

RE-MAKERS: THE NOVEL IN DIGITAL COLLABORATIVE SPACE

by

NOAH WILLIAM BREWER

(Under the Direction of Richard Menke)

ABSTRACT

Despite the shift in medial ecology represented by the dominance of digital online media, popular understanding of the book, and especially the novel, remains to a great extent firmly grounded in a sense of unity and finality that had largely been established by the end of the nineteenth century. By attempting to reconstruct a bibliographic history of the contemporary popular novel, I will examine the variety of relationships that exist between the novel's unified form as printed book and its fragmented online presence. I will examine this question through a case study of Cory Doctorow's 2009 science fiction novel *Makers*. I pay particular attention to the ways in which the novel, variously remediated in digital space, navigates a tension between the closed finality and unity of the traditional book and the open, collaborative environment engendered by the web.

INDEX WORDS: Cory Doctorow, *Makers*, Digital Media, The Novel, Serialization, Fan Fiction, Remediation, Collaborative Creation, Creative Commons, Medial Ecology

RE-MAKERS: THE NOVEL IN DIGITAL COLLABORATIVE SPACE

by

NOAH WILLIAM BREWER

B.A., Elon University, 2004

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment
of the Requirements for the Degree

MASTER OF ARTS

ATHENS, GEORGIA

2012

© 2012

Noah William Brewer

Licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License



Some Rights Reserved by the Author

For more information on appropriate uses of this document, visit

<http://creativecommons.org/licenses/by-nc-sa/3.0/>

RE-MAKERS: THE NOVEL IN DIGITAL COLLABORATIVE SPACE

by

NOAH WILLIAM BREWER

Major Professor: Richard Menke

Committee: Christopher Pizzino
Beth Tobin
Christy Desmet

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2012

DEDICATION

For Beth, Will, and Daniel.

And for Carl the Fish.

TABLE OF CONTENTS

	Page
LIST OF FIGURES	vi
RE-MAKERS: THE NOVEL IN DIGITAL COLLABORATIVE SPACE	
INTRODUCTION	1
CHAPTER 1: E-MAKERS: THE WEB LOGIC OF BOOK	
PUBLICATION PRACTICES	12
CHAPTER 2: DE-MAKERS: THE WEB LOGIC OF THE	
SERIALIZED NOVEL.....	26
CHAPTER 3: RE-MAKERS: THE WEB LOGIC OF CREATIVE	
PRODUCTION.....	43
REFERENCES	62

LIST OF FIGURES

	Page
Figure 1: Screen Capture of “Cory Doctorow’s <i>Makers</i> , Part 1 (of 81),” at Tor.com	30
Figure 2: “Book Cover” for <i>Makers</i> as designed by Idiots’ Books	49
Figure 3: Illustration for “Cory Doctorow’s <i>Makers</i> , Part 1 (of 81)”	50
Figure 4: Illustration for “Cory Doctorow’s <i>Makers</i> , Part 15 (of 81)”	52
Figure 5: <i>Makers</i> Tile Game, Flash application by Malloc Media	54
Figure 6: 3D-printed <i>Makers</i> book cover by Dmitri Kobzar	57
Figure 7: Michael Zoellner’s cyborg-Pinscher “remix in light”	59

RE-MAKERS: THE NOVEL IN DIGITAL COLLABORATIVE SPACE

INTRODUCTION

Much of the theoretical work being done in online media characterizes the world of digital creative production by its break with the traditions of unity, linearity, completeness, and individuation that have dominated the cultural logic of Western capitalistic democracies since the dawn of the Industrial Age. In *Convergence Culture*, Henry Jenkins argues that the rise of digital communications technologies sees our “older forms of social community...breaking down, our rooting in physical geography...diminished, our bonds to the extended and even the nuclear family...disintegrating, and our allegiances to nation-states...being redefined” by a new media landscape that fosters new, broadly dispersed communities “defined through voluntary, temporary, and tactical affiliations, reaffirmed through common intellectual enterprises and emotional investments.”¹ Cathy Davidson, writing about the implications of Internet technologies for education in the twenty-first century, states that the industrial logic of the twentieth century “has taught us that completing one task before starting another one is the route to success.”² In contrast to this focus on “attention to task,” she suggests, digital media technologies emphasize multitasking, “not just because of our information overload but because our digital age was structured without anything like a central node broadcasting one stream of

1 Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (New York: New York University Press, 2006), 27.

2 Cathy Davidson, *Now You See It: How the Brain Science of Attention Will Transform the Way We Live, Work, and Learn* (New York: Viking, 2011), 6.

information that we pay attention to at a given moment.”³ Likewise, Steven Johnson, exploring the spaces and habits that cultivate creative innovation, emphasizes our entanglement in “liquid networks” that encourage us to “follow the links; let others build on [our] ideas; borrow, recycle, reinvent.”⁴ Creative production in online space, according to these theorists, is by its nature collaborative, decentered, open-ended, multiple, redundant. Remixing, re-tooling and re-making are an acknowledged and celebrated aspect of the creative process, which understands an individual’s contribution always as growing out of and further contributing to the broader networked creative ecological space.

Despite the shift represented by the dominance of digital online media, popular understanding of the book, and especially the novel, remains to a great extent firmly grounded in a sense of unity and finality that had largely been established by the end of the nineteenth century. Certainly, critical and technical work being done in the digital humanities has begun to develop the new modes of bibliographic analysis made possible by digital media. This transformation of theory and practice made possible by networked computers can perhaps be most clearly seen in ongoing digital archives projects like *The Blake Archives* and The Folger Shakespeare Library’s *LUNA Digital Image Collection*, which undertake to recreate the book as an historical document to its own (nearly) perpetual process of transformation. These projects, however, as the focus of the two already listed may seem to indicate, tend to seek out texts whose transformative period can be said largely to have closed: the idea being that a more or less “complete” reconstruction might be made possible by the potentials of digital media. Put another way, historical bibliographic studies tend to set their attention primarily to discovering *new* ways of understanding *old* texts, at a certain expense to offering insight into the role of the book as it

3 Davidson, 6.

4 Steven Johnson, *Where Good Ideas Come From: The Natural History of Innovation* (New York: Riverhead Books, 2010), 246.

continues to develop within the contemporary web-oriented media ecology. While hypertext theorists such as George Landow and Jay David Bolter illuminate the startling possible effects of a digital creative space on the processes of creating and reading narrative fiction, they tend in doing so to construct a vision of new media texts that bears little resemblance to our traditional notions of the novel as a unified entity.⁵

The lack of theoretical consideration for the contemporary novelistic book as it exists in relation to the new media ecology may spring in part from the slow pace at which the book publishing industry at large has moved to adopt the new forms of creative production, distribution, and reception suggested by the digital environment. Even as the music and film industries are in the throes of a radical transformation stemming from the democratizing influence of the Internet, operating protocol in the book publishing industry has in large part been a case of business as usual. This is owed in part to the deeply ingrained perception (in the minds of both producers and consumers) of a particular cultural capital associated with print publication by an established publisher, as well as the various well-established legal and bureaucratic apparatuses configured to reproduce and reinforce this perception. But it also has its roots in a deep-seated notion of the novel as a unified and unifying framework, the singly-authored product of a creative mind, bounded as much by its own implicit project as it is by its cardboard covers. Thus, even most of the familiar iterations of electronic books—the Kindle, the nook, the iPad reader—go far to preserve (or even accentuate) the sense of the book as a closed

5 See Jay David Bolter, *Writing Space: Computers, Hypertext, and the History of Writing* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1991). Also, George Landow, *Hypertext: The Convergence of Contemporary Critical Theory and Technology* (Baltimore: Johns Hopkins University Press, 1992).

system.⁶ In this essay, I want to look at the state of the novel in the digital environment. By attempting to construct a descriptive bibliographic history of the contemporary popular novel, I will examine the variety of relationships that exist between the novel's unified form as printed book and its fragmented online presence.

I will examine this question through a case study of Cory Doctorow's 2009 science fiction novel *Makers*. Doctorow's novel seems especially appropriate for such a study because of its disposition as a fictional narrational text designed (in some sense, at least) to be distributed in a variety of media. The book was first published in a series of blogs on the website of Tor.com, an online science-fiction journal associated with Tor Books, who also acts as Doctorow's US print publisher. To accompany the serialization, Tor.com commissioned a series of original illustrations, which was later turned into a flash application and narrative card game. Furthermore, the e-book release of the novel is published under a Creative Commons License which allows for—even anticipates—its free distribution, translation, transformation, and modification. Doctorow gives away the e-book on his website, where he has also set up a library and classroom donation program (a sort of peer-to-peer grant program for teachers and librarians who want to own the printed book and micro-philanthropists who want to buy it for them). Doctorow himself even maintains an occasional archive (in blog form) of the various shapes that the book has taken as it is remixed and remediated by readers and fans. *Makers*, in other words, is a contemporary popular fiction that was in essence *born digital*, and the meanings that it suggests for itself—as a novel and as a book—are intricately tied up in the logic of the web.

6 New media theorists such as Richard Lanham criticize the contemporary e-book's stricture, its univocal iteration, which they understand as running counter to the creative logic of the digital network. In many ways, contemporary ebook technologies are *more* constricting as a medium than the print-based instantiations they seek to emulate, since the codex book, despite its formal logic, offers readers the opportunity to flip between pages, to jump radically within or between sections of the text, and to flexibly annotate pages. Ebook readers offer no such opportunities for intratextual "browsing," nor do they allow for an "at a glance" assessment of the novel's contents. See Richard Lanham, *The Economics of Attention: Style and Substance in the Digital Age* (Chicago: University of Chicago Press, 2006), 130-131.

Makers is a novel of the near-future about a pair of inventors (hacker-engineer-artists), their financial backers, and the journalist who documents their tale. Lester and Perry make hacker art in a junkyard in suburban Miami, until they are enlisted in and help to propagate an economic bubble *cum* cultural revolution that radically decenters the American workforce through a turn to commons-based peer production. The narrative movement of the story grows out of the dynamic between human ingenuity and creativity and global digital interconnectedness. It is a novel about the work of art in the age of its collaborative digital (re)production. Thus, though the book is quite speculative about the future of technology—free software, miniature robots, and 3D printers abound—Doctorow examines through his narrative the very real world of creative production into which his novel must necessarily enter. The story of the novel’s several “publications,” in multiple digital and material forms, is one that mirrors the story of the novel itself.



In *The Economics of Attention*, Richard Lanham describes what he calls “attention structures,” social patterns developed for the purpose of focusing our attention through specific channels and toward specific objects, ideas, and events.⁷ Since what is scarce in an “information economy” is not the information, which is abundant and freely reproducible, but rather the attention that can be given to any individual piece of information, Lanham suggests a rhetoric of attention structures that might help to develop a better understanding of how they work and how they are deployed to generate social and cultural change. He uses the artists Andy Warhol and Christo as examples of successful “economists of attention” who create new attention structures, or mobilize existing structures, in order to shape social discourse. Christo’s 1976 *Running Fence*,

⁷ Richard Lanham, *The Economics of Attention: Style and Substance in the Digital Age* (Chicago: University of Chicago Press, 2006), 2-3.

Lanham says, “was composed of the human behavior that was required to create it, not only the building of the fence but also the hearings, lawsuits, rulings, reports, meetings, and pleadings that were necessitated by the project.”⁸ In a like manner, Andy Warhol, despite creating works of art that may seem traditional in their instantiation in ink, paper, paint, and canvas, is at the height of his artistic genius for Lanham in the ease with which he manipulates the bureaucracies and conventions of the art world. Indeed, it would not be inappropriate to say that Lanham sees the two artists working in an aesthetics not primarily of material form but one of social institutions.

The concept of attention structures offers a useful framework for considering the work of an artist like Doctorow as it stretches across media, enmeshing itself repeatedly in the very attention constructs that it works to create. Doctorow’s print novel takes as its theme the utopian potential of a turn to collaborative creation, a utopia that he sees being set in motion by particular subsets of the contemporary population who have more or less inhabited the notion of collaborative commons-based creation that the book takes as its futuristic subject-matter: Makers. Makers are defined by their self-proclaimed flagship *MAKE Magazine*⁹ as “a growing community of resourceful people who undertake amazing projects in their backyards, basements, and garages” in the interest of “bettering [them]selves, [their] environment, [their] educational system—[their] entire world.”¹⁰ The Makers movement seeks to incorporate such creative practitioners as robotics enthusiasts, open-source software programmers, hackers, DIY homemakers, and homesteaders interested in micro-scale green energy production and sustainable architectural design. This subculture becomes both the focus of Doctorow’s plot and his natural audience, and by releasing the novel under Creative Commons Licensing, Doctorow

8 Lanham, 57.

9 Edited by Mark Frauenfelder, who not incidentally is also the founder and co-editor (along with Doctorow) of BoingBoing.net, a blog dedicated to technology and web culture. See <http://boingboing.net/about> (accessed March 9, 2012).

10 "About Make," *Make: Technology on Your Time*, <http://makezine.com/about/> (accessed March 9, 2012).

submits the book itself as an object for further reconfiguration and re-use within the system of collaborative exchange that his book posits as the inevitable future of creative production. Even as it finally finds a more traditional unified existence in the form of a bound and printed novel, *Makers* as an open-platform e-book offers itself up as both a series of potential fragments (as the book is remixed and remediated) and as itself a single fragment in an ever-expanding ecology of free information. Like the works of Warhol and Christo by Lanham's reckoning, like the kinetic social art of Lester and Perry within the context of the novel itself, *Makers*, as a book constructed and reconstructed in online space, also acts as a single component in the author's broader contribution to the invention of the "cool *social institution*" that is commons-based creative endeavor.¹¹

In order to investigate the state of this book as it interacts with an attention structure that it simultaneously works to create, then, my methodology will combine an analysis of the various social, material, cultural, and technological actors at play in the novel's particular "economics of attention." Along the way, I will introduce elements of novelistic close-reading intended to elucidate the thematic content of the text itself as it relates to its production, distribution, and reception. Peripheral to this investigation is an account of my personal encounter with the novel, which I include in order to demonstrate the ways in which attention structures like those initiated by Doctorow can work to reorient personal and social creative space. Even from the brief description I have given thus far of the media ecology that surrounds the publication of the novel, it should be clear that the following attempt to reconstruct its cultural and literary

11 Cory Doctorow, "Cory Doctorow's *Makers*, Part 13 (of 81)," *Tor.com*, August 3, 2009, <http://www.tor.com/blogs/2009/08/cory-doctorows-lemgmakerslemg-part-13-of-81> (accessed April 8, 2012). Pursuant to my contention that the blog serialization of the novel should be considered its primary published form, all citations of the novel in this paper will be made in reference to this serialization. Tor.com published the novel in a series of eighty-one "parts," and in-text citations in this paper will be made to these parts. A linked index of these parts can be accessed at <http://www.tor.com/features/series/makers> (accessed April 8, 2012).

significance must also take the form of a further re-making of *Makers*, and that such an undertaking necessarily takes part in and works to reshape the ecological space that it seeks to investigate.

In the interest of suggesting the decentralization of print that I understand as a necessary outcome of publication practices that incorporate web-based technologies, I will resist the temptation to consider the book (that is, the mass-produced, commodified volume of printed paper) as the primary form of Doctorow's novel. Indeed, the bound version of *Makers* was at least the third instantiation of the work to be published, and the number of digital and peer-produced versions of the novel continues to grow. But I also want emphasize the book's incidental nature, which is also its importance: I first read it after noticing it face-out on a shelf in Barnes and Noble when I happened to be on a sci-fi kick. I used my iPhone to read the Amazon reviews, and I bought it alongside a sure thing (Gibson's *Neuromancer*) that I had come expressly to purchase. The fact that I read the book first, rather than beginning with one of its digital instantiations (or never reading it at all), is contingent on factors ranging from my status as a graduate student in English to a series of readings that Doctorow gave at public high schools. I hope my analysis of the book's primary digital existence will show that I might have come into this story from any number of directions.

When I *do* discuss the book, I will do so in the context of a print publication environment characterized by a growing market for digital alternatives. Concerns over digital intellectual property rights have created an (electronic) book industry dominated by platform-bound digital book licensing and digital rights encryption. As a journalist and activist, Doctorow is an outspoken critic and a perceptive analyst of the role of property systems in the online digital

space, a theme which is also central to the narrative action of the novel. Alongside its print publication by Tor Books, the author released *Makers* for free as an e-book under Creative Commons licensing terms, which allow readers to copy, distribute, and remix the novel. Such licensing practices, I argue, have deep implications for property relations as they relate to the novel's digital and material form, even as they re-envision the romantic notion of the author as the sole originator and owner of his creative productions.

I will proceed, then, by considering the novel as it exists in each of a number of (more or less) digital forms. First, I will stress the significance of two digital versions (appearing simultaneously) as the *primary* published instantiations of the novel. I will begin by considering the narrative effect created by the novel published in blog format by Tor.com. I draw parallels between this new web-based serialization and the tradition of serialization that has its roots in the publication practices of the eighteenth and nineteenth centuries in order to suggest and then examine the various ways that serialization in an online environment further complicates the unity of the novelistic form, focusing particularly on the role of the hyperlink and the feed (that is, the algorithmically-determined ordering structure that is characteristic of a great deal of web 2.0 technology) in creating new concepts of narrative order and readerly meaning-making.

By drawing attention to the way in which the logic of the Internet has already transformed the publication practices of producers of non-fiction texts, I will suggest a nascent pattern for contemporary books in general that tends toward the internalization of concepts such as fragmentation, open-endedness, and collaborative creation that I argue are implicit in the digital medium itself. In this context, I will consider the novel as depicted in the original series of illustrations created for the blog release by Idiots' Books, along with the Flash application and card game that grew out of these illustrations, all of which seem to internalize the shift toward a

digital logic of hypermediated textual interaction.¹² To further demonstrate this tendency as it manifests itself in *Makers*, I examine of a range of “post-consumer” versions of *Makers* made possible by Doctorow’s open licensing practices. All of these can in some ways be considered as “fan fiction.” However, few of them (thus far, at least) take the predictable form of a continuation or derivation of the story’s plot, characters, or setting. Rather than telling their own stories through the world of *Makers*, most of these fan fictions instead re-write *Makers* into their own world by transforming the novel (as a whole or in part) into a new digital or material form. Invariably, these remediations of the novel’s text seek to open up new patterns of possibility for meaning in the novel by imagining a new concept of the novel’s physical manifestation, which I take as evidence of a reader-oriented understanding of meaning-creation that is based in active creative response to medium-specific encounters that are as intimately bound up in materiality as traditional bibliophilia. The particular forms that these fictions take, and the various digital discourse communities out of which they grow, also act as a small-scale manifestation of the quasi-utopian vision that *Makers* itself offers for the future of creative practice. Thus, I will examine how the cover of the UK version of *Makers* (which looks like a set of cast plastic figurines still attached to their sprue) was converted into a CAD design and made available for free downloading and printing by rapid prototyping machine. I will consider the way in which a wiki version of the novel, the *UnMakers*, transforms the story by allowing non-linear navigation and fan-created extrapolation and interpolation. I will ponder the implications of a novel that can be written in light by a cyborg pinscher in a park at night. With each of these instantiations (all built by other authors using Doctorow’s text), I will attempt to locate the intersection of story

12 Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: The MIT Press, 1999). Bolter and Grusin explain hypermediation in terms of “a double logic of *remediation*,” which dictates that our interactions with media want “both to multiply [the] media and to erase all traces of mediation” (5). Hypermedia are those media that call attention to themselves *as* media. That is, the patterns of interaction that they engender are directed towards a manipulation of the medium at the expense of immersive transparency.

and medium, and to bring to light some of the complex ways that the new digital collaborative authorship transforms the meaning of the novel as a whole.

CHAPTER 1

E-MAKERS: THE WEB LOGIC OF BOOK PUBLICATION PRACTICES

It would be hard to overstate the implications that the introduction of desktop publishing and the variety of digital distribution platforms offered by the web must have for traditional ideas about publication. Anyone with a desktop computer and an inkjet printer has publishing potential at her fingertips, and the web expands the power of the individual's distributive network to rival that of any large publishing company. In Bourdieu's terms, the ubiquity of personal computing and the web opens up the field of cultural production to include nearly everyone living in a more or less developed part of the world.¹³ Media theorist Clay Shirky argues that the most remarkable change implied by social media is the opportunity it creates for traditional consumers of top-down media content to become producers of content themselves.¹⁴ Web 2.0 technology, Shirky suggests, allows the audiences of traditional broadcast media (which themselves tend to migrate to digitally native forms) to generate new content based on their consumption: to talk back to media outlets, but also to create conversations amongst themselves regarding the media content they consume, to reconfigure that content into more meaningful or relevant forms, and to build networks of mass discourse that lie outside of the traditional channels of distribution. On the

13 Pierre Bourdieu asserts that “every literary field is the site of a struggle over...the legitimate definition of the writer. There is no other criterion of membership of a field than the objective fact of producing effects within it. One of the difficulties of orthodox defence against heretical transformation of the field by a redefinition of the tacit or explicit terms of entry is the fact that polemics imply a form of recognition; adversaries whom one would prefer to destroy by ignoring them cannot be combated without consecrating them” (42). See Bourdieu, *The Field of Cultural Production* (New York: Columbia University Press, 1993).

14 Clay Shirky, “How Social Media Can Make History” (video), *TED: Ideas Worth Spreading*, June 2009, http://www.ted.com/talks/lang/en/clay_shirky_how_cellphones_twitter_facebook_can_make_history.html/ (accessed April 7, 2012).

web, everyone is already, in some respect, a published author, and while utopian visions of a radically leveled playing field significantly oversimplify a digital realm that is still rife with hierarchies of economic and social capital, it should be clear that the cultural logic of the web implies a significant opening-up of the space for transformative praxis.¹⁵ Such a shift might be expected to have a marked effect on the relative positions and position-taking of the already established players in the field, including authors, book sellers, and, most conspicuously perhaps, publishers, who until the introduction of Internet technologies held a relative monopoly on the avenues for the distribution of textual material.

Much of the power that book publishers have managed to accrue over the last two and a half centuries of print-based literary production derives from the specific entailments of a developing system of copyright and intellectual property legislation. While the importance of copyright law has been popularly incorporated into the Romantic notion of the author as sole originator of creative works, the history of copyright law makes clear that these statutes have evolved less to declare the sanctity of an author's original work than to safeguard the institutionalized practices (and the profits) of a centralized publication apparatus. Indeed, copyright in its earliest form in England operated as a mechanism by which the Crown could control the printing and distribution of materials that it felt were potentially threatening to royal authority. And as Mark Rose demonstrates, the common-law copyright battles leading up to the historic 1774 *Donaldson v. Becket* decision—which Rose credits with “having [first] established the statutory basis of copyright”—“played out in the form of a national contest between England

15 Michel de Certeau: "A practice of the order constructed by others redistributes its space; it creates at least a certain play in that order, a space for maneuvers of unequal forces and for utopian points of reference. That is where the opacity of a 'popular' culture could be said to manifest itself--a dark rock that resists all assimilation. See de Certeau, *The Practice of Everyday Life*, translated by Steven Rendall (Berkeley: University of California Press, 1984).

and Scotland” by which the great London booksellers “took up their campaign...to drive the Scottish reprint business out of England.”¹⁶

In the twentieth century, this battle has been played out in the nearly perpetual legal arguments surrounding technologies for making the reproduction of cultural objects cheaper and easier, a pattern of technological development and litigation extending from the piano roll, through the cassette tape and the Sony Betamax controversy, and reaching its zenith with the introduction of networked digital reproduction made possible by the Internet.¹⁷ Certainly, digital media's potential for reorienting the world of top-down publication strategies can be clearly seen in the ongoing struggles of the music and film industry against the (real or perceived) threat posed by online piracy. As the entire realm of cultural production steadily migrates to digitally-native formats—formats which, increasingly, need never be materially instantiated at all—traditional notions of copyright, designed to limit the unauthorized reproduction of particular physical goods, lose their efficacy. That the material production of cultural goods was once a labor- and capital-intensive process—printing presses, distribution networks, film and audio equipment were all, until relatively recently, quite expensive—meant that for most of its history, copyright legislation was relatively easily enforceable. It also meant, as Lawrence Lessig points out, that such legislation regulated only “a tiny portion of human life,” and one that rarely if ever affected the individual consumer.¹⁸ Indeed, Lessig suggests, while the legal norms surrounding copyrighted content evolved significantly over the first 200 years of their history, they all contained the implicit notion “that a consumer could do with the

16 Mark Rose, “Literary Property Determined,” In *The Book History Reader, 2nd Edition*, eds. David Finkelstein and Alistair McCleary (London: Routledge, 2006), 314, 308.

17 For a brief and candid review of the history of technologically-instigated copyright litigation, see Cory Doctorow, “Microsoft Research DRM Talk,” In *Content* (San Francisco: Tachyon Publications, 2006), PDF ebook, http://craphound.com/content/Cory_Doctorow_-_Content.pdf (accessed April 7, 2012).

18 Lawrence Lessig, *Code, Version 2.0* (New York: Basic Books, 2006), 193. Also available under Creative Commons AT-SA license at <http://www.codev2.cc/> (accessed April 7, 2012).

copyrighted content that he legally owned anything that he wanted, without ever triggering the law of copyright.”¹⁹ The nature of digital media, for which the copying of content is not only *possible* but *inherent to* the logic of the technology itself, along with the ease with which content can be reproduced and distributed by individual consumers, threatens to expand the role of copyright legislation to “regulating absolutely every bit of life on a computer.”²⁰

In the contemporary field of e-book publication, these struggles have given rise to both a broad expansion of the perceived scope of copyright legislation, and to a series of technological fixes that use digital encryption processes in an attempt to prevent the unauthorized copying and distribution of copyrighted works. Doctorow understands the introduction of digital rights management, so-called “trusted systems,” and the turn to licensing of digital content as posing a direct threat to the traditions of private ownership that have underwritten Western society for at least the last two and a half centuries. He discusses the issue in terms of the Constitutionally-protected “doctrine of first sale,” which provides that a copyright owner’s right to control ends with the initial sale of the copyrighted work. Doctorow explains,

If I buy your book, your painting, or your DVD, it belongs to me. It's my property. Not my "intellectual property" — a whacky kind of pseudo-property that's swiss-cheesed with exceptions, easements and limitations — but real, no-fooling, actual tangible property — the kind of thing that courts have been managing through property law for centuries.²¹

Of course, even in traditional print media, the doctrine of first sale is a point of contention for producers who are interested in preserving their right to the distribution of intellectual products. In *The Late Age of Print*, Ted Striplas characterizes the move toward content licensing practices and digital rights management as the culminating solution to an ongoing problem for producers

19 Lessig, 172.

20 Lessig, 193.

21 Doctorow, “Microsoft Research DRM Talk.”

of print-based media. “In the case of the pass-along book trade, library loans, and professional photocopying,” Striphas explains, “printed books continue to produce surplus value following their initial sale.”²² By “compel[ling] users to cede to e-book publishers, software developers, and other interested parties much of their ability to circulate, dispose of, and reproduce whatever titles they’ve purchased,” trusted systems attempt to solve the problem of “royalty-free reads” by circumventing the systems of personal property which caused the problem in the first place.²³ In doing so, Striphas argues, the move to content licensing represents “a significant shift to a foundational logic of consumer capitalism.”²⁴

In *Code, Version 2.0*, Lawrence Lessig describes the issue in terms of constitutional law, suggesting that policy decisions surrounding the Internet expose a “latent ambiguity” in the language of the Constitution, necessitating a careful reconsideration of our values regarding privacy, liberty, and property relations.²⁵ Though Lessig draws a carefully disinterested line through the many “choices” that web logic presents to contemporary societies, coming down on a particular side of the debate only broadly and self-consciously, his decision to publish his own book under a Creative Commons license—indeed, his founding of the organization itself—demonstrates his vision of a rather particular future for intellectual property. It is a position that preserves traditional copyright statutes for the media according to which they were written—books, films and other “hard” media—but it hardens a conviction in the belief that an individual's purchased property should be her own, regardless of medium, and that a subversion of this rule is in the interest of the powerful at the expense of the public good. Furthermore, Creative Commons licensing, by committing to the standards of openness set forth by Richard

22 Ted Striphas, *The Late Age of Print* (New York: Columbia University Press, 2009), 38.

23 Striphas, 42.

24 Striphas, 16.

25 Lessig, 25.

Stallman's Free Software Foundation, acknowledges the value derived from shared platforms to human creativity and ingenuity. Open-source platforms and protocols implicitly argue in favor of a transparent code, that non-rival goods are more beneficial when shared. Creative Commons licensing translates this position into the realm of cultural goods in particular, and thereby reaffirms the Constitutional conviction that copyrights, so far as they concern fiscal remuneration, do so only at the deference to “the Progress of Science and the Useful Arts.”²⁶

By deciding to publish his *novels* under Creative Commons—his *Down and Out In the Magic Kingdom* (2003) was the first novel to be so published—Doctorow endorses a similar philosophy. Though a freely-distributable digital book may make no direct contribution to the economic well-being of the author who writes it, nor to the publishing company who produces and distributes it, the alternative—what Striplhas, following Lefebvre, has called “*controlled consumption*”—is not only unthinkable in terms of the values of cultural production engendered by the web, it is also, in technical terms, nearly impossible.²⁷ Though Lessig insists that the “power to regulate access to and use of copyrighted material is about to be perfected” with the introduction of new and more powerful digital rights management software systems, he also admits that the systems themselves are flawed in their conception of the basic functions of computers.²⁸ “Digital technology,” he states, “at its core, makes copies. Copies are to digital life as breathing is to our physical life.”²⁹

Doctorow, extending Lessig’s critique of the logic of trusted systems, insists that “zeroes and ones aren't ever going to get harder to copy.”³⁰ Digital rights management systems are

26 U.S. Const. art. I, sec. 8, cl. 8.

27 Striplhas, 45.

28 Lessig, 175.

29 Lessig, 192.

30 Cory Doctorow, “Download For Free,” *Craphound*, <http://craphound.com/makers/download/> (accessed April 7, 2012).

flawed in their conception because the combination of hardware and software encryption protocols that makes such technologies possible necessarily puts the keys to circumventing the system in the hands of those who would aim to do so. Doctorow points to a white paper published by a group of Microsoft researchers, the so-called “Darknet Paper,” as evidence from within the software industry of the relative futility of attempts to limit access to freely-reproducible versions of copy-protected intellectual property.³¹ Operating under the assumption that “[any] widely distributed [digital] object will be available to a fraction of users in a form that permits copying,” and that broad access to these copy-enabled forms is made easier by the infrastructure of the web, the authors of the Darknet Paper conclude that digital rights management schemes “may act as a *disincentive* to legal commerce,” since a digital format which restricts use is less attractive to consumers than one which allows users more flexibility.³² Thus, by reserving the right in his publication contracts to distribute the digital versions of his works for free, and by distributing these works under a Creative Commons license which explicitly allows for peer-to-peer sharing of the files, Doctorow attempts to incorporate a more pragmatic view of the potentials of online media content distribution than that held by the publishing industry at large, dedicated as it is to the “perfection” of digital control systems. He candidly summarizes this perspective in the advertisement for the release of the *Makers* e-book:

There's a dangerous group of anti-copyright activists out there who pose a clear and present danger to the future of authors and publishing. They have no respect for property or laws. What's more, they're powerful and organized, and have the ears of lawmakers and the press.

I'm speaking, of course, of the legal departments at ebook publishers.

31 Doctorow, “Microsoft Research DRM Talk.”

32 Peter Biddle, Paul England, Marcus Peinado, & Bryan Willman, “The Darknet and The Future of Content Distribution,” *Microsoft Corporation: ACM Workshop on Digital Rights Management*, November 18, 2002, <http://msl1.mit.edu/ESD10/docs/darknet5.pdf> (accessed April 7, 2012).

These people don't believe in copyright law. Copyright law says that when you buy a book, you own it. You can give it away, you can lend it, you can pass it on to your descendants or donate it to the local homeless shelter. Owning books has been around for longer than publishing books has. Copyright law has *always* recognized your right to own your books. When copyright laws are made -- by elected officials, acting for the public good -- they always safeguard this right.

But ebook publishers don't respect copyright law, and they don't believe in your right to own property. Instead, they say that when you "buy" an ebook, you're really only *licensing* that book, and that copyright law is superseded by the thousands of farcical, abusive words in the license agreement you click through on the way to sealing the deal. (Of course, the button on their website says, "Buy this book" and they talk about "Ebook sales" at conferences -- no one says, "License this book for your Kindle" or "Total licenses of ebooks are up from 0.00001% of all publishing to 0.0001% of all publishing, a 100-fold increase!")

I say to hell with them. You bought it, you own it. I believe in copyright law's guarantee of ownership in your books.³³



The rhetoric of control that is implied by trusted systems suggests a further centralization of productive power in the hands of a few well-financed and politically powerful entities at the expense of a broader population of amateur and independent cultural producers—a population which, absent such systems, the low entry cost and expanded distribution network of the web promise significantly to empower. Furthermore, as Lessig points out, while copyright law was “designed in part to protect authors, the control it was designed to create was never to be perfect,” and constitutional limitations “such as ‘fair use,’ limited terms, and the first sale doctrine” support an understanding of copyright law as being “structured to help build an intellectual and cultural commons.”³⁴ The suggestion that ideas are more powerful when shared

33 Cory Doctorow, “Download For Free.”

34 Lessig, 179, 185.

is not new. Rather, the free reproducibility of ideas, and the concept that their broad propagation is in general a social good, extends back to the basic Enlightenment convictions upon which our nation was built. Lessig cites Thomas Jefferson:

If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess [only] as long as he keeps it to himself... That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density at any point...³⁵

Jefferson's conviction, clearly carried over into the Constitution as it frames copyright protections given to cultural producers as beholden to "the Progress of Science and the Useful Arts," implies a condemnation of programs for controlling ideas that would inhibit their contribution to broader social and cultural change. Nonetheless, current patterns of intellectual property enforcement, which attempt through both litigation and technology to control every aspect of a cultural product's use, seek to subvert this collective aspect of traditional copyright in the interest of individual and corporate financial gain.

By reserving the right to publish his own digital books, and by releasing these books, through Creative Commons licensing, into the powerful "intellectual and cultural commons" represented by contemporary web ecology, Doctorow's e-book publication practices go beyond the subversion of the dominant-but-flawed distribution model of the publication powers-that-be to suggest a concept of the creative work itself as an essentially collective endeavor, beholden to the cultural productions of the past and responsive to those yet to come. Yochai Benkler, examining the implications of broadly-available networked infrastructure on traditional modes of

35 quoted in Lessig, 182.

production and innovation, offers the notion of “commons-based peer production” as an alternative to the well-developed organizational structures represented by the market and the firm.³⁶ While Benkler acknowledges a long and productive history for commons-based approaches to creative production—occurring most notably within academic institutions, for which the free sharing of information is understood to be essential to the continued progress of social, cultural, scientific, and technological innovation—he understands the availability of robust communication infrastructure made possible by the Internet as a catalyst to the development of more broadly-adopted notions of intellectual commons space, and to the rapid increase in the power of these nonhierarchical organizations to effect social and cultural change. Pointing to a “declining price of computation” that has “inverted the capital structure of information and cultural production” predominant in the twentieth century and before, Benkler works from assumptions similar to those of Richard Lanham with regards to the radical non-scarcity of free information sources in an information economy to suggest that where “physical capital costs for fixation and communication are low and widely distributed, and where existing information is itself a public good, the primary remaining scarce resource is human creativity,” which he insists is best allocated by the participants themselves, who have the most accurate information regarding their particular skill sets and creative capacities.³⁷

Benkler points to collective projects such as Wikipedia, open-source software initiatives like the GNU/Linux project, and Google PageRank’s utilization of distributed linking practices to organize search results as evidence of the work already being accomplished through a turn to commons-based peer production. The concept is equally useful, however, for explaining the various amateur and independent creative projects engendered by the web. Clay Shirky

36 Yochai Benkler, “Coase’s Penguin, or Linux and *The Nature of The Firm*,” *The Yale Law Journal* 12, no. 3 (December, 2002), 375.

37 Benkler, 377.

describes such practices, which range from the useless and playful to the civically engaged and engaging, as growing out of a developing notion of “cognitive surplus,” which activates the combined power of human ingenuity and generosity to effect social and cultural change on the web.³⁸ By publishing his fictional work under Creative Commons license, Doctorow offers it up as potential source material for diverse actors in an ongoing and expanding distributed process of cultural creation.

Doctorow’s interest in further strengthening the potentials for transformative praxis offered by the logic of the web, however, extends beyond the particular disposition of his novel in digital space to include the content and themes of the novel itself. Indeed, much of the narrative momentum in *Makers* grows out of a series of economic and technological developments that bear a striking resemblance to Benkler’s concept of commons-based peer production. When, in the opening chapter of the novel, Landon Kettlewell announces the restructuring of the newly merged Kodak and Duracell corporations, he speaks of the death of the firm and a vision for the future of technological innovation and production practices in terms quite similar to Benkler:

“Capitalism is eating itself. The market works, and when it works, it commodifies or obsolesces everything. That’s not to say that there’s no money out there to be had, but the money won’t come from a single, monolithic product line. The days of companies with names like ‘General Electric’ and ‘General Mills’ and ‘General Motors’ are over. The money on the table is like krill: a billion little entrepreneurial opportunities that can be discovered and exploited by smart, creative people.

“We will brute-force the problem-space of capitalism in the twenty first century. Our business plan is simple: we will hire the smartest people we can

38 Clay Shirkey, “How Cognitive Surplus Will Change the World,” (video), *TED: Ideas Worth Spreading*, June 2010, http://www.ted.com/talks/lang/en/clay_shirky_how_cognitive_surplus_will_change_the_world.html (accessed April 7, 2012).

find and put them in small teams. They will go into the field with funding and communications infrastructure—all that stuff we have left over from the era of batteries and film—behind them, capitalized to find a place to live and work, and a job to do. A business to start. Our company isn't a project that we pull together on, it's a *network* of like-minded, cooperating autonomous teams, all of which are empowered to do whatever they want, provided that it returns something to our coffers." (Part 1)

Kettlewell's plan, which when broadly adopted by other corporations gains the moniker "The New Work," aims to build a new model of capitalism on the concept of individual innovative potential made powerful by the robust infrastructure of a highly-networked society. His conviction that the "small...autonomous teams" can "do whatever they want" echoes Benkler's assertion that individual creativity is nearly impossible to allocate by way of the traditional top-down management systems that flourished in the industrial era.

Furthermore, The New Work also offers an evolved understanding of what it means to be "innovative," as evidenced by the newly-dubbed Kodacell's first product offering, a sort of laser-pointer which transcribes spoken words into scrolling, wall-projected text. Kettlewell explains:

"This is a new artifact designed and executed by five previously out-of-work engineers in Athens, Georgia. They've mated a tiny Linux box with some speaker-independent continuous speech recognition software, a free software translation engine that can translate between any of twelve languages, and an extremely high-resolution LCD that blocks out words in the path of the laser-pointer.

"This thing wasn't invented. All the parts necessary to make this go were just lying around. It was *assembled*. A gal in a garage, her brother the marketing guy, her husband overseeing manufacturing in Belgrade." (Part 1)

Thus, the ideal form of creative production suggested by the novel looks much less like pure invention—a notion tied up intricately with the Romantic notions of authorship long associated with the novel, and frequently deployed in arguments for strengthening control of intellectual property systems—and more like the sort of collaborative remixing and reconfiguration that is

all-too-familiar in discussions of cultural production on the web. Kettlewell's sales pitch even includes mention of the free software initiative, Linux, which Benkler touts as evidence for the potentials of commons-based peer production.

The most marked example of this reimagining of collaborative creative endeavor in the novel, and the one most closely mirrored by the form of the novel itself, is *The Ride*, a continuously evolving theme park ride begun by Lester and Perry in an abandoned Walmart midway through the novel. After the collapse of the New Work bubble, *The Ride* in its original configuration was meant to act as a memorial, a “hyper museum,” to the widespread creative spirit that the economic revolution had engendered (Part 13). Rather than offering the seamless consumer experience of most traditional theme parks—and familiar in most forms of pre-web media, including the book, where the flow of communication is ostensibly one-way, author to reader—*The Ride* is built entirely from user-generated content. Riders are invited to bring their own “best memories” from The New Work era, and to add them to the total ride as they see fit. In addition, a “plus-one/minus-one” voting apparatus embedded in the ride vehicle allows users to interact in real time with the content of the entertainment experience, their individual votes being aggregated to determine reconfigurations of *The Ride*'s multifarious content that “takes place on a minute-by-minute basis, driven by” a collection of miniature robots whose own existence is owed to the creative ingenuity of The New Work (Part 13).³⁹

When Lester and Perry decide to bring *The Ride* online, syncing with similar rides created by fans in other locations through a set of open-protocols for 3D-printer replication and robotic reconfiguration, the distributive potentials for this new networked interactive entertainment, this “gigantic physical wiki,” are multiplied with each new franchise that opens (Part 14). With hundreds, and eventually thousands, of individuals contributing to the ride, its

³⁹ Capitalization has been regularized.

status as a creative production becomes ever more unstable even as it encompasses a broader and broader range of individual viewpoints. Furthermore, the outcome of this collective endeavor takes on a narrative quality, as individuals, working through direct contribution and Slashdot-style voting, unconsciously create a collective vision of the history of The New Work written for and by the people who had helped to create it. The Ride, born of the collective endeavor of individuals empowered to engage directly with the products of their labor, offers a startling potentiality for Marx's thesis in a world that has fully internalized the logic of the web. At the same time, The Ride reinforces Doctorow's conviction, as evidenced by his publication practices, that a contribution to the cultural ecology of a society is important precisely insofar as it enables other cultural producers to make meaning of their world through their active and creative interaction with it.

CHAPTER 2

DE-MAKERS: THE WEB LOGIC OF THE SERIALIZED NOVEL

In an announcement of July 9, 2009 on Tor.com, ebook designer Pablo Defendini describes the decision to serialize Cory Doctorow's new novel, *Makers*, ahead of its scheduled November print publication, in the form of a series of chapter-length blog posts. Doctorow's conviction that the digital text be available for free makes Tor.com's decision to publish it online *first*—and thus possibly reap some advertising revenue from the transaction—easy to understand. But Defendini also characterizes the project to as being part of ongoing “experiments in publication” at Tor.com that seek to “explore alternatives to traditional publishing” which “take advantage of the [dynamic nature of the] web in order to try out new things.”⁴⁰ The publication format that Defendini and the Tor.com creative team came up with involves slicing up the novel into eighty-one “short-ish chunks,” published on the Tor.com website each Monday, Wednesday and Friday, accompanied by an equal number of original color illustrations.⁴¹

The notion that novelistic serialization itself might be something “new” or “experimental” is anachronistic at best. Indeed, the practice has its roots in the publication ecology of the eighteenth and nineteenth centuries, when it was a normal and accepted part of the process of literary production. Defendini himself acknowledges as much when he characterizes the *Makers* publication as a “new/old idea” (“remember,” he implores us, “work [from] authors

40 Pablo Defendini, “Announcing Cory Doctorow’s *Makers* on Tor.com,” *Tor.com*, July 6, 2009, <http://www.tor.com/blogs/2009/07/cory-doctorows-lemgmakerslemg-on-torcom/> (accessed April 5, 2012).

41 Defendini.

like Dickens and Verne first saw print as serializations in periodicals, too”).⁴² The intervening century between the historical moment that saw serialized publication as common practice and the one into which Tor.com’s publication of *Makers* seeks entrance, however, has been accompanied by a radical reification of the singly-authored book as the primary instantiation of the novelistic form. Furthermore, the concepts of authorial and editorial control that accompany both book-based novelistic form and nineteenth century serialization practices are radically transformed as they enter the digital space of online media. Tor.com’s “return” to serialized publication in the digital age, therefore, suggests the need to revisit the implications of serialization for the novel in an attempt to rediscover these effects as they are manifested in serialized publication on the web.

In his essay, “When is a Book Not a Book?”, Robert L. Patten suggests that nineteenth-century literary serialization also created tension for the novel’s status as a unified whole. Not only were serialized novels by their definition *not unified* (because the book was quite literally broken up into numerous smaller parts to be published individually over an extended period of time), but the editors of the literary journals also saw their own publication as representing a unified whole, and their unifying concepts were often stated quite explicitly in the various “Statements” and “Advertisements” with which early editions of the journal opened.⁴³ As Patten describes it, each novel selected for serialization in a journal was chosen at least in part because it “fit in” with the broader editorial vision of the journal as a whole (in a single edition, as well as in the ongoing journal as a unifying concept.)

Furthermore, it was not uncommon for authors of fiction during this time to be producing the latest section of a novel even as the previous section was being published in serial form. In

42 Defendini.

43 Robert L. Patten, “When Is A Book Not A Book?”, in *The Book History Reader*, 2nd Edition, eds. David Finkelstein and Alistair McCleery (New York: Routledge, 2006), 354-368.

some instances, such as that of Dickens' *Pickwick Papers* and Elizabeth Gaskell's *Cranford*, the serial publication was begun incidentally, and only later was the unifying novelistic framework applied to what were initially a series of tenuously connected vignettes.⁴⁴ In such cases, the novel as a unified form (that is, as a book) existed only *in theory* or as a *potentiality*, and the primary form of the novel was that of the serialization. Indeed, even for books which were completed in manuscript form before their serial publication began, the primary published instantiation of the novel in a weekly or monthly journal meant that, for all intents and purposes, the novel as a unified narrative form remained in effect a *virtual* form, while the *material* form of the story was from the start intertwined with the editorial vision of whatever journal happened to be publishing it, along with the content of the various other materials collected in the journal that lent themselves to that vision.

Such a situation complicates the idea of novelistic authorship *and* readership that we have inherited from a hundred years of thinking about novels as books. That is to say, for readers in the early twenty first century, broadly construed, a novel takes its cultural meaning and its form both from its instantiation as a printed bound volume of paper and from the extended narrative unity that such an instantiation implies. A printed novel has a beginning and an ending, an inside and an outside. It has a single author and an authorial voice, and despite the distractions of life that may interrupt our reading of the latest novel, we understand the book to be bound and bounded by its covers.⁴⁵ It exists, to a greater or lesser extent, as an entity separate from the

44 George V. Griffith, "What Kind of a Book is 'Cranford'?" *Ariel* 14, no. 2 (1983), 53-65.

45 I understand that by attempting to describe the practices of "readers," as they variously engage with the novel, I may be treading on the dangerous ground of supposition and stereotype. However, suffice it to say that what is of concern in this chapter's discussion is not necessarily the *actual* practices of readers, as might be determined through sociological studies, but rather the cultural logic of readership that is *implied by* the ideology of the novel's form as mass-produced, commodified codex volume. Indeed, whatever individual readerly practices might be, it seems safe enough to assume that they are influenced at least in part by this underlying cultural logic, which understands the novel as a unified, stand-alone entity which is "meant to be read" in a more or less linear fashion.

broader world of literary and cultural production. The work of Patten, Griffith and others suggests that in the world of literary production of the nineteenth century, this simply was not so. What a reader read, while reading a serialized novel, was in a literal sense the journal in which it was published; the intertextuality of the novel's discourse was suggested by its material form.

In a certain sense, then, the new web serialization of novels such as *Makers* represents a return to an earlier idea of novelistic form that sees the novel as more closely integrated into a world of textual production which includes other genres, from poetry to journalism, as well as illustrations, advertisements, and the like. Even a glance at the webpage for the first section of the novel (Figure 1) makes clear that this chapter, in addition to being a single part of a larger unified narrative work (still, at this point a virtual form existing only in the reader's mind and on the hard drives of Doctorow and his editors), is also a part of the larger editorial discourse of the Tor.com website. The reader need not dig too deep to understand that, whatever turns Doctorow's novel may take, it will both help to define and be defined by Tor.com's dedication to "Science Fiction. Fantasy. The Universe. And Related Subjects." And should she finish this first section and feel unsatisfied, hungry for more before the next section is published, she is invited to browse other "Stories & Comics," explore a related "Gallery," or join a "Community" and post to a "Forum." A glance at the list of "Latest Posts," which contains an article about the hit TV series *Buffy the Vampire Slayer* and one analyzing Suzanne Collins' recent YA dystopian novel *The Hunger Games*, assures her that the other material on the site will also fulfill the promise of Tor.com's unifying framework.



MON
JUL 6 2009
12:13PM

MAKERS

Cory Doctorow's *Makers*, Part 1 (of 81)

CORY DOCTOROW

- reddit this!
- Submit
- Add to goodreads
- Share
- retweet
- +1
- email

BOOKMARK

49
comments



Illustration by Idiots' Books

DEDICATION:

For "the risk-takers, the doers, the makers of things."

PART I

Suzanne Church almost never had to bother with the blue blazer these days. Back at the height of the dot-boom, she'd put on her business journalist drag—blazer, blue sailcloth shirt, khaki trousers, loafers—just about every day, putting in her obligatory appearances

are you getting the tor.com newsletter?

follow tor.com

LOOKING FOR TOR BOOKS?
go to tor-forge.com

LATEST POSTS

Alyx Dellamonica Buffy the Vampire Slayer: Big Bad, Version 1.0 29 minutes ago

Alex Brown The Walking Dead S2, E8: "Nebraska" 49 minutes ago

Karl Schroeder The Better Angels of ... Science Fiction? 1 hour ago

Amelia Kahaney More Katniss, Less Bella: The Hunger Games as a Game-Changer 2 hours ago

Stubby the Rocket First Footage From Abraham Lincoln: Vampire Hunter is Ax-Whippingly Awesome 2 hours ago

> show all

OF INTEREST

Harper Collins Canada to distribute ChiZine publications. —RB

Beetlejuice 2 is a "priority" for Michael Keaton. —RB

Trailer for Shatner's One-Man show on Broadway. —RB

io9 talks to the producer of the new Space:2099 —RB

Quinto says the actors are collaborating with Orci and Kurtzman. —RB

Andrew Garfield talks candidly about The Amazing Spider-Man —RB

New Entertainment Weekly apparently has some Jar Jar Binks coverage. —RB

LATEST COMMENTS

RobMRobM on Rothfuss Reread: The Wise Man's Fear, Part 18: Die Or Go Mad 1 second ago

Walker on More Katniss, Less Bella: The Hunger Games as a Game-Changer 4 minutes ago

a1ay on The Better Angels of ... Science Fiction? 6 minutes ago

Shedrick on The Better Angels of ... Science Fiction? 10 minutes ago

ZetaStriker on The Walking Dead S2, E8: "Nebraska" 11 minutes ago

SkylarkThibedeau on A Read of Ice and Fire: A Clash of

Hunger Games cupcakes! —JG

Apple Computer Cyborg! —RB

Trailer for Seeking a Friend at the End of the World. —RB

Look very closely at this picture of Obama. —RB

John Hodgeman demaned someone dress up as Dr. Zaius and read Mark Twain. And then it happened. —RB

Podcast Geek's Guide to the Galaxy now being

Figure 1: Screen Capture of "Cory Doctorow's *Makers*, Part 1 (of 81)," at Tor.com

In some sense, the various extra-textual elements of the Tor.com webpage might be understood in terms of Gérard Genette's concept of "paratexts," which he describes as "productions" that "surround...and extend" the text, enabling it "to be offered as [a book] to its

readers and, more generally, to the public.”⁴⁶ In Genette’s terms, the various images, texts, and links that surround the *Makers* text offer the text as a particular type of reading experience for a particular type of reader. As a framework for discussing formal unity, however, Genette’s “threshold” elements inevitably fall victim to the problematic logic of the frame as demonstrated by Derrida’s deconstruction of Kant’s Third Critique.⁴⁷ Even in a singly-authored book, this logic has the potential to dissolve the text itself into a regressive series of paratexts—is the preface to a text a part of the text, or is it paratextual? What of an introduction or a prologue? Print-based journalistic serialization complicates the framework further because it suggests the extent to which the various other publications within a single journal issue should be taken as potential paratext to both the single serialized chapter of a book, as well as the book as a virtual whole. Furthermore, a novel that is serialized over several weeks or months suggests the potential that an early chapter of the novel as text might serve as paratext to later chapters. On the web, this same problem is amplified to the *n*th degree, as the logic of hypertextual linking seems to suggest the entirety of the web as potential paratext to any given textual instantiation.

If we were to stop here, web serialization would seem to be involved in the same dialectic that Patten describes between the unified form of the novel and that of the journal, unified in its own right but along lines that are very different in that they necessarily include alternative unifying frameworks, as well as notions of multiple authorship and a diversity of textual form and genre. Contemporary web publication, however, underwritten as it is by the concepts of

46 Gérard Genette, *Paratexts: Thresholds of Interpretation*, trans. Jane E. Lewin (Cambridge: Cambridge University Press, 1997), 1.

47 Genette, 2.

hypertext and feed,⁴⁸ invariably complicates such a view, as these two aspects of web-based cultural production suggest the radical instability of any unifying concept beyond that introduced by readers themselves.



Hypertextual linking is the most basic method of organizing various materials on the web. In the context of a website like Tor.com, it is the dominant mode (along with “scrolling”) of readerly navigation, and takes on the basic function that in print-based media is assigned to “turning the page.” Of course, making such an analogy to print begins to expose the kinds of complications that hypertext introduces into any attempt at discussing unity (whether authorial or editorial); the multiplicity of links on the *Makers* webpage above suggests a certain loss of control on the part of the producers with regard to order, control that is to a great extent preserved in print by binding and pagination. Indeed, Bolter finds the loss of authorial determinations of order to be one of the most difficult aspects of hypertext to theorize, suggesting that “texts written in and for the electronic medium...do not have a single linear order,” a shift which he suggests “will frustrate those used to working with and writing for the medium of print.”⁴⁹

While true “hypertext narratives” like those discussed by Bolter and Landow make the variability in navigational order integral to the narrative form, so that the meaning of the text itself grows out of its nonlinearity, such an organizational principle is problematic for the more traditional novelistic form represented by science fiction romances like *Makers*, which tends to

48 I take hypertext and feed as “primitives” of digital text-based culture, in John Unsworth’s sense of the word as a “self-understood” function which “form[s] the basis” for all “projects, arguments, statements, [and] interpretations” that occur within a given communicative context. By employing the term, I hope to imply that hypertext and feed are not simply *tools* at the disposal of those working in online media, but rather that they *define* the kinds of work that can be done in such a context. See Unsworth, “Scholarly Primitives: What Methods Do Scholarly Researchers Have in Common, and How Might Our Tools Reflect This?”, May 13, 2000, <http://people.lis.illinois.edu/~unsworth/Kings.5-00/primitives.html> (accessed April 5, 2012).

49 Bolter, *Writing Space*, 119.

be determined by a linear narrative arch, as well as for the ostensible editorial unity that Tor.com hopes to inherit from its print-based forebears.⁵⁰ A reader who has finished the first section of *Makers* has any number of options for navigating to “what comes next.” So long as these links remain internal to Tor.com, moving the reader to other pages of the website itself (as in the block of links across the top of the page, and those contained in the “Recent Posts” sidebar), editorial unity can be maintained to an extent. Links to pages *elsewhere* on the web, however, must presuppose the relative dissolution of such unity. The links contained in the “Of Interest” section of the above page, for example, despite being included in the interest of furthering the editorial unity, also offer a window toward the end of that control: by clicking such a link, the reader leaves Tor.com and enters a different editorial space altogether, and, we must assume, at the risk of never returning. Thus, hypertext not only complicates narrative and editorial ordering, but it also introduces into the editorial project the potential for a multiplication of voices, viewpoints, genres and themes, introducing variation and discontinuity into the editorial unity of the journal in a manner analogous to that introduced by the journal itself on the narrative unity of the serialized novel.

The tradition of unification implied by print publication is further complicated by what I have termed “the feed.” By “feed,” I mean to suggest a range of automatically-assigned functions of contemporary web applications—algorithms—that are primarily concerned with determining

⁵⁰ *Makers* itself, as a novel, is rather traditional in its form, and contains no explicit hypertextuality (though it does, as I shall explain later, take for granted a certain aspect of the cultural logic of contemporary readership which can be attributed to the prevalence of hypertext). An interesting incidental introduction of internal hypertext *does* occur, however, when the novel is serialized online: The first chapter of *Makers* contains an email correspondence between the journalist Suzanne Church and Kodacell’s CEO, Landon Kettlewell. In the book, this correspondence is equivalent to the kinds of epistolary interpolations that are frequent in novels from their beginning. Doctorow includes the emails in their entirety, including the various (fictional) email address of the authoring characters, as well as the email’s telltale “Subject” line as contextualizing signifiers for the interpolated text. When the text is formatted for the web, however, the web-authoring tool used by Tor.com identifies the email addresses as email addresses, and hyperlinks them accordingly, thus suggesting that the reader, already a step closer to the action for reading it online, might enter into an email conversation of her own with the novel’s fictional world.

the order of relevance. In their most basic form, feeds operate on the principle of “most-recent-first,” as can be seen in the primary organizational structures of blogs, social media sites, and online news media. Indeed, this basic principle of the feed can be seen as growing out of that of the newspaper, both in its unified form (as each day’s newspaper replaces that of the day before, and, discarded, is added to the top of the pile for recycling) and at the level of the individual newspaper article (which gives the latest information first, and only thereafter explains its related context). The feed acts to reintroduce an aspect of linearity and unification that is elemental to the novel and the journal alike. The twenty-odd articles which appear at any given time on the Tor.com homepage constitute something like a “latest edition,” and suggest for the reader a sense of linear continuity reminiscent of print-based media, counteracting (at least in principle and in part) the chaotic potentiality of hypertextual navigation. In the feed, individual elements of web content are reconstituted as Barthesian “functions,” whose order and importance are determined by the dialectic between reader and text. (Though the text, in this case, has already expanded to include not only the various visual paratextual elements of the webpage but also the systems of code by which they are underwritten.)

Indeed, it is all too tempting to read the interaction between hypertext and feed as a distinctly web 2.0 instantiation of the interaction between the paradigmatic and syntagmatic axes that Barthes understands as integral to all reading experiences. The linearity of the feed acts to temper the potential randomness introduced into web culture by the radically nonlinear hypertext. On the other hand, hypertext suggests metaphoric deep-reading practices, as following hypertextual links offers the opportunity to move up, down, and across the virtual reading space to supplement linear meaning. Furthermore, hypertext linking to “previous issues” resolves the problems faced by a reader of print-based serialization who happens upon a story in progress. In

the print culture of the eighteenth and nineteenth centuries, such a reader might have had trouble “navigating backward” to the first parts of the novel, especially if the earlier editions of the literary journal were out of print and difficult to locate. In the web-based journal, of course, nothing need ever go “out of print” (since it was never “in print” to begin with), and so these two web primitives seem to work together to reinforce the potential for an occasional or incidental reader to read the (more or less) unified whole.

The functions assigned to feed-based digital technology, however, extend beyond those which organize any single website to create a network of interrelationships no less complex than those of the hypertext link. The word “feed” itself I have borrowed from my understanding of the various “feed reading” and “feed writing” applications available on the web, all of which are designed to extract certain information from various web platforms and display it on *some other* platform and in *some other* (more or less) linear form. The influence of the feed in this broader sense can be seen in the (somewhat startling) variety of options for “following” the Tor.com website and for “sharing” it with others. A reader who has enjoyed the first installment of Doctorow’s novel is invited by the series of links to the left of the text to share the story with others. Clicking “Reddit this!” submits the page to Reddit.com, an online content aggregator that advertises itself as “the front page of the internet,” and whose feed-order is determined not by time of publication but by popularity as determined by an algorithm which integrates the up or down votes of its readership.⁵¹ “Sharing” the page on Facebook or “Retweeting” it on Twitter inserts the narrative fragment into the ongoing autobiographical stream of the reader’s own

51 “Frequently Asked Questions,” *Reddit!* <http://www.reddit.com/help/faq/> (accessed April 7, 2012).

online social space,⁵² as well as that of the reader's own readership (her Facebook "friends" and Twitter "followers," into whose various feeds the page is also fed). Again, this ability to share any given piece of the serialized novel has the potential to introduce the novel or the journal as a virtual unity to a new and expanding readership, the hope being that the reader who "clicks through" a Facebook-fed link to a single section of the novel will then navigate the internal logic of the novel or the journal in order to get "the rest" of whatever story either of the two entities are attempting to tell. Any single act of sharing, however, also works in the reverse direction, as it abstracts the shared content from its original context and inserts into a new context that is entirely contingent on the interests of the reader herself. Thus, by sharing various items from across the web, according to whatever overall logic drives her, the reader in a sense takes the place of the author and editor in creating a unified whole out of a variety of content.

The notion of reader-as-editor can perhaps be seen most clearly in the proliferation of RSS feed technology in contemporary web ecology. RSS (commonly expanded as Really Simple Syndication) is an XML language that allows for web content to be easily fed through multiple channels and read on multiple platforms.⁵³ Associated applications such as FeedDemon and GoogleReader are software platforms designed essentially to create an automatic digest of materials that a reader has selected as being of personal interest. By programming its content to be compatible with RSS, Tor.com allows interested readers to "subscribe" to the content of the site, and to receive future content regularly without ever needing to actually visit the webpage

52 Facebook's recent reformulation of the "Facebook Profile" as a "Timeline" illustrates concisely the concept of linear narrative that I am suggesting is implicit in the notion of the feed more generally. As we have known at least since *Aspects of the Novel*, items that are sequential in time and space tend to imply narrative interconnectedness. As constituted in web2.0 space, this narrative movement is primarily a movement backward in narrative time (the feed dictates: "most recent first") and downward in digital space (the hyperlink suggests: "more on this"). See "Introducing Timeline," *Facebook*, <http://www.facebook.com/about/timeline> (accessed April 7, 2012).

53 "What is RSS?", *USA.gov*, <http://www.usa.gov/Topics/Reference-Shelf/Libraries/RSS-Library/What-Is-RSS.shtml> (accessed April 5, 2012).

itself. Feed Reader applications in turn compile this subscribed content into a personalized and continuously-updated web journal, contingent on an editorial control that rests entirely with the individual reader.⁵⁴ While it is still a *possibility* that a direct visit to the Tor.com website itself fits into the daily or weekly habits of the online reader to whom *Makers* is targeted, or that this activity might lead to a more or less linear reading of the novel as a substantially unified and isolated whole, this has become, in a web 2.0 media ecology, much less likely, and in any case, unnecessary.



Makers as a novel works through its historical and technological extrapolation to accentuate the role that hypertextuality and algorithmic patterns of interaction play in a contemporary culture influenced by web logic. Doctorow largely accomplishes this through a movement to *physicalize* in the real space of the fictional world the system of *virtual* relationships that contemporary audiences have already, though perhaps unconsciously, internalized. In an attempt to make roommate co-habitation more efficient, Lester and Perry design a set of smart-storage devices that rely on RFID tagging and Google-style database searching to organize material possessions (Part 4). The advances in algorithmic design and the widespread adoption of 3D printing technology that accompanies the *New Work* invites us to imagine infinitely personalizable physical goods: mass-produced home-aware gnomes that are as individuated in appearance as their owners (Part 4), a playground which transforms automatically based on the analyzed interaction preferences of its users (Part 11). The central

54 If the implied analogy between an application such as GoogleReader and a traditional editorially-directed literary journal is not clear enough, the connection is made explicit by web applications such as FeedJournal and HP's recently-defunct Tabloid, which offer to incorporate the user's various RSS feeds into a more traditional, print-friendly, magazine format—complete with pagination, headlines, and embedded images—deliverable on a user-determined schedule (see <http://www.feedjournal.com/>). Applications like FeedJournal attempt to key into a readerly impulse to rephysicalize the datastream of the web. In this regard, see also Blog Booker (<http://www.blogbooker.com/>), which offers to transform a user's blog into a book-formatted PDF, complete with footnotes and table of contents.

action of the narrative revolves around Lester and Perry's creation of "The Ride," a "gigantic physical wiki" comprised of a series of geographically dispersed theme park rides comprised of user-contributed content, algorithmically organized based on user-voting input, and synchronized across networked space by robotics and rapid prototyping technology operating on open protocols (Part 14). In a contemporary world that is thoroughly saturated by networked technology, the patterns of social and cultural interaction that these speculative technologies engender must already be extremely familiar to web-savvy readers. However, as Walter Benjamin suggested in his early analysis of film, the cognitive training that is involved in mediated interaction operates largely unconsciously, teaching our sensory apparatus to expect certain patterns of experience. The effect of the physicalization of hypertext and feed in the novel—their materialization through objects of spacial dimension—is to make them strange and thereby call upon readers to evaluate the highly digital nature of their real-world social existence.

Of course, hypertextual objects are far from being relegated to the world of science fiction. As anyone who has received a ticket in the mail after giving a rolling-stop to a camera-patrolled red light can attest, we already share our physical space with a broad array of hyperlinked objects, feeding information into the same digital networks that we use for human creation and communication. Indeed, the twin logics of hypertext and feed can be said to have in many ways "determined" my original purchase of the book. My primary mode of purchasing books being Amazon.com (whose own algorithmic suggestions are unequalled in their perceptive response to my needs), I still enjoy the experience of browsing a book store when I am looking for occasional or incidental reading. I bought *Makers* from a local Barnes & Noble, after noticing it in a prominent face-out display on a shelf in the science fiction section. The Amazon.com application on my iPhone gave me instant access by way of a camera bar-code—not incidentally

one of the two pieces of paratextual information that Gennette suggests we have no use for—to reviews of the book and information about Doctorow, as well as to the comparative price structure for which the application was originally designed. Furthermore, the pattern of book distribution which led Barnes & Noble to carry the book in the first place, and to display it so prominently, is also a function of database hyperlink and algorithm: in a recent talk on “Copyright and Creativity,” Doctorow describes his indebtedness to Tor Books with a discussion of the implications of the now widely-adopted Neilson BookScan system for bookstore purchasing decisions. By giving talks at a number of high schools within the same region who had partnerships with local BookScan bookstores, Doctorow was able to make the Neilson best-seller list, resulting in an automatic purchase of five copies by major bookstore chains nationwide. (And of course, five copies in stock earn the book a face-out display).⁵⁵ In both the conditions of its material instantiation and those of my particular book-buying practices, the book itself acted as a hypertextual object equal to any of those which its fantastic narrative describes.

It is by this broader cultural logic of hypertext that *Makers* incorporates an embedded notion of hypertextuality—despite its rather traditional linear narrative arch—that grows out of its transformation of the use of allusion and intertextual reference. Allusion in pre-web fiction tends to work by playing off of the reader’s prior knowledge. When an author makes reference to an outside work, it is with the understanding that a reader’s familiarity with the other work will offer up to her a more nuanced understanding of the work at hand. If we “catch the allusion,” we feel reinforced in our sense of readerly success (because we were intellectually prepared to catch it), and we may also be inclined to attribute to the current work some of the stature and

55 Cory Doctorow, “Creativity vs. Copyright” (presentation, Melbourne Writers’ Festival, Melbourne, Australia, August 27 – September 5, 2010) (video), <http://craphound.com/?p=3071> (accessed April 5, 2012).

importance of the work to which it alludes. In both cases, the work of allusion is a movement primarily backward, to something previously known or something previously written.

In *Makers*, however, allusions to extratextual material seem to work in the opposite direction, as recommendations for further reading. The most prevalent use in *Makers* of the form of allusion I am referring to grows out of the way that Doctorow incorporates technological objects into his work. A great deal of speculative fiction works by introducing technology that is quite radical and surprising for the contemporary reader. This is as true of Wells' time machine as it is of Gibson's wet-wired cyberspace cowboy. Doctorow's technological apparatuses, by comparison, strike us (at least at the beginning of the novel) as rather pedestrian. The ubiquity of email, tweets, blogs and miniature music devices creates the experience of a futuristic world that is still very much like our own. As I noted above, part of the motivation for the everyday quality of Doctorow's technological imaginary springs from his conviction in the novel that the future of contemporary innovation resides in a reimagining of the possibilities of existing technology. A residual effect of this familiarity, however, is the suggestion that even those objects which do strike us as uncanny might really exist. Such a suggestion, in a digital book that we are quite likely already reading in a hypertextual environment, inevitably prompts us to "take a look," to Google it, and to discover—by way of the fictional novel's technological imagination—the extent of its fidelity to the world that we already inhabit. Thus, if we are struck by the possibility of 3D printers, or batteries that last for weeks on end, or the development of evolutionary algorithms, these hypertextual allusions work to push us into an external exploration (by way of the web) that has the potential to guide us not to what was previously known and written, but rather to the edge of what is known, to what is currently being written. Furthermore, a

hypertextual exploration of this kind has the potential to lead readers into the circles of influence of the very subcultures of technological development about which Doctorow is writing.

A particular subset of this type of allusion includes those seeming neologisms that Doctorow introduces sporadically throughout the novel. Late in the novel, for example, Suzanne discusses her frequent use of web-searchable facial-recognition applications (“stalkerware”) to keep track of her digital image as it is published on the web, a privacy issue exacerbated by the automatically assigned functions of “blogjects, CCTV cameras and crap like that” (Part 48). A Google search for “blogjects” brings one quickly to Julien Bleecker’s “A Manifesto for Networked Objects — Cohabiting with Pigeons, Arphids and Aibos in the Internet of Things,” in which the author draws on Bruce Sterling’s notions of “spime” to suggest a practical method for designing smart hyperlinked objects.⁵⁶ Bleecker discusses ongoing projects such as artist Beatriz da Costa’s transformation of Los Angeles pigeons—enhanced with network-coupled biotechnological prosthetics—from urban pests into a dynamic air-quality alert system. He goes on to examine the growing threat to privacy represented by, what else, CCTV cameras, as well as the various online collaborative resources available for “hacking” this privacy threat. The combination of these allusive techniques in the novel have the effect of suggesting web resources like Google and Wikipedia as active paratextual elements in the creation of meaning within the novel, a pre-existing “glossary” that can be relied on as common cultural ground by author and audience alike. By building upon the text through web-driven curiosity, the reader becomes a “maker” of the text, even as she discovers the extent of the Maker subculture itself.

56 Julien Bleecker, “A Manifesto for Networked Objects — Cohabiting with Pigeons, Arphids and Aibos in the Internet of Things,” *Near Future Laboratory*, February 26, 2006, <http://nearfuturelaboratory.com/files/WhyThingsMatter.pdf> (accessed April 5, 2012).

The idea that a reader might create his or her own meaning from a text is not new. Critics such as Stanley Fish and Wolfgang Iser have undertaken extensive investigations of the various ways that readers construct meaning from a text based on personal experience and interest, as well as the ways that meaning is developed by reference to particular “interpretive communities.”⁵⁷ In my investigation of Tor.com’s web-serialization of *Makers*, then, I don’t mean to suggest that web publication operates by a novel logic of meaning creation. Rather, it seems to me that the effect of web publication is to radically *naturalize* the implications for meaning-making that reader-response criticism seeks to explicate in the reading process more generally. That is, it might be that the necessity of reader-response criticism itself grows to some extent out of a reaction against the same logic of the book that for well over a century has implied an authorial or editorial control over the production of literary meaning. When literary production incorporates the logic of the web, however, this centralized control quickly dissolves into the wildly variegated reading practices made possible (made necessary?) by hypertext and feed. In turn, reader-oriented meaning-making in the online environment takes on a literal quality, as each reader is compelled to make and re-make the formal and thematic contours of the text itself.

57 Stanley Fish, *Is There A Text In This Class?: The Authority of Interpretive Communities* (Cambridge: Harvard University Press, 1980), 14.

CHAPTER 3

RE-MAKERS: THE WEB LOGIC OF CREATIVE PRODUCTION

When textual material moves online, its existence is explicitly conditioned by modes of organization and interaction inherent in the logic of the web. Web logic enforces norms of nonlinearity, open-endedness, and potential transformability on material that, in printed form, seem stable, closed, and unified. However, the logic of the web, as a cultural pattern internalized unconsciously by contemporary society, also has implications for the patterns of creation and perceptions associated with traditional print-based media, even as it suggests new forms of cultural production that, though they are in many ways “post-print,” preserve and even accentuate the materiality of cultural production, the potential loss of which is a point of lamentation for book enthusiasts and historians alike. Evidence of this slow transformation of book culture is sometimes subtle, but its existence suggests a shifting understanding of the role of the book in the contemporary, web-influenced literary field.

The titular pattern of *versioning* printed material (as in Lessig’s *Code, Version 2.0*, cited above), set against the traditional notion of periodic editions, also suggests the internalization by print-based culture of a certain digital logic. Even a cursory bibliographic genealogy suggests as much: The earliest holding in the University of Georgia’s library with the words “Version 2.0” in the title is R. D. Webster and J. W. Hamilton’s *Economic Impact Forecast Systems, version 2.0: User’s Manual*, published in 1979 by the US Army Corps of Engineers’ Construction Engineering Research Laboratory. In the late 1980s, the phrase was ubiquitous in the titles of

printed user's manuals for updated software or hardware packages. 1995 saw both Microsoft's *Microsoft Visual C++ User's Guide: Microsoft Visual C++ : Development System of Windows and Windows Nt Version 2.0* and Rich Tennet's *Version 2.0: More BYTE-ing Humor from the 5th Wave*. Published alongside Lessig's own *Code, Version 2.0* was television chef Alton Brown's *I'm Just Here For the Food: Version 2.0*. As a trope of publication practice—one that ranges through a variety of printed nonfiction during the period coinciding with the rise of ubiquitous computing—versioning suggests a translation of the open-ended values of digital information space into the realm of printed materials. Even to its title, the book is reconceived not as a finished product but as a “latest stable release” in the ongoing development of a particular project, carrying along with it implicitly a range of unstable intermediary positions—test releases and bug fixes—both past and future.⁵⁸ In many cases, these unstable intermediates exist in some published form or another.⁵⁹ Certainly, Alton Brown's intervening television appearances, so far as they deal with the same or similar content as his book, offer an incremental update both of the latest print publication and toward the next. Likewise does Lessig invite us to conceive of his second version as the product of a conscious decision to update his printed opinion based upon incremental change both in the state of the issues he is exploring and his developing views regarding them.⁶⁰

Titular versioning, even when conceived as a marketing tactic, makes explicit a digital logic that seems now to be common to a growing segment of print-based popular nonfiction. If it is already a cliché of the nonfiction publishing world that “to have a book is to have a blog,”

58 As I prepare the document you are now reading, I can't help but read this logic of “versioning” in my habits of titling the document files for successive drafts. Likewise have I (all too frequently) employed Dropbox.com's “Previous versions” feature to recover whole paragraphs that I had accidentally deleted.

59 Though the versioning metaphor is dropped, and initially to awkward effect: When R. D. Webster published a partial update for the EIFS User's Guide, he called it a “Supplement to Version 2.0.”

60 Lessig, ix.

books published by bloggers are perhaps always already version 1.0 or later. Steven D. Levitt and Stephen J. Dubner's 2005 book *Freakonomics*, for example, itself expanded from a magazine article, spawned a blog (and a podcast) of the same name dedicated to the continued exploration of the ideas introduced in the printed book; in turn, the various topics explored in the blog became source material for the "Revised and Expanded Edition" of the book. Julie Powell's *Julie & Julia* blog also began as a book (Julia Childs' *Mastering the Art of French Cooking*), and in turn produced another book about the writing of a blog about a book (which then became a film about the author of a book about the writing of a blog based on a book). Thomas Friedman's *The World Is Flat* (2005) extends not only through two updated versions and a mutation (*Hot, Flat, and Crowded*, which itself has a "Release 2.0") but lives also in many of his intervening *New York Times* columns.

The same pattern of instability and open-endedness can be observed in books produced by print authors who also have a well-developed digital presence on the web, even when the book itself is not (as those noted above) explicitly a second "version" of anything at all. Thus, even though books like Steven Johnson's *Where Good Ideas Come From* or Cathy Davidson's *Now You See It: How the Brain Science of Attention Will Transform the Way We Live, Work, and Learn* are well-developed and highly unified cultural objects in their own right, they also exist, as a constellation of ideas and examples, in the fragmented online presence of their authors. If we "follow" an author like Steven Johnson in his digital social existence (subscribing to his blog, following him on Twitter, checking him out on YouTube), we have likely already been exposed to most of the information and ideas with which he fills his books.

Thus, influenced by web logic, the bound and bounded book in a media ecology dominated by digital technologies itself seems to open. As much as this sort of movement

between print and digital space complicates our understanding of the book as a unified form—a final product—so too does it complicate our traditional understanding of the author as a creative practitioner. The two books just listed are especially appropriate as examples of this phenomenon, perhaps, because both Davidson and Johnson are interested in using their books to call into question traditional notions of individualistic creative endeavor, and replacing them with new ideas of networked collaboration that are firmly grounded in the cultural logic of the Internet. These are books *about* online collaboration, fragmentation and creative re-use, and the authors make use of these concepts, directly or indirectly, in the construction of the books themselves. Johnson’s theses of “liquid networks” and the “slow hunch,” as well as his call for the reinvigoration of the commonplace book, imply that should we follow his blog, we might better understand the author of *Where Good Ideas Come From* not as the sole creator of original ideas, but rather as a compiler or a curator interested in bringing existing ideas together into new configurations that give rise to new ways of understanding the materials and the world.⁶¹ In digital space, the author becomes a narrator of the assemblage that is his literate experience.

Anne Balsamo’s construction of *Designing Culture* also acknowledges these aspects of what she calls the “technoculture” of web-influenced readership.⁶² A “transmedia book” that argues for a design-oriented approach to imagining the possible shapes that web-influenced readership may take, *Designing Culture* incorporates not only the printed bound object but also a multimedia DVD and a website, along with the various digital audio-visual elements which comprise the site.⁶³ By designating the project as a “transmedia book”—indeed, by designing it as such—Balsamo transforms the book itself into an object in the very transformative practices

61 Steven Johnson, 43, 67.

62 Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham: Duke University Press, 2011), 5.

63 Balsamo, 192.

that the text sets out to defend. Put another way, *Designing Culture* as a cultural object is posited as an active participant in the attention structure that its text seeks to create. In seeking to incorporate the different types of creative construction that each media form embodies, and to include the various kinds of readership that each affords, Balsamo's "experiments in future reading" only make explicit a pattern of book publication and reception that has become increasingly common in the new media ecology.

In the introduction to *Designing Culture*, Balsamo nods to the growing prominence of "DIY, the Makers movement and prosumer markets" as evidence for a new cultural sensibility toward design.⁶⁴ Among other similarities, these groups share an abiding interest in the use-value of specific technological objects. That is, they are all interested in the types of work that any technological object makes possible, the space for creative action that it affords. As subcultural movements, they also share a primary social existence online. This leads them to take for granted not only the vast storehouse of (free) information made possible by the web, but also the interactive and collaborative environment that it engenders. If Balsamo were interested in discovering the continuing spirit of her work with Xerox PARC and the *eXperiments in the Future of Reading*, she might look no further than *Makers*. Not only is the novel written *for* and *about* the very groups of people that Balsamo credits with hope for the future of cultural design, but as a technocultural object in its own right, *Makers* shares with the *XFR* (as well as Balsamo's "transmedia book" about the exhibit) an interest in opening up the space of possibilities for reading in the digital environment. It should come as no surprise, then, that the various

⁶⁴ Balsamo, 1.

remediations of the novel share aesthetic and rhetorical qualities with many of the “*interactives*” in the *XFR* exhibit.⁶⁵



Running atop the original publication of Cory Doctorow’s *Makers* as eighty-one blog posts at Tor.com were eighty-one original illustrations by Matthew Swanson and Robbi Behr, the creative team at Idiots’ Books. Swanson explains their design:

Each segment of the story will be illustrated by a square illustration that relates, at least in part, to the theme or content of that segment. While each illustration will function as a standalone “illustration,” each one [will] be drawn in such a way as to share common crossovers along all four sides, which means that any of the illustrations may be placed alongside any other illustration (and in any axial configuration) with guaranteed “crossovers.”⁶⁶

As with the novel as a whole, there is a total story told by the set of illustrations. Swanson offers the final assembled image as “an uber-illustration with visual coherence that stands as the ‘cover’ of the *Makers* book” revealed only when the various chapter illustrations are ordered as they are published, and fit to a nine by nine grid (Figure 2).⁶⁷ On the one hand, the movement toward a total image that is implied in the jigsaw-puzzle operation seems to reinforce a sense of linearity and formal unity that has its origins in print. Just as we see the whole novel only as we finish it, so too can we only complete the grid with the final installment, the total image of which we are offered as a visual remediation of the book. But the loss of linearity that was simply implied or made possible by the serialized novel’s embeddedness in the twin logics of hypertext and feed is *built directly into* the project of the illustrations. By drawing each illustration so that it shares “common crossovers” not just with the edges of appropriate adjacent pieces, but with *every other* edge of *every other* illustration, Swanson and Behr insist that the proper use of the

65 Balsamo, 72.

66 Matthew Swanson, qtd. in Defendini

67 Matthew Swanson, qtd. in Defendini.

total set of tiles only begins with a “correct” assembly, but offers a continued and more intimate encounter in subsequent subversions of this order. Swanson suggests that the puzzle

can be recombined into a vast number of other [9 x 9] grids. Or it could be assembled into a [3 x 27] grid. Or it could be assembled as a [81]-panel horizontal “comic.” Or it could be made into a sprawling, multi-tentacled beast of surprising crossovers that resemble[s] a crossword puzzle in its grid-based unpredictably.⁶⁸

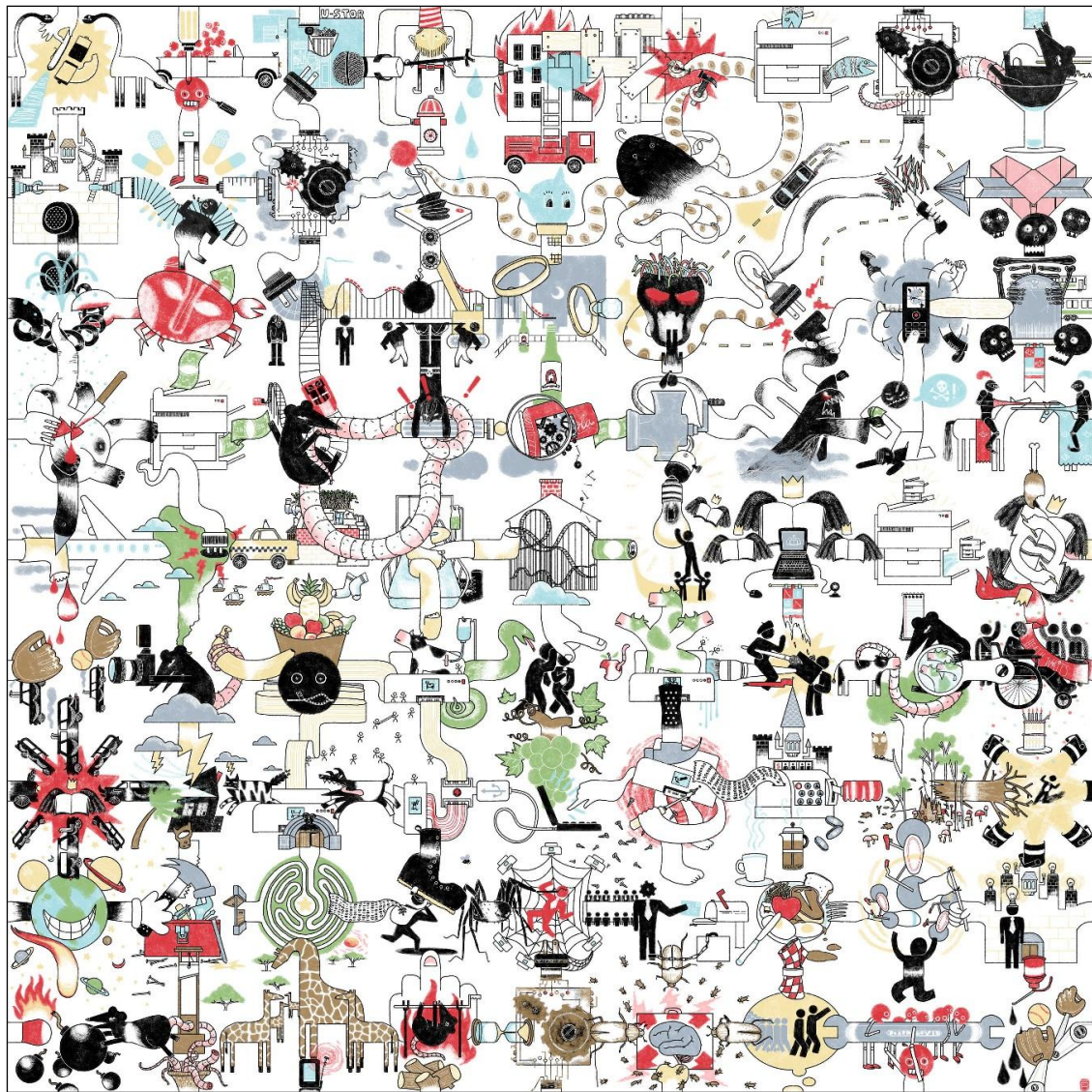


Figure 2: “Book Cover” for *Makers* as designed by Idiots’ Books

68 Matthew Swanson, qtd in Defendini.

Limited as they are by the formal and aesthetic qualifications set for them—underwritten by the competing logics of coherent totality and interchangeability—the illustrations that Idiots’ Books produce have an iconographic quality. Each illustration latches on to a simple set of objects within the chapter and produces them in somewhat cartoonish simplicity, all roughly penned lines and geometric solids in soft unblended colors. The images are playful but spare, and a little bit dark. Often the objects chosen for the chapter figure quite literally in the action of the narrative. Thus, for example, does the illustration for Part One (Figure 3), which explains the merger between Kodak and Duracell, contain at its center the two recently obsolete products of those companies, and it reproduces also the laser-transcription pen which stands in Kettlewell’s restructuring announcement as a symbol for the future of the company. Likewise the image for Part Five illustrates the fire in the squatters’ camp, and the one for Part Seven captures the 3D printer that is born of Perry’s desire to help the people of the shanty town: “They need the tools



Figure 3: Illustration for “Cory Doctorow’s *Makers*, Part 1 (of 81)”

that will let them build anything else, for free, and use it or sell it” (Part 7). Indeed, the sheer number of cards which display some bit of technological machinery, drawn from its significance in the plot, is telling: in addition to 3D printers (there are no fewer than six illustrated), the tiles are peopled with cables and wires, mechanical arms, tools, and various other electronic gadgets. This techno-proliferation, literalized in interconnected iconography, gives the total image a machine-like quality that accentuates the themes of the novel.

In other places, the illustrations make literal what in the text is only conversationally figurative. The sauropods that adorn either side of the above illustration, for example, take their cue from Kettlewell, as he asks rhetorically the question he imagines is on everyone’s lips regarding the merger: “Why buy two dinosaurs and stick ‘em together?” (Part 1). The fish being prototyped by Part 7’s 3D printer come from Perry’s breakthrough cliché regarding the technology—“Teach a man to fish, Francis, teach a man to fucking *fish*”—though we also might be inclined to read in a self-replicating machine reference to that other great multiplication of fishes (Part 7). Rat-Tooth Freddy of the British tech rag becomes, you might have guessed it, a rat, and his tail coils its corruptive influence into adjoining squares, mucking up the works of the illustrated machine.

Indeed, even the various crossovers inherent in the “correctly assembled” machine offer the reader an opportunity for reimagining the possibilities for meaning within the text. The illustration for chapter 15, for example, is filled entirely by the head of a giant octopus whose arms extend across all four crossovers (Figure 4). The inspiration for the image comes from a conversation between Tjan and Perry regarding the organizing structure for the expanded, open-source wiki-Ride. Tjan compares businesses to the development of skeletal systems, insisting that

it's going to be nearly impossible *not to* make a business out of this. Businesses are great structures for managing big projects. It's like trying to develop the ability to walk without developing a skeleton. Once in a blue moon, you get an octopus, but for the most part, you get skeletons. Skeletons are good shit. (Part 15)

Perry's response: "Tjan, I want you to come on board to help me create an octopus," the perfect metaphor for the project of commons-based creative endeavor (Part 15). In the text, the octopus is an incidental figurative, not mentioned before or after the conversation above.

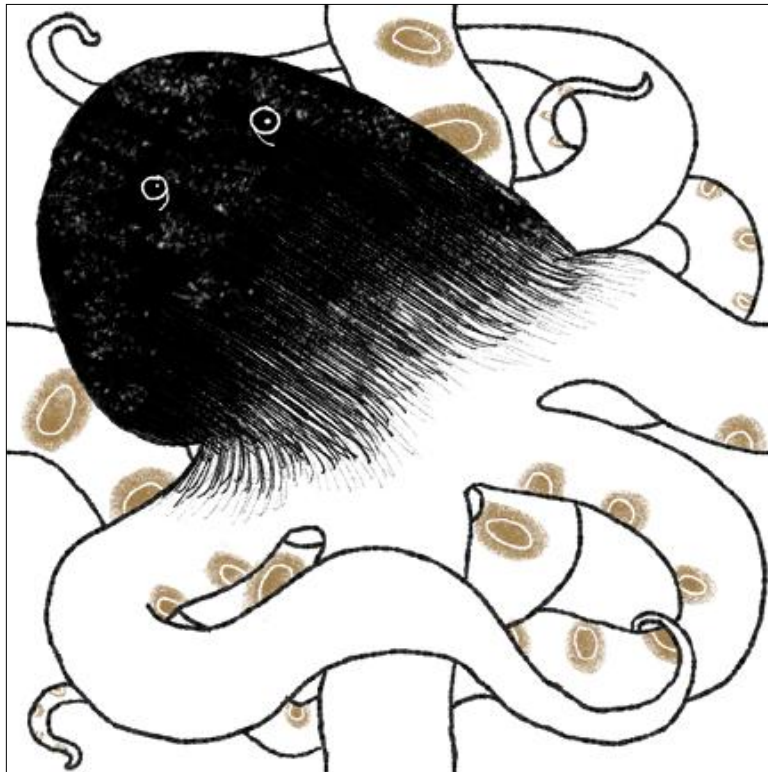


Figure 4: Illustration for "Cory Doctorow's *Makers*, Part 15 (of 81)"

In the illustrations, this is not so. What are clearly tentacles can be seen at work in the illustration for Part 6, rebuilding the shantytown after the fire. They are there again in the following chapter, alongside the multiplying fishes, and again in Parts 13 and 14, registering a Plus-One on The Ride's new Slashdot system, underscoring Lester's insistence that Perry "go invent some social institutions" (Part 14). The tentacles in these earlier chapters raise an

interpretive question for readers that *cannot* be answered, indeed, would be hard, before the payoff in Part 15, to frame as an interpretive question at all: “what are these tentacles doing in my sci-fi novel?” Once we get to Part 15, the tentacles offer us an alternative interpretive route backward through the story—we can see the seeds of collective, distributed creative production in Perry’s dream of a shantytown micro-economy built on the framework of a self-replicating 3D printer—as well as forward, as the tentacles reappear in further chapter illustrations. Similar interconnectedness occurs in various other image couplings, and is also implied by the natural vertical alignment of every ninth chapter. (What, we might compelled ask, has the Boogie Woogie Elmo of Part 2 got to do with Lester’s Fatkins treatment in Part 11?)



Implicit in the project of Matthew Swanson and Idiots’ Books is a deeply-internalized understanding of the reader as an active manipulator of the text. The various remediations of the novel, professional and amateur alike, that follow upon its initial publication work to literalize this evolving understanding of the role of a reader in digital collaborative space, and to activate and reinforce such reading practices in the audience. The balance of this essay will undertake to examine briefly a selection of the further reimaginings of *Makers* by a range of authors *other than* Doctorow himself, in an attempt to understand the specific reading experience that the novel seems to engender and to explain the relationship of this experience to traditional and contemporary notions of the book.

After the first few illustrated chapter sections had been published, Tor.com hired Malloc Media to create a Flash game of the Idiots’ Books tiles (Figure 5). Updated periodically during the publication (at Part 4, 9, 16, etc—each time the number of published illustrations was griddable) the Flash game allows users to rearrange the tiles within the grid by dragging,

notions of hypertext and feed. When Swanson and Behr publish the Tile Game in material form, as a boxed set of eighty-one cards, even the limits of the grid are thrown off, so that readerly meaning-making can spread in every direction, a “multi-tentacled beast” of creative practice, like a Rube Goldberg machine or one of Lester and Perry’s kinetic sculptures, fun and funny in its impracticality, but uncanny in the way that it opens up the guts of a mechanism which seems so simple when performed the “normal” way. The mechanism in question here, of course, is that by which a reader constructs meaning from a narrative, and the Idiots’ Books machine seeks to replace or supplement the traditional linear reading and empathic relation to characters and themes with a play of surface-features, iconography, and metaphoric meaning. It seems hard to imagine that interacting with the *Makers* Tile Game might result in an understanding of the specific plot or characters of the novel. Indeed, even for someone who has read the novel closely, the sheer number of individual images must make keeping in mind the particular chapters that they represent an exercise in futility. That said, the images, as suggested above, do contain a rather radical literalization of the thematic content of the book, so that a serious user of the Tile Game must necessarily be interacting in an ongoing way with the narrative content of the novel. This sense of a total thematic image is reinforced by the activity of rearranging the tiles themselves. In doing so, the user is engaging in a very material act of *making*, and though the individual tiles come together in innumerable permutations, their existence as aspects to be arranged preexists the readerly encounter. Thus, the act of creation by which the user engages the novel through them is always a re-making, remixing, and reimagining that is mirrored by the quasi-utopian turn to collaborative creation foregrounded by the story of the novel itself. The machine that a use of the Tile Game creates stands in as a readerly embodiment of the many human-machine assemblages that people the narrative.

Indeed, it is on the issue of embodied experience that the Idiots' Books Tile Game seems most suggestive, since a material instantiation of the illustrations necessarily re-instates the parameters of physical space and materiality that a cultural shift toward the primacy of digital media threatens to negate. Whereas the Flash game has no definitive scale other than that determined by a user's screen size and resolution, and even the saved book-cover image that the game generates can be scaled to any size, the size of the physical cards (approximately 3 inches square) is incorporated into its form by its material instantiation. Thus, playing with the card game reintroduces notions of scale to the process of creative practice, and also incorporates aspects of architectural space and embodied manipulation that are lost in the translation of the book into digital space.

The move to re-physicalize the digital content of the novel is evident also in several of the "fan fictions" that Doctorow's Creative Commons licensing practices have made possible. Whereas traditional fan fiction often takes the form of an interpolative or extrapolative retelling or accretion of the original story—using the story's world or characters in order to tell a new story, rewriting scenes from the work in an original way, or extending the original story into a sequel or prequel—the fan-created works inspired by *Makers* tend to take the form of further physicalized remediations of the work itself, and often interact with the original text in ways that play creatively with the themes of the novel even as they experiment directly with the notions of contemporary readership that it has been the project of this paper to explore.

Dmitri Kobzar, for example, worked with the online 3D-printing clearinghouse Shapeways.com to create a 3D-printable version of the book cover for the UK edition of *Makers*



Figure 6: 3D-printed *Makers* book cover by Dmitri Kobzar

(Figure 6).⁷⁰ The UK cover is illustrated to look like a series of cast plastic figurines attached to a sprue. By a similar logic to that used by Idiots' Books in illustrating each chapter of the book, the figurines depicted on the cover of the UK edition are comprised of various significant "objects" that make an appearance in the novel—the laser-pointer text projector is here again, along with an airplane, a palm tree, Perry's omnipresent sweaty beer bottle, and a Boogie Woogie Elmo that conspicuously does not infringe copyright. Thus, like the illustrations of Swanson and Behr, the UK cover art offers a sort of iconographic summary of the narrative that it contains. Kobzar's decision to develop the image into a real 3D-printable object not only insists on a physicalization of the material contained in the image; it also suggests the value in making physical the textual material of *Makers*. Once again, by downloading and printing

⁷⁰ Cory Doctorow, "Downloadable 3D cover for *Makers* is now also an Article of Commerce" (blog), *Craphound*, March 17, 2010, <http://craphound.com/makers/2010/03/17/downloadable-3d-cover-for-makers-is-now-also-an-article-of-commerce/> (accessed April 9, 2012).

Kobzar's creation, the reader is offered the opportunity to manipulate the novel in a highly individualized, non-linear, and experiential manner. Playing with the plastic figurines, or reorganizing them into a tableau, is a self-narrativizing act that parallels the imaginative play of children. That the narrative arising from such play might very well bear little resemblance to the original story is beside the point: no one expects a child playing with G.I. Joe or My Little Pony to enact in their imaginative space a direct retelling of the plotlines from which the figurines are drawn. To do so would be to defeat the purpose of play, which has more to do with the retelling of the self than with the retelling of any prescribed narrative account. And yet, such creative reconfigurations must necessarily remain grounded in the original narrative, since both the physical existence of the objects and their narratological back-stories are contingent upon it. Kobzar's 3D-printed book cover enacts this ontological connection by interacting directly with the technological milieu that the novel seeks to promote. 3D-printers abound in *Makers*, and advances in the technology act as a driving force for the reconfiguration of social and economic space in the world of the book. In *Makers*, 3D-printers displace industrial manufacturing as the primary mode of commodity production even as they suggest a quasi-Marxian potential for the redistribution of the means of production to the individual worker. By creating a 3D-print of a industrially-designed object (3D-printers have no truck with the sprue, which in large-scale industrial casting creates the channel by which the melted plastic can be fed into the mold), Kobzar's book cover literalizes the transformative potential of the technology, thereby reaffirming the utopian vision of the fictional novel in real space and asserting his individual role in bringing such a vision about.

In a similar move, Michael Zoellner programmed a miniature computer processor to feed out the text of *Makers* to a scrolling LED display, which he then attached to his miniature

Pinscher, Ianto, to create a “remix in light” of the novel, written in space by persistence of vision as the dog runs through a park at night (Figure 7).⁷¹ Once again, Zoellner’s movement to reimagine the space of the novel is also a movement to physicalize the digital text and literalize his connection to its characters and themes. Zoellner characterizes himself as a “maker,” and declares that Doctorow’s novel is “one of the most influential [he has] read.”⁷² True to the spirit



Figure 7: Micheal Zoellner’s cyborg-Pinscher “remix in light”

of the novel—and the Makers movement more generally—Zoellner’s “remix in light” suggests his active engagement with forwarding the potentials of the technological imagination for opening up new spaces for creative endeavor and social and cultural praxis. Moreover, because his light-writing cyborg-Pinscher preserves the text of the novel that it also seeks to enact, Zoellner’s project works, like Balsamo’s “experiments in future reading,” to actively (and radically) re-imagine the space for textual narrative in the twenty-first century.



The general movement on the part of these reimaginings of *Makers* is to bring the data-stream of the digital novel into material existence in real space, a pattern which takes on meaning for a discussion of the contemporary novel as it relates to the anxiety springing from the loss of

71 Michael Zoellner, “My Dog Light Writing ‘Makers’” (blog), *i.document*, June 13, 2011, <http://i.document.m05.de/?p=970/> (accessed April 9, 2012).

72 Zoellner.

the artifact in the digital age. What, we might ask, is the place of the book in this digital and digitized ecology? On the one hand, a bound collection of printed paper may offer a too-restrictive reading environment for contemporary readers interested in interacting in flexible and creative ways with the formal and narrational aspects of texts that affect them, reconfiguring the novel as best befits their various interests and skill sets. In such a scenario, the book may indeed be consigned to the archive, the paginated classroom discussion, and the dusty shelves of the bibliophile. This fate is implicit, perhaps, in the library and classroom micro-grant program by which Doctorow suggests that fans of his free e-books might remunerate him for their enjoyment.⁷³ On the other hand, that so many of the *Makers* re-makes take on a material form—outside of digital space even as they interact through it—suggests that, even today, the everywhere-experienced push to *digitize everything* is already being felt as a dangerous loss of control over the sense of embodied experience that has for thousands of years been central to our interactions with art of all kinds. If such is the case, this new materiality of culture—a secondary print culture emergent in an age of primary digitalization—might do well to look to the book for a pattern of cultural interaction that balances form and content, bounded material embodiment in space and narrativized existence in time.

Richard Lanham, discussing the movement of traditionally print-based media into digital space, calls books “talismans”: “[h]ere touch and feel and binding to matter. The physical stuff of the book carries a profound electrical charge.”⁷⁴ Lanham laments that “[t]his talismanic charge evaporates on the screen. Naturally enough, we regret losing it.”⁷⁵ Chris Salter, exploring the

73 Cory Doctorow, “Donate,” *Craphound*, <http://craphound.com/makers/donate/> (accessed April 9, 2012). On his website, Doctorow respectfully turns down offers of direction monetary donation from those who have enjoyed his free e-books. Instead, he solicits requests for printed books from teachers and librarians with limited funding, and offers his enthusiastic e-book readers the opportunity to purchase these requested copies.

74 Lanham, 134.

75 Lanham, 134.

opportunities for technology to inform the performance arts, suggests that the early new media obsession with “the ocular and the inscribed, the screen and data,” is already giving way to a recovered sense of “felt experience, situated context, and polysensory affect that cannot simply be reduced to text, code, or photons aimlessly floating on the screen.”⁷⁶ He sees the future of digital media art in performative terms, as new media reconfigure and are reconfigured by the specific, embodied, and contextually situated environments in which they are experienced.

Makers, as a digital novel multiply re-written into the material world—in printed paper and cardstock images, in plastic and robotics and light—offers a window into this transformative process. It is just this loss of the material, the “talisman” with its “polysensory affect,” that motivates the artistic and socially constructive play of the novel’s protagonists. A yearning for the material, for manual interactivity, underwrites also the various grass-roots movements that *Makers* seeks to explore. Roboticists, 3D printer enthusiasts, DIY homemakers: all of these communities owe their existence and their expertise at least in part to the potentials of a radically digitized and networked world. But they are equally interested in bringing that digital material back into the real-space of lived experience, and thereby perhaps reclaiming some aspect of their humanity in an already troublingly post-human world.

⁷⁶ Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge: MIT Press, 2010).

REFERENCES

- “About.” *BoingBoing.net*. Accessed March 9, 2012. <http://boingboing.net/about/>.
- “About Make.” *MAKE: Technology on York Time*. Accessed March 9, 2012.
<http://makezine.com/about/>.
- Balsamo, Anne. *Designing Culture: The Technological Imagination at Work*. Durham: Duke University Press, 2011.
- Benkler, Yochai. “Coase’s Penguin, or Linux and *The Nature of The Firm*.” *The Yale Law Journal* 12, no. 3 (December, 2002): 369-446.
- Biddle, Peter, Paul England, Marcus Peinado, and Bryan Willman. “The Darknet and the Future of Content Distribution.” *Microsoft Corporation: ACM Workshop on Digital Rights Management*. November 18, 2002. Accessed April 7, 2012.
<http://ms11.mit.edu/ESD10/docs/darknet5.pdf>.
- Bleecker, Julien. “A Manifesto for Networked Objects—Cohabiting with Pigeons, Arphids, and Aibos in the Internet of Things.” *Near Future Laboratory*. February 26, 2006. Accessed April 5, 2012. <http://nearfuturelaboratory.com/files/WhyThingsMatter.pdf>.
- Blog Booker*. Website. Accessed April 7, 2012. <http://www.blogbooker.com/>.
- Bolter, Jay David. *Writing Space: The Computer, Hypertext, and The History of Writing*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1991).
- Bolter, Jay David and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: The MIT Press, 1999.

- Bourdieu, Pierre. *The Field of Cultural Production*. New York: Columbia University Press, 1993.
- de Certeau, Michel. *The Practice of Everyday Life*. Translated by Seven Rendall. Berkeley: The University of California Press, 1984.
- Davidson, Cathy. *Now You See It: How the Brain Science of Attention Will Transform the Way We Live, Work, and Learn*. New York: Viking Press, 2011.
- Defendini, Pablo. "Announcing Cory Doctorow's *Makers* on Tor.com." *Tor.com*. July 6, 2009. Accessed April 5, 2012. <http://www.tor.com/blogs/2009/07/cory-doctorows-lemgmakerslemg-on-torcom/>.
- Doctorow, Cory. "Cory Doctorow's *Makers*." Blog Series in 81 Parts. *Tor.com*. July 6, 2009 – January 8, 2010. Accessed April 9, 2012. Linked index available at <http://www.tor.com/features/series/makers/>.
- . "Creativity vs. Copyright." Video. *Craphound*. Accessed April 5, 2012. <http://craphound.com/?p=3071/>.
- . "Donate." *Craphound*. Accessed April 9, 2012. <http://craphound.com/makers/donate/>.
- . "Download for Free." *Craphound*. Accessed April 7, 2012. <http://craphound.com/makers/download/>.
- . "Downloadable 3D cover for *Makers* is now also an Article of Commerce." Blog. *Craphound*. March 17, 2010. Accessed April 9, 2012. <http://craphound.com/makers/2010/03/17/downloadable-3d-cover-for-makers-is-now-also-an-article-of-commerce/>.
- . *Makers*. New York: Tor Books, 2009.

- . "Microsoft Research DRM Talk." In *Content*. San Francisco: Tachyon Publications, 2006. PDF ebook. Accessed April 7, 2012. http://craphound.com/content/Cory_Doctorow_-_Content.pdf.
- FeedJournal*. Website. Accessed April 30, 2012. <http://www.feedjournal.com/>.
- Fish, Stanley. *Is There A Text In This Class?: The Authority of Interpretive Communities*. Cambridge: Harvard University Press, 1980.
- "Frequently Asked Questions." *Reddit!* Accessed April 7, 2012. <http://www.reddit.com/help/faq>.
- Genette, Gérard. *Paratexts: Thresholds of Interpretation*. Translated by Jane E. Lewin. Cambridge: Cambridge University Press, 1997.
- Griffith, George V. "What Kind of a Book is 'Cranford'?" *Ariel* 14, no. 2 (1983): 53-65.
- Idiot's Books. "Makers Tile Game." Video. *YouTube*. Accessed April 21, 2012. <http://www.youtube.com/watch?v=a2uq7Cd2iUA/>.
- "Introducing Timeline." *Facebook*. Accessed April 7, 2012. <http://www.facebook.com/about/timeline/>.
- Jenkins, Henry. *Convergence Culture: Where Old and New Media Collide*. New York: New York University Press, 2006.
- Johnson, Steven. *Where Good Ideas Come From: The Natural History of Innovation*. New York: Riverhead Books, 2010.
- Landow, George. *Hypertext: The Convergence of Contemporary Critical Theory and Technology*. Baltimore: Johns Hopkins University Press, 1992.
- Lanham, Richard. *The Economics of Attention: Style and Substance in the Digital Age*. Chicago: University of Chicago Press, 2006.
- Lessig, Lawrence. *Code, Version 2.0*. New York: Basic Books, 2006.

- Patten, Robert L. "When Is A Book Not A Book?" In *The Book History Reader*, 2nd Edition, edited by David Finkelstein and Alistair McCleary, 354-368. London: Routledge, 2006.
- Rose, Mark. "Literary Property Determined." In *The Book History Reader*, 2nd Edition, edited by David Finkelstein and Alistair McCleary, 308-317. London: Routledge, 2006.
- Salter, Chris. *Entangled: Technology and the Transformation of Performance*. Cambridge: MIT Press, 2010.
- Shirkey, Clay. "How Cognitive Surplus Will Change the World." Video. *TED: Ideas Worth Spreading*. June 2010. Accessed April 7, 2012.
http://www.ted.com/talks/lang/en/clay_shirky_how_cognitive_surplus_will_change_the_world.html/.
- . "How Social Media Can Make History." Video. *TED: Ideas Worth Spreading*. June 2009. Accessed April 7, 2012.
http://www.ted.com/talks/lang/en/clay_shirky_how_cellphones_twitter_facebook_can_make_history.html/.
- Striphas, Ted. *The Late Age of Print*. New York: Columbia University Press, 2009.
- U.S. Constitution. Article I. Section 8. Clause 8.
- Unsworth, John. "Scholarly Primitives: What methods do Scholarly Researchers Have in Common, and How Might Our Tools Reflect This?" Online Article. May 13, 2000. Accessed April 5, 2012. <http://people.lis.illinois.edu/~unsworth/Kings.5-00/primitives.html>.
- "What is RSS?" *USA.gov*. Accessed April 5, 2012. <http://www.usa.gov/Topics/Reference-Shelf/Libraries/RSS-Library/What-Is-RSS.shtml>.

Zoellner, Michael. "My Dog Light Writing 'Makers'." Blog. *i.document*. June 13, 2011.

Accessed April 9, 2012. <http://i.document.m05.de/?p=970/>.