself, the novel in particular, constituted the structure of the American class

system and certainly the structure of the bourgeois family. It is precisely Irene Lapham's inability to finish George Elliot's *Middlemarch*, and her mistaking Walter Scott for an American author that excludes her from a chance at marrying the dashing Tom Corey—himself smitten by Penelope, Irene's less pretty but *better-read* sister. Electricity may have created "The Man of Tomorrow," but the book was still clearly responsible for creating the Woman of Today, centrally implicated in her growth, domestication, and ultimate fitness as a partner to the new electrically motivated male. If for no other reason Amy Blair has very aptly titled her study *Reading Up* (2011). The consequences for the young woman who has not read *up* are made uncomfortably clear in young Irene Lapham's stumbling performance in the presence of the eminently marriageable Corey:

"I've been reading that book since you were down at Nantasket."

"Book?" repeated Cory, while she reddened with disappointment.

"Oh yes. *Middlemarch*. Did you like it?"

"I haven't got through with it yet. Pen[elope] has finished it."

"What does she think of it?"

"Oh, I think she likes it very well. I haven't heard her talk about it much. Do you like it?"

"Yes, I liked it immensely. But it's several years since I read it."

"I didn't know it was so old. It's just got into the Seaside Library," she urged, with a little sense of injury in her tone.

"Oh it hasn't been out such a very great while," said Corey politely.

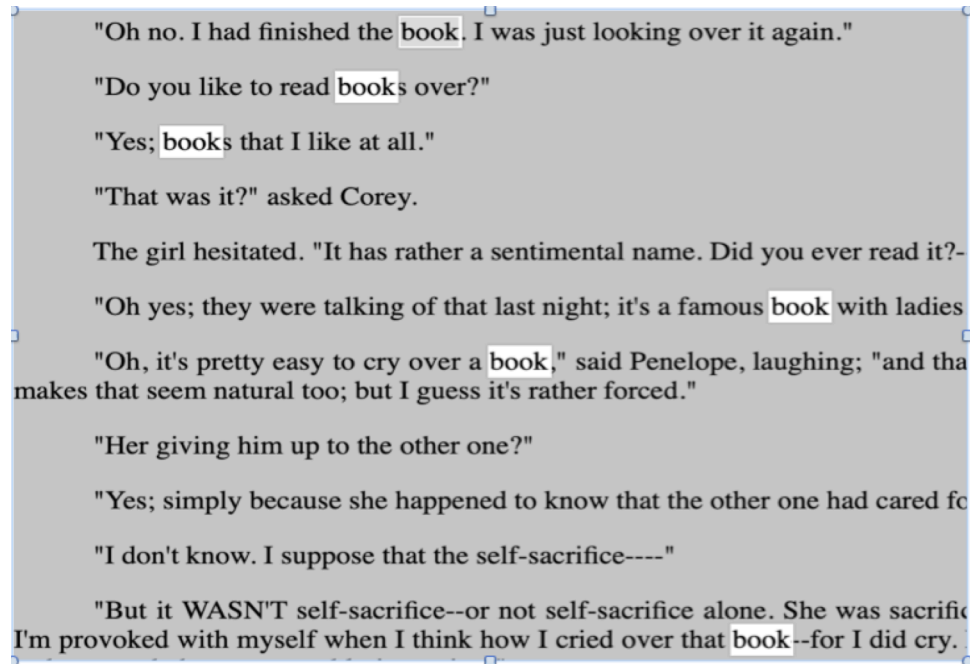
It came a little before *Daniel Deronda*."

The girl was again silent. (Howells 90)

Published during a time of intense public enthusiasm for electricity and its increasing number of daily applications, *The Rise of Silas Lapham* performs not the end of books, but rather asserts their foundational role in contemporary American society.

While the novel contains pointed mention of the new electric light, the light spectacles on the waters of Boston Harbor, and precise descriptions of the new technology of the typewriter, and the woman who “clicks” away at it, the novel remains absolutely silent on the talking book, either as literary or musical technology, and certainly not in the office business sense that Edison had intended. It would seem that the talking book is shut out not only from the pages of *The Rise of Silas Lapham*, but from all the novels of American Realism, to be found instead only in the fantasy and science fiction writings of Edward Bellamy, and H.G. Wells, Octave Uzanne, and the illustrator Albert Robida who provided the first illustrated prototype of the talking book. Independent of its cultural footing in the age of Edison, the artifact of the book appears throughout *The Rise of Silas Lapham* as a matchmaker that unfailingly pairs the right young woman to the right young man. It also exists as a *word* embedded frequently into the novel itself. The numerous appearances of “book” as a four-letter object within the novel suggest the book as a phenomenon built into the act of reading and writing, a building block that supports the literary architecture of the text. The screen grab, below, of a Project Gutenberg “e-book” of *The Rise of Silas Lapham* suggests how ‘book’ (the word) is built into the architecture of the page, as a structural unit, punctuating movement from one

sentence to another, forming repeatedly throughout the novel the object around which the sentence is centred and, finally, around which the book itself is crucially determined:



"Oh no. I had finished the book. I was just looking over it again."
"Do you like to read books over?"
"Yes; books that I like at all."
"That was it?" asked Corey.
The girl hesitated. "It has rather a sentimental name. Did you ever read it?"
"Oh yes; they were talking of that last night; it's a famous book with ladies
"Oh, it's pretty easy to cry over a book," said Penelope, laughing; "and that makes that seem natural too; but I guess it's rather forced."
"Her giving him up to the other one?"
"Yes; simply because she happened to know that the other one had cared for
"I don't know. I suppose that the self-sacrifice----"
"But it WASN'T self-sacrifice--or not self-sacrifice alone. She was sacrificed. I'm provoked with myself when I think how I cried over that book--for I did cry."

Fig. 7. 'Book' as a constituent of literary architecture

The Rise of Silas Lapham is very much a book about the centrality of the book as *the* means of understanding and negotiating contemporary American life. It also reveals neatly how the book as a physical object penetrates the practice of everyday living and even *the act of writing*. In the following brief passage the reader experiences the "book" as both a cultural artifact and a four-letter word that dominates the physical action of the text, determining how both author and characters pivot, deploy and redeploy themselves:

Where Penelope sat with her book she heard the continuous murmur of voices below, and after a long interval she heard her mother descend. She did not read the open book that lay in her lap, though she kept her eyes fast on the print. Once she rose and almost shut the door, so that she could scarcely hear; then she opened it wide again with a self-disdainful air, and resolutely went back to her book which again she did not read (124).

It is not entirely clear in this passage who or what is in control, who is guiding the action. Is it the door that opens and the book that shuts? Does the almost open door or open book bear the weight of the character's resolution? In this textual network between human and the non-human artifact, the book seems to hold the upper hand, (whether it is open or closed, read or unread) directing and even proscribing the action of the human actors. Appearing 82 times in *The Rise of Silas Lapham* the word "book" is also paired with "keeper" to form "book-keeper."

Conclusion: the End of the End of the Book

By the start of the twentieth century the enthusiasm surrounding the talking book had subsided in the face of the technical improbability of ever constructing such a device. In retrospect it is clear that this device existed as a discursive subject only, but never as a working prototype. As an anonymous 1885 wit wrote in the *Mercury* newspaper "The project is yet only in its infancy—indeed further back than that, in the womb of time" ("The Book of the Future" 4). In the digital jargon of the late twentieth century Edison's "talking book," along with R. Balmer's "whispering

machine” were both *vaporware* in that they shared the two crucial elements that define vaporware— “• it is promised before its time • its time may never come” (Savage 23). The time for the phonograph would come, but it came not as a technology to dethrone what Edison considered a clumsy method of instruction. It would find its function in the saloons of turbulent America, dispensing racially dubious audio skits and what were called “coon songs” for a nickel a play before the first recordings of African American music in the last decade of the nineteenth century. The technology became not a replacement for the written word, but a record of the singing voice, a multiplier of music, a repeatable archive of song and music that would evolve into what has since been described as “the industry of human happiness” (Chew 1). The time of the talking book or the whispering machine would also come, not as a technology that would end the book, but a 1930s technology designed to meet a specialized realm of literature, that of recorded spoken word reading for the blind, a function Edison had listed third in his 1878 essay outlining the potential benefits of his phonograph. Despite its failure in the late nineteenth century as a talking machine, the phonograph was prescient technology: it set the stage for a new literature interpreted not by the eye but by the ear, and as such predicted a technology of recorded books for use for the blind, as well as the audio book industry of the late 1980s. More radically, by rematerializing the “book” form, it postulated a new model for the book, one that existed without paper and without ink, a model that a century later was to become an embodied reality in the form of the e-reader, and electronic text in general.

The ‘end’ of the book had been from the beginning a narrative that attempted to domesticate a future in which electricity, and then electrically powered machines, would displace books from their monopoly position and assumed the lead role in their place. The end that Uzanne, Bellamy, Hanby, and others wrote of so breezily reflected not the end of the book, but the end of its unquestioned stature as *the* dominant cultural engine. The book object was not going anywhere. After coins, the book would continue to exist as the second most common artifact on the planet, (Barker 7). As an object it would exist in plenitude much as the candle still exists in great numbers today. It did mean, however, that the method of lighting the room was about to change.

Both Bellamy and Uzanne acknowledge that the end of the book object may exist somewhere on the horizon. Practically, however, as the vitality of American literature demonstrated, it was nowhere near imminent, or even remotely visible. Consequently, such men could write rather easily of its end. What was coming to an end—as a result of what Kittler described as the “technological differentiation of optics, acoustics and writing” (16) —was not the book as an artifact, but the book’s monopoly as the only technical medium for serial data processing. What was changing was the unchallenged status of the book as a way of experiencing the world and how we live within it. What Roger Chartier had carefully articulated as “the order of books” (1994) was giving way to a new order, and one decidedly not based on books, but rather the “electrical fluid.” The ritual economies of the book were giving way to what James Carey has called “the economy of a signal,” as initiated by the rapid spread of the telegraph (*Communication as Culture* 202).

Ending was the unquestioned synonymous linkage between learning to read and learning to think, the indelible connection between literacy and intelligence (Ong 1982). Through the phonograph in particular, the telegraph, along with Pitman and other shorthand systems, telephony, the transatlantic cable, mimeograph technologies, the typewriter, photographic and Kinetiscope technology, even the X ray, “the book,” as James Carey observed, had been “dislodged from its historical niche” (“Paradox of the Book” 107).

This dislodging manifested itself in a rather sudden contemporary discontent regarding the scriptural economy in general, and the book in particular. This discontent appeared even in the realm of public health, where reading the printed page was increasingly identified as a hazard to youthful eyes, and the cause of a sedentary and unhealthy, perhaps even un-American way of living. Ranging from indignantly furious, to entirely serious, from mockingly grave, to tongue-in-cheek, from fantastical to scientific, this narrative attempted to deal with the looming possibility that the book was now just another means of manufacturing and archiving text, merely one more method of inscription among numerous others that would now exist in increasing numbers.

CHAPTER TWO

“Book Me No Books”:

A Machine to Think With—Machinating the Book

In his 1924 *Principles of Literary Criticism* I. A. Richards begins with of a bold definition of what a book *is*. The book, he proclaims, is now “a machine to think with” (1). With this definition he attempts to shake the book loose, not only from its long scriptural and Judeo-Christian associations, but perhaps as well from what George Eliot had termed “silly novels by silly lady novelists.” In mechanizing and masculinizing the book Richards sets about to integrate its traditional form into a full-fledged electro-mechanical age. The critic is quick to add, however, that this machine, the book, is not intended to “*replace* the bellows or the locomotive” (emphasis mine 1). The book then, having suddenly become a machine, is not to be a machine like the steam engine, but instead a machine that retains considerable access to pastoral origins. This new machine, he continues, is to operate as a loom on which it would “re-weave some ravelled parts of our civilization” (1). This reassuring elaboration, with its classical echoes, reminds readers that “text” derives from the Latin *textere*—to weave, to join, to braid—and thereby preserves an understanding of the book as technology that joins, that combines, that brings together, that makes whole. Richards’ definition also acknowledges what Leo Marx has described as “the machine’s sudden entrance onto the landscape” (2). The overwhelming power of this entrance is what I. A. Richards seeks to ally the book

to, advocating a renewed and masculine power for the book and its *ravelling* capacities during an age that had now routinely become known as ‘the machine age.’

Beginning with the book as a purported “machine to think with,” this chapter looks beyond Edison to explore a succession of mechanical re-makings of the book that followed the electro mechanical “read with your ears,” talking book of Edison’s original design. The emerging reading and writing-machines examined here include Admiral Fiske’s 1922 invention, “the Fiske Reading Machine;” Bob Brown’s Dadaist conception, “the Readies;” Vannevar Bush’s “Memex,” and Ángela Ruiz Robles post-war invention, “the Mechanical Encyclopedia.” Rather like the digital technologies of a near century later, these ideas and inventions were ushered in on a narrative that took for granted that the book was in sudden and desperate need of improvement. This improvement, almost without exception, involved migrating text off the page and into a mechanical environment that was often (though not always) dependent on electricity. In particular this chapter scrutinizes various inventions or conceptions that existed prior to computerized text and yet involved radical new physical forms for the book that further divorced the written word from its agricultural base as plant fibre, and allayed it increasingly to metallic structures, mining technologies, iron, steel, glass, all which sought to transform the book into a lens-based, screenic and/or filmic technology. Collectively these inventions, or ideas for inventions, demonstrate that the shift from paper and ink to the computer screen was not an epochal, linear leap from the printing press to the micro chip, but a staggered, and considerably less revolutionary event than is commonly presented. As Gitelman notes, while Gutenberg’s press is universally used as “the

revolutionary point of comparison” (220) to digital technology, there appeared other technologies that offered alternate directions and potential stepping stones to a fully re-materialized textuality.

The alternate book technologies examined here are characteristic of the economic and cultural pressures of the time. They reflect the growing presence of Fordism, the assembly line, hurry-up industrialism and the commodification of everyday living that, by Richards’ time, had come to permeate modern societies. These commodifications extended into dimensions of time and space in particular where the book was suddenly seen to be technologically inept and out of step with contemporary needs. In creating and narrating this abrupt crisis centred on the book, critics, commentators, and even the inventors themselves, employed a new rhetoric for an old medium, one that, not surprisingly, speaks less to the book than to the cultural and economic concerns prevalent in industrialized societies at the time.

“Simplicity and compactness personified”

The above concerns and assumptions are blatantly sounded in Admiral Bradley Fiske’s invention of the early 1920s, the Fiske Reading Machine. This hand-held mechanism was essentially an early form of microfilm, and in touting its virtues, writers fell back, with increased vigour, on the same tropes employed to attack the book and other ink and paper based technologies in previous decades: they presented reading, the book in particular, as a surefire cause of eyestrain and blindness. With this rhetorical pillar in place, the Fiske Reading Machine was positioned within an already-familiar rhetoric that books caused blindness, or at least

eyestrain. Consequently the invention was presented as a technology that would reduce eyestrain and, according to *Popular Mechanics*, “make eye glasses unnecessary for the majority of readers who now use them” (“Reading Machine to Aid Eyes and Reduce Cost of Books,” 108). Stratagems such as this are identified by Geoffrey Pingree and Lisa Gitelman as efforts to cope with what is essentially an “identity crisis” (*New Media 1740-1915* xii) faced by each new medium. This crisis, state the editors, is “precipitated...by the uncertain status of the given medium in relation to established known media and their functions” (xii). The Fiske Reading Machine, rather like digital text and the electronic readers that appeared toward the end of the century, was faced with the difficulty of establishing its own credibility against the daunting and highly revered functionings of the book, a medium that was, to say the least, extremely “established [and] known.”

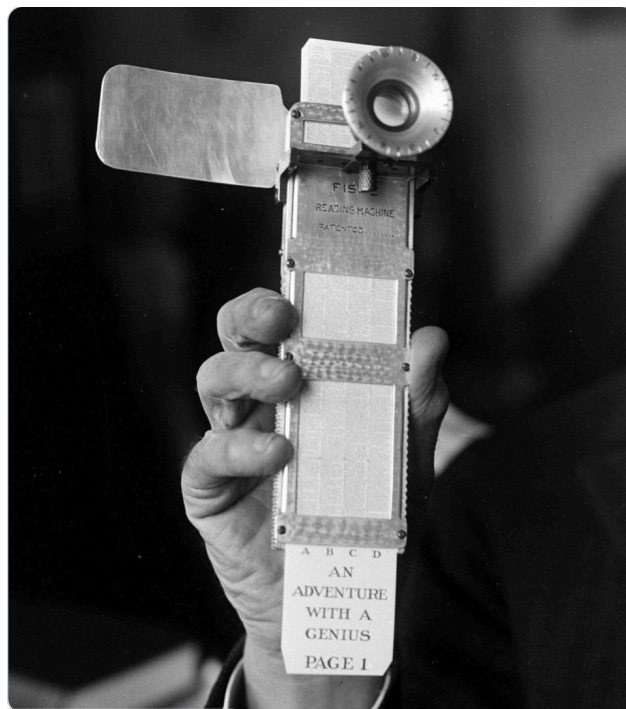


Fig. 1: Fiske's Reading Machine circa 1922

Having re-enlisted the well-worn but entirely fictional belief that reading damages or wears out the eyes, the Fiske Reading Machine also sought to discredit the book not merely as a health hazard, but as an inherently wasteful, profligate technology that was bankrupting the nation by its publishing costs, and taking up obscene amounts of space. According to the *Scientific American* of 1922, “voluminous periodicals” and “the expenditure of billions of dollars annually in printing and acres and acres of space in which to store as embodied in the present art of printing,” can all be “revolutionized” by the Admiral’s invention (Winters 401). Indeed the decorated navel officer and one time commanding officer of the *Arkansas*, the *Minneapolis*, and the *Tennessee*, parses the economic savings of his device with the some obsessive detail According to Fiske:

The cost of manufacturing books, magazines, weeklies and perhaps newspapers will be so reduced that 10,000 copies of one of average size, containing about 100,000 words, can be manufactured and sold to a publisher, for four cents each. If 100,000 copies are issued, they can be sold, of course, at a price much less. (Winters 401)

Nor do the savings stop there. The inventor is convinced that “an ordinary book, magazine or weekly thus reduced can be sent by mail for one cent, singly.” Fiske goes so far as to suggest that, “[t]he cost of manufacturing magazines, weeklies and newspapers will be so greatly reduced that, in all probability they can be *given away*” (emphasis mine). Such an observation anticipates something of the expectations and complexities posed by the internet eight decades later. Fiske,

however, is quick to amend his subversive suggestion in regard to free content by adding that this condition will prevail only if “advertisers continue to pay as present” (Winters).

Perhaps even more than the cost, the space-occupying dimensions of the book seemed to suddenly horrify Fiske and the journalists who wrote of his device. In one example, Fiske claims that the 93,000 words of Twain’s *Innocents Abroad*, can be successfully reduced to a “13 page pamphlet three and three-quarters by five and three quarters inches in size” (Fisk cited in *Miami News*, 1926). This recitation of numbers itself is offered as a literal *measure* of success of the technology and complies with a sudden cultural enthusiasm for miniaturization, along with electrification, was becoming a significant zeitgeist the modern age and one that was rapidly leading to the appearance and proliferation of the hand-held mechanical device (Unwin). The acres and acres of storage space taken up by periodicals alone, is contrasted with Fiske’s device which is briskly described as “compactness personified, lending itself to easy carriage in one's coat pocket” (Winters 401).

Despite living in ‘the machine age’ in which the book itself had been defined as a “machine to think with,” it appears that to Admiral Fiske the book was still not machine *enough*. To that existing machinery he was determined to add another machine—a “reading machine.” Together, these new machines would greatly contribute to what Fiske considered the greatest machine ever invented, what he called the “Machine of Civilization.” This magnificent machine, it turns out, was entirely dependent on another machine without which, according to Fiske, civilization is not possible: the gun! Indeed, in his eighth and mercifully final book,

Invention: the Master Key to Progress, published 1921, the word gun appears 156 times, putting it just behind ‘civilization’ which makes 209 appearances. “The gun today,” he writes, “is one of the most highly specialized and perfect appliances that the world possess” (107). Furthermore,

“the gun seems to constitute the foundation of modern civilization
and the printing press to be the part of the structure built upon it; for
the fundamental enemy to civilization has always been the barbarian,
be he a savage under Attila or a Bolshevik in New York. (115)

In the Admiral’s fevered expostulation it is difficult to discern a distinction between the gun itself and civilization, and equally difficult to differentiate between gun and Gutenberg’s invention. The rather blunt title to his chapter V reads: “The Invention of the Gun and Printing” (101). While the gun is the world’s “most perfect appliance” due to its capacity for “keeping in check the barbarians” (110), the inventor of the Fiske Reading Machine is willing to concede that “the [printing press] was next to the gun in influence on history,” although he appears somewhat perturbed that “some people think that it has had even more influence than the gun” (110).

“A Pre-silicon Kindle”

Today, among online techno-enthusiasts and writers, the Fiske Reading Machine is almost without exception described as ‘history’s first Kindle.’ This uniform and un-thinking rush to cast Fiske’s gadget within the rhetoric of the digital age demonstrates what Paul Duguid has warned against: the reductive “futurological

trope” of *supersession*, the firmly-held assumption that a new medium “vanquishes or subsumes its predecessors” (165). This trope takes for granted a straightforward, chronological movement from a 1922 device to a later more modern and presumably superior medium, the Kindle, which inevitably and predictably vanquishes the earlier one. It also indicates the still powerful influence of this linear reflexive thinking in new media writing, even as it serves to obscure the variant possibilities and profound cultural implications of a technology that was very much a product, *not* of the digital age, but of its own historical times.

Despite the eagerness to legitimize the Fiske Reading Machine by positioning it as a precursor to “the cool clean electroworld” (Sterling 63) of the future, the technology, in fact, does *not* move toward an electro-digital reading environment at all. Instead, it moves decisively, even radically, *away* from the impending future of the written word. Most obviously, the Fiske reading machine categorically rejects the ‘electrical fluid.’ It is a manual machine and rejects outright the electrification taking place in industrialized societies. On every important level it rejects the Edison model for contemporary textuality. Not only does it exist independently of electricity and the electrical network, it insists on maintaining reading as a visual activity, rather than an aural one. In a century that would relentlessly seek to divorce the written word from its paper substrate, the Fiske Reading Machine also remained categorically dependent on paper and ink as the fundamental medium of reading. Fiske is adamant that the success of the technology depends not only on paper, but on the highest class of paper that represents the apex of paper technology: “Since the best quality of paper must be used, books,

magazines and newspapers used in reading machines will last indefinitely. At present, they begin to get discolored and to crumble in a few years” (Winters). Here is an early sounding of a trope repeated throughout the twentieth century, that paper, unless of the highest technological quality, will rot before the reader’s eyes. According to Nicholson Baker, it is such a myth that was employed to further legitimize microfilm technology, and finally to justify the unparalleled destruction of U.S newspaper library holdings in the latter half of the twentieth century (see Nicholson Baker, *Double Fold: Libraries and the Assault on Paper* 2001).

Contemporary insistences on framing the Fiske device as an anterior and inferior electronic reader demonstrate a technocratic and presentist chauvinism that critically misrepresents the technology. In doing so, such framings run the risk, as Gitelman puts it, of “eras[ing] their own historical contexts” (*New Media 1740-1915* xiv). The Fiske reading machine was demonstrably *not* a precursor to the digital turn, but rather a holdover of ink and paper literacy: the technology it most resembles was that of the reading glasses and the magnifying glass. Unlike the “readies” and “Memex” technology that followed, the Fiske Reading Machine, looked back technologically to previous centuries rather than ahead to the emerging one. In its rejection of the screen as the soon-to-be dominant site of textual communication, the Fiske device situates itself as a unique and reactionary outlier from the direction that reading-machine technology was about to take in the twentieth and twenty-first century.

Yet in several crucial ways, Admiral Fiske’s machine addresses the impending concerns of the modern age. It exemplifies emerging attitudes toward

American space in particular, the idea that the vast spaces of the Midwestern American landscape was something that needed to be “annihilated.” This annihilation of space, a theme that runs from the Pony Express to the telegraph and beyond, is found in the obsessive admiring recitation of statistics and figures that sound the triumph of taking up less space:

At a single glance through the lens one hundred and twenty words are revealed to view. Admiral Fiske, in demonstrating his invention to the writer, read aloud at a rate of 239 words a minute. The writer, in turn, in giving the machine a trial demonstrated read, in silence, 287 words a minute by actual count. The strip of paper containing the lettering is chockful of words —10,000 on each side, to be exact. Thus, five such strips, with characters on both sides, would contain 100,000 words, in excess of the number possessed by an ordinary book or magazine. More graphically expressed, perhaps, is the comparison between a package of these strips and the cumbersomeness of a standard dictionary. The latter contains approximately 2,850 pages, weighing about 20 pounds: while 475 strips, two inches wide and nine inches long, could incorporate the contents of a bulky dictionary. The weight of these strips of paper would be only two and a half-pounds or about one-eighth of that of a standard dictionary. (Winters 401)

This approving, somewhat feverish recitation of numbers from a leading U.S science journal in 1926 reveals a sudden near pathological faith in the numeric, technocratic, and scientific assembly-line-hurry-up ideology that was gaining ascendancy in the new century. It also indicates a visible break from a longheld understanding of print, the book, and what it meant to read. Jan Kirk Muller’s insistence that “print...is

placed among the cultural technologies that humanity owes to mythical heroes” (184) no longer applies here. What is found instead is an eerie confirmation of George Simmel’s 1903 description of the modern mind:

the modern mind has become more and more a calculating one; the calculating exactness of practical life which has resulted from a money economy corresponds to the ideal of natural science, namely that of transforming the world into a mathematical problem and fixing every one of its parts in a mathematical formula (cited in Kolocotroni et al 53).

In their eagerness to anachronistically position the Fiske Reading machine as “the world’s first Kindle,” “the Kindle of 1922,” or a “pre silicon Kindle,” tech-writers have misrepresented the medium’s contribution to media history. Proceeding down a path that Siegfried Zielinski has labelled “lazy linearity” (vi), such thinking casts about for the lineage of a technology as a means of comprehending it, while insisting that media history is inevitably a movement from the primitive to the complex, a logical progression from primitive tools to complex machines. “We must be careful,” warns Larry Owens “lest we find in older artifacts only anticipations of future developments, and overlook dimensions of meaning that open windows on the past” (15). Rather than opening the window to the digital revolution and electro-digital scriptural economy that would come to dominate by the end of the century, the Fiske technology sought to vigorously assert the primacy of paper and ink-based literacy. Despite this, the machine was very much a technology that implemented modern notions and even a modern psychology of efficiency and compactness to the

otherwise ancient mediums of paper and ink. The literature surrounding the technology is uniformly a celebration of compactness, of making smaller, a response to the suddenly offensive bulk of the written word. “Reading Machine Invented to *Abolish Bulky Volumes*” headlines the *Miami News* (emphasis mine, 1926). “Bulky volumes can be condensed into small pamphlets,” insists *Popular Mechanics*, while further applauding “the great saving of space in libraries.” The machine would “authorize drastic economies” affirms *Scientific American* (Winters). Nearly a century later, this same valorisation of compactness, compression, and economization is sounded in an article from technology website *engadget*. There, the authors insist on the Fiske machine as the progenitor of the Kindle, while soundly praising E-readers “above all else,” for their ability to “hold the entire works of Shakespeare countless times over while being thinner and lighter than any paperback” (Rigg).

Unlike Edison’s talking book, the writing that surrounds the Fiske Reading Machine offered no speculation concerning “the end of books.” Instead, it focussed on a particular type of book: “bulky books,” “voluminous periodicals,” “standard books like the Bible, and the works of Shakespeare” (Winter). What the device attempted to achieve was a re-orientation of these books in *space*, envisioned as a radical reduction in the space-occupying dimension of text. This capacity would be invoked decades later to promote an array of electronic reading devices, but in Fiske’s time, it appears the seductions of miniaturization were not enough. After registering some eleven different patent designs between 1922 and the mid thirties,

the technology got as far as the prototype stage, and then vanished from public view and discussion.

“Smash em up words”: Bob Brown and the Readies

While Admiral Fiske’s Reading Machine addresses an underlying concern that the written word, the book in particular, was simply too large, and occupied too much space for the modern age, Bob Brown’s conceptual technology, the Readies, addressed a different short-coming of the book—speed: “the written word hasn’t kept up with the age,” he writes. “The movies have outmanoeuvred it. We have the talkies, but as yet no Readies.” To resolve this, Brown imagined a technology that would create “a moving type spectacle, reading at the speed rate of the day with the aid of a machine” (Brown, *The Readies* 1). When Brown wrote this, the speed of the times had been undeniably fast for some time, and was only presumed to get faster. “[E]ver more accelerated becomes the tempo,” wrote *transition* editor Eugene Jolas in 1930, “ever more whirling are the pistons” (cited in Saper xi). Four decades earlier the President of the Great Northwestern Telegraph Company of Canada had declared “There is no competition against instantaneousness” (cited in Chadwick 70). Speed itself had become an ideological standard by which the success of modernity was to be measured, even the standard by which modernity was to be comprehended. Modernity’s overriding accomplishment was to achieve speed, to go faster. Marinetti’s celebrated manifesto is a cry for it—not just for speed, but for an *aesthetic* of it, one that in his time was already manifesting itself as triumphant: “We say that the world’s magnificence has been enriched by a new beauty; the beauty of

speed [...]” (Marinetti cited in Kolocotroni et al 251). It is this new beauty that Bob Brown extols in his own remarkable manifesto of 1930, *The Readies*, which is “DEDICATED TO ALL EYE-WRITERS AND ALL READERS WHO WANT AN EYEFUL (Brown 4). With this dedication Brown indicates that the modern book is no longer to be fashioned, after Edison (and even Cyrano de Bergerac), as a technology to be comprehended through the ears. Now the book is to be a strictly visual medium, as before, but one that is definitively shaped by optical technology and film technology in particular, and one that will shed its dependency on what Brown calls the “preposterous page” (38). It is this dependency that, according to Brown, rendered the Fiske Reading Machine a backward-looking technology that failed to address the requirements of the times:

Book me no books. In the Fiske Machine we have still with us the preposterous page and the fixity of columns. It is stationary, static, antiquated already before its acceptance, merely a condensed, unbound book.” (38)

Brown rejects Fiske’s technology for not confronting head-on the crucial failure of the book which was still “getting out twentieth century reading matter in fifteenth century book form” (34). He also sounds, for the first time, the rhetoric, the terms, to be adopted and re-deployed by advocates of the digital revolution some seven decades later. In identifying the book as static, antiquated, and stationary technology; constrained by the “fixity of columns,” and “bottled up,” (31) “imprisoned in books,” (33), Brown provides the language that would be deployed by techno-utopic media scholars, such as Bolter, Landow, Lovink, Lanham, and others by the end of the

century in their efforts to define the book as a technology that was now inadequate for the times (see Chapter 4).

Not only was it Brown's belief that "books are antiquated word containers (12) he was equally insistent that

modern word containers are needed now, reading will have to be done by a machine; microscopic type on a movable tape running beneath a slot equipped with a magnifying glass and brought up to life size before the reader's birdlike eye, saving white space, making words more moving, out distancing the flatulent winded ones and bringing the moment brightly to us. (12-13)

Independently of the technical differences between the various mechanical book prototypes that appeared from the 1870s and beyond, what distinguishes Brown's conceptions of the modern book from both the talking book of Edison, and Fiske's optical reading machine, is his careful scrutiny of what it meant to read. Neither Fiske nor Edison paid the slightest attention to reading. Edison was seemingly unable to conceive how listening to a text read out loud by someone else was not the same as reading it himself. Fiske, for his part, expresses no awareness or concern that miniaturizing text, and viewing it through an optical magnifier, might affect the act of reading. Reading is not mentioned by Fiske at all. In *The Readies*, however, Brown, an irrepressible writer, a doyen of the *avant garde* and a committed techno-enthusiast, recognizes that not only must the machinery of the book be reconstructed, but words themselves need to respond to the vitality and explosiveness of the modern age. The machine, *his* reading machine, "by its very existence, makes a need for new words and

demands the deletion of some worn out ones.” If the modern reader is to ever “regurgitate with Gert” or “Proustly rejoice in Jamesre,” or merely “bathe in Appollinaire” (1), then a new technology is required.

Yet outside of a single photograph of a no longer locatable prototype, a machine that more resembles a ‘ready made’ of his friend Duchamp, it is not clear that this technology of *The Readies* ever existed beyond Brown’s precise descriptions of it. This serves to underscore what may be the real function of the technology: to argue for a language that aligns with the tempo of the age, one that was increasingly indistinguishable from electricity. “Revolutionize reading,” Brown writes, “and a Revolution of the Word will be inklessly achieved” (38). This revolution, electrically driven, demands “words machinewise” (40) that are “readable at the speed of the day 1930—not 1450, without being broken by conventional columns confined to pages and pickled in books” (40). The very term “readies,” appears to apply not only to an envisioned electric reading machine, and the spools of text that it projects, but to what Brown himself refers to as a “*title* for what I have to say about modern reading and writing” (63, emphasis mine). What Brown repeatedly has to say about reading is that it is now to be fully imbricated within Marinetti’s mechanized aesthetic of speed: “To continue reading at today’s speed, I must have a machine” (31). Furthermore this machine must be capable of being “attached to any old electric light plug” (31). Brown is insistent that his Readie must be powered by electricity since only this way will it be possible to read “hundred thousand word novels in ten minutes if I want to, and I want to” (31).

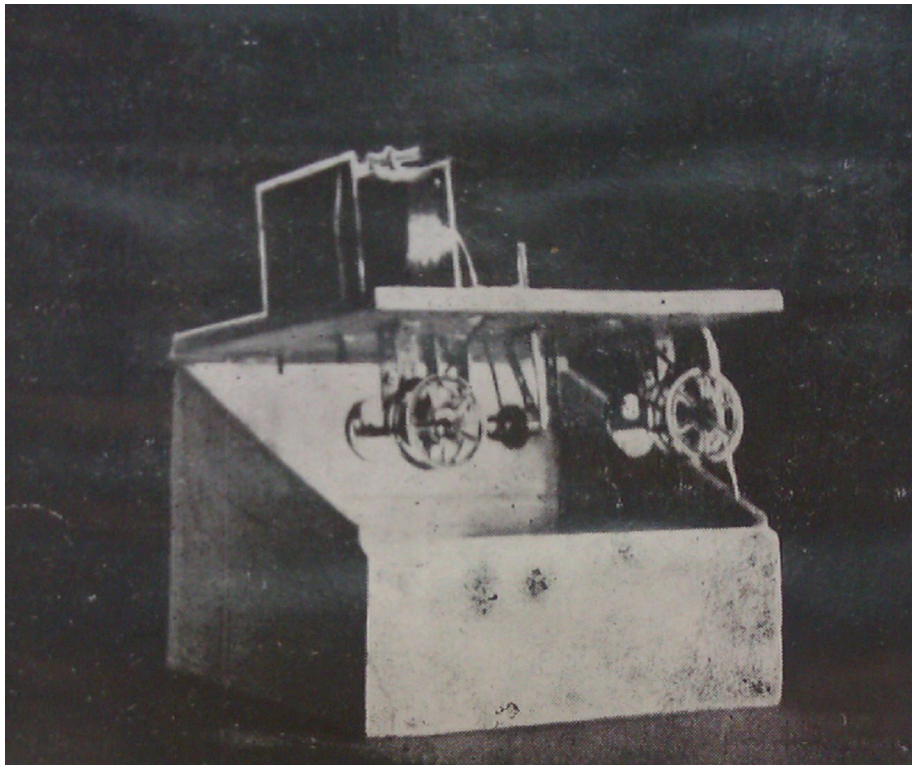


Fig. 2: Bob Brown's Reading Machine, 1930s

Despite the obvious and categorical differences between the Fiske reading machine and the envisioned technology of the Readies, there exist several telling similarities between the two approaches to reading. Both machines upend or reverse the ocular practices that guide the way text is comprehended. Both devices, in their differing mechanical and electro-mechanical ways, require the eye to remain *still*. The Fiske Reading machine requires the reader's eye to remain fixed, or at least relatively fixed, while the text is scrolled upward through the lens. Similarly, the moving type spectacle that Brown demands no longer requires the reader "to jigggl[e] his weary eyes back and forth in the awkward pursuit of words from the upper left hand corner to the lower right all over the vast confusing reading surface of a columned page"

(32). The readies both allow and demand the reader to now become a *viewer* of text a “spectacle” to be viewed as much as comprehended.

Brown’s *The Readies*, published in an edition of one hundred fifty and distributed to the leading moderns, surrealists and avant gardists of the era, documents the cinematization of print, heralds its possibilities, and provides the first sustained account of an off-page, electrically driven literacy. As, among other things, a construction manual for a largely imaginary machine, it advocates text as an optical feast: “request[ing] the reader to fix his mental eye for a moment on the ever present future and contemplate a reading machine which will revitalize his interest in the “Optical Art of writing” (29). The readies is not merely new technology, but a new approach the what Brown calls the “the 26 abracadabras”(10). As with the Pitman brothers and their shorthand system, Brown identified dead weight in the language and offers a system for improvement in rapidity, comprehension, and brevity. Citing some dubious scholarship, he observes:

Statisticians have found that in a novel of 80,000 printed words the following twenty-five are used the number of times indicated:			
The	5,848	As	626
Of	3,198	You	620
And	2,624	With	582
To	2,339	He	544
A	1,696	On	514
In	1,693	At	498
That	1,076	Have	494
It	973	By	480
Is	970	Not	471
I	924	This	458
For	828	Are	434
Be	677	We	423
Was	671		<u>29,661</u>
Aproximately 30,000 of the words used in a book 3/8ths or nearly one half of its bulk are			

Fig. 3. Screen grab from *The Readies* p.52

By eliminating these words, and overturning the technology of reading, it is possible to achieve a spectacle of the word suitable for “the ever present future” (27). Flowing from right to left in a single continuous line at a speed chosen by the reader, with all punctuation replaced by hyphens, the Readies advocate a cinematic means of experiencing text, with words becoming ‘eye lingo’ for a new cinematic textuality. The Readies will do away with “clubfooted langwiche” and replace them with “smashem up words”:

seldom-dovetailed-so-her-dovetailing-progressed- -
 without-undue-danger./Once-after-miraculously- -
 winning-eight-hundred-dollars-roulette-Harry- - -
 decided-stop-ashore-six-months-Dorothy-holiday -
 musical-revel-local-cabarets.-But-nervous-Dorothy-
 poutingly-pointed-his-art-duty-her-new-dress- - -
 needs-hats-shoes-herewithals-unmentionables.- - -
 Together-they-spent-one-joyous-afternoon-off- - -
 shopping-Harry-back-aboard-counting-twenty-six -
 remaining-dollars-recalling-all-hazily-while-playing-
 Auld-Lang-Syne-pushing-away-from-Rio - - - - .

(57)

To some extent Brown shares, or at least pretends to share, a contemporary concern with miniaturization, advocating “a tissue roll which carries the entire content of a book and yet is not bigger than a typewriter ribbon, a roll like a miniature serpentine that can be put in a pill box” (31). Like Fiske, Brown wishes to do away with “cumbersome books,” “those bulky, bulgy bundles of words” (3). His technology would not only facilitate a physical miniaturization of “the medievalism of the BOOK” (28), it would compact literacy by ridding it of the “sentence-encumberers”

(39) charted above, and result in what would appear to be a functioning literary eye-lingo:

The typewriter key-test of “Now is the time for all good men to come to the aid of their party” can be expressed with more interesting optical effect “Nowtime goodmen comeaid their party” or “Timegood men come aidparty. (39).

Not only is the Readies a machine, an electro-mechanical technology for reading in the hurry-up age, it is also a radical reconstruction of the reading and *writing* process itself—as with the Pitman system, it is a type of literary shorthand.

Amongst the various technologies, from Edison onward, that sought to displace book technology, the Readies, is the only one that demanded a significant, radical and, above all, *artistic* transformation of literacy: “All of the arts are having their faces lifted,” Brown wrote,

painting [Picasso], sculpture [Brancusi], music [Antheil]
architecture...drama...dancing...writing [Joyce, Stein, Cummings,
Hemingway]. Only the reading half of literature lags behind,
stays old-fashioned, frumpish....Present day reading methods are
as cumbersome as they were in the time of Caxton and Jimmy
the Ink. (31).

Despite Brown’s full-throated approach to the modernist project —“I do not hiss in pronouncing Tzara’s name” (2) — he does not appear to be entirely sure what do with *paper*, with the preposterous page.” What precisely will the page be made of?

“Sausage words may be salivary to the starving mind,” (and thus located predictably

on paper, yet the language of modernity requires a new reading technology, “modern word-conveyors are needed now, reading will have to be done by machine; microscopic type on a movable tape” (13). Where to locate this language, upon what substrate are they to be materialized? Here Brown is indecisive, offering tape (perhaps ticker tape) in this instance and, given the over-riding cinematic impetus to Brown’s imagined technology, film/tape would appear to be the logical, perhaps only choice. Yet he strangely hesitates. While he insists that “writing must become more optical, more eye-teasing, more eye-tasty, to give the word its due and tune-in on the age” (12) the material substance that will do this heavy lifting is never clearly defined as film. Instead he offers “movable tape” (13) or “a transparent tough tissue role, or “reading film” “reading roll” “an adaptable carrier of flexible, flowing reading matter” (33). While Brown adamantly identifies his machine with the speed-enhanced and space saving impetus of the modern age, it seems these savings are not to be achieved by *eliminating* paper and ink, but simply by “cut[ting] down the *quantity* of paper, ink, binding and manual labor now wasted” (34 emphasis mine).

Finally, where Brown’s imagined technology radically distinguishes itself from Fiske’s Reading Machine, from Edison’s early phonographic talking book technology, and even Cyranno de Bergerac’s fictional invention, is that the Readies demand, from the start, a fully electrified textuality. Written words are to be unambiguously powered by electricity. This insistence prefigures the direction taken by future efforts to re-technologize the word. After the Readies, with the notable if obscure exception of Ángela Ruiz Robles’ Mechanical Encyclopedia, all efforts to rematerialize reading matter accepted that text would be electrically powered, and

would become another product of electricity. In this regard, contemporary new media writers who insist on framing the Fiske Reading Machine as “the first Kindle,” are on surer ground when they just as confidently anoint Bob Brown “the godfather of the e-reader” (Schuessler).

Manning Up: Vannevar Bush and the Memex of Man

Brown’s manifesto, while it appeared at the end of a decade that witnessed an explosion of Dadaist and Surrealist experimentation in Europe, appeared in the United States at a time when the nation was experiencing what has been described as a “bull market for engineering” (Owens 29). Throughout the 1920s enrolment in the Electrical Engineering Department of MIT doubled, along with the “rapid expansion of graduate programs, especially in electrical engineering, which had been insignificant before the war” (Owens 31). This surge of engineering interest and growing scientific expertise shared both Fiske’s and Brown’s concern that current storage methods for text were bulky, space consuming impediments, that no longer met the needs of an increasingly modern world.

Such concerns were forcibly put forth by Vannevar Bush, head of the Office of Scientific Research Development during WWII, under whose “direction 6,000 scientists worked on such projects as the development of radar and the atomic bomb” (Nyce and Kahn 86). In a celebrated essay “As We May Think” published in *Atlantic Monthly* in 1945 and a somewhat different version in *LIFE* several months later, Bush laments that while “[t]he summation of human experience is being expanded at a prodigious rate,” the technology for “threading” through the “record is the same as

was used *in the days of square-rigged ships*” (italics mine, Bush 89).¹ Despite their radically different intentions, the celebrated engineer reinforces Bob Brown’s concern that modern civilization was still “getting out twentieth century reading matter in fifteenth century book form” (*The Readies* 34). To move beyond square-rigged ships, Bush, like Brown, conceptualized an electrically powered technology, not in order to provide a modern and more appropriate means for avant garde and iconoclastic literature, but to ensure that the male scientist, the engineer, had the means necessary to “apply[] science in an economic way to the needs of mankind” (Bush, “The Qualities of a Profession” 43). One of these needs, and a rather pressing one since Edison at least, was to wrest the book from its long, organic and vegetal technological state as paper and ink, and successfully integrate it into a mechanical, and in Bush’s case, an insistently *hyper*-masculine electro mechanical system:

Undoubtedly *man* will learn to make synthetic rubber cheaply,
undoubtedly *his* aircraft will fly higher, undoubtedly *he* will find
more specific poisons to destroy *his* internal parasites...but what
can *he* do to mechanically improve the book? (italics mine, Bush,
“The Qualities of a Profession” cited in Nyce, Kahn 47).

Bush takes for granted that “man” must do something in order to mechanically improve the book, a technology that in 1939 he perceived to be in desperate need of improvement. He is further confident that this improvement must be and can only be accomplished electro-mechanically, and that these improvements will be ushered in by a male “technological, scientific elite,” that sits “atop the cultural and political hierarchy” (Nyce, Kahn 47). Just as Bob Brown had taken for granted an artistic

aristocracy that positioned Gertrude Stein on the high council, surrounded by Kay Boyle, Nancy Cunard, Hemingway, Duchamp and others, Bush takes for granted that the “scientocratic impulse” (Nyce, Kahn 47) will lead to a technologically advanced society governed by applied science. When it came to the new and improved electro-mechanical book, these *masters*, as Bush calls them, would maintain control over all reading and writing machines, assuring the primacy of a technocratic world vision.

In the contemporary environment of new media studies Bush’s 1945 essay remains a celebrated text for, in particular, anticipating the invention of “hypertext.” This prescient look into the future of computing took the shape of an imaginary machine conceived of by Bush, and termed the Memex, a machine that, despite all the commentary it has engendered, remained, like Brown’s Readies, an invention on paper only. It is the Memex, with its reputed connection to “hypertext” that largely explains why Vannevar Bush’s monochromatic and discomfiting essay “As We May Think” is still discussed today.

Although “hypertext” has lost the seductive allure it once possessed in new media discussions, it was until recently still shrouded in a daunting and messianic rhetoric. Ted Nelson, who coined the term in the mid-sixties, had no doubt that his system was not only a “revolution” and the “wave of the future,” but also “the next stage of civilization, the next stage of literature and a clarifying force in education and the technical fields, as well as art and culture” (2). Such revolutionary, even *hyper*-revolutionary rhetoric for the technologies of word-making entailed a corresponding dismantlement of the equally venerable language that surrounds the

book. Thus, as one scholar states in her essay on Nelson's hypertext, "All methods of paper impose connective restrictions which mask the true structures of ideas" (Barnet 74). Barnet here employs what is now a mainstream narrative tactic that describes the book and paper in particular, in terms of "restriction" of containment/imprisonment/masking/concealing, while reflexively associating electro-digital machines with truth and "the true structures." Such metaphors of restriction and immobility, first proffered by Bob Brown and re-employed by Ted Nelson several decades later, have now become central to how scholars and technopathic writers into the 1990s and beyond, and often continue to frame the book and other paper-based inscription technologies (see Chapter 3).

Driving Bush's efforts was not so much an anger about the book (as occasionally evinced by Edison) but an overriding conviction that there was simply too much data, too much information, too much that needed to be known, for the human brain to accommodate. It is this "bibliometric crisis" (*Always Already New* 98), as Gitelman terms it, that Bush addresses in "As We May Think." Foremost are concerns that on a practical level "publication has been extended far beyond our present ability to make real use of the record" (Bush, 89). Thus, as with Fiske, and even Brown to a smaller extent, miniaturization is a key feature of Bush's imagined machine, and, as with Fiske, Bush conjures up some cheery if bizarre rhetoric to drive home the miniaturizing beauty of his technology:

Assume a linear ratio of 100 for future use. Consider film of the same thickness as paper, although thinner film will certainly be usable. Even under these conditions there would be a total factor

of 10,000 between the bulk of the ordinary record on books, and its microfilm replica. The Encyclopedia Britannica could be reduced to the volume of a matchbox. A library of a million volumes could be compressed into one end of a desk. If the human race has produced since the invention of movable type a total record, in the form of magazines, newspapers, books, tracts, advertising blurbs, correspondence, having a volume corresponding to a billion books, the whole affair, assembled and compressed, could be lugged off in a moving van. (93).

That the great human record can miniaturized, stashed in a “moving van” and “lugged off” carries for Bush, an unmistakable stamp of progress. It is also an acknowledgment of suburban living and the American ethos of moving, of relocating, of leaving one job for another. That the American male can take the great human record with him, is offered by Bush as an advantage at least as valuable as the record itself.

What precisely is being miniaturized and lugged around, however, is not always clear. In one paragraph Bush emphatically refers to its as “His [Man’s] record” (106); in another as merely “the record” in another as “the great record” (107); “the common record,” (95); the “existing record” (95); the “total record” (208); “the record of ideas” (88); and finally “the record of the race” (105). While this somewhat aligns his imagined technology, the Memex, with Fiske’s actualized Reading Machine, it put his vision singularly at odds with Bob Brown who imagines a technology, not to makes access to the “record” easier and more

efficient, but one that dispenses with the record altogether: “break up the word,” Brown demands, “and throw all the broken bits away into a handy kaleidoscope” (*The Readies* 2). It is precisely Bush’s faith in the great record or the record of the race, that Brown will have nothing to do with. As far as the Readies’ inventor is concerned, one can take the words that comprise that record and “press [them] between the pages of a bibulous Bible, to serve as a shriveled club-footed langwhich for future archeologists to munch upon” (3). The great record, to Brown, needs to be dispensed with immediately because “the written word hasn’t kept up with the age” (Brown 11). To Bush however, the record is sacrosanct, vetted and approved by a procession of “he[s],” including the scientist of the future who, to Bush, is the one actor possessing the authority to decide “what is worthy of the record” (Bush 91). Once he decides what is worthy of going into the common record, or the record of the race, the male scientist will then exercise what Carolyn Marvin terms “the male prerogative of technological literacy” (28). Bush states, “he trips the shutter and in it goes, [to the record] without even an audible click. Is this all fantastic?” (*As We May Think* 91.) The celebrated engineer and *Times* ‘Man of the Year’ takes it for granted that what goes into the great record will go in through photographic means or through other advanced technological devices. To make the record,” he laments, “we now push a pencil or tap a typewriter” (94). Pushing and tapping old writing machines is clearly insufficient, and Bush advocates a model of textuality that looks back to the aural, record/playback technology imagined by Edison a half century earlier, and conceptualized as the talking machine.

It is this imagined technology that *Life* defined as a “supersecretary of the coming age” (Bush, 114), a technocratic, scientocratic framing in which the secretary herself is made “super,” by becoming a *machine*. This rhetoric puts on display a growing disappointment in the human body, perhaps the female body in particular, along with an overriding masculine veneration of the machine.

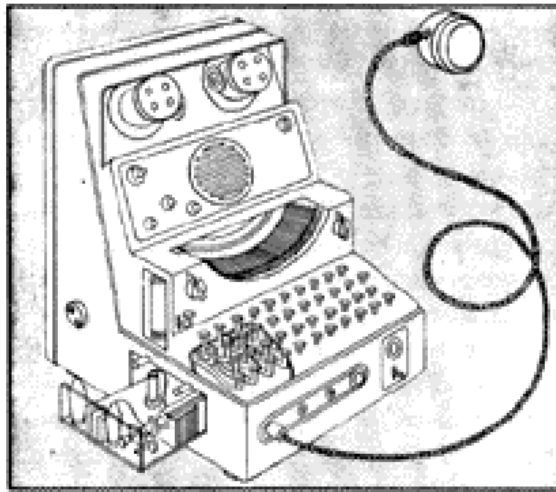


Figure 4. “Supersecretary of the coming age”

Not surprisingly the language surrounding such technologies seeks to advance deep into the territory of the book, to claim the book’s heritage, and the respect afforded to it, to arrogate that legacy unto the machine. This evolution is visible in the metaphors of the human body and nature itself as *machine* that admiringly work their way into “As We May Think”:

In the outside world, all forms of intelligence whether of sound or sight, have been reduced to the form of varying currents in an electric circuit in order that they may be transmitted. Inside the human frame exactly the same sort of process occurs (106).

I.A. Richards may have declared the book a machine to think with, technologizing and thus masculinizing the book, but approximately a decade later, Bush postulates an electromechanical machine that will outperform the book, an electronic circuit technology located inside the human frame.

“As We May Think” reads today as a case study in “the role of technology in reproducing patriarchy” (Wajcman144); a masculine expostulation on a somewhat embarrassing scale. Its value as a cultural document may have less to do with being the putative origins of “hypertext” than as a display of unreflective masculinization, a reproduction of the patriarchy, even an *over-reproduction* of the patriarchy, concerned primarily with the policing of the female body, and maintaining power imbalances between *he* and *her*, and perhaps generating a few new ones along the way. Even given the then contemporary editorial willingness to use *he* to mean *she*, of *man* to mean *woman*, of *Mankind* to mean *Womankind*, there is, beyond this, in “As We May Think,” a pounding masculinization that frequently overwhelms the text. The pronoun *he* appears 67 times, *his* appears 69 times. *Man* as in “brave man” or “enabled man” appears eight times. The pronoun *she* is entirely excluded. The noun *woman* does not appear. What is found instead is “girl” appearing three times and twice immediately aligned with “stroke” as in “keystroke”: “a girl stroked its keys” (94). In regards to these futuristic devices that Bush postulates in some detail, it appears the complex cultural negotiation in which a technology domesticates itself as a gendered machine, has already taken place.

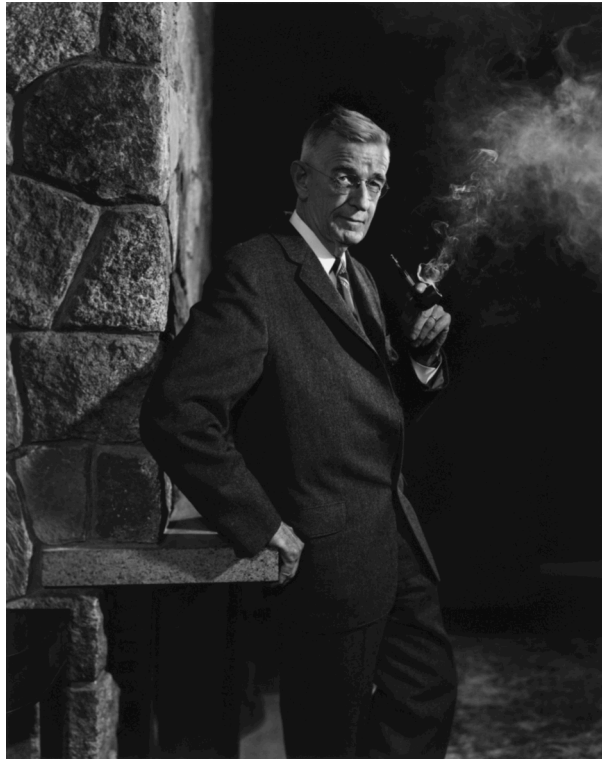


Fig. 5: Vannevar Bush: Man of the Year

Unlike digital technology, which some cyberfeminist writings have framed as offering “possibilities for destabilizing conventional gender differences,” (Wajcman 2), the exclusively analog technology of Bush’s interest and expertise appears to offer the opposite; a strict reinforcement of the gender roles of information processing, and the uncontested assumption that the “girl’s” function as a stroker of keys will continue into the service of future new machines. It is noticeable that within “As We May Think,” when it comes to the keyboard, a man may “tap”, but “girls” without exception, “stroke.” Describing the stenotype and its operator, Bush strays into a veiled eroticism of his own as he describes how “the girl

strokes its keys languidly and looks about the room and sometimes at the speaker with a disquieting gaze” (94-95). Later, this girl becomes “a roomful of girls” all of whom are armed with “simple keyboard punches” (97). While the man goes about his business of contributing to and accessing the great record, the race record, the role for the woman (“girl”) is mechanical. With her stroking she will move the great race record from one machine to another. Her function, as elaborated in Bush’s essay, is to facilitate a future in which the reification of data, collecting it, moving it around, is indistinguishable from progress and the future itself. There are times when Bush conflates “girls” with engineered machines, presenting the wax cylinder and “the stenographer” as interchangeable technologies. While much has been written about the disappearance of the racial and gendered body in the post-everything age of the digital regime, Bush’s essay literally contributes to that disappearance by semantically eliminating the her/her’s/she/woman/ that locate the female at least on a sheet of paper. In Bush’s revealing essay, even the mosquitoes are exclusively male (89). Indeed, the physical material out of which the female is comprised seems up for grabs to Bush. In a somewhat chilling passage, he outlines a cyborgian vision of the female and her relationship to the electric impulse:

The impulses which flow in the arm nerves of a typist convey to her fingers the translated information which reaches her eye or ear, in order that the fingers may be caused to strike the proper keys. Might not these currents be intercepted, either in the original form in which information is conveyed to the brain [...] (106).

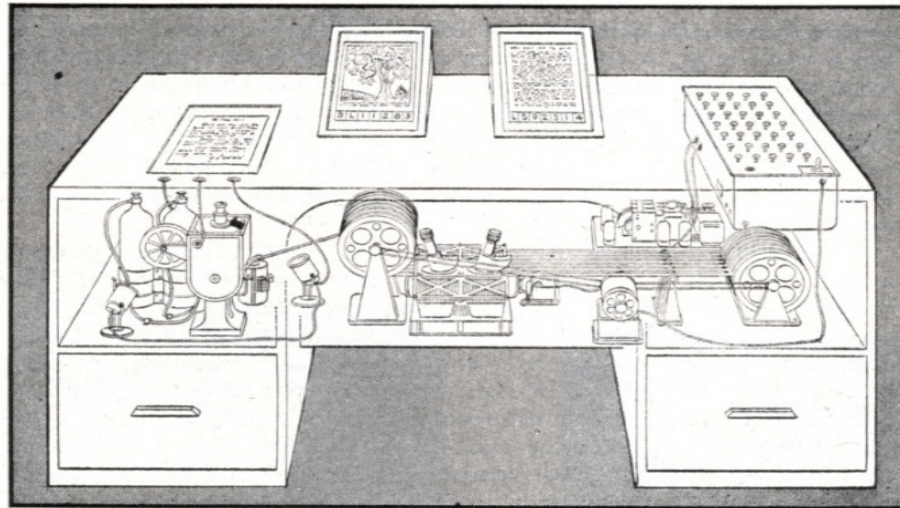
Beyond her function as a conveyor of “currents” and “impulses,” and emitting those “disquieting gazes,” there appears little for the female to do in the highly machined environment Bush describes. One thing she seems unlikely to do is give birth. The essay’s two references to pregnancy both involve the term being applied to technology: film strips “impregnated with diazo dyes” (Bush 91) and “impregnated” paper” which turn dark “when an electrical contact touches them.” (92). Attributing life-giving capacity or even the capacity of life itself to technology has become a cornerstone of the digital narrative. Even though “As We May Think” is resolutely an analog affair, the author is fully at home in a semantic system that divorces life from living organisms, from women in particular, and places it within electrically powered machines instead. As a master of analog machines Bush’s interest in digital systems was slight. Instead, his interest remained in machines such as “thermionic-tube equipment capable of counting electrical impulses at the rate of 100,000 a second” (96). Such machines will take the great race record beyond the days of the square rigged ships. Like man himself, this machine will possess “enormous appetites” (Bush 96). It will be the task of a roomfuls of girls, armed with *simple* keyboard punches and their languid and disquieting gazes, to satisfy these appetites: to “deliver sheets of computed results every few minutes” (Bush 97). In his cheerfully Orwellian manner, Bush concludes by insisting “There will always be plenty of things to compute in the detailed affairs of millions of people doing complicated things” (97).

These computations, Bush is clear, will have at last been freed from ink and paper based formats and will be materialized differently, through “improved

microfilm” (102). Most significantly, Bush postulates a new home for text; one that by the end of the century would become its definitive performative space, what Bush terms “the screen,” the “glowing screen” or the “translucent screen.” To this screen, perhaps imbedded in the same desk, will be added a “transparent platen” on which “are placed longhand notes, photographs, memoranda, all sort of things” (Bush 102). With “the depression of a lever,” the document is photographed and added to “the record” (293). Thus the screen becomes a two way interface, re-materializing the paper document *into* the machine where it is stored in miniaturized form, and facilitating its extraction for viewing.

Frequently referred to in media and new media studies, Bush’s essay has generated little or no interest in the field of book studies. Nonetheless, his imagined Memex and the mechanized writing environment that it presumes, effectively incorporates all the major re-materializations that, since Edison, have been directed at the book. It is a technology that removes both ink and paper from the architecture of text. Equally significant, it abandons the hinge technology of the book, the spine, fundamental to the book since the second century, and fundamental to a codex metaphorical structure that is constitutive to the meaning of books: their ability to be open or closed, to conceal or to reveal. Having finally recast the book out of its vegetal and agricultural origins into an engineered machine manufactured through mining practices, the book is removed also from its peculiar and deeply meaningful relationship to the hand, the *manus*, and that which evolves from the hand: the *manuscript*. The movement of text, the flow of words, is removed from the hand of

the reader, and replaced by electronically powered movements executed by machines.



MEMEX in the form of a desk would instantly bring files and material on any subject to the operator's fingertips. Slanting translucent viewing screens magnify supermicrofilm filed by code numbers. At left is a mechanism which automatically photographs longhand notes, pictures and letters, then files them in the desk for future reference.

Fig 6. Drawing of Bush's imagined "Memex"

Angela Ruiz Robles and the Mechanical Encyclopedia

In the reflexive effort to define and comprehend new media technologies by what is perceived to be their historical precursors, Angela Ruiz Robles has the honour, or dishonour, to be viewed categorically as the inventor of what is termed "the electronic book." Although others, as we have seen, share this honour, she alone is almost crushed beneath the burden of it. Perhaps without exception the Spanish school teacher, inventor, educator, and mother of three has been overwhelmingly defined as the inventor of the first e-reader book. In more circumspect writing she is referred to as the inventor of a "fore-runner of the modern

electric book” (history-computer). The noticeably rare exception to this description is Alessandro Ludovico’s “*Looking For the Spaceless Book: an E-publishing Archaeology*” where, with considerably more accuracy he describes her invention as “a prototype of a mechanical book” (2-29).



Fig. 7. Robles with her mechanical encyclopedia

Robles’ unique intrusion into what is a formidably male technical realm has been celebrated in a rather sudden splurge of online writing that links her ‘Mechanical Encyclopedia’ directly and unfailingly to the electronic book. In a backward nod to her machine, and in a rather back-handed tribute to the woman herself, the sudden attention paid to her, nearly all of which has appeared after 2013, is based less on *her* invention than on the sudden unanimous delight in insisting on a link between

her odd contraption and today's e-book. In a way that speaks revealingly about how new media is comprehended, Angela Luis Robles is now celebrated not because she invented and had built a remarkable technical machine, but because today's techno-commentators have sanctified that particular machine by anointing it as an early, perhaps first member of the digital "époque" (Ernst 107).

Her machine was patented in 1949 and, as "a prototype of a mechanical book," to use Ludovico's language, it fits within the cluster of technologies that appear following the marketing of Edison's phonograph and that have been examined here. Like Fiske's reading machine and to a lesser extent, Brown's Readies, it is a technology that still requires ink and paper. It shares with the Memex a capacity for graphics, and even audio. There is suggestion that the invention employed electricity and was capable of attaching to electrical power. There are also suggestions that instead of electricity, it used luminescent inks so that it could be read in the dark. It also seems that the technology was powered by "pressurized air" (Moran). While this does not make the *Enciclopedia Mecánica* a wind-driven machine, it reveals a technology that is independent of the masculine prototypes and projections shaping the technological expectations of the twentieth and twenty-first century.

Rather like Edison's electric pen and the printing press itself, Robles' machine is not so much an invention as a cobbling together of previously existing technologies. At its most basic level it is a suitcase, a hinge technology, and thus "opens like a traditional book" (espacio.fundaciontelefonica.com) Invented in 1949, at a time when only twenty-five percent of Spanish women knew how to read and

write, (espacio.fundaciontelefonica.com) it is a technology that does not seek to replace the book, or improve the book, or to modernize the book. Rather it seeks to re-assemble, to further dimensionalize the book, to perform the functions not only of the book but of many books, including picture books. It is technology that welcomes children, and it bears the unmistakable intrigue and playfulness of the inventor's pedagogy. Resembling a highly-decorated birthday cake, and decidedly less formidable than the line drawings of the Memex, the Mechanical Encyclopedia seeks to be touchable, as with a toy, to give reading to those who do not possess it. If the aim of Bob Brown's Readies was to electro-mechanically overturn the fossilized aesthetics of the previous century, Robles' suitcase appears a technology conceived, designed, and invented to give delight to children, to make them want to touch it, to put their fingers on it, to manipulate and to play with it. This attentiveness to the child, to the fun of learning, rather than to Bush's "race record," or "great record," or to perfecting technologies for calculating the trajectory of missiles, radically distinguishes Robles' machine from the Memex, the Readies, and from Fiske's writing machine, just as it radically distinguishes the machine from the overall direction of technological change in the twentieth century.

For all of its amorphousness as a communications technology, the Mechanical Encyclopedia sought to achieve many of the results claimed by the new mechanical book technologies that appeared in the early decades of the twentieth century. Most obviously, it sought to miniaturize, to contain *more* in a space that was *less*. In this way it was also a technology that sought to achieve what Fiske, Brown and Bush (to greater and lesser extents) believed to be crucial: "the

mechanically induced collapse of content in a given space,” (Ludovico 2-28). Unlike the Memex, or even Brown’s proposed textual projector, Robles’ offering was decidedly portable, in fact, a suitcase. Such a design fosters a vision of schoolteachers tramping from one village to another, or to another schoolhouse, carrying a mechanical suitcase stuffed with its tightly wound paper scrolls, alphabets, games—crammed, as one journalist stated, “with innovation and pedagogical enthusiasm” (Jones). Frequently, the attention paid to Robles and her technology notes that her elaborate suitcase was designed to lighten the satchels of students. It is safe to say that a technological system prioritizing the needs of children is not something sought in the machines of Fiske, Brown, or Bush and highlights what is transgressive about the inventions and the pedagogy of the woman who was known as “Doña Angelita.”

Far from being the first e-reader, or even a precursor to the electronic book, the *Enciclopeida Mecánico* offers a type of technological shorthand in which the book, the library, the blackboard, the illustration, the sound recording, the atlas, the poem, the cartoon, the alphabets of different languages are integrated discretely and mechanically—not into Kittler’s homogenizing data stream—but into a suitcase, itself a recent invention from the late nineteenth century. These discreet technologies look back rather than forward, to a type of folk technology that is naive and richly immersed in the history of learning and the past. While tech-writers today, and book historians are pleased to identify the metaphorical return of the “scroll” in a digital keyboard’s up-and-down keys, Robles’ gear used *actual* scrolls, tightly wound, stacked one upon the other, turned by a crank. Rather than revealing itself to be a

precursor to the so-called “electronic book” this classroom in a suitcase reaches back to the design of the abacus and scroll technologies that predate Gutenberg’s invention.

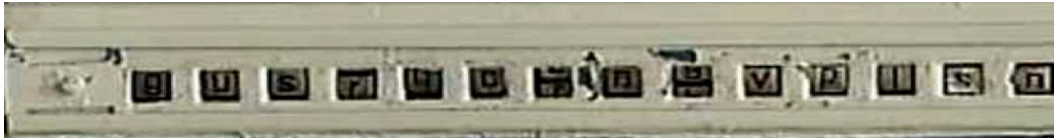


Fig. 8. Close up of Mechanical Encyclopedia showing counters.



Fig. 9. Close up of Mechanical Encyclopaedia showing hand-written scrolls.

In the rush to position Robles and her inventions as a type of curious female contribution to the masculine triumph of Project Gutenberg and the electronic book, writers have done a disservice to Robles and her work. They have inverted historical timelines to insist on her invention as an inevitable step toward an electro-digital society, and a monopoly of what, since the mid-nineties, is termed “new media.” As Wendy Chun states, this term replaced the less exclusive term, “multi-media,” which of course, is what the Mechanical Encyclopedia is (*New Media Old Media* 1). It would be difficult to imagine a technology more ‘multi media.’ Unfortunately, the

disappearance of the term in favour of ‘new media’ has meant the disappearance of what Chun calls “a happy if redundant plurality” (1). This happy plurality abounds in Robles’ invention in a way that noticeably separates it from the other technologies that sought to turn the book into a mechanical device. Perhaps even more, writers have scrupulously ignored the gendered concerns her technology addresses. The “her” and “she” the “woman” who have all been so disappeared or compartmentalized in Bush’s essay are made visible in a technology that was not only invented *by* a woman, but appears to have at its core, the girl, the girl student in particular, and—what Bush found somewhat alarming—an entire “room full of girls.”



Fig. 10. Ángela Ruiz Robles: “The teacher who created the eBook”

Conclusion: Mother of Three and the Record of Man

In the first five decades of the twentieth century there appeared an ongoing effort to turn the book into something else: what I.A Richards was happy to call “a machine.” The written word, with its long and pastoral history as a product of various plant fibres, of ink based on oak gall, presented a somewhat hidebound obstacle to an urbanizing century eager to assimilate the wonders of the electrical

fluid and the mechanized efficiency of the machine in a machine age. Attempts at this transformation had been made earlier with the phonographic technologies of Thomas Edison and the concurrent appearance an “end” of book considerations promulgated with enthusiasm by a small circle of men whose status as journalists and authors helped usher this concept into the public realm. The new century witnessed a continuation of this sudden masculine impatience with the book, and the appearance of a cluster of technologies, or imagined technologies that would rehabilitate an old technology and render it fit to meet the demands of the speed-based dynamism of the twentieth century.

Two of these technologies were either invented or conceptualized by men with deep and intractable affiliations with the military, with weaponry, and the precision machinery of twentieth-century warfare. The Fiske Reading Machine, invented three decades after the official closure of the American frontier, manifested for the first time what would become a defining and dominating pressure on book technology; that it become small, *very* small, that it give up its bodily form and submit to photomechanical miniaturization. In the sudden representation of the book, the magazine, the newspaper, the written word itself, as an alarmingly profligate technology that threatened to overrun America’s now officially closed frontiers, the solution was to introduce “drastic economies” as one approving journalist reported of Fiske’s device. In somewhat different and telling ways, Angela Ruiz Robles’ complex learning machine also made text smaller. However, what it made smaller was not just text, but the schoolhouse itself, the college, the learning centre. The *Enciclopedia Mecánico* does not appear so much a technology designed to facilitate

the storage of more information, as a physical incarnation of wonder—the wonder of learning in particular—existing within the confines of a single and portable suitcase. Her surprising suitcase stands in defiance of “new media” and, *avant la lettre*, is decidedly a multi-media technology, bursting with a “happy... plurality.” Robles’ technology appears now as a technology of defiance, an outlier against the direction in which a powerful caste of men were determined to take textuality and even learning. By uniformly and fallaciously anointing “Donna Angelica” the inventor of e-book or its precursor, the schoolteacher, inventor and mother of three, has been diminished. Instead of honouring her flagrant challenge to the accelerating technological tempo of the century, her invention, the woman herself, are re-told as proof of an uninterrupted linear march toward the digital status quo.



Fig. 11. Google doodle commemorating Angela Luis Robles 121 birthday

Conclusion:

The technologies examined in this chapter indicate the movement from the printed word to the digital textualities of the computer age was not an implacable, linear leap, the final step in a ‘big four’ understanding of media history: orality, followed by literacy, followed by Gutenberg’s set type, followed by the computer.

Instead, variant reading machines were proposed or actually constructed, that offered alternative outcomes, not all of which required electricity, and none of which demanded digitization. While Lisa Gitelman has used the technical richness of the 1870s and the following three decades to challenge the historical assumptions that are routinely imbedded into mythologies of hypertext, this chapter has extended that time span to investigate the machines that followed Edison's talking device. In doing so it suggests further ways in which deeply entrenched understandings of digital textuality can be re-appraised by relying on "historically comparative explanations" (Gitelman, *Scripts Grooves and Writing Machines* 19).

CHAPTER THREE

Discoursing the Book to Death

In his essay “Material Matters: The Past and the Futurology of the Book,” Paul Duguid observes that in the very era in which we are learning to celebrate the coming of the book—a reference to Febvre and Martin’s seminal text—we find ourselves forced to contemplate its *going* as well (Duguid, *The Future of the Book* 63). Less than twenty years after the 1976 English translation of *The Coming of the Book*, we are confronted by *The Gutenberg Elegies* (1994), Sven Birkett’s alarmed and earnest treatise on the book’s presumed demise in the face of digital communication and its devastating effect on thought and, according to Birkett, deep thinking in particular. This book was part of a near sub-industry within publishing, a ‘death of the book’ genre that, with varying degrees of dismissiveness, alarm, caution, and even jubilation (see J. Gomez’s *Print is Dead: Books in our Digital Age*. 2006), sounded the demise of the book and the culture of print in which it was centrally implicated.

Preceding these digitally-inspired pronouncements on the fate of the book, the mid-twentieth century had itself grown familiar with numerous “end of” scenarios appearing in philosophic, intellectual, and literary fields. They include Adorno’s pronouncement that lyric poetry was no longer possible after Auschwitz; Barthes’s essay on the death of the author; Foucault’s musing’s on the “author function,” and a host of other “death of” or “end of” narratives. Such narratives

achieved their ultimate expression in the terminally-oriented works of Samuel Beckett and the emerging practices of linguistic negativism associated with both Beckett and the “crisis of representation” defining European modernism generally (Weller 4). This crisis would come to embody the end of writing, of literature, the novel, the author, the self, of religion, and even the end of history.

The book then, following the technical incursions and challenges that took place throughout the late Victorian age, confronted not only a sustained corporate and cultural drive to rematerialize it, but also the collapse of the moral and intellectual certainties that the book was held to embody. Milton’s confidence that books were “the progeny” of an active “soul,” or a belief the books gave “transparent access to the essential meaning” (McKenzie 32) rang hollow in a post-Holocaust environment in which both essential meaning and active souls had been fundamentally called into question. Instead of a living technology entrusted with the best that is thought and known, the book, along with the act of writing had become, as Beckett indicated, little more than the urge to

blacken margins, to fill in the holes of words till all is blank and flat
and the whole ghastly business looks like what it is, senseless,
issueless misery (*Molloy* 16).

The death of the book would then appear to be the stage that follows the death of the numerous literary forms that once flourished as part of the book’s architecture. This terminal narrative followed text into its nest, its home, into the place where both writing and thinking at its highest level was long-agreed to exist, what Alison Muri has identified as “the ‘cathedral’ of human identity and

consciousness” (251). The book’s “going” then, or as Alan Galey more carefully puts it, “the ambiguity of the book’s status...both materially and in the cultural imagination,” (Galey 211) represents a further stage that follows the putative demise of the various literary genres that once flourished within the book form. As the latest casualty in the twentieth-century epidemic faced by the written word, the book would face not its “end,” as it had in the age of Edison, but, following two world wars and the moral catastrophe that lay at the heart of the twentieth century, but its “death” in a sustained death-of-the-book narrative that found voice in popular and academic discussion from the early 1990s onward.

This chapter critically examines the late twentieth century concern known as “The Death of the Book.” It maps the emergence of a predominately masculine narrative that sought to strip the book of its privileged cultural position, and re-invest that privilege in screen-based, electrically-powered digital technologies. Collectively these techno-affirmative narratives propagated a gendered account of what Paul Duguid terms “Liberation Technology” (73) —the optimistic, often euphoric linking of “new media” to increased self-expression, efficiency, individuality, personhood and democracy. In constructing this narrative, the arbiters of the digital revolution established an agreement that sought to undermine the metaphorical foundations upon which the book had solidly and so impregably rested. This chapter provides a close reading of the rhetorical stratagems, tactics and metaphors deployed in that argument. It also examines certain corporate and cultural phenomena, such as the “smell of books” industry and the “edible book festivals” that, in their distinct ways, seek to address the radical re-materialization of the

written word. Employing the writings of book scholars such as D.F. McKenzie, Roger Chartier, Leah Price, and others, it interrogates the tactics employed both by popular media, and ‘new’ media theorists George Landow, Richard Lanham, Nicholas Negroponte, Jay Bolter, Corey Doctorow, and others, to construct a masculine and enabling narrative of electrically-powered digital screen-based networks. Building on emerging media scholarship that approaches media as a narrative phenomenon (see Ballatore; Natale, “E-Readers and the Death of the Book: or, New Media and the Myth of the Disappearing Medium,” 2016), this chapter scrutinizes the lexical tropes and strategies by which the “death of the book” both preserves the popular emotional attachment to the book object, reassures the public that there is nothing to worry about, and simultaneously demonstrates that the book is an inadequate technology for negotiating contemporary life. It further investigates and challenges a ground-level acceptance of the book as a ‘container.’ This model, rarely identified or theorized, nonetheless exists as a fundamental understanding of the architecture of communications media, and is crucial to the enabling, liberating, and democratizing attributes of new media narratives. It also inseparably links to a contemporary agreement that “information” and/or “data” are now the crucial contents of that ‘container.’ This chapter pursues these narratives in the light of media theorists, Lisa Gitelman, Carolyn Marvin, Wendy Chun, James Carey and others who have, to a lesser and greater extent, rejected a masculinist and enabling appraisal of the digital regime.

“The Physical Forms Which Mediate Meaning”

On June 21, 1992, the *New York Times Book Review* section published Robert Coover’s essay “The End of Books” (1). This short piece, appearing in the books section of the Sunday edition, revived the career of a prolific and iconoclastic American experimental author. It also came to be identified as the foundational text and starting point in the death of the book narrative that would come to prominence over the next two decades. While the essay itself is rarely quoted, it is frequently made mention of, sometimes in tones of mocking gravitas: “It was in 1992, in the *New York Times*, that Robert Coover *declared the end of books*” (italics mine, O’Kelly). This 2013 *Huffington Post* article does not acknowledge Coover’s pregnant reference to Octavio Uzanne’s story of the same title, published, a century earlier, but instead situates ‘death-of-the-book’ alarms exclusively within the 20 year span between the appearance of Coover’s article and the journalist’s own online column.

As this dissertation’s previous chapters have shown, concerns about the state of the book predate Coover and are not difficult to locate. More recently the 1976 English translation of Febvre and Martin’s *The Coming of the Book*, makes it clear that the book’s “future is no longer certain, threatened as it is, by new inventions based on different principles” (10). A decade later, D.F. McKenzie expressed concern that “some central unifying concept of text ha[s] broken down” (52). McKenzie was referring to the “the British Data Protection Act” of 1984, which required 400,000 British computer users to register, in compliance with the law, to protect individuals from misuse of data stored on a computer. McKenzie

notes that under the law, individuals had the right to access that information and to amend it if inaccurate. Yet those same rights were denied when the same individual desired to access or amend that same information stored in *paper formats*. This differing legal response to the same text foregrounds the cultural and even legal privilege of the paper-and-ink document, accepting its permanence, intractability, inviolability and its symbolic relationship to truth, as something legally enforceable by British lawmakers. The cultural and mythopoetic attributes routinely associated with paper-based documents did not exist for the emerging digital textuality. In the early days of the ‘digital revolution’ the computer, and the textuality it generated, exercised no metaphorical (or legal) hold on the imagination, and was in no way intuitively linked to factuality, dependability or truth.

In its dismissal of Coover’s “The End of Books” the *Huffington Post* article mocks not only Coover but all “Luddites, nostalgists and technopositivists” (O’Kelly) who have failed to realize that “the death of the book is a dead subject.” The dismissal is based on what the *Huffington Post* author maintains to be an incontrovertible fact that “books in an electronic format *are still books*” (emphasis mine, O’Kelly). Such reasoning is frequently deployed to dismiss any pessimistic concerns about the state of the book, and maintains that the ‘meaning’ of a book, what Chartier calls its “semantic content,” (*Order of Books* 90) is in no way altered when it is removed from ink and paper and rematerialized through a process of electronic digitization. This position is precisely the opposite of that expressed by the Data Protection Act of 1984, which insisted upon, and legally mandated, two different sociological and legal significances to the same text, depending on what

material form it took. The *Huffington Post* argument is also centrally at odds with D.F. McKenzie's insistence that the material form of text crucially determines its meaning, and that bibliography itself is a study of "the physical forms which mediate meaning" (61). Roger Chartier is equally insistent that when "the same text is apprehended through very different mechanisms of representation, it is *no longer the same*" (emphasis mine, *Forms and Meanings* 2). Chartier adds that "any comprehension of a text is necessarily dependent on the material forms it has taken" (5). This insistence that the material properties of text play a crucial role in the determination of meaning is one that finds considerable support among book historians, including Leslie Howsam who argues that "texts... cannot be separated from the material forms in which they appear" (11).

Such a division is central to the discussion that the book is an imperiled communications technology. One side represents a belief, neatly summarized by Paul Duguid, and insisted upon by the *Huffington Post*, that "information stands aloof from the technology that carries it" (66). In this largely, perhaps even unconsciously accepted model, the book is internalized as a type of container designed to *hold* wisdom, knowledge and enlightenment *inside* it—"a vessel of wisdom" to use Richard De Bury's fourteenth century description of the book (21). Seven centuries later the American librarian, and critic Lawrence Clark Powell was still insisting that "books are the best packages that man has ever found to hold his ideas" (8). Such a deeply held container model of the book allows an 'old wine in new bottles' understanding that smoothly facilitates the domestication of the e-book and electronic text as a legitimate and unproblematic successor or alternative to ink

and paper text. If the value of a text is determined solely by its semantic content, by its literary meaning alone, then situating that content in a different medium (container) suggests, insists even, that nothing is lost. Not only will nothing be lost but, according to many new media theorists, such a re-situating will actually be liberating. This belief is sounded by *The Economist* in a 2014 essay which states: “Books read in electronic form will boast the same power and some new ones to boot.” Sterling Brand had argued for these new powers, in his often-repeated 1984 observation that “information wants to be free” (Gans). The right of a text to be “free” and free in particular from the materials in which it is embodied, permeates a popular assumption that a medium, far from being the message, is in fact “a neutral thing” (Nunberg 121), merely a “means of delivery” (Osnos) in which “information” can be stored and extracted at will without consequence to how meaning is received and interpreted.

The two contrasting positions describe two sides of the ‘the-death-of-the-book’ debate. One is a loosely new media approach that considers “the mystical arts of interpretation” (O’Donnell 54) to be confined to “content” alone, regardless of the materials out of which that content is instantiated. The other advocates, through history of the book studies in particular, an understanding of the material properties of text, what Umberto Eco broadly defines as the “vegetal” nature of the book. By underscoring the book’s vegetal links Eco distinguishes the book’s material origins from what he further identifies as the “mineral” origins associated with electronic text (Eco, *Vegetal and Mineral Memory*). These mineral properties “frequently ignored in conventional media studies,” (Goddard 1762) have become a subject of

serious scrutiny to media archeology scholars, Jussi Parrika, in particular, and bring another dimension to the study of new media—their role in the Anthropocene era and the environmental degradation resulting from their large-scale use and disposal.

Analyzing the trope: the straw man; bait and switch

Two decades after the *New York Times* appearance of Coover's article, book scholar Leah Price, in the same section of the same newspaper, would write that Coover's metaphor had "launched a thousand eulogies for the book as we knew it" ("Dead Again" 30). In fact, in 1992, Coover himself believed that he was merely commenting on the "would be executioners" and the thousand eulogies for the book that already existed, or at least were *believed* to have existed. Like many other authors, thinkers, and media-savvy citizens of the time, Robert Coover appears long familiar with a language of superannuation, fatigue and failure in regards to book technology, and was already somewhat weary of it:

In the real world nowadays, that is to say, in the world of video transmissions, cellular phones, fax machines, computer networks, and in particular out in the humming digitalized precincts of avant-garde computer hackers, cyberpunks and hyperspace freaks, *you will often hear it said that the print medium is a doomed and outdated technology, a mere curiosity of bygone days destined soon to be consigned forever to those dusty unattended museums we now call libraries*. Indeed, the very proliferation of books and other print-based media, so prevalent in this forest-harvesting, paper-wasting

age, is held to be a sign of its feverish moribundity, the last futile gasp of a once vital form before it finally passes away forever, dead as God (italics mine, *New York Times* 1).

Coover, it is clear, did not so much himself launch a thousand eulogies as both rehearse and ride what in 1992 was already presumed to be a pre-existing tide of book eulogies onto the front page of the *New York Times* books section.

Rather like the shadowy personages of Evert Nymanover and R. Balmer (or Bulmer) who haunt the background of the nineteenth century's "end of the book" headlines, attempts to locate, elucidate or compile those already existing eulogies prove difficult. One of the first, possibly *the* first use of the "death of the book" as a concern, appeared, without a byline, in the June 14th edition of the 1939 *Times*:

Pessimistic defenders of reading and the book... were wont to contrast the active process of reading with the lazy and passive contemplation of the screen or listening to the wireless, and to prophesy the death of the book (11).

Seen here is an early sounding of what will become a familiar strategy in the popular death-of-the book narrative: the creation of a presumed multitude of 'pessimists,' who are busy prophesizing "the death of the book." This multitude would be invoked again in the last decades of the twentieth century and the early decades of the twenty-first. Leah Price, as we have seen, estimated the number of these book eulogists at a thousand, but like the anonymous *London Times* journalist of 1939, she provides no names beyond that of Robert Coover. Coover, however, the author of twenty-three books (and counting), is an unlikely candidate in this category and is

one of the few who offers a suggestion as to where we might find this multitude of ‘death-of-the-book’ prophets. According to Coover they are to be found “in the humming digitalized precincts of avant-garde computer hackers, cyberpunks and hyperspace freaks.” Geoffrey Nunberg in his introduction to *The Future of the Book* refers to “current prophesies of the end of the book” (11), but does not indicate who is making them. Jan Dirk Muller, in “The Body of the Book” is confident that “funeral orations are held in public for the book” (eds. Finkelstein; McCleery 144), but neglects to say by whom, or where in the public they are being held. Umberto Eco and Jean Claude Carrière collectively insist in their book title that *This is Not the End of the Book* (2009) but are vague as to who is insisting that it *is*. Umberto Eco suggests that the blame likely lies with “the public” or “perhaps journalists” (3-4). American novelist E. Annie Proulx has no doubt that “every other week someone says that books are dead or dying” (“Books on Top,” *New York Times*) though pointedly names no one. The *National Post* is certain that the death of the book is a claim made by “experts,” and even “many experts” (Fisher) but offers no names. In a both gendered and racialized reckoning, a male *Globe & Mail* columnist blames the death of the book on “a giddy army of Japanese school girls writing and “publishing” on cell phones” (Barber). This is not the only time the giddy Japanese school girl and the *keitai shousetsu*, or cell phone novel, would be blamed for bringing down the stately edifice of the Western book, and suggests the ways in which anxiety regarding the state of the book can be used to express both racial and gender biases.

In the face of this difficulty the collective response, and one that is crucial to

the death of the book trope, is to emphatically *presume* its existence, to give the ‘death of the book’ an *a priori* status as a *fait accompli*. In much the same way the late nineteenth-century interest in the ‘end of the book’ presumed, or at least pretended, that the end of the book as a communications technology was imminent, when in fact, even a remotely working prototype did not exist. A century later, with the digital turn, such technology *did* exist, as did an uneasy sense that the “cathedral of human consciousness” (Muri 251) was being dismantled. These fears fed easily into the assumption that a full-blown death of the book discussion already existed.

That no such overwhelming discussion is there to be found has resulted in the creation of a rhetorical straw man whether that be Robert Coover, Japanese schoolgirls, journalists, the public, pessimistic defenders of the book, experts, or what the Huffington Post termed “Luddites, nostalgists and technopositivists” (O’Kelly). Throughout the ‘death of the book’ story, in both popular and academic discussion, such straw men have been employed to shoulder the responsibility for expressing what we are informed is the patently ridiculous idea that the book is “dead.” This remains the central rhetorical maneuver employed by the barrage of “death of the book” headlines that began to appear in the last decade of the twentieth century and accelerated in the first two decades of the twenty-first. Concealed by this rhetorical device is the absence of any actual declaration concerning the death-of-the-book. Instead, the trope serves to confirm the belief that a general discussion termed “the death of the book” has permeated society and has done so for some time. Rarely, if ever, does a death-of-the-book headline indicate the author is about to seriously (or even remotely), outline the manner in which the book is faltering as

a cultural engine, or the consequences of such faltering. Instead, without exception, the trope of death-of-the-book, whether it appears in the writings of either the popular or academic author, is used, as Ballatore and Natale indicate, “a rhetorical starting point *to introduce their counterargument*” (emphasis mine 2380).

Examples from mainstream media demonstrate how this rhetoric operates:

“The Book is Dead, Long Live the Book” (Sturrock, *New York Times*, 1987).

“Books are Dead, Long Live Books (*Media in Transition Conference*, 1999).

“The Death of the Book, Again” (Kindersley, *The Guardian*, 2007).

“The Book is Dead, Long Live the Book?” (Barber, *Globe & Mail*, 2010).

“Why the Death of the Book is a Dead Subject” (O’Kelly, *Huff. Post*, 2013)

“Books are not Dead. They’re Not Even Dying” (Estes, *Pub. Weekly*, 2010).

“The Death of Books has been greatly exaggerated” (Shepherd, *The Guardian*, 2011)

“ ‘The Book is Dead’? Let That Myth Rest In Peace” (Osnos, *The Atlantic*, 2011)

“Pity the Book, it’s Dead Again” (Los Angeles Review of Books, 2011)

“Dead Again” (New York Times, 2012).

“Who says the book is dead?” (Bilton, *Amazon, VentureBeat*, 2012)

“The Book is Dead? Not at This School” (Gourlay, *Youtube*, <https://www.youtube.com/watch?v=AlZd8oROS74> 2012).

“The Death of Print Has Been Greatly Exaggerated” (O’Brien, *The Atlantic* 2013)

“6 Things to Show People Who Say the Book is Dead” (Thorson, *Book Riot*,

2015)

“Books. Still Not Dead” (Shaughnessy, *Design Observer*, 2017)

This sampling of headlines indicate something of the penetration and duration of the use of this simple bait and switch strategy. As such it constitutes what Ballatore and Natale call a “crucial communication device, deployed very often in the mainstream media” (2385). Even the briefest appraisal of the popular death-of-the-book “debate” makes it clear it is not a debate but a one-sided journalistic conversation in which the outcome has been decided. Within the death-of-the-book rhetoric, concerns are no sooner voiced before they are silenced by the reassuring, “long live the book.” This imperial declaration effectively ends the discussion before it begins, and has established itself as a repudiating catch-phrase within the death-of-the-book counter-argument. It declares the impossibility of such a death, and so provides a welcome and much-needed victory over the endless “death of” scenarios that are frequently employed to make sense of rapid technological change. The ‘death-of-the-book’ headline with its impregnable rejoinder, ‘long live the book,’ provides solace by repeatedly insisting that the book, with all of its every day associations and humanist implications—*is just as healthy as it ever was*. In doing so, it disarms concerns regarding the diminished role of the book, and the digitization of daily routines.

“Vague forebodings” and the “reconformed book”

Despite efforts of the popular media and to demonstrate that any talk of the book’s demise was misguided, unfounded and just wrong, readers in the late

twentieth century were nonetheless confronted with a reality that the late nineteenth century reader was not. While Edison's speaking machine had introduced the idea, or *possibility* of a radically re-materialized textuality independent of ink and paper, the late twentieth century experienced its actuality, its implementation and, soon, its dominance. In this light, the sustained counter-argument of the 'death-of-the-book' can be seen as an expression of what Nancy Kaplan describes as "the vague forebodings of loss that so frequently accompany technological change" (208). As the last years of the twentieth century drew to a close, these forebodings were heightened by secular millennial concerns and the "millennium bug" itself or "2YK," the widespread apprehension that networked digital systems would fail when confronted with dates beyond 12/31/1999. Age old millennial fears, combined with a new digital dependency, made it increasingly possible to envision not only the end of the book, but jetliners dropping out of the sky. It also brought into focus the book as an object of cultural concern—concern about how extreme technological change was affecting the sociologies of reading as well as the habits of every day life, the very function of the body in the post-human age . As Umberto Eco suggests, the death of the book narrative, by this point, was very much a fear "about the end of something, even the world included" (Eco, "Vegetal and Mineral Memory").

The first days of the new century also loosely coincided with the impending release of the second, and radically improved generation of electronic readers that provided more impetus to the death of the book concerns. As long as the "electronic book" as conceived by Andries Van Dam in the sixties, remained the size of a

barbecue and was constrained to the desk it sat on, death-of-the-book concerns were largely speculative, hypothetical, and fantasy-based. Not until a radically improved second wave of ‘electronic books’ entered the market in the first years of the new century did the rhetorical landscape change. The confidence expressed in American novelist Annie Proulx’s oft-cited 1994 remark that “[n]obody is going to sit down and read a book on a twitchy little screen. Ever” (“Books on Top,” movies2.nytimes.com) became an embarrassment after the introduction of lightweight, low cost electronic “readers.” Less than twenty years after Proulx’s remark, the world’s largest bookseller announced that ‘electronic books’ were out-selling actual books (Miller, Bosman).



Fig. 1. “No one is going to read a book on a twitchy little screen. Ever”

Instead of admitting defeat in the face of this announcement, death-of-the-book discussion simply resorted to a container model that declared an equivalency between vegetal based text and electro-digital text, insisting that electronic text was equivalent *to*, and the same *as*, the ink and paper-based artifact. The online retail head of Amazon’s German operations was keen to reinforce this equivalency when he insisted, “the book disappears during reading. You no longer perceive its existence. It’s exactly the same thing with the Kindle” (Brauck, Hobel, Voigt). His comment demonstrates the ways in which the domestication of electronic reading is facilitated by a long-standing and commonly-held belief that “books transmit texts in simple and straightforward ways,” (Galey 213). This belief, as book scholar Alan Galey states, is a belief that he and perhaps all book historians, would call a “fantasy” (217). Nonetheless, as discussed later in this chapter, a deeply ingrained

container model of the book has helped facilitate the easy acceptance of electronic reading machines. To many involved in ‘the death of the book’ trope, the sudden proliferation of digital reading machines and the enormous sales of ‘electronic books,’ provided further proof that the book, in some form, was more robust than ever. Even should the book “die,” it would rise again in a digital format or, as a headline from *The Province* put it, “The book is dead-long live the ebook” (Darbyshire). Such languages serves to “reconform the book as a nonbook,” (Bazin 153). and to accept the “e-book” and the “p-book,” as merely two technically different ways of reading the identical text.

Metaphor, Agriculture and the Edible Book

Despite the vigorous claims that the patient is in perfect health, three decades of “death of the book” headlines suggest an underlying anxiety about the role of the book, and everything it represents, during times of extreme technological infiltration. In their backhanded way these headlines acknowledge what Paul Frosh describes as “the increasing mediation of everyday life—the ubiquity and *priority* of [digital media] in the experiences and *behaviours* of individuals (italics mine 6). “The book is dead,” and “death of the book” headlines, regardless of their final insistence on the health and stability of their subject, acknowledge a fear that the central organizing metaphor of Western life, its chief cultural artifact, has been dramatically challenged by a networked technology which, in its place, has become the “defining concept of our epoch” (Chun, *Updating to Remain the Same* 25). By assuring the public that the death-of-the-book is a patently ridiculous notion clung to

only by misguided pessimists, the narrative blunts the dramatic consequences that follow technological change, and provides optimism in the face of what Gitelman calls “widely shared apprehensions of technological and social change.” (*Always Already New* 12). Yet these technological and social changes cannot be denied and are, in themselves, a cause of concern. They are sounded in Sven Birkett’s unqualified insistence that “the bound book is the ideal vehicle for the written word” (6), and again in Umberto Eco’s frustrated insistence that “you can’t make spoon that is better than a spoon” (*This is not the End of the Book* 4). The author’s frustration stems from the unshakeable belief in the book as an already perfect communication technology, rather “like the wheel” (4), with electronic text being a misguided effort to fix something that is not broken, that is, in fact, *perfect*.

Eco’s metaphors of the spoon and the wheel also effectively exposes the enormous metaphorical reach of the book, strategically linking books to their foundational associations with the wheel, but also with food, nourishment, edibility and sustenance, growth, agriculture pleasure, taste—associations that, as Eco understood, decisively elude digital text. Whether we devour books, eat our words, develop our own *taste* in books, or encounter books we can’t stomach, the reading of a book, as with eating, is long understood to be a central activity of life, one to be performed daily, even perhaps thrice daily. It is found as early as Ezekiel, “Son of man, cause thy belly to eat, and fill thy bowels with this [sc]roll that I give thee.” (Ezekiel 3:3).

According to Francis Osborne, “a few books well studied and thoroughly digested Nourish the Understanding more than but hundreds gargled in the mouth.”

This advice, offered in the seventeenth century, outlines a regime in which eating, the book, and hygiene are indistinguishable from each other. Reading, we understand, was “the spiritual nourishment of monks” (Hamesse 104). To read in a low voice, or “*ruminatio*,” allowed the monk to taste the words in his mouth, what St. Augustine and others called *palatum cordis*, “the taste of the heart” (Makinen 18). Through ink in particular the written word has always been at least theoretically potable, due to the aqueous base of the substance. Defined by Dr. Samuel Johnson as “the black liquor by which men write” (103) ink does not only alleviate thirst, it also alters the state of the reader, intoxicates and inebriates, liberates as well. Francis Beaumont, in his letter to Ben Jonson, maps the relationship between various fluids and their corresponding literary forms. According to Beaumont English beer was

Good only for a Sonnet straine
With fustian Metaphors to stuff the Braine. (135)

On the other hand “Water mixt with Claret Lees” was a “Drinke apt to bring in dryer heresies/than beer.” Ink was not only metaphorically edible, it *was* edible. The bread rolls that were once routinely used in ink-making, were withdrawn from the ink, fried and eaten. Called “*abgekroschte*,” these rolls, when salted, were considered a great delicacy (Bloy 8).

Just as ink provides a rich nutritional legacy for the book, paper and parchment also offer a feast. With the invention of the printing press in the mid fifteenth century, the book emerged from its material base of parchment, and entered its vegetarian incarnation. The agricultural nature of the typeset book is found in the

early paper mills of France, first built as corn mills and converted by state decree to grind paper instead (Febvre 38). Febvre writes fondly of the “steeping” and “fermenting” and the “fatty substances [that] were forced out of the cellulose” in the paper-making process (33). The seventeenth century poet Henry Vaughan, in his poem “The Book,” attempts an understanding of paper through the eyes of God. In doing so he constructs an extraordinary nucleus of metaphors that comprehends the book as an entirely earth-based agricultural phenomenon inextricable, indivisible, even unknowable independently from the materials out of which it is made, or rather, *grown*:

Thou new’st this *papyr* when it was
Meer seed, and after that but grass
Before ‘twas *drest* or *spun*, and when
Made *linen*, who did wear it then:
What were their lifes, their thoughts & deeds
Whither good *corn* or fruitless *weeds* (Fogle 347).

Here the dizzying metaphorical penetration achieved by paper indicates something of the almost endless reach of the book as a discursive phenomenon. The depth and power of this reach that, for material reasons, is denied the digital word, is what new media narratives set out to minimize, disappear, define as unimportant or re-interpret in favour of internet technology.

Despite an enabling and techno-optimistic language that has been hastily assembled to help establish and domesticate networked technology, there is yet no effective rhetoric that is able to recast the digital turn into metaphors of edibility, nourishment and agriculture. Despite the naked and somewhat desperate attempt to

conceal this disconnect behind “server *farms*” “tweets” and the “cloud,” there is no metaphorical legacy that can equate reading a digital file to the harvest or to nourishment and certainly not to what Richard de Bury termed “celestial nourishment” (8). In the emerging narrative of digital textuality the language of edibility has been abandoned. The virtual word thus far exists outside the rhetoric of ‘brain food.’ Metaphors of food and nourishment appear incompatible with the metaphorical framework that seeks to advance and legitimize electronic text. This has resulted in the emergence of a new nomenclature to replace the language employed in relation to reading and writing. Even in the early decades of digital text, book-centric concepts have been replaced by a different series of terms to describe literacy. It is revealing that what we are reluctant to do with digital text is *read* it or *write* it. Instead we ‘skim’ it, we ‘post’ it. We ‘click’ in it. We ‘delete’ it. We ‘attach’ it. We ‘scroll’ through it. We check it out. We cut and paste it. We surf it. We text it. We tweet it and blog it. We also “stream, update, capture, upload, share, grind, link, verify, map, save, trash and troll” (Chun, *Updating to Remain the Same* 1). All of these activities take place within a new rhetoric of literacy in which reading and writing have become clickable action-based phenomena, disassociated from contemplation, and from any nutritional or agricultural base.

It is hardly surprising then that the “Edible Book Festivals” should first spring up in 2001, on the dawn of the widespread and successful appearance of the new generation of e-readers, and the increasing “death of the book” headlines in the media. These festivals, in which books are rendered as food and eaten, take the nourishment of the book as a metaphor and turn it into physical reality. They

acknowledge, playfully, even tastefully, the new historical disconnect between nourishment and text and set out to fix the problem both symbolically and physically. Inviting the public to celebrate “the ingestion of culture and its fulfilling nourishment,” (books2eat.beatricecoron.com) the edible book festival is a public gesture that performs the death of the book by acting out, and insisting upon, rituals of nourishment at the very moment when such nourishment has disappeared from daily textual encounters.

Despite their apparent innocence, these events typically held in universities acknowledge that the ancient metaphorical structures that equate the book to edibility, food, and sustenance, have become invalidated. They also serve notice that under the digital regime, the written word is now estranged from its agricultural base, and that metaphors of edibility, food, and nourishment no longer apply. In their cheerful way edible book festivals expose the barrenness of the metaphorical ground on which digital text is forced to stand. Compared to the book, with its long metaphorical history as a feast, the “wafers” ‘bytes’ ‘bits’ and ‘nibbles’ (or nybles) the rarely used “crumbs” and the dreaded “cookies,” digital terminology invoke a rhetoric not so much of the fully-sated reader as one of near starvation. Playfully, yet poignantly, the edible book festival reminds the public of a new reality in which there is no feast of the mind, no seed to plant, no harvest to reap and, in the post human age, no “breast of grammar to suck” (De Bury 22-23).



Fig. 2. “A Clockwork Orange” (Albright College Edible Book Festival, 2008)

Moving ‘beyond the book’

Confronted by the book’s age-old metaphorical foundations, narrating digital technology has involved a sustained rhetorical strategy to question and undermine those foundations. To “conform the book into a non-book” (Bazin 153) and to facilitate the widespread and hurried acceptance of a digital regime, the language in which the book has been traditionally understood, has been systematically undermined, dismantled, or simply displaced by the language of digital technology. In the same way that the ‘end of the book’ manifests a late nineteenth century masculine representation of the book as a deeply flawed technology, the ‘digital revolution’ invokes a similar reasoning narrated by a similar self-appointed cadre of

male technical experts, often academics, along with the “cyberpunks and hyperspace freaks” identified by Coover, for whom the book has largely ceased to exist as a meaningful technology. As Edison and advocates of an electrical modernity framed the book in terms of fatigue, sluggishness, inefficiency, amateurism, and unseemly old-fashioned-ness, advocates of digital media do the same, with parameters only slightly altered. Such arguments insist not so much that the book is dead, but that its *time has passed*, that it now stands as an impediment to the successful realization of a future that is to be a digital one. Even the old and entirely false claim that the book is a cause of failing eyesight is trotted out.



Fig. 3. “The next time you find yourself squinting, recognize the sign and get a Kindle.”

These strategies advance not only a technology, but an imaginary geographical site that is inseparable from that technology; “Cyberspace,” or the “infoverse,” a “global social space,” a networked space that would be intimately involved with the future

(Barlow). This process of giving the future demonstrates a rhetorical ploy frequently used in digitally-affirmative discourse, to cast the book as an impediment, a roadblock on the path to the future. In 2002, net theorist Geert Lovink dismissed “offline thinking” as “old-fashioned Gutenberg knowledge stored in books” (Lovink, 28). Media writer and theorist George Landow similarly insisted on the past-ness of the book and sought to know “how we might move beyond the book” (*Hypertext 3.0* 209). Digital technology, according to Patrick Bazin, is “already[...]finding the means to get beyond linear narration” (163). Yale University in 1993 hosted a conference “Beyond Gutenberg.” Educators frequently narrate moving ‘beyond the book’ as an urgent necessity for young students in particular (Dogget 65). This sudden and gendered insistence on the book as a thing that must be moved beyond presents the book as a type of wrong decision made in the past, one that must be atoned for by putting it behind us. Sherman Young, author of the 2007 *The Book is Dead – Long Live the Book* is adamant that “great ideas and a deeper conversation will only survive if we embrace...ebooks and electronic distribution” (Young).

Almost overnight a new narrative appears in which a technology, long considered the source of “great ideas and a deeper conversation,” is suddenly identified as the killer of those ideas, an impediment to thought itself, and to great thinking in particular. By steadfastly aligning the book with the past, by essentially accusing the book of ‘pastness,’ this narrative effectively seals its digital subject within the always bright future and, at the same time, positions the book on the other side of what Chun has called “the bleeding edge of obsolescence,” (*Updating to*

Remain the Same 1) that very location at which “new media” stops the bleeding and validates itself, however briefly, as ‘new.’

Users, Consumers, Readers

The trope of moving ‘beyond the book’ is one example of an extensive and systematic dismantling of the rhetorical structure in which the book has been traditionally conceived. Another is seen in the efforts to “remediate” the terminology of the book within the terminology of digital times. Thus, Gutenberg becomes “the world’s first Zuckerberg” (Christie). Similarly the 46 line Bible becomes “the Kindle of its age” (Christie). “[T]he information industry of the sixteenth century Venice,” is thus an early “Silicon Valley” (Cohen & Cohen 129). The creation of the printing press is “the world’s first tech startup” (Christie). In more academic parlance the “page” becomes an “interface,” or the “digital page.” Yet “page” invokes the marsh sedges of the Delta region of the Nile River where the *papyrus* once grew in abundance. It invokes the Latin *pagina*, “strip of papyrus, and the Greek *pegnynai* “to fix, make firm, fast or solid” along with the Slavonic “paz” “wooden partition;” the old French *pagene*, and even the Proto-Indo-European root “pag” meaning “to fasten.” These definitions precisely comprise an expectation of what a page does, and what it is thought to do. The “page” formally supplies the reader with an historical overview of the plant matter out of which the surface is composed, and insists also on the qualities of holding fast, firm and solid that the page is expected to provide. No surprise that digital narratives are eager to co-opt this word. What appears on a computer screen is known as an “electrophoretic

display” (Bonheur) or since the nineties, a “microencapsulated electrophoretic display.” Even though these terms effectively and accurately define screen-based textuality, it is not difficult to see why techno-industry insiders might want to reach back to Latin and Greek etymologies in order to avoid such mouthfuls. These efforts are crucial in order to accept, rightly or wrongly, that the electrically-powered screen (and the rare earth minerals on which they depend) is a legitimate and trustworthy site for conducting the activities historically and culturally granted to the page. One of the difficulties facing new media representation is to find a way to capture the page’s considerable age-old authority and its powerful conceptual coherence, in such a way that is transferable to the technology of the screen. This difficulty has been largely disappeared by enabling theoretical models such as “convergence” (Jenkins 2006) and “remediation” (Bolter, Grusin 1999) in which the page is assumed to have been painlessly and fruitfully (and rather Whiggishly) absorbed within new media. Even though the idea of a digital page is no more sensible than digital milk, it is accepted largely without caveat that the “digital page” is what appears on a screen. This mind-boggling oxymoron appears so frequently that it may seem churlish even to mention it. Yet it is a classic example of the process by which, according to James Carey, a new medium co-opts the “privileged and honorific status of print literacy, its unquestioned right to social prestige” (“Paradox of the Book” 104).

Similarly, the book becomes a “platform” with its implications of rocket launches into both cyberspace and outer space, cashing in on what Jodi Dean calls the “[h]appy ‘go get em’ space images ... linked to cyberspace” (61). The “reader”

becomes a “user” with that term’s unavoidable resonances of addiction. “User” imbricates the “reader” within the internet, not as a reader, but as an “internet user” or as an “interface user.” The reader becomes, alternately, a “consumer” not in the sense of bibliophagy, or the edible book, but in the sense of consumerism, what Wendy Chun calls “new media as forms of accelerated capitalism” (*Updating to Remain the Same* 2). Book historians themselves can be complicit in this re-branding: throughout *Introduction to Book History* (2005) authors David Finkelstein and Alistair McCleery employ the terms “readers” and “consumers” interchangeably. In doing so the word “reader” is disassociated from its long-standing Anglo Saxon origins: *raeden*, meaning “to discern, to advise” (Websters’ 1500) and instead interpellates ‘the reader’ within the society of ‘consumers,’ a society that as Zygmunt Bauman states “promotes, encourages or enforces the choice of a consumerist lifestyle and life strategy” (53). More recently, the book has been termed the “p-book” meaning print or paper book, to distinguish it from the “e-book,” as in “*Close the gap between the price of p-books and e-books, and increase the profit margin*” (www.macmillandictionary.com). The “p-book/e-book” formulation elides crucial differences between two categorically dissimilar technologies, suggests an equivalency between the two and, finally, makes the differences between books and electronic text appear reducible to the substitution of one single letter for another.

These metaphors and analogies diminish the capacity of book technology and expose what Gitelman calls the “discernible rhetorical conventions” by which “[a]rtifacts become knowable” (*Scripts, Grooves and Writing Machines* 7). They

are sounded again in Ted Nelson's insistence that "the four walls of paper are like a prison" (Logan). When assembled such 'rhetorical conventions' expose a tactic of linguistic reversal in which the book is entirely flipped over, and its long established characteristics are narrated as their opposite. Thus, the living book, or what Robert Louis Stevenson called "the human book" (cited in Louis x) is now neither living nor human. Instead it is a cluster of frequently occurring terms that present book technology as *frozen, static, undynamic, fixed, imprisoning, linear, passive, old-fashioned, dead, traditional, isolating, tied to the printed object, un-engaging, inflexible, stationary, bound*, and others.

Collectively, these terms present a torturous linguistic about face in which the "lazy and passive contemplation of the screen," an understanding taken for granted by the *Times* in 1939, must be turned inside out. In this new topsy-turvy hierarchy, the printed page is forced to assume all the characteristics of passivity and brainless consumption that were once routinely associated with the screen. Two widely used terms from the mid 1960s, the "boob tube" and the "idiot box," reflect a generally acknowledged cultural understanding of the screen, particularly the portable screen meant for home use. The Merriam-Webster dictionary defines the idiot box as "an electronic device with a screen and speakers that reproduces images and sounds... Usage example: "She huffily declared she wouldn't have an idiot box in her home" (www.merriam-webster.com/dictionary/idiot%20box). To get from the 'idiot box' that no intelligent person would want in her home, to a portal to the future that very much needs to be in the home, even carried about everywhere a person goes, is a considerable uphill battle and has required serious linguistic

valorization around many aspects of digital technology. This valorization goes hand in hand with the linguistic *de*-valorization of the book as a communications technology.

The technology of the screen, in particular, with its now ubiquitous penetration into culture, plays an invasive and ineradicable role in the practice of daily existence. Perhaps for this reason alone the screen often escapes critical and theoretical scrutiny. Such scrutiny quickly reveals that the long etymological roots of “screen” function in noticeable conflict with a contemporary understanding of what a screen is, and what it does. ‘Screen,’ with its contemporary meaning as a “flat vertical surface for the reception of projected images” (OED), does not make its appearance until the magic lantern shows (Kittler, *Optical Media* 70). Yet for many centuries screen, from its Frankish root ‘*skrank*’ has meant a “barrier.” In Afrikaans it is *skerm* “a screen for hunters,” and the Dutch *scherm* “screen, cover, shield” (Online Etymology Dictionary). These definitions insist on the screen’s long history of concealment, of impediment and barriers, of hiding and deception. Such insinuations exist in stark opposition to the abundance of access, freedom and transparency that drives the narrative of digital screen-based devices. For the narrative to succeed, the somewhat off-putting and *skrankish* origins of the word need to be ignored. These troubling etymological roots go unmentioned in Anne Friedberg’s book on the screen. Instead she opts to re-title the screen a “virtual window,” a supposed digital replacement for the architectural window (103). In this way the reader is allowed to detour around the discouraging historical meanings and enter a more congenial and enabling interpretation, an “opening,” rather than a

closing off. Lev Manovitch, with some decidedly masculine bravado, eludes the problem altogether by simply coming up with his *own* definition: “I define the *screen* as a rectangular surface that frames a virtual world and exists within the physical world of a viewer without completely blocking her visual field” (16).

The frozen static fixed book

While popular death-of-the-book articles in the mainstream media provide assurances that no such thing is actually taking place, they also leave the door open to the possibility, the certainty even, that the book is a technology that can be improved upon by electro-digital methods. These improvements are echoed, even necessitated, by a new narrative that is more academically based and insists that book technology is now frozen, static, and fixed. This linked metaphorical trifecta emerged with some frequency during the last decade of the twentieth century and provides the semantic foundations necessary to narrate the book as a technology ill-equipped and inadequate for meeting the challenges of the new multi-directional and polyvocal age. Not only is printing “a frozen medium” (almost, *Writing Space* 65) but printing itself is a “frozen technique” (Bolter 138). “The written word is frozen and dead” declares Ted Nelson, who coined the term hypertext (cited in Landow, *Hypertext 3.0* 112). This language seeks deliberately, and provocatively, to dismantle the *haute* rhetoric, the enormous lexical veneration that surrounds the book. Such rhetoric responds literally to John Ashbery’s line “the gilded spines of those tomes burn too bright” (*Houseboat Days* 44) and attempts to dim and even extinguish that brightness, to shine it instead on the digital technologies which are

presented as inseparable from, and a cause of, the future.

In a similar manner Sherman Young frames the book as “static, unengaged and less than dynamic” and expresses frustration that all one “can do with printed words is read them” (*The Book is Dead: Long Live the Book* 66). Reduced to mere reading, the door is opened for the celebrated “interactive” attributes of digital textuality. Nicholas Negroponte narrates the printed word as “forever fixed by the confines of three dimensions” (*Being Digital* 69) and is convinced that technologies manufactured from silicon and electrically powered, somehow escape these dimensional restrictions. Such a rhetorical insistence on the dichotomy between “analogue fixity and digital fluidity” (Frosh 66) clears the deck for a new narrative that positions digital text as everything that “frozen” is not: warm, fluid, flowing, life-giving, mobile, adaptable and so on. In case the reader may have missed the connection, Ted Nelson is quick to explain “Water flows freely, ice does not” (cited in Landow *Hyertext 3.0* 112).

Casting digital text within the metaphorical scope of the aqueous also allows “new” media writers to appropriate pre-existing metaphorical structures already long in place for print, as in Balzac’s “ocean of literature” (Balzac 10), or Sarah Carter’s 1850 book, *The Choice Gift; or the Golden Sands, from the River of Literature*. “The river,” she writes, “has its source in the fountains of Knowledge, Genius, Poetry and Truth; it is called the River of Literature” (11). Modernist literature, most notably in the work of James Joyce, pioneered a technique known as ‘stream of consciousness.’ No surprise then to find “Streams of Consciousness in the River of Literature” (Mason-Koehler), or to be told that some books are deeper than others.

The free flowingness that is so readily and determinedly applied to the digital word allows digital text to align itself with one of the few, perhaps the only nature-based metaphorical structure available to it: that of hydrography, of water, and the river. This metaphorical network of the fluid, had already been initiated in the 1880s by Balmer and his description of the “subtle fluid” of the spoken word, in contrast to the “pebbles and coarse sand” of the written (Balmer 498). This early example demonstrates the extent to which ‘aqueous’ metaphors have been handed down from broadcast media and have lately been replaced by the ubiquitous use of “streaming” to define new media transmission. Such language further follows up on the aqueous vocabulary employed in the late-nineteenth century to make electricity comprehensible—the widespread use of the term “electrical fluid.” Notably, the hydrographic quality of this term continues today in its updated form as the “electric current,” and is found also in the waves and wavelengths of radio transmission and the television *channel*. According to Ghislain Thibault, even if “surfing” has become a thing of the past, “fluid metaphors still occupy the core of our understanding of digital media” (110). These range from the ‘torrents’ of peer-to-peer sharing files, to the ‘sea of information’ that digital technologies are presumed to make sensible to us. “The Declaration of the Independence of Cyberspace” narrates the future as “arrayed like a standing wave in the web of our communications” (Barlow). Such metaphors have assisted digital technology in becoming “mainstream” while effectively pushing the printed word out of the “flow,” perhaps even out of the “mainstream” itself, and back to the shore where it is to be found immobile, static, fixed, frozen, and dry as a bone.

With all this fluidity washing about within the digital network, it is not surprising that leaks are endemic. As Wendy Chun argues these leaks, though interpreted and presented as catastrophes, failures in the system, the result of bad actors, are in fact not accidental to the network but crucial to its architecture. Leaks are what digital networks are meant to do, leaks are “constitutive” of digital networks (Chun, *Updating to Remain the Same* 17). They dismantle privacy, they deliberately undermine the very privacy that has been linked to print itself (Ong, *Orality and Literacy* 128). Under the metaphorical cover of ‘fluidity,’ digital networked systems replace privacy with surveillance. Such concerns may have motivated Lady Gaga to expand the water/fluid metaphors of network technology, when she stated, “social media, quite frankly, is the toilet of the internet” (Celebretainment).

The No Longer fluid Book

One of the startling, and more audacious appropriations of the digital narrative is its insistence that the book is suddenly no longer “fluid” whereas the digital word and the internet positively drip with it. According to Bolter the digital word is not just fluid, it is almost everything:

[e]lectronic writing is mechanical and precise like printing, organic and revolutionary like handwriting, visually eclectic.... On the other hand electronic writing is fluid and dynamic to a greater degree than previous technologies (*Writing Space* 8).

For Negroponte, digital networks will facilitate “the fluid movement from one media to the next” (72). Landow is confident that electronic text is not only “more fluid” but “possibly truer than conventional editions” (*Hypertext 3.0* 103) Others insist that “computer-mediated communications”...” retain a fluidity [lacking] in traditional literacy” (Pixy Ferris). “Ebooks,” gushes Corey Doctorow, “You’re soaking in them” (<https://craphound.com/ebooksneitherenorbooks.txt>).

While the rampant fluidity coursing about in the digital word may be applicable as a metaphorical description, it conceals and denies the book’s own deep relationship to water, not only as metaphor but as a crucial natural substance in its makeup and construction. Keats was fully aware of this relationship when he arranged to have his gravestone inscribed with the epitaph: *Here Lies One Whose Name is Writ In Water*. This is more than an evocation of the ephemeral nature of the poet’s life, but an insider’s understanding of what *makes* literature: the slurry from which paper is derived, for example, is comprised of 99 percent water (PSSMA), “and pure water at that” (Febvre, Martin 34). Casting the book as a technology that is suddenly not fluid, also requires new media writers to remain collectively silent on the subject of ink. Ink is not merely a metaphor for fluidity: it *is* fluid. It is precisely the fluid that is so noticeably absent from digital communications, possessing a vast history that links the written word to the seasonal cycles of the earth; from the harvesting of the wasps eggs within oak galls that constitute ink, to the harvesting of the huckleberries by which “purple prose” was made purple. Replacing the medium of ink with electronically charged black and white “particles” to construct a ‘microencapsulated electrophoretic display’

(then called a “page”) involves a radical technological transformation. It also serves to relocate, redefine, and reduce the book into yet another ‘display technology’—one of many, while jettisoning the agricultural and vegetal materiality of the various media out of which the book is constructed, and voiding/avoiding any discussion of the metaphorical legacy engendered by that materiality.

The key words and wordings examined here indicate, to some extent, the often torturous linguistic flexing undertaken to legitimize, habituate, normalize, and domesticate a technological regime that has imposed extraordinary changes on the activities of daily human life. At its best, this language demonstrates an understandable enthusiasm, interest and excitement for the applications of various machines that are new. At its most problematic, it is a techno-semantic chauvinism that squelches thought, resists critical analysis, and supports a masculine agenda of technological supremacy, what Marvin Carolyn Marvin has described as “the male prerogative of technological literacy” (28). Its breezy confidence is found abundantly in the University of Chicago Press’s anonymous online review of Lantham’s *The Electronic Word*. This short text sounds many of the keywords driving the rhetoric of victorious supersession that defines the narrative of the early years. Stripped to its verbs and adjectives, the review reads as a mantra of unbounded optimism: “Revolution[ary] ... radical... interactive...volatile... challeng[ing]...fullfil[ing]... expressive... revolution[izing]... democratizing... and “posing anew.” The short review expresses no doubt at all that

[t]he personal computer has revolutionized communication, and digitized text has introduced a radically new medium of

expression...[E]lectronic text fulfils the expressive agenda of twentieth-century visual art and music, revolutionizes the curriculum, democratizes the instruments of art, and poses anew the cultural accountability of humanism itself (*The Electronic Word*, bibliovault.org).

In this remarkable display of what Carolyn Marvin termed “cognitive imperialism” (192) it is now the book, book reading itself, that is suddenly reconstituted as lazy and passive. A reviewer of Jay Bolter’s *Writing Spaces* insists that “words on the electronic screen are not...passive; they are active and usually serve as beacons” (Barton 500). Of such technospeak Geoffrey Nunberg states that it “play(s) false to the truth” (107). James Carey goes further and describes such as language as “morally and politically irresponsible,” (“Historical Pragmatism and the Internet” 445) and critiques its disengagement from the historical contexts of media studies. In 1994 Roger Chartier carefully drew attention to the “long history of Western metaphors that represent the book as a figure for destiny, the cosmos, or the human body,” (Chartier 22-23). *Wired Magazine*, six years later, announced that “the universe is not merely like a computer, it is a computer” (cited in Mosco 14). In her study of the discourses of expectation and promise surrounding the electrical technologies of the late nineteenth century, Carolyn Marvin observes that it “it is clear some of the maps constructed for them are fabrications we have sought to dismantle in the twentieth [century]” (8). Two decades into the twenty first century that dismantling has more than begun and the parade of enabling descriptives are being countered by a darker investigation, one that critiques networked technology as

crisis technology, the enabling machinery of neo-liberalism and the engine of accelerated capitalism.

The Body of the Book/ Bookish Bodies:

In digital times, the materiality of the book, what Leah Price describes as the “brute materiality of the book” (73), has provided grounds for another discursive strategy for normalizing the digital imperium. This strategy invokes a certain discomfort with the flesh, and seeks to narrate book technology as too close to living matter, too close to the human body, to the animal body, to nature itself. As Ghislain Thibault states of digital technology, “most users see and experience the internet as an immaterial medium and thus, are prone to mock anyone who imagines its as having any sort of material embodiment” (“Streaming: A Media Hydrography of Televisual Flows”).

The book, unable to conceal this material embodiment, is mocked for its sudden shocking physicality, its insistence on its very thingness. From body text to the body of the book, from bodies of literature to the *corpus* of an author’s work, from the book of life, to the death of the book, the headers, the footer, spines, contents, the hides, skins and parchment of the book all foster an age-old identification of book with body, and with living things generally. These implications are problematic to narratives of digital triumphalism in which text, as N. Katherine Hayles states, is “thinned out of existence as a physical object,” (*Translating Media* 278) and where embodiment is denigrated, denied, and disappeared. As the “Declaration of the Independence of Cyberspace” makes clear,

the digital environment “is not where bodies live.” Barlow is insistent that Cyberspace is a “civilization of the mind.” Not only is the body not welcome there, but the body of the other, the “immigrant” body, the body that will never be “native” in an independent cyberspace is particularly unwelcome (Electronic Frontier Foundation).

The female body, native or immigrant, with its engendering, flesh-giving, and ‘expressive’ capacities is perhaps noticeably unwelcome in cyberspace. Anne Wallman’s engages with this question in her epic poem *The Iovis Trilogy: Colors in the Mechanism of Concealment*: “the computer,” she writes, “is a little theatre for her mind although she senses it was designed & created & marketed by more & more men. Is this a problem?” (745).

The physicality of the textual is put in plain and markedly unashamed sight in Hélène Cixous’s likening of ink and the act of writing to “Nursing time,”(31) and to the breast milk of a nursing mother. The *authorship* of the nursing mother is *expressed* through breast milk. Cixous’s identification “Ink. Milk.” (31) reconfigures ink as a decidedly female substance that facilitates not only expression but nourishment and growth of human life. Similarly Helen Keller has humanized books as “friends” who “talk to me without embarrassment or awkwardness” (63). Such metaphors offer a re-gendering of the technology of the book, the book as body, of lactating breasts and friends, and provide alternative models very distinct from I.A. Richards 1924 technocratic and masculinist definition of the book as “a machine to think with” (*Principals of Literary Criticism* 1), a definition that fits neatly within an age of automation, assembly lines, and machinery. This discomfort

or at least profound indifference, to the body, and the female body in particular, stands in sharp contrast to what American poet Robert Kelly identifies as one of the “great sources of human information, the *flesh of sensory experience*” (emphasis mine, *Poems for the Millennium* 567). Another, he adds, is “the holy book of tradition and learning shared through time” (567). These unambiguously physical resources, and the power they imply, lie resolutely outside the reach of digital technology. Instead, they lie within what Canadian poet Genevieve Lehr has called “the analog of touch” (14). They are manifestly unwelcome in cyberspace where only information “that has lost its body” (Hayles, *How We Became Posthuman* 5), can be accommodated. “The post-human view,” Hayles further articulates, “privileges informational pattern over material instantiation so that embodiment in a biological substrate is seen as an accident of history” (*How We Became Post Human* 2).

The book may well be an accident of history but it is decidedly embodied in a biological substrate. Books, independently of a metaphorical agreement that they are living essences, *are* living essences, composed of the cellulose of plant fibre, and teeming with life in the form of the larvae and insects that inhabit their pages and bindings and feed off the starch and cellulose of which the book is made. Ezra Pound was well aware of this relationship when he attacked critics by writing “the vermin crawl over and de-slime our literature with their pulings, and nothing but the day of judgment can, I suppose, exterminate them” (65). Outside of the celebrated moth discovered in 1947 stuck between relay contacts in the Harvard Mark II computer, (and duly taped into the daily logbook), the bugs that have proved crucial

to computer technology no longer exist as living entities, but as metaphors only. But there is little that is metaphorical about bugs when it comes to book technology. Attracted by the warmth of the book, they live there, lay their eggs, are born there. Some of these insect species “prefer papers that are soiled from body oils, food stains, or other insects.” Even termites “enjoy a good book” (Williams). These creatures live, or they exist as larvae, and they contribute to the book as a technology that is subject to a decay unto death and to all the uncomfortable putrescibility that the “cool clean electroworld” (Sterling, 63) promises to do away with.

Wake up and Smell the Book

Stinking, infested with bugs, and alive with mold, the alarm over the biological messiness of the book is sounded in William Mitchell’s squeamish and compulsorily-cited definition of books as “trees flakes encased in dead cow” (56). This statement, along with Barlow’s “Cyberspace Manifesto,” both published in 1996, sound a masculine discomfort around the physical artifact that is not necessarily widely shared. It is decidedly not shared by Helene Cixious, as we have seen, or by the Victorian novelist Amelia Edward who quite happily describes a “dusty treasure [...] three or four dozen wormeaten, faded volumes [...] overlaid with blotches of white mould” (9). The acceptance of the putrescibility of books not as something to fear and loathe is discernible even in Sylvia Plath’s remark: “nothing stinks like a pile of unpublished writing” (254). The real stench here emanates rather more forcibly from rejection, from the economic and editorial vagaries of the

industry rather than the odour of hexanol and lingum. Her comment, published in 1963, aligns chronologically, and buttresses Balatore and Natale's research that found a longing for the smell of the book, even the notion that books could 'smell good,' appeared in mainstream literature only *after* the everyday use of electronic text. "Paradoxically," the authors note, "the smell of paper becomes meaningful only to the extent that it is perceived as something that might disappear" (20).

The disappearance of book smells from the digital reading environment is acknowledged by the marketing of products that aim to re-flesh and return the body to the book. These products include aerosol sprays, such as the trademarked "Smell of Books" spray cans, designed and marketed to those who, according to the 'Smell of Books' website "have been avoiding e-books because they just don't smell right." These sprays are designed with the discerning literary reader in mind—the Jane Austen lover can fritz the room (or device) with "Scent of Sensibility, while the breakfast reader can infuse the house with "Crunchy Bacon Scent (not recommended for vegans)." Furthermore the "Aerosol E-Book Enhancer" is

compatible with a wide range of e-reading devices and e-book formats and is 100% DRM-compatible. Whether you read your e-books on a Kindle or a smartphone using your favorite app, Smell of Book™ brings back that real book smell you miss so much.

(*smellofbooks.com*).

That the website is an elaborate, pointed, anonymous and rather insightful hoax in no way detracts from the confusion that defines the situation of the book in the epoch of its putative death. This confusion is acknowledged, with a wink and a nod,

by the willingness of the rare and antiquarian book blog *Booktryst* to review the product. The reviewer has no hesitation holding up the company’s founder “Orleg Tarlev of Moldavia” as a “visionary,” a man who single-handedly returned to the book its olfactory birthright and also managed to invent a “steam powered television” (Gertz). The “steam powered television,” of course, is no more audacious, ridiculous or unimaginable than an “electrically powered book,” and why, after all, why *wouldn’t* someone invent a perfumed spray to make an electronic file smell like a book?

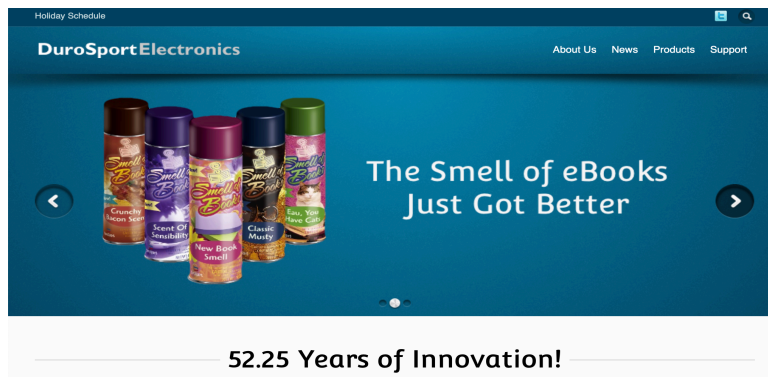


Fig. 4. From the “smellofbooks.com”

Despite the elaborateness of the “Smell of BooksTM” hoax, there is no shortage of similar products on the market and their marketers employ language shamelessly similar to the Smell of Books website. Demeter’s “Paperback” line,” for example, “sweet and lovely with just a touch of the musty smell of aged paper,” offers an entire “library” of products to ensure that “embracing electronic books doesn’t mean we have to sacrifice one of the most wonderful scents in the world—the book smell” (Kowlaczyk). Available in both spray and roll on, the Demeter

library of books smells fetishizes and formally acknowledges the loss of a now defining attribute of books and the diminishment of the sensorium with which book technology is inextricably linked. These products are sold as commoditized forms of nostalgia, a means of recalling the memory of what a book *once* was. They constitute another theme in a larger ‘death-of-the-book’ narrative, offering, at a price, to re-flesh the book, to return to it what the digital revolution has forced the reader to “sacrifice.”

These products indicate chinks in a narrative that maintains there is nothing to be alarmed about in the state of the book. Like the edible food festivals, these products respond to the failure of technoculture to accommodate the decidedly non-virtual physicality of the book, and to suddenly impose a post-human and fully digitized textual environment on the reader. In at least one crucial regard, however, the *eau-de-book* industry is markedly different from the edible book festivals. While edible books festivals happily critique the digital takeover and makeover of the book, these commodities attempt to exploit ‘death of the book’ concerns by playing both sides of the digital coin—they promise to return at least some of the artefactual and monumental authenticity to the book, its now suddenly valued aura of aroma, yet they promise to do so in a way that in no manner threatens, criticizes or interrogates the hegemony of the digital regime or a neoliberal order that renders such products marketable in the first place. Their stated aim, in fact, is an ideological one, to help us “embrac[e] electronic reading” (Kowlaczyk).

As the online marketplace is marketing the smell of books as a commodity, some new-media promoters are busy downgrading the olfactory dimension of the

book and its significance to the textual experience. It is not unfair to suggest that criticizing the nostalgic and romantic yearning for the smell of books has become something of a sub trope employed by more than a few new media enthusiasts. It is sounded in Corey Doctorow's insistence (approvingly cited by Sherman Young in *The Book is Dead—Long Live the Book* (105) that the last thing we need is another "little sermonette on how good books smell." By insisting on the feminized diminutive of sermon, Doctorow genders the concern over this physical attribute of the book, positioning it as silly, something a girl might worry about. As an elusive sensory dimension that critically eludes digital text, it is presented contemptuously. However, as Adorno and Horkheimer have pointed out "of all the senses that of smell...bears clearest witness to the urge to lose oneself and become the 'other'" (cited in Shutkin 56). As much as '*the urge to lose oneself and become the other*' is a function of smell, it is also a function of the book.

Smells, like books, also possess their own unique cultural heritage (Meier). To better understand the relationship between olfaction and heritage, the authors of a 2017 study undertook research into the composition of historic paper. A frequently-quoted section of their research describes the odour of books in language not dissimilar to the Demeter book smells campaign: according to the scientists, the smell of books is "a combination of grassy notes with a tang of acids and hint of vanilla over an underlying mustiness...." In an interview the lead scientist of the project, Matija Strlic, went on to state that "[t]his smell is as much a part of the book *as its contents*" (emphasis mine, Strlic, cited in Schultz).

That the significance of a book may lie in the material reality of the artifact

as well as in the myriad interpretations of its so-called “contents,” intriguingly widens the scope of textual studies. It suggests a ‘fruitful’ (even “grassy”) alternative to what Jerome McGann has described as the restrictive “spell of romantic hermeneutics” (12) and suggests a way out of the *cul de sac* of the container model of the book which, acknowledged or not, has decisively shaped thinking on the complex issue of how text relates and interrelates to the medium that instantiates it. Raffaele Simone, for example, is confident that the book is “the graphic materialization of the physical container of an object quite different from it; of a text [...]” (240). Such a description summarizes a widespread acceptance within media thinking generally, about the architecture of this relationship; two distinct entities, one contained in the other. Precisely the same model informs new media thinking as well. John Perry Barlow states:

So far we have placed all of our intellectual protection on the containers and not on the contents. And one of the side effects of digital technology is that it makes those containers irrelevant. Books, CDs, filmstrips — whatever — don't need to exist anymore in order to get ideas out. So whereas we thought we had been in the wine business suddenly we realized that all along we've been in the bottling business (cited in Nunberg 103).

Whether it is a longing for the bodily sensorium of the book, or a disdainful dismissal of the nostalgia for physical containers, smell—and its relationship to books—offers the opportunity to challenge a simplistic and long-standing acceptance of the container model of media objects. As Gitelman notes “however

commonplace it is to think of information as separable from, cleanly contained in, or uninformed by media... it cannot be considered 'free of' or apart from the media that help to define it." To do so, she adds, "merely redoubles the structural amnesia that already pertains" (*Always Already New* 7). Roger Chartier is noticeably reluctant to embrace the container model of the book and has meticulously deployed a different language, one that nuances and explores alternative understandings of this interaction. Chartier does not write of text existing *within* the book, instead it is "constrained" by the form in which it appears (*Forms and Meanings* 1). Linguistic content is "embodied" by the book (24) Text is not the 'content' but a "linguistic function" (3) Books are "objects" on which we are "accustomed to finding [the written word]" (*The Order of Books* 89). Texts are "conserved" by the book (89). They are "indissolubly linked" to it (90). Writing is not located inside the book, instead "writing becomes the book" (ix). Books do not contain texts, books "bear" them (viii). Text is never "apart from" the book (9). Instead of containing text, the book *offers* it for reading (emphasis mine 9). "Traces of an important moment" are "imbued" by books (22).

Through these painstaking semantic distinctions, Chartier resists the container model of the book and an accepted dichotomy between content and medium. The insistence on a separation between medium as 'container' and text as 'content' is an understanding so commonplace that it has conditioned understanding of how the architecture of the book is constructed. Strlic's irrepressible observation that the smell of books is as significant as their "content," offers another way to break the "spell of romantic hermeneutics," (McGann 12) and the container model

of the book and “structural amnesia it pertains” (Gitleman, *Always Already New* 7). It enriches our “artefactual understanding of a book” (Raven 47) by suggesting additional forms of “content” beyond that of syllabic code, and provides an alternate model that is more elastic in understanding the relationship between text and book, between media and content. In such a model, text is not located *inside* anything, rather it co-exists with the material form. All the carefully chosen terms employed by Chartier describe a relationship between the medium and its ‘content’ that more resembles the smell of an object—co-existent, simultaneous and inseparable. Such a model challenges the insistence on the book as a discrete container independent of the text. This model is crucial to the enabling story of digital supersession and liberation technology, the insistence that words have been imprisoned in “cages” (Gomez 13-14) or frozen in a static and somewhat disgusting material state from which only digital technology can set them free.

Information Inc. and “the Living Speaking...Bleeding Book” of Truth

While the conception of the book as container, a vessel, or a type of package, has stood as a metaphor and model for comprehending the architecture of the book, the understanding of what that container represents, and the contents imagined to exist within it, have changed dramatically. To Richard de Bury’s mid-fourteenth century understanding, what lay within the codex was often the Christian God: “therein the mighty and incomprehensible God himself apprehensibly contained” (9). Such understanding, by the time de Bury committed it to paper, was already a thousand years old. Although reasons for Christianity’s adopting the codex are the

subject of ongoing scholarship, it is clear that from the beginning the emerging codex technology thoroughly implicated itself with that emerging religion. For centuries, the codex was *the* technology for the apprehension of the Christian God, so much so that by 300 CE the dominant production of parchment codices throughout the Mediterranean world took shape as bibles (Raven 24). Robert Curtius has drawn attention to the “religious metaphors of the book”(cited in Villalobos Henessey 17), while Henessey herself notes:

Christ became a storehouse of bookish conceits: his crucified body was compared to parchment stretched out to dry, the blood of the passion to red or purple ink. As the Middle Ages progressed the trope of Christ’s blood as ink became related to a whole network of associations that featured Christ as a living, speaking and often bleeding book. This discourse stressed the human somatic nature of the Christ-book: its ability to feel pain, to speak and its fleshly propensity to bleed extravagant rivulets of red ink (18).

In secular times it is difficult to fathom the depth, totality and intimacy of the codex’s integration with the Christian God and the practice of Christian worship. As Debray powerfully states, “the codex popularized the word of God and was in turn ennobled by it (cited in *Understanding Technological Innovation*, Flichy 28).

Even the very gestures involved in the reading of the codex are imitative of Christian prayer: the folding and the opening of the hands, the requirements of book reading and page turning (as opposed to the scroll) to reproduce the physical action of Christian prayer. This mimicry is a crucial component of the technology of the

codex design. “Every time we hold a book today,” states Andrew Piper, “we are re-enacting this initial bond between reading and prayer” (5).

In his 1992 essay, “The End of Books,” Robert Coover briefly but significantly addresses the determining role of Christianity in the existence of the book as a communications technology. In that essay which, in fact, makes no claims the book is dead, the author points out instead its intimate relationship to the Christian God, insisting the bond between the two is not severable, that the health of one determines the health of the other. It is, according to Coover, the health of God that accounts for the book’s status. In the end the codex can only be, as Coover carefully puts it, “dead as God” (*New York Times* 1). The book’s religious metaphors, noted by Curtius, and many other scholars, emphatically denote a time when the death of God was not a conceptual possibility and when, instead, the radiant health of God was reflected in the radiant health of the book. Coover acknowledges that this relationship still applies, that as it goes with God, so it shall go with the book.

Since the “digital turn,” that mysterious and worshipful entity, what Coover calls “God,” faces yet more competition from another mysterious and worshipful entity called “information” and “data.” The evolution from the truth and wisdom originating with God, toward the information, data, and Big Data of digital networks is inseparable from the apprehensiveness that has marked recent considerations of the book. It has also fundamentally altered, even redefined, the contemporary understanding what a book is, of its function and purpose. The book is now a medium that has become routinely implicated with the storage, display and transfer

not of truth, but of *information*. Kittler himself is adamant that the book is a technology where data flows, where serial data were traditionally confined until Edison's phonograph, the typewriter, and film, exploded the book's monopoly. Kittler's confidence that the book is a technology for "serial data processing" (*Gramophone, Film, Typewriter* 183) represents a categorical shift from a centuries old understanding of the book as the tabernacle of God's truth, or the cathedral of human identity and consciousness (Muri 251). Such a radical reinterpretation of the book reflects more than the further secularization of Western existence, but a drive to locate the book within a framework of science, technology and data, to replace the codex's historical positioning as a site of the truth and wisdom made available by God, with a site of information, data, and the findings of infometrics.

Lacking the hefty ideological and epistemological freight of truth and wisdom, information has become variously a "cult" (Roszack, 1994) a "revolution," a "turn," an "age," a "religion" a universe ("infoverse") and even, according John Perry Barlow, "a life form" ("The Economy of Ideas"). Increasingly it is accepted as an "intentional substance that is present in the world that translates with absolute freedom from one medium to another... a noble substance that is indifferent to the transformation of its vehicles" something that can be "liberated and manipulated as pure essence" (Nunberg 110). As Nunberg perceptively notes, "one can be a skeptic about knowledge but not about information" (107). Truth, and knowledge are different in this regard: truth and knowledge have only ever known one material habitat, its traditional and historical resting place is the book. While noticeably absent from death of the book rhetoric the marginalization, downgrading, the

skepticism about wisdom, knowledge and truth are key determinants in the changing status of the book. “Raw data,” may be, as Gitelman observes, “an oxymoron,” (2013) but it has been granted a type of ideology-free status that makes it impervious to the corruption of “cooking the books.” In this regard, data, and information, become the new truth that decidedly does not require the book to assert its authority, or define its location. The Google Ngram, below, bluntly illustrates the fate of two competing “substances.” In doing so it provides a useful schematization of the anxiety, nervousness, and indignation that surrounds “the book is dead long live the book” headlines. Here “information” is visualized in its ascendancy, soaring above “truth,” which is brought low, not only by the “deep and troubling questions of epistemology” now attached to truth and knowledge” (Nunberg 107), but by the electrically-driven, digital, networked technologies that so have so totally aligned themselves to information and data

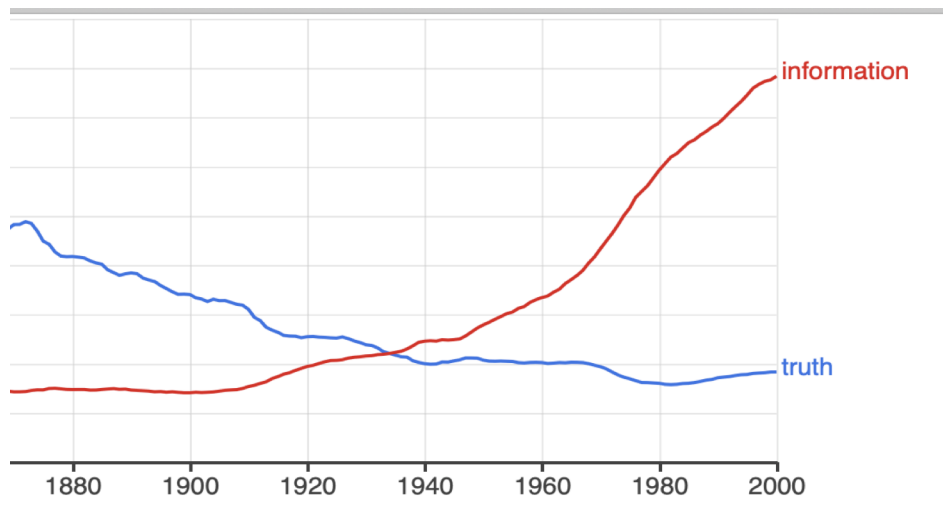


Fig. 5. Google Ngram charting “information, truth”

Even given the contemporary uneasiness about both truth and the book, the traditional twinning of the two has proved difficult to uncouple. New media theorists may continue to disparage the frozen book or pointedly exclude the book as an excavation site for meaningful research—yet, nonetheless the results, the findings, the information, the data and the conclusions of their research invariably are instantiated in books. Jun Naim Paik drew attention to this inconsistency in the work of Marshall McLuhan, a thinker he deeply admired: “The only problem with McLuhan is that he still writes books” (cited in Chun, *Marshall McLuhan* 36). After a lifetime of attempting to locate truth outside of the book, Jun Naim Paik’s impatience is arguably well-earned. The same cannot be said of new media enthusiasts and scholars who excitedly promoted hypertext, and digital networks, along with just about every steam punk technology imaginable, while pointedly ignoring the book, and who, without exception expressed that excitement—in books. This is not hypocrisy as much as a deeply ingrained acceptance of the book as truth’s natural home, its default location. There is no other place to go. Even Mitchell, who dismissed books as “tree flakes encased in dead cow” did not think twice about where to locate his own thinking and research. Despite the liberating rhetoric of much new media language, the age-old acceptance of the book as the pre-eminent, perhaps sole, precinct for the existence of truth has proved extremely difficult to dislodge.

Conclusion

If “machines for reading” can be viewed, as Gitelman suggests, as “consensual, embodied theories of language” (*Scripts Grooves and Writing Machines* 5) then the rhetorical strategies of certain new media narratives can be read as representing the efforts to achieve that consensus. This chapter has attempted a preliminary mapping of those strategies and efforts. They are manifested in the repeated positioning of book technology as something that needs to be ‘moved beyond,’ to the insistent, circular counter-argument of “the book is dead long live the book.” Whether it is the creation of a fictional army of misinformed straw men supposedly insisting “the book is dead;” the surrender of the *reader* to the *consumer*, the insistence on an equivalency between print and digital text, the hijacking of long-established meanings and turning them inside out, or the reification of “information” as an unassailable commodity against which truth and wisdom cannot compete, all contribute to the construction of what Flichy has termed “legitimizing ideologies” (11). These ideologies manage the imposition and domestication of a techno-digital existence as affirmative, liberating and often utopic. In doing so they propagate a serious re-branding of the book as an impediment to both progress and freedom: a past-bound, even hide-bound technology that now stands in the way of the future.

CHAPTER FOUR

Book Destruction and the Death of the Digital

Part One: *Reading the Book to Death*

Nearly forty years ago, Robert Darnton inquired into the nature of books by asking the question “What is the History of Books?” In answering this question he relied heavily on metaphors of vegetation. In two decades between 1970 and 1990, Darnton observed, “the history of books had become a rich and varied field of study” (*What is the History of Books?* 66). This field, however, had turned into a “tropical rain forest” (66). History, English, comparative literature, analytical bibliography, and other “ancillary disciplines” (67) all served to ensure that the book historian was “entangled in a luxuriant undergrowth” of competing articles and crisscrossing disciplines (67). In short, Darnton was concerned that it had become near impossible to see the forest for the trees, or perhaps the trees for the forest. To lead book scholars out of this predicament, Darnton proposed what he called a “communications circuit” in the conviction that, however varied their individual biographies, books “generally pass through the same life cycle” (67). This cycle, which Darnton rendered diagrammatically, has become an integral schematic in book studies. The University of Sterling’s “The Book Unbound” project views Darnton’s drawing as a “cornerstone of the disciplines of book history and publishing studies since its conception” (“The Book Unbound,” University of

Steiling). Others, such as Adrian Van Der Weel, have attempted to employ Darnton's communication circuit as a means of comprehending text in the digital age and, in particular "the interaction between the many agents involved in the transmission of text through society" (13).

While Darnton's communication circuit has been employed and debated within book studies for nearly forty years, no attention has yet been paid to its most striking insight, or perhaps its most striking oversight: nowhere throughout the circuit is the book allowed to *come an end*. In its reassuring conglomeration of circles, ovals, squares and directional arrows the book, made possible by suppliers

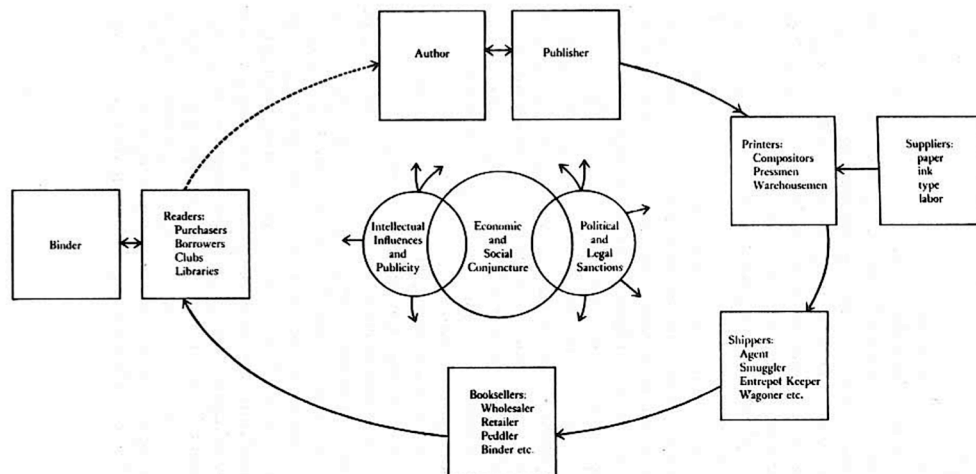


Fig 1. *Never ending:* Darnton's Communications circuit

of paper, ink, type and labour, is passed on to the shippers, wagoners, and smugglers where it is buffeted by political and legal forces, intellectual influences and opinion before sliding for all eternity into the arms of "Readers." What happens after that, or

what happens to books that do not make into the hands of readers, is not addressed. This remarkable omission indicates the difficulty involved when the technology of the book is confronted by 'end of' and 'death of' the book scenarios. What Darnton's circuit demonstrates, most significantly, is that within the *long duree* of *l'histoire du livre* as a field of study, rather like everyday thinking on this matter, there exists no historical, theoretical, or even commonplace model for comprehending how *the* book or even *a* book comes to its end. Any understanding of the death of the book, or "the book is dead," postulation is stymied by deeply-held cultural assumptions that such a point is never reached, and that as the common phrase has it, "a good book never dies." While Darnton is adamant that books pass through a "life cycle," his diagrammatic circuit reinforces an unquestioned and perhaps unquestionable assumption that books exist forever, that the book is not only immortal, but as Rufus Choate insisted, "the *only* immortality" (emphasis mine, cited in Sewal 539). Indeed, in Partington and Smyth's *Book Destruction from the Medieval to the Contemporary*, the authors struggle to find an appropriate language even to define the end of a book's existence. Settling finally on the term "misuse" (8), the authors, in effect, offer up the real possibility that there is no culturally accepted legitimate or 'natural' end to a book's existence, and that the imposition of such *end* to any book is, *ipso facto*, a "misuse."

This chapter examines the complexities of how books come to an end, not as a discursive or metaphorical phenomenon, but within the realities of books' daily and continual destruction, and their repeated destruction throughout history. It concurrently investigates how books do *not* come to an end, and how the inviolable

associations between the living body and the living book, between the human body and the “human book” (Stevenson x) have influenced an understanding of the sanctity and beatification of book technology, just as they have influenced an understanding of the human body. This chapter further argues that the ‘death-of-the-book’ and ‘the-book-is-dead’ headlines, while serving to alleviate popular concerns over a reduced and increasingly negligible cultural role for the book, operate as strategic narratives to divert public attention from the ecologically unsustainable manufacture and destruction of digital technology, a technocide without precedent and upon which “new media” is dependent in order to remain “new” (Sterne 2007). In brief, the ‘death-of-the-book’ headlines exist as a loud and effective counter narrative that conceals from the public the consequences arising from the routine disposal of digital technology. In pursuing these concerns, this chapter initiates a working understanding of what is yet noticeably under-theorized in book studies: its terminal point, its destruction, “death,” and its obsolescence both as a technology, and as a discrete physical object. Whereas concerns about the end and disposal of new media technologies are beginning to emerge in media scholarship, media archeology in particular, along with an awareness of the “geological underpinnings of contemporary media culture” (Parikka 1), within book studies these concerns remain largely absent. Scholarship that attempts to historicize or theorize how a book comes to its end is almost non-existent. As the authors of one of the few texts on this subject observes, [book] “destruction has been until now, largely uncharted territory” (Partington, Symth 8).” In attempting to chart such territory, this chapter examines “the death-of-the-book” not as a discursive counter-argument, but a

material phenomenon and attempts to construct a working understanding of how it is that a book ‘dies,’ and ceases to be a functioning technology.

“The Only Visible Change which Changes no Further”

The impossibility of the book ever coming to a physical end, of even imagining how such an occurrence take place, is forcefully sounded by Leigh Hunt who, in 1823, insisted that the book

is the only visible change which changes no further; which generates and yet is not destroyed. Consider mines themselves are exhausted; cities perish, kingdoms are swept away, and man weeps with indignation to think that his own body is not immortal.

Yet this little body of thought that lies before me in the shape of a book, has existed thousands of years, nor since the invention of the press can anything short of an *universal convulsion of nature* abolish it. (italics mine, 200).

Yet even Lamb’s possible outcome presents no clear or comprehensible vision of how a book actually comes to an end, of how exactly it is “abolished.” If there exists a conceivable scenario of the ‘natural’ demise of a book, it is its dissolution over time; a sedimentation that sees paper slowly breaking down over the centuries into dust, rather like the statue in Shelley’s “Ozymandias,” until finally the paper itself no longer occupies space, no longer exists as paper. It is such a vision of rot and decay that, Nicholson Baker states, motivated the U.S. library efforts to rematerialize its newspaper archives from paper into microfilm. In this

way the library would combat what a preservation expert at the Library of Congress's called "the inherent vice of deteriorating paper" (cited in Baker 35). Although the Library of Congress still describes "the deterioration of paper" as a "problem," the moral overtones have been scaled back somewhat and the institution now concedes that a great deal of paper that is already *500 years old* is in fact in perfect condition and shows no signs of deteriorating to any degree soon ("Deterioration and Preservation"). Despite an underlying concern that paper, inexpensive paper in particular, is prone to rapid deterioration (Price 16), it is also prone to lasting for centuries. Baker portrays the professional concerns about the mutability and fragility of paper as both a type of moral panic, and a technocratic attempt to further shoe-horn electro-mechanical technology into a realm that has stubbornly and steadfastly resisted such colonization.

While there may exist a commonly held understanding of paper as perishable and fragile, the invention is a highly developed technology that has undergone more than 2000 years of experimentation and use. Popular, even professional, concerns about its fragility are countered by the numerous examples of paper's extreme durability. This understanding of extreme durability is echoed in Hippocrates's phrase *Ars longa, Vita brevis*. Writing, specifically, is *longa* because the materials out of which written words are manufactured are astonishingly durable. Surviving examples of paper exist from the very years when paper was first inscribed upon. The Fangmatan paper fragment excavated in 1986 from a tomb in China's Gansu province is thought to be two thousand two hundred years old, and quite possibly would be fully intact if not for extensive water damage. It is also entirely legible

(Buisseret 12). The New York Library's copy of the Gutenberg Bible, after five centuries, is pristine, and refutes any argument that would describe paper as constantly on the verge of crumbling. While dissolution and decay unto dust may be the only natural, unforced end to a book's 'life span,' this end is extremely slow in coming and may, in fact, never actually arrive. Such centuries' long lifespans serve to further complicate cultural understandings of how a book, legitimately, and naturally comes to its material end.

Another scenario for comprehending the book's terminal point appeared with some frequency in the nineteenth century and involved the book being "read to death" (cited in Colclough 148). In this scenario, the book is understood to have disintegrated through repeated use, and suggests some of the social concerns brought about by mass produced and increasingly affordable printed documents being manufactured under factory conditions, ranging from sermons and flyers, to novels and newspapers. In a mid-Victorian environment which already conceived of itself as a "world overburdened with printed objects" (145), to be read to death was both a class condemnation of the public lending library with its "'many dirty books' in circulation and the connection between dirt and disease so often made" (149), but also a celebration of literary success no matter how low brow. Thus the book that was 'read to death' also became a marker of success, a "celebration of the commodified circulating text" (146).

This fate of being 'read to death' is not as entirely metaphorical as it sounds, and allies with a notion of a book being read to pieces, suggesting the breaking of the book into its constituent parts, its "broken backs and torn leaves" (Wynter, cited

in Colclough:146). Wynter's article on Charles Mudie's pioneering Lending Library provides several useful insights into how the book comes to its end. Of Mudie's Library he writes that there is a "vault" where are stored books that are not "yet considered dead" (cited in Colclough 146). Furthermore, there exists a

charnel house to this establishment where literature as it were is reduced to its old bones. Thousands of volumes thus read to death are pitched together in one heap. But would they not do for the buttermilk? was our natural query. Too dirty for that. Nor for old trunks? Much too greasy for that. What were they good for then? For manure! Thus, when worn out as food for the mind, they are put to the service of producing food for our bodies (Wynter, *Subtle Brains and Lissom Fingers* 135).

Here is found a nineteenth century description to how the book might come to an end. The book is returned to the earth, its mortal remains are spread across the soil. This rather satisfying solution is understood today as 'composting' and represents not so much a communications circuit as an agricultural cycle in which the book is returned to the ground in order to fructify the earth, to nourish its inhabitants, to put food on the table, even to nourish the livestock whose harvesting will, among other things, provide the sizing that is used in the manufacture of paper. After being read to death, the book, too stained and greasy to even wrap butter or line suitcases, is rematerialized along lines that dovetail neatly with the bibliophagic metaphors examined in chapter three. As the author puts it, food for the mind becomes food for the body. Such

activities expand enormously upon what Leah Price has termed the “material affordances” of the book (16). While such non-textual uses may easily include a woman matching the binding of her Bible to her dress (Price 6), or using an almanac or encyclopedia as a doorstop, they extend massively outward in directions that are decidedly excluded from Darnton’s communication circuit or any of its modified versions. These affordances serve to further obscure the actual terminal point of the book object. According to Wynter’s comments on Mudie’s “charnel house,” book destruction is perhaps best conceived as a type of “reduction” in which the physical object of the book devolves into a different materiality, which in turn is used to enrich the garden or the pasture (Wynter 135).

It is here in these largely unexamined precincts that an initial comprehension of the termination of the book might be found. Leah Price only somewhat rhetorically asks “can the study of the printed book stop short of forestry...?” (219). The question is perhaps more usefully worded: “can the study of the printed book (or any printed matter) begin *anywhere else* than in forestry and agriculture?” As a vegetal technology the book’s ‘death’ fits within a ‘death of nature’ narrative, and within global drives toward deforestation and clear cutting, with the loss of family farms to corporate agriculture. Yet on a material level, the death of the book is categorically different from the toxic ecologically disastrous death of digital media discussed later in this chapter. There still remains, as Wynter’s comments on Mudie’s Library indicates, a somewhat pastoral ending for print, one that fits within practices of recycling, and re-use, of husbandry, and agriculture. These practices are found today

in the widespread adoption of shredded newspapers as bedding for dairy cows (Orr 1989). While it is largely newsprint that undergoes this remediation, books themselves are finding material affordances that extend well beyond employing a volume of verse to level a table, or for the rolling of cigarettes. The British highway M6 Toll has been, to some extent, constructed with pulped books. Forty-five thousand books were used in every mile of construction for a total of some 2,500,000 books. Highway engineers have found pulped books help prevent cracking, and further bind the asphalt to the tarmac, solidifying the road (Britten). The book pulp “also acts as a sound absorber” (BBC, *M6 Toll built with pulped fiction*). In this outcome the material ‘death’ of the book serves to extend the ‘life’ of the motorway and in doing so both metaphorically and materially re-unites communication with transportation, a relationship severed, as Carey has pointed out, by the first use of the telegraph (“Technology and Ideology” 3).

These wide-ranging affordances, indifferent to the ‘meaning’ or the “semantic contents” (Chartier, *Order of Books* 90) of the book, provide a useful response to Darnton’s insistence that “some holistic view of the book as a means of communication seems necessary” (“What is the History of Books” 67). They also supplement his suggestion that “[t]he wagon, the canal barge, the merchant vessel, the post office, and the railroad may have influenced the history of literature more than one would suspect (77). The M6 Toll and the two and half million books of which it is comprised suggest, after Darnton, that just as transportation technology has influenced the book, so too has the book exercised its influence on the history of the wagon, the car, the railroad, the airplane and the ship. It is in such alternate

circuits as this, and in perhaps countless and yet unimagined circuits and cycles that a holistic view of the book might be assembled. Whether the M6 Toll represents a remediation, a de-mediation, a material transmutation, or a convergence of the book artefact, it does not appear to effectively answer a question that the death of the book headlines pointedly make no effort to address: what happens once the thing is ‘dead,’ how is the living body of the book turned from corpus to corpse?

David McKitterick, in his study of secondhand books, states that “ideally the history of books is concerned as much with what has been thrown away as what has been kept” (635). That history, however, is less than ideal and the extraordinarily complex matter of how books come to their end has been unsatisfactorily reduced to their being “thrown away.” As to where exactly books are thrown when they are thrown away, McKitterick offers “the dung heap” (635). This dung heap bears a considerable resemblance to the “charnel house” described in Wynter’s newspaper article on Mudie’s Lending Library, and conjures up a compost pile of rotting books and manuscripts, no longer wanted. McKitterick’s research into the emerging second hand book economy describes an environment in which the steam press, double-sided printing, and factory-made paper, created a situation in which the “simple need of households to dispose of books meant that every town of any size had its second-hand shop” (636). This shop served to prolong the book on its passage to a presumptive death, and provided a forceful reminder that, as McKitterick observes, “Books are not like most other commodities. Their useful lives can spread over generations, and they fall in and out of use” (636). Yet this sudden and burgeoning appearance of the second-hand book market also attests to the fact that there exists a

long held and “deep cultural investment in the written word as a lasting monument” (Partington 4) and that people are therefore extremely reluctant to bring this monument to an end. Combined with a longstanding acceptance of the book as indistinguishable from the human body, and a logic that “link[s] the fate of books with the fate of human beings” (Partington 7), the book has, not surprisingly, proved to be a technology that is extremely difficult to make go away.

Burnings and Death by Exposure

It appears that if there exists a single cultural vision, a commonly held understanding of how the book is destroyed, of how it categorically meets its end, it is that of burning and of bonfires. This understanding is found even in Google’s search algorithm for the query “book destruction” which returns, without hesitation, “book burnings.” Frequently, according to Google, these burnings were perpetrated by the Nazi regime during the early 1930s. To the extent that there exists a general historical understanding of book destruction it is perhaps fixed in several iconic pictures of books assembled in heaps, and set ablaze before a mob, at the Opernplatz in particular. The limited literature that exists examining the destruction of books gravitates frequently to fire, and to the burning of books during the Nazi regime.¹

Far from being a innovation of Nazism, of course, the burning of books is as old as book technologies themselves. Plato is said to have burned his early poetic efforts for failing to reach the literary heights of Homer (Forbes 115). Of books burned in anger, the fifth century BC is stated to have witnessed the immolation of Protagoras’s treatise on individual relativity, burned for what Forbes called “The

first cause ever alleged for condemning books to the fire...atheism” (117). A thousand years before the invention of the printing press, catalogues of forbidden books were being written (Fishburn 4). This meticulous archiving, and repeated burnings throughout history testifies to a formal recognition of the book’s potency, its intimate relationship to God both Christian and Pagan, and confirms the long-granted exalted status of the book. To burn books is a formal recognition of the book’s authority. Walter Ong attributes this status to an understanding that books are tantamount to truth. As Ong observes, not only do books speak the truth, but they *continue* speaking it no matter how many enraged critics denounce them: “After total and devastating refutation [the book] says exactly the same thing as before” (78). Rather like Melville’s “Bartelby” but in reverse, the book refuses to shut up. It is this intractable stubbornness that demands the most primal physical response, that of “the purging fire” (Fishburn 4).

Frequently books have been burnt at the stake like martyrs, with martyrdom itself often linked to the book. Heinrich Heine’s famous statement “Where they have burned books they will end in burning human beings,” is included in nearly all writings on the destruction of books. But an equally accurate rendering may be ‘where they have burned human beings, it is usually *because* of the book.’ It is not only the authors of books who are burned, but the translators, printers, and even typefounders. Febvre and Martin refer to this class of victims as “martyrs of the book” (151). Quite frequently these martyrs are burned with their books. Sometimes it is not enough merely to burn the heretic. One must torture and strangle him first. This degradation of the human body acknowledges the associations between the

corpus of the body and of the book, an association Guy Stern has described as “a deep seated mythic view that books are living beings” (cited in Knuth, *Libricide* 1). Ray Bradbury, author of the book-burning dystopian novel *Fahrenheit 451*, has stated that “when Hitler burned a book, I felt it as keenly, please forgive me, as his killing a human” (cited in Fishburn 8). Deliberate immolation levels a disfiguring and obscene punishment on both the book and body and reinforces the material and cultural links between the two. Only when book and body are burnt beyond recognition is the offence demonstrably avenged. This formality may account for why the burning of books in early modern France and England was a task assigned to the public hangman (Fishburn 8). The undeniable theatrical power of book burning may also explain why books are not simply tossed into a lake or a river. Water, in fact, provides a much more efficient means of destroying books, of turning paper back to pulp. Marlowe’s Faustus offers to burn his books to save himself from hell. Shakespeare’s Prospero effectively heaves them into the sea. Milton had no doubt that a “monstrous book” could be “justly burnt, or sunk into the sea” (cited in Fishburn 7). While water may provide a more efficient means of bringing books to their material end, death by drowning fatally lacks what Derrida called “the exterminating gesture” of burning a book (651). Book burning is performative of both a God-like anger and the application of justice itself. This theatre of book burning defines a Western tradition of bibliocasty and foregrounds an enormous cultural respect for the book. The burning of books indicates that the noble technology of truth has been polluted by falsehood and heresy, and that the ‘vessel of virtue’ is contaminated. In this light the consigning of books to the flames is

punishment, not against the technology of the book, but against the crime of compromising the vaunted integrity of that technology with falsehood. As a Berlin professor informed the crowd assembled for one book burning, what they had gathered to witness was “neither the destruction of the press nor of intellectual freedom but an interdiction against poison” (Fishburn 33).

This Western tradition of respect, formality, and reverence evinced in this bringing of the offending book to its end through fire is pointedly absent in the fate of textual objects under the regime of the Khmer Rouge. As Ivor Brown wrote “to burn books, in a sense, is to believe in them,” (cited in Fishburn 78) and this is what the leaders of the Khmer Rouge steadfastly refused to do. Consequently, they were under no pressure to re-enact the highly dramatized rituals of fiery destruction that characterized European bibliocasty. The Khmer Rouge promoted no exterminating gesture, since such a gesture suggested a power and authority to books that the regime did not countenance, or acknowledge. What scholarship exists on the destruction of written culture in Cambodia between 1975 and 1979 suggests a startling contempt for that culture. Although book burnings appear to have taken place, they were typically undertaken only to provide warmth, and did not begin with the “Fire Incantations” that pedantically preceded the Nazi bonfires. Instead, the language that describes bibliocasty of the Pol Pot regime is that of scattering, of books and document strewn on floors, and across fields, of libraries used for pig stys, padlocked, or simply abandoned (Knuth 128). The internal documents themselves, written by members of the regime, insisted upon a strategy that demanded patriotic Cambodians “continue the struggle to *abolish, uproot and*

disperse the cultural, literary and artistic remnants of the imperialists...” (emphasis mine, Chigas; Mosyakow). Textual documents such as passports, diplomas, identification papers, and paper currency were “thrown into heaps and trampled into the mud” (Knuth, *Burning Books* 127). Beyond use as toilet paper, fuel for the warming fire and cigarette papers, there existed no seeming function for the media of literacy. Those who could read were murdered. Pens and pencils were confiscated. The most sacred of books were simply ripped to pieces (Knuth 132). The textual heritage of the country was largely torn apart, tossed into the ponds and canals of Cambodia, and destroyed by exposure (see Knuth 121-142). One witness describes the Bossic River “awash with soggy French Literature” (Criddle and Mam cited in Knuth 128). The city of Phnom Pen was depopulated and littered with torn books...[and] with paper blowing everywhere (May cited in Knuth 143). In contrast to the selective reverence for the book displayed by the burnings in Nazi Germany, the Pol Pot bibliocaust was not an attempt to weed out and conflagrate books that had been poisoned, or contaminated. Instead, it sought to eliminate literacy altogether, including the tools that made literacy possible whether pens, pencils, or presses. The *sastras*, made of palm and mulberry leaves and inscribed with ink, the traditional book of the region, were destroyed. Some estimates suggest that 80 percent of this literature was annihilated. These gestures shock and confound a Western understanding of civilization precisely because they afford the book no status at all, insisting instead on the complete uselessness of the written word, of textual documents and of literature in any sense.

Despite this entrenched contempt for text, it appears that the Khmer Rouge

maintained at least three monthly publications and insisted that only literate persons could “enter party structures” (Chigas, Mosyakov). In the mass murder of all educated citizens, Pol Pot and his colleagues sought to “teach the population the ‘correct’ way to read and write” (Chigas, Mosyakov). This was to read like a peasant...in an uncritical and passive way, taking things at face value and not questioning the meaning or source of the text” (Chigas, Mosyakov). After dismantling the structures of textual organization, the order imposed by books themselves, the party of Democratic Kampuchea attempted to invent literacy for a second time. Following a murderous period in which illiteracy became one of the “instruments of revolution” (Knuth 126), the party would pursue a selective process of literacy from the ground up. Having mandated that “The fountain pen is the plow. The paper is the land. You can write all you want, anytime” (cited in Knuth 133), the regime returned to the written page for the same reason that the page has always been turned to—as a sanctioned and accepted site of truth.

In the space of few years, the Khmer Rouge attempted the forcible imposition of a *post book* age in which all textualities were hitched to the state, and the pen was made servant of the sword and granted no purpose beyond that. This type of state-imposed extinction of literacy appears in the long history of book destruction as a freakish occurrence, a political hatred that is not seen in other forms of bibliocasty. It reveals a violent and degraded end to what is often considered humanity’s greatest civilizing tool. The Pol Pot regime insisted that not only were the contents of the container impure, but the container itself was suspect: it was an imperialist technology that needed to be rebuilt from top to bottom.



Fig 2. *"The fountain pen is the plow. The paper is the land."* The uncertain role of printed matter under the Khmer Rouge is seen here in this rare photograph of a party cadre in front of a blank blackboard employing textual matter, along with the microphone and loudspeaker. (Yale University, Genocide Studies Program).

Despite the scholastic and popular attention given to censorship, attacks on 'freedom of the press,' and the burning of books in particular, this form of destruction is a comparatively rare means for the physical object to meet its end. In contemporary times books are far more likely to be destroyed by the companies that publish them, as part of the market forces in which they are involved. Books destroyed in this manner are estimated by their tonnage. One single outlet alone, the British shopping chain Asda "sends back 50 tonnes of books a week" (Moss). That

most books do not sell in large numbers is something that publishers know too well. Nielsen Bookscan estimates that in 2009 in the U.K a new book sold an average of only 18 copies (Alberge). This may have something to do with the sheer volume of new titles that publishers issue. In 2014 British publishers released new titles at the rate of 20 *per hour* (Flood). Whether this is a sign of “cultural vitality” or, as one agent put it, “publishing suicide” (cited in Flood), the harsh reality of the book business means that many volumes, even of small, limited editions, are shredded and pulped. Such destruction is not incidental to publishing but central to its operation: Random House UK operates its own shredding and dismantling company, TBS Returns. This facility yearly renders some six million of Random House’s books into shreds, along with the stock of 25 other publishers who share the facilities (Moss). Clearly then, within Darnton’s communication circuit, a large number of books do not make it from the shipper to the retailer. Instead, they pass directly from the warehouse to the pulping industries, where they are rematerialized.

Not surprisingly, this continuous and routine destruction is a secretive aspect of the book industry. Tours of shredding facilities are not easily arranged. As Gill Partington and Adam Smyth put it; “book shredding is difficult to watch....because no one will let you see it” (1). In this way modern industrial book rendering resembles the meat rendering industry—with a noticeable exception. In the late nineteenth and early twentieth century, meat rendering facilities were open to the public, and even actively promoted regularly scheduled tours, complete with guides and handouts (Shukin 255). No such tours have been encouraged or facilitated by the publishing industry. As Partington and Smyth suggest, “book destruction has

become so inextricably linked with brutality, that we think of it as an act of brutality itself” (6). This fact that this process is so hidden and so secretive is perhaps inevitable given the long history of the book’s association with the human body, with religion, and with the architecture of civilization itself. Furthermore, what are now routinely referred to as the “Nazi book burnings” have branded the destruction of books as a hateful and barbaric act, making their routine rendering into pulp a rather shameful thing to own up to. Oxford University Press simply “refuses to discuss specifics of its remaindering practices” (Allen 48).

This unpleasant and often concealed reality of the book ‘trade’ demands a radical re-routing of Darnton’s communication circuit. This path would be one in which the book moves from enormous warehouses into trucks and is shipped directly to the pulping and recycling companies responsible for its destruction. Once pulped however, the book is far from dead. It now begins another existence in a complex and ever-mutating scenario in which the book becomes any number of material affordances; particulate for road beds, fodder for animals, the shredded bales destined for various recycling purposes. These expanded material affordances which, by definition, are non-textual, suggest that far from being the exception, an unfortunate fate that afflicts an unlucky title, the communication circuit for many books, perhaps the majority of them, is one that entirely bypasses the reader. Despite the “spell of romantic hermeneutics” (McGann 12) and the textual dimensions of the book, it appears that a great percentage, perhaps a majority of books have no textual function at all. What Leah Price has so usefully termed “material affordance” is not merely a peculiar physical employment such as using *Plato’s Republic* to prop

open a window, or Richardson's *Pamela* to wrap fish.² It is instead a probable and routine outcome for the majority of all individual books.

Within the limited writings about book destruction, this dimension is scrupulously avoided. Despite the fact that deliberate pulping by the publisher is overwhelmingly the cause of book destruction, nowhere in Baez's ambitiously-titled *A Universal History of the Destruction of Books* (2004) is this process mentioned. Instead, the author insists on the destruction of books as an overwhelmingly and unstoppable evil—a force of nature that has existed throughout history and that beggars the capacity of humankind to bring to an end. The evil includes time itself, a malevolent force that causes the book to fade and wither. Acid in paper, according to Baez, is particularly murderous, and is “destroying millions of books” (20). “The truth is,” Baez admonishes, “that at this very moment, as you read these lines, at least one book disappears forever” (20). In an uncomfortable example of the deification of the book object, the author routinely conflates the crematoria of the Holocaust with the pyres of burning books and makes little, if any, distinction between the murder of people, and the destruction of books.

Baez's bizarre zealotry is absent in the works of Rebecca Knuth, whose sociological approach focuses on the regime-sponsored destruction of books and book destruction as a consequence of extremist violence. Within Knuth's framework, the book is cast as “the material correlative of an established cultural identity” (Bauer, cited in Partington and Smyth 17). Therefore, she argues, books are burned in a deliberate attempt “to eradicate” that identity (Knuth cited in Partington and Smyth 17). In Knuth's work, the violent and angry end of books is placed in

direct opposition to the defining humanist attitude toward books as “the carriers of civilization” and “humanity in print” (Tuchman, cited in Knuth 5). In this scenario, extremist attacks on the book are necessarily attacks on humanity. Consequently, the massive daily and wholesale destruction of books for corporate reasons makes no appearance in either of Knuth’s comprehensive works. This unwillingness to consider corporately-driven mass destruction of books as a form of bibliocasm suggests that such destruction takes places in a neutral moral environment—and perhaps even an apolitical one. As such, it remains exempt from the politics and the cultural outrage that, at least in the twentieth century, has become so strongly attached to the spectre of the deliberate destruction of books.³

Yet the book trade is one in which a staggering number of volumes never make it out the box, and accounts, perhaps on a weekly basis, for the destruction of considerably more books than ever were burned by the supporters of Nazism and other forms of extremism. One estimate suggests that a quarter of a million *tons* of book “are destroyed annually” (Allen 52). Given these numbers the omission of the commercial destruction of the book from the scholarship of book destruction is only possible when capitalism itself is excluded as a form of extremism, or even an ideology. By depoliticizing the exigencies of the market and the routine pulping of books for profit, or at least loss reduction, this form of destruction manages to achieve extermination without the “gesture,” as Derrida puts it. The death of the book is quietly stripped of its performative dimension, is rendered apolitical, innocuous, and finally blameless. Somehow, the destruction of these millions, even billions, of books escapes censure as an attempt to eradicate cultural identity, or

civilization itself. The mass commercial death of the book is exempted from the legacy of censorship and ideological extremism. Instead it is accepted as a form of re-materialization and market stabilization in which the codex, with its spines, and threads, its covers, ink and paper, is rematerialized into any number of material affordances—including manure.

Part Two:

Digital Death, Censorship and Digicide

A noticeable if unremarked characteristic of digital text is that, as of yet, it has not been heaped into piles before angry crowds and burned.⁴ While technical impediments may stand in the way of such activity, it is perhaps useful to consider another equally compelling reason: Ivor Brown's suggestion that books are burned "because we believe in them." As of yet, this belief has not migrated to the numerous black boxes that deliver digital text into a post-book reading environment. When U.S. pastor Terry Jones threatened to burn 200 Korans on the 2010 anniversary of the September 11 attacks, he had no intention of burning anything but the paper and ink-based book, even though an e-file of the Koran text was widely available. After finding the Quran guilty of "crimes against humanity," (Moffit) the pastor set a single copy of the Quran on fire using a barbecue lighter.

Regardless of the book's evolving status in the computer age, it would appear that it yet commands enough cultural respect that it can be found guilty of crimes against humanity, sentenced to death, and set on fire. Both these tragic and historical dimensions are ones that digital text rather tellingly lacks. Banned books,

book burnings, and censorship haunt the cultural memory of the West. Burning books achieved iconic literary status in Eco's *The Name of the Rose*, in Bradbury's *Fahrenheit 451*, along with fables of the burning of the great library at Alexandria. In an effort to imbue electronic text with at least some of the cultural weight of the book and the attacks it has endured, promotional copy for Amazon's Kindle Fire painstakingly aligns the device to the burning of books in ways that emphasize fire's regenerative capacities. By naming the electronic reader the "*Kindle Fire*" the device is linked to the invigorating, and passionate associations of fire rather than the destructive cultural links between fire and books. In this way the "Kindle Fire" aligns with Victor Hugo's use of fire as a metaphor for reading: "To teach reading, means to light the fire; every syllable spelled out sparkles" (*Les Misérables* 155). The Kindle Fire invokes the cultural abhorrence associated with book burning while at the same time offering it back as an act of desire on the part of passionate and enkindled individual. As an advertisement states: "You burn with the desire to read [...] Will you put out the fire of your desire or simply feed it?" Invoking the monetized, speed and efficiency-oriented society that Edison attempted to facilitate with his electric pen and his talking machines, the Kindle proposes that users can "download new books in under a minute." (Kindle print add, below). The Kindle Fire also presents itself as a library that can be taken with you "everywhere you go." An illustration of a crammed bookshelf being sucked into (or out of?) the electronic reading machine reinforces the popular assumption that "books in an electronic format *are still books*" (emphasis mine, O'Kelly). Or as Jeff Gomez confidently states in *Print is Dead: Books in our Digital Age*, "it's the writer's words that touch

us, not the paper they are printed on” (20). Pictorially the advertisement relies entirely on the container model of media: the book, the library itself, gives up its material presence, while remaining “virtually” unchanged despite being poured wholesale into a “new” container—the Kindle Fire.



Fig. 3. Visualizing the container model.

1984: Burning the Kindle Fire

By reversing the destructive associations of books and burning, the narrative of the Kindle Fire serves to enlist its material form as a way of defying censorship itself, or at least eliminating the exterminating gesture of book burning. Yet the Kindle Fire, and electronic readers in any form or generation, as well as the digitized reading environment they depend on, are not immune to censorship and, in fact, provide previously unavailable, comprehensive, remote, and wireless opportunities for destroying text on a scale that was not before possible. This was forcibly demonstrated by Amazon's 2009 decision to delete a digital edition of Orwell's *Nineteen Eighty Four* along with *Animal Farm*. The ban on these titles was not undertaken out of extremist religious, moral or racial anger, or because the text was unorthodox or heretical, or for any of the reasons identified either by Rebecca Knuth or Mathew Fishburn in their texts on book burning and bibliocasm. In this case the text was, abolished for corporate reasons alone. After discovering that an "unauthorized" 99-cent digital version of *Nineteen Eighty Four*, along with several other titles, was being offered on the Amazon site, the company remotely deleted the file from any Kindle on which it existed. A then much-touted capacity of the Kindle was its ability to allow readers to notate in the text as they read. Disappearing *Nineteen Eighty Four* meant that readers' notes disappeared with it. After both the text of the novel and his notes vanished from his screen, a seventeen-year old U.S. student brought a class action suit against Amazon to prevent it from again deleting texts from Kindles. In the aftermath of this \$150,000 out-of-court settlement, Amazon agreed to produce "legally binding terms that describe its content deletion

policy” (Timmer).

Amazon’s ability to remotely make digital ‘book’ files vanish from electronic readers introduced a new economy and culture to the experience of reading. It also introduced a new dimension to censorship: “content deletion.” It was now clear in the digital age that purchasing an electronic file granted the “owner” no rights of ownership at all. The reader (termed “user” in the Amazon contract), became not an owner of the text, but a licensee, with the legal right to “use” the file, but no right to keep it, resell it, or give it away, alter it, or improve it. He or she did, however, legally own the electronic reading device (though not the software running it, nor the contents associated with it). A centuries-old container model for visualizing the workings of a book was now enshrined into corporate policy, and had become legally binding: while the user was permitted to own the container, the contents could only be leased.

Perhaps because the destruction did not conform to any known model of how text is censored, commentators at the time were reluctant to decry the disappearance of the digital *Nineteen Eighty Four* as a form of censorship and bibliocasm. With no libraries burned, no mobs in the street hurling books into a pyre, no iconic photographs, the entire digital edition of one of the most discussed books of the twentieth century, had been destroyed. A key had been pressed and the text vanished. Such censorship is literally *screened off* from the outrage that greets book censorship, and for the most part, was spared the moral outrage that greets visible conflagrations. Commentators were often content to bask in the irony of Orwell’s totalitarian classic being remotely censored by a Big Brother-like corporation, and

tended to view the event apolitically, not as banning, but in terms of ‘deletion’ or ‘remote deletion’ or simply “removal—a type of market correction that served to preserve the power of copyright law. The *New York Times* could not resist describing the incident as “an Orwellian gaffe” (Fowler). The technology website *The Inquirer* found no fault at all with Amazon for what it termed a “deletion”:

When Amazon had discovered the unauthorized sales it did the right thing. It reversed them, deleted them from users' Kindles and refunded them the cash. (Farrell)

After gently scolding the company for not informing its “users” what it was about to do, *The Inquirer* confidently concluded “Amazon has seen the error of its ways and will no longer remotely delete books” (Farrell). In fact, under its new policy Amazon promised to remotely delete “books,” only if the file was contaminated by malware, because of credit card failure, or “judicial orders” (Cheng) — such “orders” being an oblique reference to the very same copyright concerns that had led it to delete *Nineteen Eighty Four* in the first place. Furthermore, software, blogs and periodical content, received no such protection and could still be remotely deleted at Amazon’s discretion. In contrast to the generally benign and bemused response to this incident, a *Slate* technology review expressed concern that “the power to delete your books, movies, and music remotely is a power no one should have” (Manjoo). Rather than an ironic blunder by a megalithic corporation, the *Slate* article viewed “Amazon’s remote deletion of e-books from the Kindle” as a model that would “pave the way for book banning’s digital future” (Manjoo).

While the destruction of the digital file of *Nineteen Eighty Four* generated

none or little of the public outrage that greets the deliberate destruction of books, it made extremely public the changed circumstances of text in digital times. Books in electronic format may be, as the Huffington Post declared “*still books*” (O’Kelly) but the culture of reading, owning and even censoring those “still books,” was now governed by radically different principles.

The computer is dead; long lives the death of the digital

Since the era of 1930s’ Nazism, the narrative surrounding the burning of books and literary censorship generally is typically associated with near universal condemnation and outrage (Fishburn 73). While the massive destruction of books for corporate and economic reasons has escaped this censure, it is nonetheless regarded as a morally grey area accepted as a possibly sordid but necessary condition for doing business in the world of book publishing. In both cases the material death of the book is comprehended in moral terms, a type of injustice perpetrated on an artifact that has been long imbued with associations of humanity, community, and truth itself.

These associations stand in revealing contrast to the response evoked by the disposal of electro-digital gadgets. This response calls forth not the moral horror of the burning book, but one of ecological ruin, degradation, and extreme corporate irresponsibility threatening human as well as animal and plant life. Such decidedly different cultural responses reveal a deep human investment in book technology, including a respect and intimacy with the book’s material constituents that extends back many centuries. Intimacy with these materials is a *bodily* intimacy: paper

manufactured out of rags ensured that worn-out bed sheets, clothing, underclothes, all the habiliments of daily living, found their way into the love letter, the novel, and the Christian tract that called on sinners to repent and to save their souls from eternal death.

For digital technology such extreme bodily intimacy does not exist. Few ‘users’ can list the more than 1000 minerals and compounds required to make digital text visible. Information technology, as Paul Duguid observes, is “often characterized in terms of circulating texts or of cultural consumption, *but not of production*” (emphasis mine, 179). It is this production that is carefully silenced in narratives of new media as technologies of liberation and democratization. The ecological consequences that result from the use of digital technology are silenced or presented as a “fleeting contemporary phenomenon or an apolitical design issue to be overcome by the juggernaut of technological progress” (Taffel 80). Given that electronic waste (E-waste) has been identified as the fastest growing waste stream on the planet and that the future of digital media is always the trash heap (Sabine1; Sterne 17), new media studies, particularly those influenced by the ideas and practices of media archeology, have taken to incorporating the material death of digital technology as pivotal to a meaningful investigation of new media. This focus as Taffel notes, “largely falls outside of conventional approaches to media studies which have primarily focused upon questions of representation, ideology, and identity” (78).

Unlike the myriad and somewhat mysterious ways that a book comes to its end following its working life (or even before) there is no uncertainty about the

outcome of electro-digital technologies. As Jonathon Sterne observes: “the future of digital hardware is in the trash heap” (27). Sterne goes further, stating that the true product of the digital technology industry is “the ongoing manufacture of obsolescence” itself (28). The frantic, compacted, and headlong rush into microelectronic obsolescence is governed with mathematical regularity by what is termed Moore’s law. This ‘law,’ offered as an *observation* in 1965 by the CEO of Intel, Gordon Moore, has since become an industry “imperative” (Sterne 20). It states that the number of microprocessors that can be fitted onto a computer chip will double every 18 - 24 months, thereby doubling the speed and storage capacities of computers. Moore’s initial observation, now a standard, provides the mathematical logic that underpins the acceptance of digital tech as *Always Already New* (Gitelman); an environment in which *Updating to Remain the Same* (Chun) has become just something that people do. Paul Ceruzzi has called Moore’s Law, “the driving force of history” (cited in Gabrys 116). The twenty four months identified by Moore (since shortened) indicates something of a time frame for what Chun has called the “bleeding edge of obsolescence” (*Updating to Remain the Same* 1). As Sterne and others have made clear keeping “new media” “new” requires the constant destruction of suddenly “old” media. In the rush toward the new, the old soon ends up in the fossil records of waste sites; an archeological layer of digital debris that far outlasts the brief shelf life of the hardware itself. Unlike paper and ink, which eventually and finally *goes away*, “hardware does not *die*.... (Parikka 39). Instead, it is abandoned, forgotten, stashed away, and

yet retains a toxic materiality that surpasses the usual time scale that are

encountered in media studies. Such abandoned devices are less about the time of use, or practices of users, but the time and practices of disuse....

Think of this idea as the media technological equivalent of the half-life of nuclear material, calculated in hundreds and thousands of years of hazard; in media technological contexts, it refers to the dangerous materials inside screen and computing devices that are a risk to scrap workers as well as to nature, for instance, to the soil (Parikka 39).

Ironically, it is in these many thousands of years *following* its miniscule shelf life that digital communications technology achieves one of the most celebrated attributes of the book—its perceived immortality. A good book may never die but digital machines, regardless of how good or functioning they are, are pronounced dead all the time. Once dead they remain in a decomposing state for many thousands of years, a type of *digitalis longa*, that produces “new orders of permanence and new spaces and artifacts of indeterminable duration” (Gabrys 88). Unlike ink-and-paper-based technology, the environmental consequences of disposing of digital technology are so dire that its perpetual passing is governed by a complex and contentious regime of state, federal and international legislation. These range from myriad regulations of the United States’s EPA, to the Basel Convention of 1989, and the Dobbs Frank Agreement, all of which, effective or not, attempt to slow down the global practice of dumping toxic waste in developing countries, or attempt to verify that mining activities are not in the control of warlords.

In the U.S. alone, 30 million computers are discarded each year. An early

EPA estimate indicated that in 2013 the United States generated 3.14 million tons of consumer electronics (Risen). This continuous outpouring of dead media, an “effluence of affluence,” as it has been called (see *Pollution: the Effluence of Affluence Selected Readings*, edited by Frank J. Taylor, Phillip G. Kettle, Robert G. Putman) has established a pattern in which digital waste from economically privileged countries is routinely exported to less-privileged countries that lack the environmental protection and controls prevailing in the country where the devices are sold, used, and almost immediately declared obsolete. In this way, as Gabrys notes, the West has come to use the developing world as a global landfill for techno trash (140). In many cases legal restrictions on the disposal of toxic waste prevent superannuated digital media from being disposed of in North America or Europe. Consequently, the death of the computer, a death that is coldly implemented every 18 to 24 months, is not only a declaration that current media technology is now trash, it is also a *deportation* order that demands entire previous generations of digital machines be taken off North American soil and, for reasons of environmental toxicity, shipped to Nigeria, or Vietnam, Chad, China or other countries. In these locations the burning that takes place is neither the theatrical nor symbolic desecration of an offending book. It is the toxic de-manufacturing of extremely problematic materials, and it is performed by the most desperate of workers under desperate conditions.

The environmentally disastrous consequences of ever-mounting volumes of technotrash, along with the squalid working and living conditions of scrap workers who break it down, are themes that have been avoided in the meta

narrative of digital enablism and technological triumph. In its place exists the public counter narrative known as ‘the death of the book.’ It is *this* putative death, or imagined death, that has diverted popular and also academic attention from the routine daily exporting of shiploads of no-longer-wanted digital equipment to sites in the developing world. Strangely, in the face of this constant ‘twenty-four-seven’ obsolescence, there exists no “death of the computer” or “the computer is dead” narrative in popular or academic media writings. From the early nineteen nineties and beyond, this silence has been scrupulously maintained throughout a number of influential media texts. Today, it is somewhat startling to revisit those texts and re-encounter the complete disappearance of the physical dimension of digital machines. For example, Bolter and Grusin’s *Remediation: Understanding New Media* (2000) is steadfast in its refusal to entertain the possibility of digital machines coming to an end. *Remediation* permits of no waste at all, no pollution, no disposal, no birth defects, no poisoned groundwater, or children employed “to strip away toxic chemicals with their bare hands” (“Garbage In Garbage Out,” economist.com). *Remediation* is silent on what is the most meaningful and consequential remediation that digital technology will undergo: from its blink-of-an-eye shelf life to the shores of a developing country where “media history conflates with earth history” (Parikka 16). *Remediation* accepts and perpetrates a technical imaginary in which the ‘environment’ has been effectively divorced from *nature*. Instead the environment is re-imagined as a post-nature phenomenon a “virtual environment,” (2, 32, 167, 232, 252); “computer environment” (101); the “networked environment” (264); the “mediated environment” (167), and even

the “hypermediated environment” (68, 214). All of these ‘environments’ exist exclusively as *technological circumstances* and all require the continuous presence of hardware and the continuous application of electricity. The lone appearance of the word “environmental” bearing any relationship to the earth occurs only when the “damaged ecosystem” is “restor[ed]” by “environmental engineers” (59). In this reference, the natural environment is already understood to be a form of inferior and “damaged” technology, in need of being repaired by the environmental “engineer.” Furthermore, for the authors, this environment exists to be “aimed at” by “digital cameras,” and viewed on “websites.” Such language consistently eclipses the natural environment with a multiplicity of ‘environments’ that computer technologies appear to be manufacturing out of thin air.

Remediation is far from alone in ignoring the problematic material concerns of the digital turn. *The Virtual Window*, one of the few books examining the computer screen, ‘virtualizes’ its subject so thoroughly that it is not clear if the screen or monitor has any physical presence at all. A reader passes through this substantial text with no indication that a computer screen requires electricity in order to operate. In a stark and mystifying omission, the book pointedly declines to note that computer screens contain both lead and mercury. Published in 2006 when many screens still employed cathode ray tubes (CRT) containing *pounds* of lead, the omission demonstrates the willingness of media and new media thinkers to completely bypass the material dimensions of media in favour of solely hermeneutical dimensions that insist on understanding media as a type of ‘tool’

for delivering ‘content.’ By divorcing the virtual from any connection to the electronic grid upon which it depends Friedberg and many others perpetuate a notion that the virtual creations of “new media” are benign and immaterial spaces easily separated from child labour, imperilled groundwater, birth defects, the slaughter of lowland gorillas, warlords and civil war in the Democratic Republic of the Congo. Yet to manufacture the virtual requires a least a thousand different minerals, more than a few of them defined as “blood” or “conflict minerals,” many sourced in the Democratic Republic of Congo. As Gabry states “an enormous amount of material and resources are required in order to establish and convey the sense of the virtual” (53).

In contrast to the extremely short “life span” of digital technologies, a time frame often measured in months, the “death span” of digital machines is indeterminate and can theoretically extend for many thousands of years—better measured, as Parikka suggests, in half lives (*The Anthrobscene* 39). This brings frank new challenges to the study of media and so-called “new media” in particular. Why focus on the presumed social and cognitive effects of a machine that in eighteen months will be shipped to a dump in Nigeria? Would it not be more fruitful to begin at ground zero, where digital media reattach to their geological origins as very old minerals, entering what Siegfried Zielinski has termed the “deep time” of media history. In this location the *metaphorical* fluidity that new media writers employ to approvingly describe digital technology, ceases to be a turn of phrase and becomes material reality; leachate, and groundwater, dissolving chemical constituents entering that groundwater. Here ‘smart’ phones,

tablets, e-readers, the ‘i-everything’ that constitutes what Wendy Chun has called the “accelerated capitalism” (*Updating to Remain the Same* 2) of new media machines, begin their millennia-long remediation into the air, the water, and the earth. Here convergence becomes especially meaningful. From this perspective, and given the devastating consequences of both constructing and destructing a digital regime, discursive musings on the effects of digital technology appear limp and even inappropriate. Given that the manufacture of ‘virtual windows’ and bits and bytes have financed, at the least, the second Congolese civil war with its estimated six million deaths, authorial meanderings about freedom, fluidity and weightlessness appear, as James Carey has suggested in regards to a great deal of new media studies, to be both ahistorical, and morally irresponsible (“Historical Pragmatism and the Internet” 445).

These early texts have in themselves become examples of the “effluence of the affluent,” a largely academic narrative granted legitimacy throughout the nineties and beyond, in which scholars laud virtual spaces while typically and scrupulously disappearing the offshore spaces and decidedly non-white spaces where the consequences of manufacturing and de-manufacturing the ‘virtual’ are routinely acted out. The authors of *Writing Space* do not include in those spaces the artisanal pits of northern regions of the DRC where child workers dig at the earth, often without tools, and sometimes being watched over by men with rifles. This space, which is not only *of* the ground, but *in* the ground, graphically reveals some of the consequences of the change from what Umberto Eco terms the “vegetal memory” of the book to the “mineral” reality of the digital text. The

writing space of the book remains a site of harvest and agri-*cultural* practices, in use for thousands of years. Electronically powered digital textualities, however, require the most invasive of relationships to the earth; that of mining. As Ovid observed long ago, this penetration into “the bowels of the earth,” brings its own mournful legacy and is; “the bad cause of all our ills.” These lines, employed with considerable effect to open Parikka’s *The Anthrobscene*, are useful to cite in full, and describe the differing materialities between digital machines and the vegetal materials of the book’s manufacture, along with the concurrent social and economic effects of each:

Surveyors anxious marked with metes and bounds
the lands, created free as light and air:
nor need the rich ground furnish only crops,
and give due nourishment by right required,—
they penetrated to the bowels of earth
and dug up wealth, bad cause of all our ills,—
rich ores which long ago the earth had hid
and deep removed to gloomy Stygian caves:
and soon destructive iron and harmful gold
were brought to light; and War, which uses both,
came forth and shook with sanguinary grip
his clashing arms. Rapacity broke forth—

(*Metamorphosis*, The Four Ages, Book 1, lines 146-157)

Noticeable here is Ovid’s swift identification of the relationship between mining and warfare. To “destructive iron and harmful gold” the digital turn has added numerous other minerals, silicon, copper, cobalt, and coltan in particular. Silicon may be the

most common and one of “cheapest elements on earth” (Kittler 153) but coltan is a “conflict mineral” mined largely in the Democratic Republic of Congo and is crucial to the architecture of new media devices, just as it is crucial to modern computerized warfare. Contemporary war is not only dependent on coltan, but such warfare itself appears an underlying circumstance of removing coltan from the earth. To label coltan a conflict mineral is to scratch the surface of the martial implications of a mineral that is essential both to the waging of modern warfare—and to the waging of digital media. It is a mineral in conflict with itself, the spaces where it is mined have been defined by Ovid as spaces where “rapacity broke forth.” This is precisely the space that is starkly missing from a great deal of new media writings. Instead, the reader is offered a congenial space, typically in a country far away from the coltan pits—perhaps a desk at a university or a business office, even a bed or bus seat, or in a cafe. In these spaces it is assumed that prose “will have a brighter future now that it has freed itself from print technology” (6). Such a future may be bright for those who read and write within this ‘freed,’ post-print environment, but the opposite is true for those who mine the minerals out of which this brighter future is manufactured.



Fig. 4. Writing Spaces: Where writing is ‘freed...from print technology’

Unlike the “death of the book,” the death of the computer, or the death of the digital has not commanded the attention of news editors, nor has it become a near daily staple of the news cycle. Apart from a handful of studies—a paper by Jonathon Sterne (2007), Jennifer Gabrys’s monograph *Digital Rubbish*, published in 2013, and Parikka’s *The Anthrobscene*, 2014, and a scattering of smaller scholarly efforts—the unsustainable, toxic, and destructive ‘birth’ and ‘death’ of digital machines has been largely overwhelmed by a techno-positivist approach promoted by the scholars and pundits discussed here. Compromised by the horrific realities of its both its manufacture and corporately-induced obsolescence, digital communications have been required to rely heavily upon a hastily-constructed narrative that conceals these central realities. As Wendy Gabrys argues, the

overwhelming mass obsolescence and off-shore disposal of “new media” machines, crucially “undo the narratives of speed and progress so central to electronic technology” (105). For this and for other reasons the birth story and the death story of technoculture must be vigorously excluded from the digital narrative. Rapid and forced obsolescence also exposes the brevity of “new” technology in comparison to more traditional technologies of literacy that are understood to manufacture not obsolescence, but longevity, permanence, *ars longa* and even immortality. The clay tablet, as with the various electronic reading devices that have appropriated this term, is also a mineral technology, but it was mined from the alluvial clay deposits of Mesopotamia. This technology existed unconstrained by Moore’s law, and flourished for more three thousand years, encompassed fifteen languages, and facilitated several of the foundational texts of humanity, including *Gilgamesh*. It was also a writing technology that was extremely easy to bring to its terminal point. The tablets were moistened, wiped clean, and started again. Clay tablets, or “dirt tech” as one blogger has neatly termed them,” (Cushing) reveal something of the enormous obstacles confronting the domestication of digital communications technologies. Processed from “conflict minerals,” mined under violent, exploitative conditions, dismantled under equally dismal circumstances, identified as hazardous waste, and censorable with the touch of a keyboard, the narrative of the digital revolution is necessarily silent on these consequences. As Keith Tester observes, “technology....makes sure that history is the story of progress” (85). Consequently, the new media narrative of “liberation technology” (Duguid 73) stridently censors areas in which new media fails to present itself as a progressive and continuously

successful, an “already always new” timeline that claims the future for itself.

Photographs of gorillas staked to the ground, waiting to be slaughtered and served to artisanal miners, many of whom are children, must be rigorously excluded from the triumphant mythology that has been constructed in order to normalize the digital takeover. Also excluded are the labyrinthic details of the Dobbs Frank act, in particular section 1502 which attempts to confront the violence, “particularly sexual gender-based violence” caused by “the exploitation and trade of conflict minerals originating in the Democratic Republic of Congo” (Chandna).

Conclusion

In the face of the daunting realities that confront electro-digital machines both in their manufacture and disposal, the ‘death-of-the-book’ headlines represent something more than a demonstration of cultural anxiety about a swiftly changing technological environment. Notwithstanding ‘the book is dead’ (no it’s not) counter-arguments presented in mainstream media, the book still has managed to replenish itself on the earth by some two *billion* volumes each year (Allen 45), ensuring it remains one of the most plentiful artifacts on the planet. Even with upheavals mandated by the imposition of an electronic digital regime the book, in its codex form, has remained a consistent technology, maintaining the technical shape it assumed in the mid fifteenth century with the invention of the printing press. This form hardly differs from what the codex had been for many centuries *before* the invention of printing with moveable type, and underpins Umberto Eco’s insistence that it is impossible to make a spoon that is better than a spoon (*This is not the End*

of Books 4). Manufactured from familiar, trusted and even intimate materials to perform a familiar, trusted function, the book has been an easy story to comprehend and to live with: extremely long-living (possibly immortal), un-problematically and often fruitfully disposed of, otherwise remediated into a host of functions, including husbandry, there are no details, or no legacy so cruel and unpalatable that they must be consistently concealed from the narrative of the book.

In contrast, the digital imperium battles on all rhetorical fronts to deny, conceal, and disappear the circumstances of its own production and un-production. In *Print is Dead, Books in our Digital Age*, Jeff Gomez perpetuates what is perhaps one of the more grotesque tropes of the cyberspace imaginary: that digital files are *not* physical things. “Soon,” he writes, books will all end up “as a digital file *instead of a physical thing*” (emphasis mine 16). To deny that a digital file is a physical thing, even a *hyper*-physical thing comprised of blood minerals and a thousand other problematic substances mined largely in Africa, is to keep the realities of technoculture “off book” and very much *out* of the book. Such confident and unexamined statements allow the digital narrative to sustain its own story. As such they represent the very “discernible rhetorical conventions” by which “[a]rtifacts become knowable” (Gitelman, *Scripts Grooves and Writing Machines* 7). These conventions have come to include the almost institutionalized acceptance that digital technology is not only environmentally benign but somehow *less damaging* than paper and ink technologies. While “send an e-mail save a tree” may have succeeded as a marketing slogan, there is no factual basis behind the environmental argument whatsoever, and the expression has been domesticated as part of an enabling digital

narrative complicit in concealing a legacy of human violations central to the machinery and the supply chain out of which e-mail is made tangible. Even beyond the well-documented human rights abuses in the artisanal mines where digital technology is initiated, this oft-repeated shibboleth regarding trees and e-mail remains a trope crucial to the domestication of the digital order. Yet, “In aggregate,” as the curator of the Illinois Sustainable Technology Centre states, “e-mail has a significant environmental footprint, which may be even higher than that of paper mail” (Barnes). These valuations are based on environmental concerns, and exclude human rights violations, and violations of other life forms that have been documented extensively by the United Nations.

For the most part the silent or muted response to the commercial destruction of books reveals the moral uncertainty in taking an object widely understood to be non disposable (and perhaps sacred), and disposing of it on a daily basis. It offends an exalted, even fetishized conception of the book, lending an unsavory air to the corporate destruction of unwanted, unprofitable volumes. In contrast, digital devices celebrate their disposability, are in fact, “designed to become disposable after a short period of use” (Sterne 19). This very disposability is central to their newness and permit ‘new media’ to constantly ‘refresh’ themselves, to re- generate into the ‘new’ and next ‘generation.’ New media thus remains new by displacing their “own counterparts more than anything else” (19). As Sterne points out, this “endless cycle of [digital] creation” is only made possible by accepting “the underground burial of next year’s product” (29). To make this burial more acceptable, the material practices of digicide are silenced behind a unified celebratory discourse of

connectivity, community, personal freedom, and even a “race free Utopia” (Chun *Control and Freedom* 135). Furthermore, in the public record, the mass destruction of digital technologies has been consistently ignored in favour of a more pervasive possibility, one that is guaranteed to provoke ire and to ensure controversy: the sudden ‘death of the book’ headlines, and the leading and provocative re-framings of the book as forest wasting “dead tree” technology. By emphasizing its linearity, its inefficiency, its static and frozen state, and its ecological threat to the forests, the new media consensus on book technology distracts from concerns about the unsustainability of the digital imperium, and locates and proclaims a crisis not with the new, and “new media,” but a crisis within the old, with the very technology that most embodies the conception of ‘old media’— the book. This crisis, it appears, has now been firmly fixed in the past, along with the technologies by which the past is commonly identified. Yet networked technology, as Wendy Chun carefully elaborates, is itself a site of continuous crisis, is, in fact, “crisis technology.” This continual, habitual newness of new media has implemented a technological logic in which habit itself is coupled with crisis, as an activity that must be brought to an end. Habits, old habits, book reading perhaps, are all implicated in “the coupling of crisis with habit” (Chun , *Updating to Remain the Same* 171), and can only be resolved by yet another update.

Domesticating digital technologies into the habits of every day life requires that a great many uncomfortable circumstances be excised from the narrative. No “user” wishes to be reminded that her or his cell phone, is also referred to as “blood phones” (Sutter). Instead of dwelling on the disconcerting abuses that surround and

compromise the digital turn, it has proved considerably easier for both the mainstream media, and even scholarly writers, to mock misinformed (and perhaps non-existent) luddites who claim the book is in danger. Aside from assuring the public there is little to worry about when it comes the invasiveness of digital technologies, ‘death of the book/book is dead’ headlines, also serve to effectively divert attention from the global conflicts and the human and environmental consequences that result from the mass deportation of techno-trash to developing countries, and the circumstances under which such technologies are mined and manufactured.

By concealing the material side to the technology of the ‘virtual,’ such new media narratives serve to conceal the outcomes and origins of the tech and technology they are studying. In the process of this concealment, a new narrative has been handed down for a new understanding of the book. This understanding broadly positions the book as a subaltern communications technology that is increasingly employed as a metaphor for oldness itself, the bench mark by which ‘new media’ separates itself from ‘old.’ Under this electro-centric framework, the ancient ‘vessel of virtue,’ is reframed as a technology incapable of dealing with the networked, on-the-go, multi-dimensional and polyvocal demands of today’s visually-oriented silicon-based culture.

CHAPTER FIVE

The Future of the Death of the Book

Suddenly as the book has taken to its sick bed, everyone wants to write one.

Robert Coover

The Late Age of Print: Everyday Book Culture from Consumerism to Control is a scholarly and frequently cited assessment of the state of the book in the computer age. Published in 2009 it backs wholeheartedly “the book is dead *long live the book*” counterargument employed by both popular and scholarly writers suggesting, once again, that the book is in good shape or as the publisher’s online blurb insists, “books are *anything but dead*” (italics mine, cup.columbia.edu). Like most commentators on this subject, the author accepts without question the existence of a grim and widespread discussion predicating the imminent demise of the book. Like other commentators he does not locate this discussion or identify those who are assumed to be engaged in it, although he is confident that such people are “industry insiders.” Oddly he does not state *which* industry—the book industry presumably. The author announces very early on that the book’s purpose is to once and for all put and end to the “familiar story of the morbidity and decline of printed books” (2). This familiar story, or “crisis discourse” as Ted Striphas rather solemnly terms it, was, by 2009, apparently so rampant that the stated aim of *The Late Age of Print* is to convince readers that “the death of the book has been greatly exaggerated” (xxiii). With this paraphrasing, or rather re-paraphrasing of Twain’s famous remark, the

author deploys or rather re-deploys a rhetorical tactic that has served to deflect and minimize concerns about the book and to mock those who share those concerns for more than a decade. Whether it be the *MIT Technology Review* of 2010, the BBC of 2019, or any of the extremely numerous publications in between, the repeated deployment of “The Death of the Book has been Greatly Exaggerated,” headline has served as a firewall, a comforting reflexive rhetorical gesture that reassures readers that the book remains as healthy as ever and, perhaps thanks to the computer age, will be made even healthier still.

This is the over-riding argument of *The Late Age of Print*. Throughout, the author is eager to frame the digital turn not as a threat to the book and its traditions, not as a technology that imperils the book, not as the death of the book, but rather as a technology serving to strengthen the book, bringing new life to it, and exposing the presumed multitudinous naysayers (whether they be “industry insiders” or not) as misinformed. In doing so the author aligns himself with a two stream model that sees books and silicon-based textuality operating not in conflict, but side by side, happily, and perhaps even productively. This approach of seeking compromise and accommodation between two radical different textual materializations is discernible in the work of Toronto book scholar Bonnie Mack’s 2013 *Book Unbound: An Exploration of the Material Forms of the Codex and E-book*, and Alan Galey 2012 article, “The Enkindling Reciter: E-Books in the Bibliographical Imagination.” To some extent, both works seek means of applying bibliographic techniques to the realm of silicon-based digital textuality. Similarly Alessandro Ludovico suggests a

two-stream model, what he calls “a balance of power between paper and pixel” (*Post Digital Print* 70).

This chapter examines the book within the framework of such a possible balance of power, *not* as an antiquated and superannuated technology in the late stages of print’s existence, but rather as an *emerging* technology, one that has survived the impacts of a digital takeover and is now assuming a position that is perhaps unique in its long history. Displaced, since the late nineteenth century from its monopoly position as society’s primary cultural engine, the book, in the face of overwhelming electronification, followed by overwhelming digitization, has been displaced to the borders of cultural power. From these borders this chapter suggests that the book assumes a new position as a radical and transgressive technology, one that stands in opposition to the status quo of the digitally-networked future, demanding and commanding, in the act of its reading, a physical rejection of this network and the dominant means of organizing society. In this way the book becomes a dissident technology, a new samizdat that evades the networked surveillance regime imposed by surveillance capitalism, a technology that lies outside the harsh and unsustainable environmental consequences of manufacturing and disposing of electro-digital hardware.

Bar code: the Book as Cyborg

In arguing for a rapprochement between the book and digital technology, *The Late Age of Print* takes for granted what can only be called a drastic re-interpretation of the book object, an interpretation that is radically at odds with how the book has

been comprehended in previous millennia, in previous centuries, and even in previous decades. What *The Late Age of Print* categorically excludes from the book is any historical understanding of the book as ‘vessel of virtue’ or the actual residence of the Christian God, (or any god). Equally overlooked is a comprehension of book technology as the site of truth, the ‘cathedral’ of human identity and consciousness, the progeny of active souls, or as a location of “essential meaning” as D.F. McKenzie termed it. Whereas Milton understood books to be the “the precious life blood of a master spirit,” *The Late Age of Print*, dispenses with such constructions and reconstructs the book exclusively as a commodity. Less than a century after being defined as “a machine to think with,” the book is comprehended here exclusively as a commodity to be sold. Even before getting to the book itself, the Columbia University Press’s website announces the Striplas text as evidence that the digital age has accomplished wonders for the book; such wonders that the book is now heroically implicated in “the rise of retail superstores.” The computer/book alliance has also contributed to “Oprah’s phenomenal reach” and is now allowing the book to make a regular appearance on a popular TV show. Furthermore it has played a crucial role in the creation of “pop sensations like Harry Potter.” Above all, the Columbia University website enthusiastically insists that the great accomplishment of digitally assisted books is that they “have inspired the kind of brand loyalty that make advertisers swoon.”

For *The Late Age of Print*, the digital turn has brought about not the marginalization of the book as Bolter has phrased it, but instead has provided the book with new life. Instead of irrelevance, the digital regime has invigorated an old

pre-digital commodity. With its speed and processing capacities technoculture has ensured a vigorous life for the book. The author attributes no small part of these improving prospects to the implementation of the bar code in particular. With the attachment of the barcode it is possible to reconsider the book within the mythology of the cyborg, an entity that Donna Haraway suggests “subvert[s] myriad organic wholes” including “the biological organism” and undermines “the certainty of what counts as nature –a source of insight and a promise of innocence.” (70). Noticeably absent in *The Late Age of Print* is any discussion of the bar code as a type of digital intrusion into the organic whole, or as a prosthetic attachment applied to the body of the book, or any acknowledgment that the book has now been breached by a digital *surveillance technology*. Although Ted Striphas describes the bar code as a “symbol,” the bar code is a control technology, a machine-readable optical representation of data. By the 1970s, the technology of the bar code had penetrated deep enough into society to begin generating acronyms. AIDC (automatic identification and data capture) was one of them. Out of it emerged the UPC (universal product code) or bar code that, since its introduction on a package of chewing gum in 1978, has managed to attach itself to nearly every manufactured object that passes through a checkout line including, as Striphas writes, “most books” (*The Late Age of Print* 10)

The benefits that Striphas asserts as technological augmentations to the book appear to reside in improved efficiencies in the tracking of books as marketable commodities. Thanks to the bar code the commodity known as books have been technologically enhanced in a way that thwarts the inefficiencies of the human

worker and the communities they form. With the bar code implanted on the body of the book it becomes a cyborg that can be more easily integrated within an electro-digital consumer network, an integration that, as Striphas has noted, entails some rather pernicious surveillance of those employed in the vast Amazon warehouses where the majority of new books are shelved and distributed:

Not only do [bar codes] allow the company to coordinate complex operations inside its order-fulfillment centers but they empower management to monitor worker productivity to an astonishing degree. Its implementation of these everyday—often unnoticed—commodity codes has resulted in a workplace increasingly suspicious of and hostile to living labor.

In 2001 Amazon.com “upgraded” employee bar-code scanners with new software, allowing management to track the number of times employees shelved or retrieved items erroneously[...} The new software also enables management to monitor and compare each worker’s level of productivity on the basis of the number of scans made during a given period of time[...]repeated errors or a consistently low level of productivity will result in an employee’s dismissal (106).

Although *The Late Age of Print* details with considerable exactitude the grim human consequences of a hyper-surveilled hurry-up work environment, what the text pointedly leaves out is any suggestion of the book’s pivotal role in the making of meaning, or its rather intimate relationship to “human cognitive capacities” (Priest

142). According to Eldritch Priest, it is these capacities that are increasingly “encroached upon by contemporary capitalism” (141). Largely, *The Late Age of Print* is a celebration of electro-digital interventions that make this encroachment possible. Consequently, throughout the *Late Age of Print*, the book is rarely, if ever, presumed to exist as anything more than a commodity. While rather reluctantly acknowledging that this commodity possess a “deep and abiding history” (3) the author is adamant that such a depth and such history entitle the book to be “no more or no less so” a part of our own age as “flat screen televisions” (4). This easy conflation between wildly differing technologies speaks to some central confusion as to the nature of the book, a confident, even aggressive insistence on stripping away the multitudinous layers of meanings that over the centuries have come to constitute the book.

Striphas’s study into the late age of print also puts into some perspective the central and sustained criticism of the book that appeared in the last decade of the twentieth century, and has continued into the opening decades of the twenty first. This criticism as promulgated by techno-positivist writers and scholars, holds the book to be a static, linear, fossilized and, above all, a “frozen” technology. *The Late Age of Print* noticeably refuses to engage in this rhetoric, and offers instead a frank assessment of the book’s failure in the digital age: the book is a failure simply because it does not sell enough units. It does not meet sales profit margins that are held to be possible within a neo-liberal regime of new media commodities, and is resistant to being included in “new media as accelerated capitalism” (Chun *Updating to Remain the Same* 2). To the dismay of many new media writers and

thinkers, the book is rather difficult to accelerate. It remains a staple that is commonly shared, and very much a cornerstone of the gift-giving economy.

This recent physical attachment of a digital tracking technology to the body of the book indicates some of the difficulty faced when attempting to fit the product within an electro-digital network. Notwithstanding extensive efforts, Edison's own attempts failed in this regard. Despite his talking machine eventually finding a textual market as an electromechanical product for reading books to the blind—a forerunner to what is commonly called the “audiobook”—the decidedly *non-electrical* nature of the written word proved too much for the Wizard of Menlo Park. And despite confident utterances to the contrary, the same difficulty has baffled the leading men of the digital age. While digital technology has proven extremely adept at producing a *facsimile* of the written word, it too has failed to come to terms with the material fact of the object. This object, manufactured largely of plant fibre and ink, must be entirely dispensed with when bringing the book into a screen-based computerized environment. Such a glaring inability to deliver the book, as opposed to the syllabic code affiliated with the book, has been glossed over by a new rhetoric that disparages the book on the very grounds of its intractable physicality, suggesting that this body is not worth keeping: merely “cow flakes,” “dead tree,” or “dead pulp” technology. The body of the book is presented as not only as unseemly and unhealthy, but irrelevant. As Gomez declares “it's a writer's words that touch us, not the paper they are written on” (Gomez 20). Such an unquestioning insistence on a container model of the book takes it for granted that it is possible to shed that container and yet retain the essence, perhaps even a *purser* essence, of the written

word. As the talking book of Edison's era was assumed to offer a more honest, unmediated form of the author's expression in the recording of his or her voice, so too has digital technology offered the promise of a more fluid text, one that is no longer 'frozen' in a linear grid imposed by the book form. This assumption is crucial if text is to be regarded as having successfully migrated off the page and into raft of new writing and reading machines. It is also an assumption that is rejected by historians and scholars of the book, who insist, without exception, that meaning follows form, or, as Chartier frames it, "each form, each medium, each structure for the transmission and reception of the written word profoundly affects its possible uses and interpretations" (*Forms and Meanings* 21). This near consensus among book scholars is less fully embraced by media thinkers and journalists who often appear confident that the meaning of the book lies entirely within its "linguistic function" (*Forms and Meanings* 3).

Contemporary Reading and the Zombie Cookie

The widely accepted and somewhat intuitive idea that "digital texts" [...] are not truly different in kind" (Piper 48) carries with it an assumption, an insistence even, that 'online reading' is not truly different in kind either, or that there exists no controversy or even difference between the two. Yet online screen-based reading, as first envisioned in 1930 by the American Dadaist and iconoclast, Bob Brown, demands immediately that the reader abandons her status as a reader and assume that of a spectator or a user. In this capacity, the former reader, now a user, enters a "clickstream" of "online behavioral advertising," "data brokers," and "re-spawning

tracking cookies” (Raley 122). It is these cookies, or zombie cookies, the viruses, spyware, malware and other forms of digital surveillance that, contrary to Gomez’s insistence that *words*, not paper are what touch the reader, touch the reader very much, sometimes catastrophically. Within this silicon-based textuality, to read requires entering a corporatized, intensely-surveilled reading environment designed to facilitate micro-targeting technologies. To insist on an equivalence between electronic reading and reading a book is to grossly conflate two distinct estates of literacy and to provide a cover of neutrality for the network and its owners. This “network,” as Zygmunt Bauman notes, has become a conceptual entity that is “rapidly replacing ‘society’ in both social-scientific discourse and popular speech” (3). Furthermore, Geert Lovink envisions the future of such a society as the “digitally networked future” (143).

This revolutionary transition from one reading model to another has become, as Rita Raley states, “uncontroversially...situated under the rubric of ‘enhanced user experience’” (125). Yet, if the book has demonstrated anything throughout the deep time of its existence it is that it, like the spoon or the wheel, has little need of being enhanced. Despite the massive historical innovation that saw the codex distinguished from the scroll, neither technology is in any way dependent on electrical or electro-digital ‘improvements.’ In a silicon-based digital environment, clocked by Moore’s law, driven by constant, frantic, and even compulsory technological “improvement,” and “updating,” the book—any ink and paper based medium—stands outside the digitized network. Of all the provocations now offered by the book perhaps the radical and most troublesome, is its very public indifference

to any assistance that might be offered by the one billion transistors that exist for each person on the planet (Gabrys 29). Despite the bar codes that Striplas offers up as the book's commercial salvation, the book remains beyond the colonizing conquest of the microchip, just as it somehow retained its traditional material form during the nationwide implementation of electricity in the age of Edison. In opposition to the new media environment, one that Lisa Gitelman has termed "always already new" the book remains always, steadfastly, already *old*, insistently old. Instead of "new and improved" the book remains "old and just the way it was." Previous models do not become "outdated" and in need of a technological "update" or "upgrade," (although individual editions, admittedly, are often "revised"). In fact the new model resembles the model from a century before, and the century before that, so much so that scribal books from the 13th century often look identical to books produced on the printing press two centuries later. Frequently, the older model, in the form of first editions and antiquarian volumes, is often imbued with more cultural distinction, and even economic capital than the new.

Garagebook

The sustained attempt to rematerialize the physical forms of reading and writing that took place throughout the 19th and 20th centuries did not emerge as a viable alternative until the late twentieth century when the written word was subjected to its overwhelming "digital turn." To achieve this ascendancy required an entirely new material base out of which the written word was to be manufactured. It also facilitated a new class of electrical engineers, code writers, and computer

engineers, a new young male caste and a new class of businessmen committed to making sure that the written word would be subsumed within the dominant technology of the times. Such text would emerge out of a predominantly male space: alongside the office, the study, the scriptorium, the monastery carrel, the newsroom, the den and even the home library, would be added another male-coded venue, an outpost on the last remaining American frontier of masculinity—the garage. As the story is repeatedly told, the staggering success of Apple, Amazon, of Disney, Hewlett Packard, Google and Microsoft, are all a result of this most commonplace of male sites. In the garage men unleash their inventiveness and establish the future while making a fortune along the way. It is not for hipness reasons alone that a new media commentator such as Bruce Sterling, author of the “Dead Media Manifesto,” describes himself as “a professional garage futurist.” The garage has assumed a mythical status in the male upper-case New Media narrative and more than a few digital billionaires, eager to include themselves in that mythology, are quick to announce their garage credentials. It is in the garage where the eminently practical job of inventing the future takes place. Within the new media narrative the garage becomes the male equivalent of Virginia Woolf’s room of her own; a space where a man might go to safely tinker without being pestered by women or by domestic concerns. The garage becomes the birth site in the creation myths of the digital empire. As the Steve Jobs character states in the 2015 film of the same name, “I sat in a fucking garage with Wozniak and invented the future” (*Steve Jobs*, Boyle). Efforts to turn these mythologies into legends are legitimized by state and cultural bodies even outside Hollywood that are, nevertheless, equally intent on privileging

the same narrative. In 1987 the Palo Alto garage where Hewlett Packard began their enterprises was designated an “historical monument.” Similarly in 2013 the garage attached to Steve Jobs’ family home was declared a “historic site” (Griggs).

As of yet there has been little Hollywood or civic pressure to invest Agatha Christie’s kitchen with similar cultural recognition, to incorporate it as a site of progress and the future. Despite Christie’s insistence that the best time to plan a book is while doing the dishes, the mythologizing of the garage indicates a gendered understanding that it is more important to invent a machine than to cook (“I sat in that fucking kitchen with a cookbook and I invented a dinner that fed five people!”). Feminist thinking has long articulated food preparation as a critical form of knowledge production, but the kitchen, the child’s bedroom, the children’s playground, the elementary school classroom, all predominantly females spaces have been shut out from the triumphant narrative of technological progress. Even with the advent of the microwave oven and electric dishwasher, the kitchen will likely never be considered a workshop for forging the future. Whatever digital text might prove to be, it successfully serves to hyper-masculinize the written word, to oust it from the kitchen, the garden, the larder, the room of one’s own, and to embed literacy itself within a continuing masculinist narrative of mechanized, technological progress. The heavy lifting of “making” the future has been established as decidedly a garage-based and man-based thing. The garage has become so crucial to the male-techno genius narrative that when buying a new house to start his Amazon business, Jeff Bezos insisted on purchasing a home that had a garage because, according to the *Wall Street Journal*, he wanted to “boast of having a garage start-up like Silicon

Valley legends” (Brandt). That in this particular case the garage had been renovated into a bedroom did not matter. It had at least *been* a garage. It is here that the paperless, inkless book—digital text—what book historian Roger Chartier carefully calls “the electronic representation of texts” (*Forms and Meanings* 5) was produced for mass consumption by users. In this place the written word was not only electrified but sanitized of its un-technological fungal nature, purged of all mold and mildew. Here the written word shed a long and “fruitful” relationship with its agricultural past, the culinary arts, the kitchen, and entered the black box of digital technology. The word became, for the first time, inedible.

The book’s obstinate physical form represents a public and visible challenge to the computer revolution and its narrative of triumphant enablism. The physical form of the book has yet to be successfully fragmented (remediated) into bits and bytes, and therefore cannot be dissolved into what Kittler has termed the “data stream” (*Gramophone Film Typewriter* 28) and what Henry Jenkins, in his 2006 book has defined as “convergence” (*Convergence Culture: Where Old and New Media Collide*). In an epoch that is commonly referred to as “post nature,” the book remains solidly *of* nature. In a post-human age, the book, with its headers, its footers, and its spine, insists upon and incarnates the human body. In a hurry-up economy instituted during Edison’s time and firmly entrenched under the neoliberal regimes, the book continues to exist at its own pace. It may now have a bar code forcibly attached to it, but once it has escaped beyond the technology of the checkout counter, once it finishes its extremely transitory existence as “new” it cannot be electronically surveilled or remotely deleted. When it comes to being

subsumed within an electro-digital network, the book, like Melville's "Bartelby" would not only "prefer not to" (17), it *will* not.

Despite the ceaseless mass death of digital media machines and a growing rhetoric of the death of the book, there is no spot set aside in the Graveyard of Dead Media for the book to be soon buried. What lies buried there instead are the billion upon billions of discarded microchips that have been poured into earth and for which no 'death of' narrative exists. In fact, the author of "The Dead Media Manifesto" is adamant that in order to understand "all the freakish and hideous media mistakes that we should know enough now not to repeat," what is needed is, not a computer, but another *book*. This book, he insists, must be "thoughtful and somber," (Sterling) These two adjectives cannot in any manner be attached to digital technology and it is the author's awareness of such that forces him to insist that if any sense is to be made of "the dizzy midst of the digital revolution," it must be made by a book. Sterling's statement is a reminder that once all new media "have died on the barbed wire of technological advance," (deadmedia.org) there exists but one technology for making sense of what is going on, one technology where truth may find a home. It reminds that in a technology-driven culture that insists on the future, the book insists on the past. The moment a book is published it exists on the planet as artifactual proof of that past. As such it stands in complete opposition to John Perry Barlow's exclusionary cyberspace manifesto: "On behalf of the future I ask you of the past to leave us alone. You are not welcome among us." With its unwelcome physical body, its unbreakable links to history, the book is not welcome within future-based narratives of technological progress. Linked as it is to the now

questionable entity known as ‘knowledge,’ and even more problematically to that of ‘truth’ with all of the intellectual nervousness attached to that term, the book is further ostracized by its age-old intimate and perhaps irrevocable links to the gods; the Sumerian God Nabu, the God of wisdom who created the alphabet, the indigenous entities of North America, the two-row wampum, and the Iroquois Book of Rites, formed by the shells of a great bird; to the Egyptian God Thoth who gave writing to the world and according to De Bury, “writes down justice and hates every wrong,” (27) and, of course, the Hebrew God. Coover’s declaration of 1992 rings no less true nearly three decades later, God and the book can only be as dead as each other.

Approaching Samizdat: The Book as Dissident Technology

With textual and graphic matter routinely located in the black boxes of the digital age, the book now occupies a position it has never occupied before. No longer society’s chief cultural engine, no longer its driving mechanism, and no longer exercising a monopolistic hold on the assembling and distribution of the written word, the book finds itself suddenly and uniquely positioned to challenge the hegemonic pervasiveness of the digital regime, to become an irritant to the black box model of communication by existing out of the box, off line, and off the grid. The book seeks no place within Geert Lovink’s “digitally networked future.” By offering an arguably humane, and even sustainable material alternative to the digital monopoly with its dependency on conflict minerals, warlords, child labour and electronic networks, the book assumes the appearance in the first decades of the

twenty-first century as a radically transgressive technology, one that stands in frank opposition to the status quo. Unlike radio, television, cinema, and telephony and phonography, all of which have been co-opted or “converged,” into the ‘data stream,’ the book remains still *at large*, still maintaining its traditional material form, and remaining fully integrated into a vast metaphorical network that forms, and has formed for centuries, a shared cultural understanding of the lived experience—the book of life. Given a totalizing and near inescapable order that demands all cultural productions be digitized, miniaturized and electronically networked through linked computers, the book has yet to surrender its discrete physical independence.

In this way the book assumes a new function as a point of resistance, a technology that performs resistance, not in its alphabetic code, or “content” as it is frequently called, but through the brute materiality of its material form, through the empires of paper, and age-old ink recipes, and through its intimate relationship to living matter. It is such materials that protect the book and its reader from “online behavioral advertising,” that shield the reader from “data brokers,” “re-spawning tracking cookies,” and the collecting of meta-data while engaged in the reading process. The book’s radical physical form also ensures that it remains rather outside of the economy of the signal, retaining instead a physical attachment to the ritual, and to the ever-expanding metaphorical network that has over many centuries established the book not just as a way of reading, but a way of thinking, and being. In times that have been variously termed the digital turn, and the digital age, the book becomes, *defacto*, a new form of samizdat, unofficial, unserveillable,

untraceable, undeletable, undigital, and thus lying outside the purview of the electrified digital network and its exigencies. Samizdat provides a fruitful model for comprehending the new roles, responsibilities and realities of the book in an age in which the book itself has ceased to be “one of the defining characteristics of developed civilizations” (Pearson 7) and is instead bracketed by “the book is dead/the death of the book” headlines. Samizdat is particularly demonstrative of the current situation of the book in that the samizdat form has always assumed considerably more significance than the ideas, or the ‘content.’ The form of samizdat has always been inseparable from its idea. Its form did not only represent rebelliousness, it *was* rebelliousness, a crude often typescript form that exemplified resistance, and was itself a physical manifestation of that resistance regardless of the so-called meaning of the syllabic code imbedded on the surface. As Anne Komaromi writes “The form and function of the physical (samizdat) page, the embarrassingly wretched ‘body’ of the text expos[ed] the operation of both official ideology and its dissident counterpart” (608). Similarly the wretched body of the book, maligned in digital times as frozen, or dead, or hopelessly linear, nonetheless exposes the electro-digital network as something that can be frankly rejected, that can be escaped *from*. Samizdat, and now the book, represent technologies of what James Carey theorized as “ritual” communication; they “give life an overall form, order, and tone” (*Communication as Culture* 21). As with samizdat, the book increasingly is a form of communication in which the value does not lie in the information theoretically “contained” within/inside it, but in the role the artifact plays in the construction of community. Finally, it is through their embodiment in

material form that they “create[...] an artificial though nonetheless real symbolic order that operates to provide not information but *confirmation*” (italics mine, Carey, *Communication as Culture* 15).

What the book confirms for the first time in its long history, the precise ritual it performs, is that of bodily separation from the electro-digital-network. It creates a real symbolic order in which electricity and the digital network occupy no significant position—indeed, no position at all really. The book artifact seems to exist outside of what Wendy Chun has identified as the very technology that makes neoliberalism possible (“Networks Now: Belated too Early” 37). Despite the cheerful and cooperative face put to what is an unlikely partnership in *The Late Age of Print*, the book, while very much a product that exists within capitalism, is not caught up in the *accelerated* capitalism of which new media is entirely entangled. Because the book is implicated in a mysterious and nervous-making estate known as ‘truth,’ it plays no major role in what is has been termed the “dot.con” (Cassidy 2003). The book remains unaligned with new *media*, but rather retains its old historical singularity as a *medium*. Its physical presence on the planet as a discreet and “unplugged” object, in itself, facilitates a dissident relationship to the wired world. In this way it provides alarming proof that existence ‘offline’ is still very much a possibility. It is the book object itself that appears of little use when it comes to the pervasive data capture that is the inevitable outcome of digital communications. Instead, with its etymological origins as the Germanic *buche* (beech tree), the French *livre*, the Latin *librum*, (the inner bark of trees,) it demonstrates always its own ‘rooted’ and agricultural existence.

Arising from fields and forests the book, once understood and even racially sanctified as, “one of the defining characteristics of developed civilizations” (Pearson 7) now becomes a dissident medium, and one that evades the totalizing surveillance implicit in digital communications. What Komaromi states of samizdat, can be stated of the book in its contemporary circumstances, that: “the material existence of the samizdat text...demonstrates the essential subversive force of this culture” (618). Against a clique of extraordinarily powerful male billionaires implementing a fully digitized networked existence and a full-surveillance regime carried out by the devices they manufacture, the book becomes an outsider, a feminist, a rebel, an outlier, a dissident. It, unlike other media, exists independently of the consensual hallucination by which William Gibson defines cyberspace. This in itself is now fully subversive. The book is non-consensual, it exists; an *un-virtual* existence that takes up *space* on bedside tables, on bookshelves, in basements, and beneath the legs of unbalanced tables. The book necessitates that the human eye avert itself from the electronically-powered screen.

The intractable material existence of the book, and even the *right* to that existence, has commanded a sometimes-torturous narrative strategy that has been examined in previous chapters. It is further apparent in the increasing deployment of the term “pre-digital” to describe and encompass technologies prior to the computer. Such keywords obliterate the past, occlude the substantial tensions that exist between different technological systems and assess a technology that is forty centuries old by the terms of a technology that made its appearance barely fifty years ago. The adoption and implementation of “predigital,” as opposed to “postbook”

reveals a technocentric bias which blends into other conceits such as “computer literacy,” “digital page” “electronic book,” and so on, to create what James Carey has called a “rearrangement in the hierarchy of skills, and a revaluing of the importance of artifacts” (“Paradox of the Book” 106). “Predigital” insists upon the ascendancy of one technology over another and aligns itself to narratives of supersession and myths of linear progress that serve only promote what Parikka has called “the hegemony of the new” (*What is Media Archeology* 11).

The Internet and the Book Imaginaire

Like the internet *imaginaire*—described by Flichy in his 2007 book of the same name—a narrative that vaunts and mythologizes the cybernaut and their new universe, there has come to concurrently exist a counter *imaginaire* for the contemporary interpretation of the book. In it the book is no longer cast as an agent of change as Eisenstein would have it, largely because that agent is now, and must now be, the computer. Consequently the new book *imaginaire* casts the book as an agent of sameness, a moribund technology that needs to be turned, if not kicked, over. The deficiencies of the book are identified and stressed. Strengths are turned into weaknesses; fixity becomes a lack of freedom; pages are now to be conceived as cages, printed text becomes bound in its own frozen, static linearity. This new *imaginaire* forms the background to a “death of the book” drama that has been ongoing since the 1870s. Its construction is an example of what has been described as “ ‘the high stakes drama of “the medium’s struggle to depict itself” ’ (Gitelman citing Rosen *Always Already New* 96).

The great aim of the narrative of digital triumph, or “liberation technology” is to obfuscate the fact that digital technology is finally unable to usher the book across the digital divide, to de-flesh the book and to turn it into a virtual object. In order to cast this failure as a success, it has been necessary to engage in an enormous high stakes cultural re-interpretation of the book, to somehow escape the “idiot box” and “boob tube” origins of the television screen, to divert this contempt away from screens and to relocate it on the printed page. This has resulted in a cognitive dissonance around the nomenclature of new media. In this nomenclature the cultural prestige and authority of the book is routinely appropriated to help overcome the lingering cultural suspicion that still attaches to the “new” with its dubious associations to “newfangled.” It appears that the crumbs, nybles, bytes and cookies of the computer revolution have not entirely obliterated the appeal of old fashioned home-cooking. The ‘book is dead/ no it’s not’ trope is an attempt to have it both ways; to assure a nervous public that that book remains as virtuous and impregnable as mom’s home cooking, and that the digital “revolution” is not a revolution in *that* sense, but simply a marketing slogan, another marvelous step toward an always bright future. This torturous balancing act, is inherent within a medium’s struggle to depict itself, to define its own narrative, and has demanded some remarkable contortions in both language and logic, as shown below:



Fig. 1: Co-opting the “privileged and honorific status of print literacy”
(James Carey)

Such an advertisement makes painfully clear how promoters of technoculture must raid the legacy of the book in order to offset the suspicion that lingers under the new regime.

As this research has demonstrated, since Edison’s failed efforts to rid the book of its material form, ink and paper textuality has become the target of a sustained effort to re-materialize it. Electro-digital technology, the so-called digital turn, has confronted the same difficulty, of finding an alternative, and somehow better or “new and improved” method of representing text and graphics. In doing so it entered a historically crowded field. Far from being a direct step from Gutenberg’s press to the digital environment, the fate of textuality was influenced by a host of competing technologies all of which sought to find a cheap and effective means of duplicating print. Just as Edison’s electric pen entered a market already flush with new and emerging mimeographic technologies, the arrival of the computer took place following decades of experimentation with text-based reading machines. These machines have been identified and studied here and include Admiral Fiske’s reading machine, which sought to miniaturize the textual experience, to dramatically

reduce the physical and spatial demands of the reading. Yet Fiske's machine required, even demanded, the retention of the vast mechanical infrastructure of the book, the printing press, which would print the text intended to be photo-optically miniaturized. Fiske's machine meant to couple an old technology—the type setting machine, with the newer technology of photography and photo-optical reproduction. Unlike Edison's phonographic endeavors in regards to text, the Fiske Reading Machine maintained the fundamental structures of ink on paper to produce what was anticipated to be a compendium of useful information, of dictionaries and large standard texts. Aligning itself to a long history that regarded book-reading and bookishness as detrimental to eyesight, the device sought to overcome the inefficiencies, especially the spatial inefficiency, of what had appeared for so long to be an impregnable technology and one that could not be improved upon.

Yet the Fiske Reading Machine noticeably refused the assistance of the nineteenth century's newest medium; the electrical fluid. The new book, or a least the newest of reading machines as imagined by Fiske, would simply be *less* book and considerably *more* machine: less paper, less ink, more machine. Fiske's devotion to the machine (whether it be gun, torpedo, printing press, or reading machine) defines a general approach toward the book on the part of those who sought to profit from its alteration—one that sought to further a cultural embrace of the machine, and the future such machines implied.

With the future, even modernity itself, understood exclusively as a place enhanced by technologies that are better than current technologies, the book was suddenly and rather visibly out of step with the times. In a machine age it was not

machine enough. In an age of electricity it possessed no wires, no batteries, boasted of none of the speed and instantaneity that modernity was expected to deliver. As Fionna Coll observes, even the ordinary user of Edison's electric pen, a technology that failed to find a role in the modern office, was performing her right to belong in the "modern, efficiency-oriented world" (Coll). The exciting mechanical and electro-mechanical hand-held devices of the late nineteenth and early twentieth centuries both performed and enforced the arrival of modernity, speed, of a time and space-saving aesthetic that was coming to increasingly define an efficiency-oriented world. As modern machines they were "implicated in much higher expectations for individual accomplishment" (Coll).

Despite the higher expectations for individual accomplishment generated by modern machines, the book remained tangled in the foliage of the woods and in the pulped rags of used clothing as it resisted the mounting prestige and influence of the electrical grid and the increasingly miniaturized and engineered wheels and cogs of the machine age. It remained a product of the forest rather than of the forge, or electric dynamo. The Fiske Reading Machine represents a forcible attempt to bring the reading experience within the tool and die mechanical precision of the times, and to respond literally to I.A. Richards's sudden representation of the book as a machine to think with. Fiske's machine, along with I.A. Richards's definition of the book, indicate how the book itself was beginning to be re-evaluated as to its function in the modern age.

Along with an increasing acceptance that the book/machine could be mechanically improved and modernized, was an emerging sense that reading itself

was in need of further mechanization. What Sue Currell has called the “mechanization of reading” (344) already initiated by the Pitman brothers and their aggressively marketed shorthand systems, addressed an underlying concern that the book, as a machine, was being run by “inefficient operators” (Currell 355). Improving the efficiency of these operators resulted in the sudden appearance of a class of reading experts, intent on professionalizing the practice of reading, a class of “canny advisors,” as Amy Blair defines them, eager to instruct women in particular, in the literary science of “reading up.” Reading up also meant reading faster, reading at the speed demanded by the modern age. This understanding of reading as something that should be done swiftly represents a watershed re-evaluation of the mysterious phenomenon of reading and one that appeared in lockstep with the ‘end of books’ narrative following the 1877 invention of the talking machine. Previously, reading swiftly had been considered a vulgar endeavour, brought about by the publishing and reading of too many novels in particular (De Quincey cited in Currell 345). To read rapidly was understood “as an exercise in skipping” (cited in Currell 345). The book’s own unique interaction with time has proved problematic to the modern age. Marinetti’s elucidation of speed as the motivating force of this age is visible in massive efforts throughout the twentieth century to somehow encourage people to read faster. These efforts became formalized at the University of Utah in the 1950s, with the Evelyn Wood Reading Dynamics courses and included encouraging the student to “become an active page-turner” (Frank 27).

Such a deference to speed underscores not only the ever-faster ideology of

modernity, to do everything more rapidly, but also indicates how deeply a container model of the book had penetrated the accepted understanding of literacy. The book contained valuable “contents:” reading faster allows those contents to be consumed at a faster rate, thus the reader could empty the container more quickly, freeing themselves to move on to the next container, and the next. In an age that expects and even demands high speed, the book’s relationship to time has produced considerable anxiety and confusion. There exists few, if any, online courses to teach a student how to read more slowly. This confusion is tellingly revealed in the recent addition of digital timers now instituted into machines that display electronic text—a desperate attempt to fit the ancient phenomenon of reading within a punch clock mentality of Fordian hurry-up ideologies:

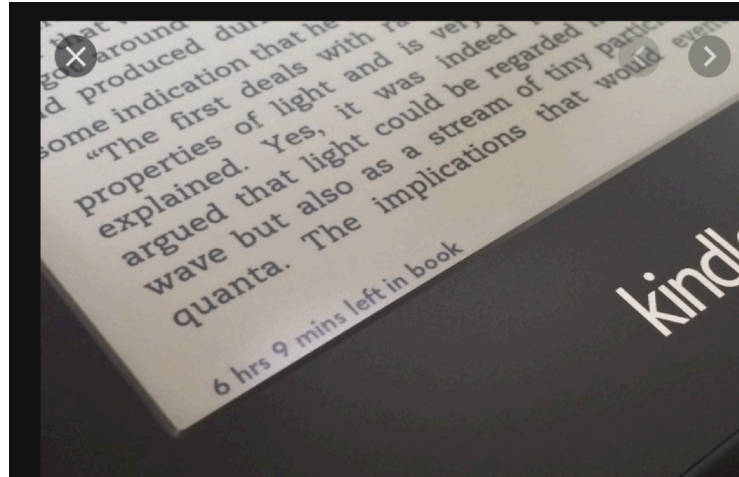


Figure 2. Reading time: 6 hrs 9 mins left in book

Forfeiting the book in exclusive favour of its syllabic code has defined the corporate, cultural, and even scientific attack on the book that began in the

nineteenth century. Such strategies remain fundamental to the successful implementation and maintenance of a digital textual regime. These strategies have been effectively concealed, or at least muffled, in the computer age by the conveniently timed “death of the book/the book is dead” headlines. As this research has argued, this argument as promulgated by both pundits and scholars is exclusively a counterargument, a ruse that insists the book is in perfectly good shape and, as Striphas would have it, even better shape thanks to the intervention of silicon-based machines. “It’s the words that touch us not the book,” declares the author of *The Book Is Dead*. Such exclusive privileging of the syllabic code presumed to exist *within* or *inside* a book would be inconceivable to previous centuries of readers who were quite willing to comprehend the book as a human body, and to understand ink as the blood of Christ. Even Richard De Bury’s description of the book as “vessel of virtue” insists the vessel itself is virtuous.¹ In terms of domesticating the digital turn, the container model’s triumph has been to divide the book where no division exists and in this way it crucially facilitates the transition away from ink and paper to silicon and electricity, making it a seemingly effortless one and, more significantly, a transition *without* consequences.

Consequences

In questioning a popular acceptance of an equivalency between print and screen-displayed electronic symbols, this research has insisted on the extreme and even irreconcilable material differences between the printed word and what has become called “electronic text.” These differences follow a generic and useful

categorization identified by Umberto Eco as mineral and vegetal. As noted, these categorical differences have been excluded from many of the influential new media texts that appeared in the nineties and even later. Instead, this body of scholarship was committed to the disappearance of the material *stuff* of literacy and the human cost of making it. It was supplemented by writings of the self-described futurist and sci-fi writer John Perry Barlow, who insisted that cyberspace itself in “an act of nature and it grows itself through our collective actions”

(www.eff.org/cyberspace-independence). Frequent “Wired” contributor (and self-described futurist) Bruce Sterling was equally confident that the “centralized, dinosaurian one-to-many-media that roared and trampled through the 20th century,” (deadmedia.org/) would prove insufficient in the new media age. In a disingenuous attempt to associate life with the digital regime, Sterling insists that the new media environment “is aswarm with lumbering toothy digital animals. It’s all lynxes here and gophers and big fat venomous webcrawlers”

(www.deadmedia.org/). Such lexical gymnastics are not innocent. They are crucial and part of a sustained rhetorical strategy to obfuscate the material origins of cyberspace, to insist that cyberspace, far from posing a clear and present threat to life is, instead, positively abounding with it.

Increasingly comprehended as a “disturbing form of neo-colonialism” (Brabazon) the disastrous consequences of constructing digital machines from minerals mined in developing countries, and the equally destructive consequences of shipping techno trash back to developing countries for disposal, are excluded from the carefully curated media biographies that define digital technology. Nor

are such narratives welcome in mainstream media and, beyond the works of media archaeology, are rarely to be found in ‘new media’ studies. In their place has appeared a diversionary trope, ‘the book is dead’, a narrative that is at once dismissed along with the unidentified persons who are said to be making the claim. The continual three-decade long repetition of this bait-and-switch strategy in both popular media and academic writing represents the lexical means by which public attention has been effectively diverted from the brute reality of a technology that, according to MIT’s website *The Future of Natural Strategic Resources*, begins in “violence and terror,” and is sustained by “years of systematic brutality, raping, murdering, and committing other atrocities in order to keep local populations terrified.” This is not the sort of backdrop welcome in the media narratives that so vibrantly tell the story of the digital age and the heroic male figures who slave in their garages to give us the future. Almost without exception the “birth” of the computer and rapid colonization of daily existence by an electronic digital network have been driven and justified by utopian narratives of progress that praise such developments, equating them with the improvement of democracy, civilization, human life, and the future itself. Yet no matter how heartfelt, the approving masculine wonder at the prospect of an electro-digital civilization serves to minimize and conceal the reality taking place on the ground of developing countries, the DRC in particular.

When editors at *Wired* magazine insist the universe is not like a computer, but in fact *is* a computer; when the Electronic Frontier Foundation celebrates “a world that will soon be blanketed in bit-bearing media” (“A Declaration of the

Independence of Cyberspace,” Barlow) when universities accept and legitimize a term such as “digital *humanities*” they contribute to a techno-fable of empowerment and enablism that effectively conceals the appalling human and environmental tragedies that serve to further the hegemonic status of the digital imperium. The tug of what Jerome McGann calls “the spell of romantic hermeneutics” may well have led to a “poverty of criticism in textual studies” (12) and one that pointedly neglects the material realities of book. Yet this neglect is arguably equally glaring in the field of media studies, where, until very recently, the geological origins of textuality, especially electronically powered textuality, have been blatantly excluded from study. Despite what is frequently called the ‘material turn,’ despite a supposed post-structuralist interest in studying material culture, the actual material of that culture, “the mineral politics of media” (Parikka 6), “the small pieces of Africa that we carry in our pockets” (Bratton cited in Parikka 37) have been conspicuously evacuated from scholarship of the material turn. As a result the human, communal, corporate and ecological consequences of such neglect remains well outside both a large sector of new media studies, and book studies as well.

Consequences II: marginalizing the margins

In *Writing Space: Computers, Hypertext, and the Remediation of Print*, Jay Bolter speculates that “prose,” despite the computer revolution, may yet have a future, but such a future is only possible if prose “frees itself from print technology” (6). Published in 1991, the text, and this language in particular, renews with a vengeance the vocabulary of dissatisfaction toward the book evinced since Edison,

and formalized by Bob Brown's 1930 manifesto *The Readies*. The book's failure to free itself from the bondage of print or the "preposterous page," as Brown puts it, explains "the very reason" why, according to Bolter, the book will be "pushed to the cultural margins" (6). In the unguarded use of this term "margins" the author revealingly sounds one of the many perplexing consequences that are arising and will continue to arise in an age that is struggling with both the status and validity of the book. In order for Bolter to disparage the book he has no choice but to rely on the entrenched, and perhaps limitless metaphorical reach that the book has contributed to language, to existence itself, and to the human ability to fathom it. It is not clear how scholars such as Bolter or others will ever be able to 'turn the page' on the book if they are denied the very metaphors that make turning the page on the book possible. No one will be able to 'write the *computer*' about—the computer. There is no language to allow this to happen, there is no visible image that conjures any sense of how this is humanly or even inhumanly possible. This explains why the most fervid naysayers of the book are forced to write a book in order to denounce the book. In order to explain why the book is inferior to digital technology and an inadequate technology for modern times they have insisted on writing another one. They too wish to be seen as telling the truth, and they too understand that truth resides in the book, or is at least linked to it in a way that is not easily severed. Such techno-hungry scholars and pundits who wish to 'close the book' on the book or 'open a new page' on the book or 'start a new chapter' in media thinking, or to 'write off' the book, or relegate the book to 'the margins' or to the 'back pages,' are in a precarious linguistic position. Even Bob Brown was reduced to the plea of

“book me no books.” Chartier’s malleable and ever unfolding conception of “the order of books,” has been fundamental to the cultural and societal coherence of western civilization that was largely book-based, one that McLuhan theorized as a galaxy. In dispensing with this galaxy which, according *Wired* magazine, has now been upgraded to a “universe,” (“the computer”) it is possible to discern what is the cornerstone of an actual death of the book scenario—one that is neither a trope, or a discourse, or counter-argument, or set of provocative headlines, but a significant and emerging social and political issue. This issue involves the dissolution, the abandonment and the forced irrelevance of a metaphorical architecture that has shaped thought and expression for thousands of years. In a techno-utopic and corporate rush to replace the book of nature and the book of truth with silicon-based machines that collect information and Big Data, what is sacrificed is a millennia-old metaphorical structure that has come to underpin Western understandings of the book of life. With this gone, even the most basic consensus concerning the facticity of facts becomes suspect. Instead of the problematic commodities of truth, wisdom, or knowledge, networked silicon machines trade instead in pattern recognition, homophily, data brokerages, click farms, click bait, and a twenty-four-seven data stream intent on maintaining permanent growth.

For all the dismissive insistence on the imprisoning, fossilized, fixed and frozen limitations that have suddenly made the printed word so inadequate, breaking words out of this prison, or their ‘cages,’ as they have been termed, does not appear to have resulted in freedom or liberation. Instead cyberspace has demanded a cultural reckoning in which facts now compete with “alternate facts,” where truth is

consigned to “post-truth” and “alternate truth,” where news becomes “fake news,” where information becomes disinformation, where the “human book” is replaced by juridical, electro-digital files that cannot be gifted or given away. Networked digital media, so vehemently celebrated for its democratizing capacities, is now increasingly viewed as a technology that is capable of perverting, subverting, and subjecting democratic elections with the influence of foreign actors. Behind headlines that announce the death of the book and then immediately correct themselves, there has swiftly appeared a “national misinformation industrial complex” (Lamoureux). This complex, for all of the utopic narratives created to ensure its dominance, is increasingly understood to be a region of duplicity and toxicity. The effects of the routine use of this technology are now studied as “online disinhibition” and “cyberbullying.” For all its self presentation as a “liberation technology,” the silicon-based electro-digital regime has engendered a support industry whose sole aim is to protect the young from the consequences of using the very technology that is aggressively marketed at them, and for which, increasingly, there is little or no alternative. From this perspective the death of the book ceases to be a media diversion or an intellectual parlour game and becomes an issue fraught with deep social and human consequences.

The frequent media employment of the headline ‘death of the book’ or ‘the book is dead,’ has taken place as a rallying cry against a backdrop of extreme technical change—a change that has witnessed the upending of many of the routines of daily existence. “The book is dead/death of the book” both domesticates this change and offers a buffer, a populist cry of ‘enough is enough,’ while concealing

the domination, the social control, and environmental degradation that networked communication machines have implemented. “The death of the book” further defines an historical age in which information is privileged above truth and where the machines that traffic in data (both big and small) are privileged above the traditional machinery for conveying truth, a truth that extends even to the word of God. On this new technocentric stage constructed by an extremely small group of male billionaires, the human actor plays her or his role not in the face of her own life and death, but within the confines of what has been termed a “drama called Big Data” (Chun *Big Data as Drama* 363). For this drama called ‘Big Data’ to unfold, it is necessary for the book to be displaced as the dominant cultural engine. Kittler’s powerful observation, made nearly a half century ago, that the mid 1880s witnessed the overthrow of the book’s monopoly on the serial storage of data, is tempered by his carefully attenuated description of what a book *is*—a technology for the serial storage of data. Yet, alongside its ability to serially store data, the book remains a technology, perhaps *the* only technology, by which ‘truth,’ in its various constructions, is engaged. This perhaps explains why Kittler is able to productively mine Bram Stoker’s *Dracula* to reach a comprehension of the working of technologies of writing and media machines.

Whereas Coover is adamant that the book is only, and precisely, “dead as God,” (*New York Times* 1), it can perhaps be stated equally the book is also as dead as *truth* and that the death of truth is a consequence of the extreme privileging of information. As Nunberg states, information did not come out of nowhere, it is a product of industrial capitalism, a “noble substance” to be commodified and sold by

the byte or the gigabyte or on a monthly plan. It also passes easily into an electro-digital network that allows it to fully circumvent national and cultural boundaries in ways that suits neoliberal and global corporate exigencies. Information fits neatly into copyright regimes, and corporate ownership of learning and remains free from the interpretative caution and suspicion that is directed at truth. In a secular society truth remains problematically in much too close a relationship to the gods and to the Christian God in particular to whom the codex technology is inextricably linked. In a secular data-based techno-environment in which both truth and God are largely understood as either being dead or no longer meaningful, it is inevitable, as Coover insisted in 1992, that the book has been subsumed within a book-is-dead media campaign that is now thirty years old. That this campaign has taken place contemporaneously to the successful wholesale implementation of the digital turn indicates how high the stakes actually *are* in “the high stakes drama of ‘the medium’s struggle to depict itself,’” (Gitelman citing Rosen *Always Already New* 96).

To fit the book within the increasingly inescapable electronic grid has been the aim of inventors and technicians since Edison. The myriad attempts in this direction discussed here and in chapter 2, are anticipated and modeled by a penetrating observation made by Walter Benjamin in “The Work of Art in the Age of Mechanical Reproduction.” Discussing the various art forms that appeared prior to film Benjamin insists that “the history of every art form aspires to effects which could be fully obtained only with a changed technical standard” (16). In this way the fertile frivolity and screaming hysteria of both Dada and Surrealism reflect an

anticipation of a technology—film—that is not quite there yet, but coming. In regards to the book, to printed text as a whole, this changed technical standard, which had waited in the wings since the time of Charles Babbage, found tentative and brief expression in the surrealistic and Dadaist constellations of alternate reading technologies that began arguably with Samuel Morse and traced a path through Edison’s phonograph, Fiske’s reading machine, Brown’s readies Bush’s Memex and even Robles mechanical encyclopedia. All of these technologies attempted to overcome the essentially agricultural nature of print, and the book. The very *biblios* of the book, which insisted on its origins as tree bark and plant fibre, insisted equally on its indifference to electricity, and then, a century later, demonstrated its problematic inability to be forcibly integrated into an electro-digital network. This refusal has gained commanding and even unique significance in what is now frequently termed the ‘Surveillance Age,’ or what Zuboff has termed “surveillance capitalism.” The discreet electro digital devices of this age, sold so aggressively and then so aggressively pronounced obsolete, have in themselves enabled a full-service regime of surveillance. Beyond the bar codes celebrated in *The Late Age of Print*, the book, however, does not participate in an environment of total surveillance. It remains a technology of privacy, even a form of privacy *itself*, one that cannot be subjected to remote surveillance. Should the state ban a particular book, the state must put boots on the ground, police officers with warrants, to knock on doors, to search houses, basements, attics. It cannot be done by pressing a key on a keyboard. It cannot be done within the operating parameters of so-called “friction free capitalism” which, according to Bill Gates, is what the Internet has delivered.

This is the challenge that the book poses to an electro-digital society; it is not friction free, it lies outside the full surveillance regime enabled by the use of digital tech. By standing outside the silicon turn, the book has also stands publicly outside what has been called the “defining concept of our epoch” (Chun, *Updating to Remain the Same* 24). In such ways the technology of the book asserts a new-found adversarial status in the face of a dominating electro-digital regime. It establishes its new status as an *outsider*, as a dissident, as *de facto* criticism of the digital takeover. The book does not abide by the ideology of the new. It exists outside of the contemporary fetish of newness.

In the face of a lengthy popular provocation suggesting that the book is dead, immediately followed by the mocking of anyone who believes such a thing, what emerges is not the death of the book, but the shocking and carefully-hidden death of the computer in all its ecological and human manifestations. Concealed behind the “the book is dead/no it’s not” dynamic is the unnerving reality that all digital technology can ever do is duplicate an electronically powered facsimile not of the book, but of *syllabic code*. This syllabic code is then electronically instantiated through a series of negatively and positively charged particles, so that even ink, or what *was* once ink, “the black liquor” as Johnson defined it, loses its larval origins in the galls of oak trees, and now exists within an electronic regime. Such technology then proceeds almost immediately into the graveyard of dead media which, as Bruce Sterling neglects to point out, is always located offshore in a developing country. The computer may duplicate alphabetic code with considerable ease, but it fails catastrophically when it comes to the brute reality of the book. This

failure lies at the very centre of the nervousness, the shrill intensity, the confusion, and imposing prevalence of both the populist “book is dead” counter-argument, and the more academic techno-utopian campaign directed at book technology since the early nineties. In an era in which the “universe” and the “computer” are proposed as being precisely the same thing, the book stands *outside* of the digital takeover, it rejects the “universe” and exist in the mere galaxy—but a galaxy, as McLuhan noted, of its own making.

Conclusion: The Birth of the Book

In the absence of the book’s authority, lacking its deep history and traditions, lacking the faith rendered unto it, and unable to invoke itself as the human body or the word of God, today’s digital communications regime finds itself engaged in a come-from-behind action to legitimize itself, to disparage both the human body and the body of the book. To accomplish this has involved the creation of a foundational ‘birth’ story, a self-serving masculine techno-mythology that claims the future as its own and insists ultimately on *being* that future. In the face of this emergent narrative books exist as a visible affront to a grand fable of ongoing chronological techno improvement, to electricity itself, to digitization, to a networked connectivity, and to the takeover of the screen, and the silicon-based screenic surface. To open a book means to avert the human eye away from the electronically-powered screen and, necessarily, from the network, from the reach of FANG itself. This may yet become the most radical and threatening of activities: to go private, to re-assert privacy, to go dark, to go offline, to ultimately thwart the electro-digitization of human life and

its everyday practices.

As universities convert book holdings into electronic “files,” as governments aggressively pass mandatory legislation directing education off paper and into electronic, silicon-based online scenarios, this radical turning away of the human eye has come to constitute a potential act of destabilization, defiance, and resistance. In the performance of this resistance, the book enters not into the “late age of print,” as Bolter, Striplas and others have insisted, but into an entirely new age of print, a radical age of print. With its radical materiality, the technology of print offers sanctuary from the server farms, the bots, algorithms and tracking cookies, from twenty-four hour surveillance, and from the catastrophic ecological consequences that arise from the manufacture and obsolescence of the digital word.

Conclusion

This research was inspired by two specific headlines that began to appear with some consistency during the early 1990s. These headlines, “The Book is Dead, and “The Death of the Book” were promoted in many major news outlets, and have only lately been driven out of media discussion by the arrival of the Covid-19 pandemic.

Behind these headlines lies the widely accepted and perhaps somewhat instinctive belief that the rapid appearance of personal computers and a networked digital system are the catalysts driving the anxieties concerning the status of the book.

Despite these assumptions, this research has identified and articulated an earlier ongoing challenge to the dominant position of book technology. Beginning in the mid 1870s with Thomas Edison’s invention of the phonograph—also called the “talking machine,”—there appeared a sudden and decidedly male insistence that the book was about to come to its end. Although this conversation was often tongue-and-cheek it postulated with some thoroughness a growing concern about modernity, and whether the book had a significant—or any—role to play in it. This uncertainty revealed itself in the shadow of the swift appearance and dominance of a new technology:—electricity.

Viewed with a reverence that David Nye, Leo Marx and others have identified as a type of ‘sublime,’ electricity was held to portend a new world, a future that had dispensed with the agrarian, slow-moving ways of the past in favour of speed, high speed, and even instantaneity. The men who promised this future constructed a masculinist and, as Marvin notes, even racialized master narrative that

positioned themselves as the experts, arbiters and, ultimately the beneficiaries of this new electrically-powered regime. Carolyn Marvin's examination of this masculine and approving techno-narrative has fostered an understanding of media that is not based exclusively on hardware and machines, but also the social and cultural storytelling, narratives of progress that came to envelop the machines, what today are routinely called media narratives. Marvin depicts how, in the explication of this narrative, these men invented *themselves* as an elite who were eager to maintain the social hierarchies of the time, and convince the public that the sudden and inescapable turn toward electricity would in no way threaten the racial, the gender, and the class divisions on which American society was built.

This study has extended Marvin's ground-breaking work into what, a century later, would be known as the "computer revolution." It has also introduced book technology into the framework of her research, investigating how the electro-positive narrative of the late nineteenth and early twentieth century came to embroil the book in an "end of" discussion in which book technology was beginning to be perceived as inadequate, and antiquated. While this 'end of the book' narrative took the form of a playful, fictional, and yet looming possibility, it also can be seen as an effort to domesticate and naturalize a future in which electro-mechanical technologies might displace books from their monopoly position as the dominant cultural engine—and assume that position for themselves. By building on Marvin's influential study, it has been possible to identify a very similar male narrative constructed a century later by a cadre of self-described "garage futurists," computer theorists and authors. This new and self-conscious male elite would explicate the

sublime wonders—not of electricity—but of the digital revolution, and help guide the public through this new and miraculous environment. Once again a narrative of the book’s incompatibility with new technology suddenly appeared. This narrative emerged largely from academic authors and media pundits who suddenly insisted on redefining the book not in terms of what it was, or what it could do, but in terms of what it wasn’t, and what it couldn’t do. The book was now presented as a hopelessly “linear” technology, one that was ‘frozen’ ‘fixed’ and ‘static.’ The nomenclature of the past with all of its slowness and rigid fixity was deployed to undermine the one technology that could lay historical claim to what the promoters of digital hardware desperately desired their own machines to be—civilization’s dominant communications technology and the means by which it ordered and understood itself.

The creation of this narrative aligned chronologically with the popular press’s headlines that declared the ‘death of the book/the book is dead.’ These headlines appeared with growing frequency in the months, years, and decades following the publication of Robert Coover’s 1992 *New York Times* article “The End of Books.” Written by a decidedly transgressive figure in the field of American literature, Coover’s essay achieved a foundational status in what this research has identified as an emerging scholarly field, and one to which it attempts to contribute: the history of the death of the book. Coover’s nuanced article, more frequently invoked rather than cited, postulates that the book is facing an indefensible challenge to its status as *the* technology of the real world. This challenge, suggests Coover, will come from a different real world and indicates the author’s

understanding that the end of the book, or the death of book, is fundamentally a struggle over who, or *what technology*, gets to determine what the “real world” is. For the purposes of Coover’s brief article, the “real world” was very much the “real world of video transmissions, cellular phones, fax machines, computer networks, and [...] the humming digitalized precincts of avant-garde computer hackers” (*New York Times* 1). Of more importance to this research has been Coover’s perspicacious historically informed observation that in the face of this “real world” the book has now become “dead as God.” This declaration effectively summarizes the fate of the book in an increasingly and even *desperately* secularized society. It also highlights the deep and perhaps irrevocable connection of the written word to the gods. There is hardly a culture that does not link its discovery of literacy to the gods, the heavens, or a higher power. In this way the book, from the beginning, has been culturally linked to the idea of an ultimate truth, the idea of an ultimate being or entity that potentially knows all and *is* all.

In the “computer age” this sort of truth, whether it possesses a capital T or not, has been radically de-privileged in favour of something significantly different—information. This “substance,” as Geoffrey Nunberg calls it, “incorporates assumptions of nobility and transferability in its meaning” (107). Free from the vexing ideological and epistemological freight that burdens concepts such as “truth” and even “wisdom,” information has become more than a “cult” (Roszack, *The Cult of Information*); more than a “revolution,” a “turn,” an “age,” a “religion,” a universe (as in “infoverse”) and has asserted itself on the planet, according John Perry Barlow, as “a life form.” Increasingly, information is understood as an

“intentional substance that is present in the world that translates with absolute freedom from one medium to another[...] a noble substance that is indifferent to the transformation of its vehicles” (Nunberg 107). These very assumptions supposedly allow information to migrate without consequence out of one medium and into another—a migration that is only made possible by a deeply-held and un-interrogated acceptance of a container model of communications technology. Such a model is crucial to the liberation-technology narrative that promotes silicon-based electro-digital devices as a direct and superior step beyond the book and directly into the future. This same belief, presented with confidence by many media writers, is emphatically and uniformly rejected by scholars of the book. In this field there exists “the bibliographers’ core idea, that the material form of the text affects (and to some extent effects) the meaning attached to it by the recipient” (Howsam 48). This disconnect across two distinct fields of scholarship reflects a gulf between these two areas of study. In this dissertation I have attempted to put these two fields into dialogue—using books studies to fathom new media and new media studies to interrogate the book. Placed in such proximity, it becomes apparent that concepts such as truth, knowledge, and wisdom have been historically grounded in the vast and ancient estate of the book, while concepts such as data, information and surveillance have risen to new height of cultural importance in reference to networked computerized systems. Thus Nunberg describes information as “the substance that computers traffic in” (110). This brief statement elucidates a central dichotomy between the technologies of communications that are examined here—that, in the broadest terms, digital technology traffics in information and data, while

books have been framed for centuries as a uniquely powerful means to traffic in truth, wisdom, and knowledge.

While frequent mainstream declarations that “the book is dead” suggest a widespread cultural nervousness about the fate of a ubiquitous and trusted artifact, that same artifact has been the target of a sustained attack for at least a century and a half. Following the invention of Edison’s phonograph, or “talking machine,” there appeared a succession of new technologies that each attempted to dislodge the book from its vaunted position atop the field of cultural production. I.A. Richards oft-repeated 1924 definition of the book as “a machine to think with,” offers not only an attempt to further masculinize book technology, and perhaps distance it from “lady novelists,” but also reflects the critic’s attempt to re-invigorate a largely agricultural artifact within what had become known as *the machine age*. What the following decades brought forth was a series of machines that sought a radical new physical form for the book, one that had considerably more affinity with industrial mining than agricultural husbandry, and sought to replace oak galls and plant fibre with iron, steel, and glass. These changes attempted to bring the book within the lens-based, screenic and filmic technologies that were sweeping the times. They include the Fiske Reading Machine of 1922 which engaged in the same fraudulent scare tactics employed by promoters of the talking book some four decades earlier, and by Amazon in the twenty-first century: that book-reading led to blindness or at least contributed to visual impairment. Even more significant than the Fiske Reading Machine’s promise to put an end to eye problems, was its paramount concern that the book was wasteful and inefficient, took up far too much space and flagrantly

resisted the contemporary impulse to make smaller, to fit more effectively into the now officially closed American Frontier and an increasingly miniaturized future. Yet for all its radical machinic manifestations, the Fiske device remained dependent on fifteenth century technologies; the printing presses, paper, and ink, and, like the book itself, required no assistance from what was then still called “the electrical fluid.”

Fiske’s Reading Machine was soon followed by Bob Brown’s conceptual technology described in detail in his 1930 manifesto *The Readies*. With this technology the book was eagerly allied to what had become the almost ubiquitous phenomenon of electricity, and was intended to be entirely dependent on it. Although Brown references the Fiske Reading Machine, he does so only to dismiss it, and while he haphazardly includes miniaturization as one of the benefits of this cinematic book replacement, it is clear that it is not so much the closure of the American frontier that has precipitated his technology, but the closure of the American mind—a closure brought about by the fossilized structure of the Victorian novel, by “sausage words” (13) and by the very shape of what Brown calls “the preposterous page” (38). In this way Brown’s literary career traces a surprisingly direct path toward another American literary dissident who has a role to play in this dissertation: Robert Coover, a man who valued the electronification of literacy, not because of any overarching enthusiasm for digital technology, but because he saw in it a chance to achieve “true freedom from the tyranny of the line” and to bring down the orthodoxy of the novel, that “virulent carrier of the patriarchal, colonial, canonical, proprietary, hierarchical and authoritarian values of a past that is no

longer with us” (*New York Times* 1). Both Coover and Brown are adamant that the time had come to stop “getting out twentieth century reading matter in fifteenth century book form” (Brown 34). Brown is also the first to fit the book within a rhetoric of imprisonment, confinement, and static closure, a language that would be eagerly appropriated and deployed decades later by new media pundits in their attempts to fit the book within a narrative of diminishment and superannuation.

Brown’s conceptual technology of the Readies is pivotal in reorienting the book toward a cinematic framework which predicts the monumental late twentieth century transformation in literacy: directing the written word away from Gutenberg’s invention, and rendering it into a fully re-materialized form that would be dependent on electricity and binary code—a product of broadcasting rather than print, and materialized on the electronic screen rather than paper. With the written word fully conceptualized and operative within an electronic data stream, the link to the corporal reality of the “human book” is severed. Brown’s conceptual machine argues for a new technology that will align reading to the tempo of the age, a tempo that was set by electricity. Like both Edison and Fiske, Brown demands “words machinewise” (40). This cultural, or at least male, insistence that words now be generated by machines, by mineral alloys powered by electricity, further masculinizes literacy in a way that shuts out textual sources from associations that are not electro-technical, and that emanate often from women. These include Cixous’s rich evocation of ink as breast milk, Helen Keller’s understanding of books as friends in a friendship based on reading, Agatha Christie’s insistence on the kitchen as a site of both domestic and literary activity. This quandary is neatly

expressed by American poet Anne Wallman who invokes the total male ownership of all aspects of digital tech and then asks, quietly and with a disconcerting *faux* innocence, “Is this a problem?” (745).

This accelerating circumstance of more and more men attempting to rematerialize the written word or at least to advocate for it, found its fullest expression in Vannevar Bush’s frequently cited essay of 1945, “As We May Think.” This piece has been widely hailed as the initial written depiction of what would come to be called ‘hypertext’ and, as such, has occupied a position of considerable interest within the field of media studies. It sounds the age’s mounting confidence in the science of engineering and the growing institutionalization of engineering as a driving factor in U.S. society. “As We May Think” effectively predicts and illustrates the modern computerized desk. It also shares Admiral Fiske’s somewhat driving desire to miniaturize. Unlike Fiske’s device, however, the Memex, as Bush termed his projected machine, aligns itself thoroughly to the now ubiquitous “electrical fluid.” In this way it proceeds from Bob Brown’s conceptual technology in that it is both electrically powered and seeks to replace the page with the screen, or what the Bush calls “slanting translucent viewing screens” (Bush 109). Despite its largely accurate prediction as to what the textuality of the future would look like, this essay has made no inroads at all in the field of book studies.

What the essay and its imagined technology indicates is the growing agreement amongst male engineers and inventors that the reading machines of the modern age would be screen based and powered by electricity. Bush’s essay is also driven by the overriding conviction that there is simply too much information, all of

which is crucial in order to compile what he terms the “common record,” (95) a term that quickly gives way to “the record of the race” (105). While media scholars have largely accepted Bush’s essay on its own terms, positioning it as an historic stepping stone to the computerized network, and a perceptive prediction of hypertext, this research has offered an alternative interpretation, one that, after Carolyn Marvin, fixates less on the working of the machine and more on the cultural assumptions imbedded in, and propagated by, the narratives that normalize those machines. Consequently it has examined Bush’s seminal essay as a towering contribution to what Judy Wajcman (and others) has identified as “the role of technology in reproducing patriarchy” (144). In short, “As We May Think” is read here as an overwhelming demonstration of unreflective masculinization, a reproduction, even *over-reproduction* of the patriarchy that systematically disappears the linguistic presence of the female, uniformly miniaturizes the woman into the “girl”, assigns her with the lowliest of administrative functions, and reserves the future itself for men and the data their machines generate. While Bush’s essay has been hailed for its prediction of hypertext, its function can be fruitfully comprehended within what D.F. McKenzie has identified as the “sociology of texts” (1999). Such identification “directs” the reader “to consider the human motive and interactions which involve texts at every stage of the production, transmission, and consumption” (15). In this light “As We May Think,” becomes less a perceptive anticipation of the digital age and hypertext in particular, and instead, with its extremely public appearance in highly visible mainstream American magazines, functions as a reinforcement of the old structures of the analogue machines to which Bush was intractably wedded.

Equally, it reinforces the gender structures of the time to create an impregnable trinity that links masculinity, machines, and modernity. Finally, independently of whether Bush's essay is or is not an insightful foray into the future of technology, it exists as a text that spills over with sexual anxieties, and in the end postulates an edifice of man-machines to essentially shield men from the "disquieting gaze" of the "girls" who work for them (94-95).

Fittingly, this overview of alternate book technology comes to its end with a woman and her remarkable machine known as the "mechanical encyclopedia." This machine appears in the mid twentieth century as a *cri de coeur* against the implacable imposition of a male technocracy. As such it recalls the Fox sisters in their tragic but revealing attempt to wrest communications media out of the complete control of men, and to insist that there was a role for women in the increasingly metallic and electrified world of the telegraph. They sought a different tap-tapping, not of Morse's straight key but of the departed one, the lost child, the dead lover. In their careers as mediums, they insisted upon, and actually performed, a radically different medium of communications, one that was not about machines but people, and in this way established themselves as rebels, outliers and dissidents, rejecting steel and electricity in favour of unknowable ectoplasms and the mysterious resources of the female body. Similarly, Angela Ruiz Robles' mechanical encyclopedia offers not the computer, but a type of *folk* computer, amenable to the assistance of electricity, but by no means dependent on it. Powered by the human hand and compressed air it anticipates the portability of the personal computer with various media, not converged, but contained within it: not new

media, but old media, multi-media in the truest sense, aligning itself to the wonder of learning, to touch, to the curiosity of the child rather than the profits of the corporation. Patented four years after the appearance of Bush's celebrated essay, this technology, conceived and designed by a female school teacher, offered an alternative to the direction, and even the very principles that had increasingly come to define machines for reading and writing.

While Robles' machine stands as a remarkable alternative to the electro-digital regime, the sudden celebrity recently bestowed on her only affirms the cultural belief that it is entirely unheard of (but nonetheless *intriguing*) for a woman to be involved in this field. Discussion of her and her machine has been crushingly enfolded within a technocratic chauvinism that views her contribution as significant only because it anticipates the invention of the "e-reader," which, of course, it does not. Such a narrative has allowed the tech-world to present itself as female friendly and inclusive, even as the same narrative seeks to diminish her contribution by celebrating its achievement only as something that opened the door to the work of men such as Michael Hart, Andries Van Dam, Michael Joyce, Ted Nelson and other men who followed. Far from viewing her invention as a challenge, even a rejection of the materiality and the intentions of what would become new media, the narrative that surrounds Robles unfailingly appropriates her invention within the semantics of liberation technology and celebrates her work not for standing in frank and productive opposition to new media, but instead for making new media possible—the "e-reader" in particular.

The effective and demoralizing disappearance of Robles and her mechanical encyclopedia within a narrative of masculine technological triumph, reveals one—but only one—of the myriads narrative strategies by which new media has been normalized. This research has sought to isolate that story and map the emergence of a masculine narrative that seeks to strip the book of its privileged cultural position, and re-invest that privilege in screen-based, electrically-powered digital technologies. As such it presents a first sustained attempt to interrogate the semantics, the keywords, the rhetoric, and the metaphors deployed in the language that sounds the imperiled state of book technology. These stratagems involve the creation of a fictional multitude of misinformed straw men who supposedly insist “the book is dead.” They include as well the commonplace linguistic replacement of the *reader* with the *consumer*, the insistence on an equivalency between print and digital text, the hijacking of long-established meanings and turning them inside out. These tactics have appeared in lockstep with the reification of “information” and “data” as unassailable, unbiased, objective and raw commodities against which truth, wisdom, and knowledge cannot compete.

Such semantic strategies, or “legitimizing ideologies” as Flichy terms them (11), seek to overcome the fundamental divide between what Umberto Eco has termed the mineral and vegetal dimensions of communication. These useful categorizations, presented in a lecture at the Alexandria Bibliotheque in 2003, have achieved little or no traction in the field of book studies or new media studies, but have been relied upon in this research because they offer an escape from the *cul de sac* of the container model of the book and new media, and break down, in the

broadest terms, a fundamental difference between book technologies and textual systems that are powered by electricity. The divide between mineral and vegetal also lays bare a fundamental problem facing digital technology and assists considerably in understanding how narratives of digital triumphalism are constructed. While it is undeniable that modern industrial paper-making techniques have certainly resulted in spills, contamination and other dire ecological outcomes of their own making, books, as they have for millennia, remain agricultural in the realities of their manufacture and eventual destruction. In contrast, the digital word is constructed entirely out of mining techniques, often carried out under brutal conditions in countries dominated by brutal regimes. Concealing these material origins, along with normalizing and humanizing the digital-tech regime, has required an aggressive appropriation of the nomenclature of the vegetal—thus concealing the sordid reality of the mineral network. Consequently data is now frequently “harvested.” Freshly harvested data is stored, not in vast superheated complexes surrounded by barbed wire, but in server *farms*. “Data,” has been routinely coupled to “raw,” to further obscure the lifeless innate and artificial substance that it is, and to facilitate a notion that what appears in books is “cooked.” Digicide, to the extent that such a term exists, has been hijacked to mean—not the mass destruction of digital materials destroyed every twenty four months under the logic of Moore’s Law—but the “systematic killing of *digital pets*” (italics mine, Urban Dictionary) Even the ‘web’ invokes the filaments of the spider in a way that the ‘grid’ does not. The very location of digital technology has been disappeared, or at least obscured. Currently it is comfortably located in what was once called “Software as a Service” (SaaS)

before being pastoralized into the more market savvy term—the *cloud*. In what is perhaps the most pernicious appropriation, digital text can even be ‘digitally born.’ Such language continues the diminution of the female into the process of pregnancy itself, re-assigning birth away from the female, and assigning it instead to decidedly man-made electro-digital machines.

On a basic level this research has attempted to further expose the “con” that lies behind what John Cassidy has historicized as the “dot.con” revolution, or *The Greatest Story Ever Sold* published in 2003. This con has been perpetrated in several distinct ways, including the sudden, sustained and, at times, overwhelming appearance of “the book is dead/the death of the book” headlines. Such a terminal assumption took place in a century that was overwhelmingly freighted by a host of other “death of” or “end of” narratives. Against this background of moral and intellectual uncertainty and even despair, the book had already undergone more than a half century of technical challenges that soon coalesced into a sustained corporate and cultural drive to rematerialize book technology during what was first called the ‘mechanical age,’ and, a century later, ‘the computer age.’

Out of these latter efforts arose the two nearly identical headlines the ‘death of the book’ and ‘the book is dead.’ These provocative declarations are, in fact, as Natale and Ballatore point out, not an argument at all, but a counterargument. They exist only to insist that anyone who believes the book is endangered is misinformed. Their effect is to consistently shut down any voice that suggests the book is an imperiled technology. This counterargument preserves the popular emotional attachment to the book. Simultaneously it seeks to normalize a belief that

technological changes, particularly those associated with the digital takeover, pose no threat to the book or to the social, racial, economic, and gendered structures of everyday life. ‘The book is dead long live the book’ counterargument insists that despite the sudden and complete colonization by a networked silicon-based technology, one that has overturned nearly every aspect of daily life, things will still be ‘done by the book.’ Significantly, this sustained barrage of headlines did not, and does not yet exist for the destruction of digital technology. Despite the daily mass transportation of no-longer-wanted digital technology to dumpsites in the developing world, despite the awareness that techno-trash or ‘cloud dirt’ is the fastest growing waste stream on the planet, there pointedly exists no “death of the digital/the digital is dead” headlines in the popular media. Such headlines have been effectively diverted from public view by the now decades long presence of a bait and switch linguistic parlour game, in which the death of the book is continuously revealed to be a misinformed opinion held by misinformed people ranging from “industry insiders” to Robert Coover.

Underlying all of this is the un-interrogated assumption that the so-called “contents” of a book are somehow separable from “the book” itself, and thus can be neatly poured into computer technology without any disfigurement at all, and without any social consequences. This model is crucial to the enabling, liberating, and democratizing attributes routinely maintained by new media narratives. It is also a belief categorically rejected by those who study the book, and book history. Nonetheless an ‘old wine in new bottles’ understanding is fundamental to the successful entry and colonization of digital machines. This research has posited that

the unexamined acceptance of this base model inhibits an understanding of new media in particular. Furthermore, by focusing on the so-called “contents” as somehow distinct from the medium, it provides the intellectual cover necessary to deny the catastrophic and inhuman political realities out of which digital textuality is materialized.

These chapters have also gone to some length to critique writings that were once considered nearly canonical in new media studies, and that even today retain considerable legitimacy. It has pushed against those texts that began to emerge in the early nineties heyday of masculine digital bravado. In manufacturing this narrative, authors defined the printed word as “forever fixed by the confines of three dimensions” (Negroponte 69) and were convinced that electrically powered technologies manufactured from silicon, plastic, and conflict minerals located in Africa somehow escaped these dimensional restrictions, and even introduced wondrous new dimensions into human existence. An insistence on “analogue fixity” as opposed to “digital fluidity” (Frosh 66) drives the narrative of new media, and positions digital text as warm, fluid, adaptable, flowing, life-giving, mobile, and everything that the frozen word of print could never be. This dissertation has critiqued these texts in particular for their consistent and determined refusal to acknowledge the materiality of the electro-digital network, thereby abetting the destructive silence that has allowed technoculture to successfully implant itself in the public mind as environmentally benign, and independent of the extreme circumstances out of which it is manufactured. The success of this exclusionary narrative is evident in the widespread acceptance of the trope: “send an e-mail save a

tree.” Such deception indicates the life and death consequences that result from the successful imposition of a narrative that asserts one medium’s superiority over another. This enabling rhetoric of freedom, creativity and equality, while steadfastly maintained in corporate language, has been critiqued by less male-centric narratives advanced by Carolyn Marvin in regards to electricity, and Wendy Chun in regards to the digital network. The latter’s work ignores the techno-centric fantasy of the digital turn, and critically examines networked existence in terms of crisis technology, the enabling machinery of neo-liberalism, and technology for accelerated and exploitative capitalism.

In attempting to understand the “death” or the diminishment of the book as a rhetorical strategy that normalizes the digital takeover and justifies and exalts a digital regime, this research has also interrogated the actual ‘death’ of the book as a physical artifact. Despite a popular assumption that a good book never dies, and a cultural acceptance of the book as ‘*ars longa*’ incarnate, this writing has sought to expand and deepen an understanding of how the book object meets its material end—not as a metaphorical or rhetorical death, but a *physical* end. The research presented here largely represents initial scholarship on a fundamental and, as of yet, unstudied dimension of the book: how it comes to an end. As such it substantially supplements *Book Destruction from the Medieval to the Contemporary*, edited by Partington, Gillian, and Adam Smyth (2014), which deals largely with book destruction as a form of artistic expression. It also demands a reconsideration of Robert Darnton’s influential communication circuit, having exposed an un-remarked and yet remarkable reality of this diagram—that it permits no end, no death to the

book artifact. Instead it implicates the book in an endless loop from production to purchase and continues a popular and unspoken acceptance that books are immortal. It is very possible that the lack of scholarship on the terminal stages of the book has been partly normalized by the communication circuit itself as it maps the various interactions of a text passing through society.

The immortality of the written word, the acceptance of the book as a living entity, the association of the book with the human body, the understanding of literacy as something handed down by God, all contribute to a perception of the book as an entity that cannot and *must* not be destroyed. Consequently, its deliberate destruction, even its accidental destruction in a fire, is comprehended in moral terms. Such destruction is considered an injustice perpetrated on an artifact long imbued with associations of humanity, community, and truth itself. Recognized since the time of Milton at least, as “the progeny of an active soul,” (Milton 7) acts of violence toward this technology are understood as acts of violence against the human body and even God’s own image: “he who destroys a good book, kills reason itself, kills the image of God” (7) In Milton’s frequently quoted observation can be found a logic for Coover’s insight that the book is “dead as God.” It also explains a public reluctance to put the book to the sword. Even today publishing houses are unwilling to release details as to their internal pulping procedures. Oxford University Press, for example, refuses to discuss the specifics of its remaindering practices (Allen 48).

Yet books are destroyed in staggering numbers, in the their billions, routinely as part of a capitalist system. It is quite possible that the majority of new

books do not make it out of the box they are packed in, and proceed directly from the warehouse, not to the bookstore, but to the pulping facility, a reality that is not to be found in Darnton's communication circuit. This corporate destruction is conceived as distinct from censorship, from book banning and burnings, for example. Mass commercial death, carefully hidden behind walls and protocols of the book destruction industry, are exempt from the visceral moral objections produced by book destruction as a public spectacle. Instead, it is understood as a form of market stabilization and remains unburdened by any sense of crushing moral failure. This research has examined, side by side, the practices of book destruction and the practices by which by which digital machines are passed into obsolescence. The narratives that encompass these two streams of destruction provide a fertile ground for comprehending the differing natures of the technologies. Whereas the deliberate destruction of books calls forth moral horror, the narrative that defines the disposal of electro-digital gadgets invokes not moral horror, but ecological ruin, the degradation of nature, extreme corporate irresponsibility that threatens human as well as animal and plant life. Such ecological consequences are driven by the dependence of "virtual reality" on mineral substances—the more than 1000 materials that must be mined from the earth and processed in order to produce the electronic facsimiles that populate "virtual reality." Interrogating the end of life scenarios of both technologies unearths troubling environmental consequences that have been, and *must be*, eliminated from the digital narrative if it is to remain one of unfailing technological triumph. In this way this study has extended the pioneering work of media archeology to finally include—the *book*—a technological artifact that

has been pointedly excluded by investigators in that field.

While it is clear there exists a foundational, growing, and diversified scholarly comprehension of the ‘birth’ of the book, along with a rich and extensive body of research into how books makes their way through the human community, there exists little understanding of how books are un-made, how they come to their end, or even if they *do* come to their end. In this regard it is possible to consider that Darnton’s frank omission of the book’s terminal point from his communication circuit is not an oversight at all. It is an informed acknowledgement that the end is not there to be found. It quietly accepts that the book, as Leigh Hunt insisted, is “the only visible change which changes no further”—a technology that “generates and yet is not destroyed” (200). This abiding dimension of immortality attached to the book object has led to a central confusion as to what exactly happens to a book when it reaches the end of its life. Where does it go? In addressing this question, this dissertation has suggested several locations and processes by which books evolve from their intended function and assume an entirely different one. These evolutions out of the book form occur in the stables and pens of domesticated animals. They occur in compost heaps, and in recycling facilities. They include in-fill for road-making. These numerous and variant outcomes for the book once it’s textual existence has ended, stand in stark contrast to electro-digital machines. For digital technology the future is only and *always* —the trash heap (Sabine 1; Sterne 22). There is no other place for it to go. Such differing end-of-life outcomes suggest a new means of pursuing these very disparate technologies. They suggest new questions that may lead to a deeper and more significant comprehension of the

technologies of communication. Such questioning rejects a container model and seeks an understanding that exists beyond merely interpreting signs presumed to exist *within* or *inside* a communications machine. In this way opportunities are exposed for enriched understandings that go beyond the “conventional.... questions of representation, ideology, and identity” (Taffel 78). A frank approach to the materials of communication makes it possible to question whether the toxic realities of the construction and disposal of digital tech has affected an emerging understanding of the internet as a toxic and threatening location. Conversely, it becomes possible to investigate the rather profound respect yet afforded the book as related to the pastoral and agricultural circumstances of its manufacture and disposal.

Finally, this research has examined the striking *failures* of a sustained historical effort to re-materialize the book into a technology that fits within the emerging techno-enthusiasms of the times—from the electro-mechanical enthusiasms of Edison’s era to the digital takeover of the computer age. Far from indicating the book’s morbid and terminal state, these chapters have examined how the book’s material form, its *life* form as plant fibre, has rendered it immune from the surveillance capitalism implicit in the networked future. In this way, the book, having been deposed from its central position as the dominant cultural engine of civilization, has assumed new powers. In times that have been variously termed the digital turn, the digital age, the digital revolution, and the digital everything, the book becomes, *defacto*, a new form of samizdat, unofficial, unserveillable, untraceable, undeletable, undigital, un-censorable and lying problematically outside

the purview of the electrified digital network and its masters. Such powers are the disruptive powers of the outsider, and the rebel. Instead of entering the “late age of print,” as it has been commonly called, the printed word may have already entered a *new* age of print in which it becomes a radical, dissident technology that by its continued existence threatens the social controls and total dominance of networked and global digital systems.

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Notes:

Chapter 1

¹ That expressions of discontent with the book are predominately, even *exclusively*, uttered by men, is a noticeable feature of both the *end-of-the* book narrative of the late nineteenth century, and the *death-of-the* book concerns of the late-twentieth. This push by an emerging class of male engineers and writers in the late 1800s, took place despite a noticeable and enthusiastic embrace of book reading, sharing, and writing, by women. These expanding female textual communities indicated no discontent with the book at all, but rather a successful and fruitful engagement with it. Such a gendered indifference appears visible a century later, with techno-affirmative and enablist discourse predominately emanating from male writers, with cautionary and even critical approaches found frequently among female commenters. Although contained in no single chapter, this dissertation often employs gender as a means of re-narrating media myths. It attempts in particular to examine the rhetorical means by which the presence of women is made invisible, de-statured or simply *assumed*, within and *appended to* a story of ongoing technological progress.

² In reciting this poem before a live audience Browning forgets his lines: “I’m terribly sorry,” he says “but I can’t remember me [*sic*] own verses.” He recovers by stating “but one thing I shall remember all my life is the astonishing moment by your remarkable invention.” There follows a boisterous rendering of “Hip hip hooray.” It is not clear whether this hooray is for the poet, or the “remarkable invention.” (<https://www.youtube.com/watch?v=OYot5-WuAjE>)

³ For a full account of the “talking book” see Mathew Rubery, *The Untold Story of the Talking Book*. Harvard Press, 2016.

⁴ As late as 2000 a BBC Homepage vote on the greatest “inventors of the millenium” resulted in a first place finish by Gutenberg for “the mass production of books in the 15th century.”

<http://news.bbc.co.uk/hi/english/static/events/millennium/jan/winner.stm>

⁵ Edison speculates that the amount of dandruff generated depends on the amount of reading one does. He suggests “a book on German metaphysics would thus easily ruin a dress suit” (4). Thomas Edison, *The Diary and Sundry Observations of Thomas Alva Edison*, Greenwood Press Publishers, 1968.

⁶ Binary relationships are central to the technology of literacy whether in the black/white structure of ink on paper or the recto/verso architecture of the codex. The binary code that most resembles the binary code of the Morse’s telegraph is of course the practice of poetic scansion that involves the graphic depiction of stressed/unstressed symbols:

Stress	/	x	/	x	/	x	/	x	/	x	/	x	/	x	/	x
Syllable	Once	up-	on	a	mid-	night	drear-	y,	while	I	pon-	dered	weak	and	wear-	y

The connection between Samuel Morse’s code and the development of computer languages was significantly furthered by the inventor and telegraph operator Jean-Maurice Emile Baudot (Baud rate derives from his name). See Smithsonian.com <https://www.smithsonianmag.com/smart-news/roots-computer-code-lie-telegraph-code-180964782/>.

Chapter 2

¹ I have cited “As We May Think” from the compilation of these two versions which appear in *From Memex to Hypertext: Vannevar Bush and the Mind’s Machine*, James Nyce, Paul Kahn, editors. Academic Press, Inc. 1991 pp 85-110.

Chapter 4:

¹ See *The Holocaust and the Book: Destruction and Preservation*, edited by Jonathon’s Rose, 2001; *Libricide*, by Rebecca Knuth, 2003; *Burning Books and Leveling Libraries: Extremist Violence and Cultural Destruction*, by Rebecca Knuth, 2006; *Burning Books*, by Matthew Fishburn, 2008.

² That the book could be, and was, used to wrap fish and pork pies titillated many nineteenth century authors, Byron in particular, perhaps because it served to destabilize the emerging social construction of author as hero, as well as the time-venerated insistence on the book as a vessel of virtue, of God’s word made immanent.

³ In *Burning Books*, 2008, Mathew Fishburn, makes clear that attitudes toward book burnings were not always those of outrage, indignation and moral horror. Instead such attitudes came into existence following the book burning ceremonies of the Nazi regime. Initially, even with these public burnings, Fishburn states, “The bulk of the attention the fires received was infused with mocking derision or amused condescension.... The book fires, it was routinely held, were little more than jejune or adolescent posturing” (39-40)

⁴ Common sense may tell us we burn books because we *can*, and do not burn digital

text because we *can't*. However, as disappointed book burners throughout history have learned, burning a book, particularly a *pile* of books, is not easy. More than one angry crowd has turned away in frustration at the sheer difficulty involved in setting books on fire. Successful book burning for the Nazis often meant ensuring that numerous cans of petrol were on hand, and that the books carefully stacked, the way a fire is built, with space between books for the fire to breathe. Book burnings are best scheduled on nights when there is no chance of rain. Rainfall during the 1933 book burning at the Odenplatz in Berlin forced students to request help from the city fire department, who obliged by pouring gasoline on the offending heap. Nor do clear skies guarantee a successful performance. In the early Christian era the magistrate of Abitinae tossed the Holy Writs of Bishop Fundamus into the flames only to have a miraculous rain fall from a perfectly clear sky, putting out the fire, and saving the scriptures ("Books for the Burning," Forbes 120).

Chapter 5

¹ The long standing acceptance of the book as a container would appear to relate to an equally longstanding Christian conception of the human body as the vessel of the soul, the physical entity wherein the soul is contained, this model has its critics as well, however. William Blake states emphatically: "Man has no body distinct from his soul for that call'd Body is a portion of Soul discern'd by five Senses (William Blake, Edited by J. Brownowski, Penguin Books, 1968, p 94).