The Social Media Reader ☆

Edited by
Michael Mandiberg

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References to Internet websites (URLs) were accurate at the time of writing. Neither the author nor New York University Press is responsible for URLs that may have expired or changed since the manuscript was prepared.

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Acknowledgments

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I conceived of this anthology while preparing a seminar on social media. The absence of any critical anthology prompted me to collect the writings that I thought were most important. The realization that many of these were Creative Commons licensed inspired me to transform this reading list into a table of contents for this book. I wish to thank the Department of Media Culture at the College of Staten Island, City University of New York, for its support of this project: C. W. Anderson, Cynthia Chris, Jeanine Corbet, David Gerstner, Janet Manfredonia, Tara Mateik, Edward D. Miller, Sherry Millner, Jason Simon, Matthew Solomon, Valerie Tevere, Cindy Wong, Bilge Yesil, and Ying Zhu. I am indebted to my colleagues at the CUNY Graduate Center: Steve Brier, Ashley Dawson, and Matthew Gold. I am grateful to the provost, William J. Fritz, for the support of the Provost's Research Grant and to Dean Christine Flynn Saulnier and former dean Francisco Soto for their support of my research leaves and for the Dean's Summer Research Assistantship.

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Introduction

MICHAEL MANDIBERG

Beginning with the printing press, technological innovations have enabled the dissemination of more and more media forms over broader and broader audiences. This mass media built and maintained a unidirectional relationship between a few trained professional media producers and many untrained media consumers. This model, which reached its peak in the middle to late twentieth century, began to shift in the 1980s with the widespread use of photocopiers, home video cameras, and mixtapes and evolved further with desktop publishing, home computing, and increased Internet access. By the early 2000s, the cost of computers, software, and Internet access decreased, allowing individuals access to the same tools of production used by professionals. In this period, new media forms such as blogs and social networking sites have focused squarely on active audience participation, uprooting the established relationship between media producer and media consumer. At the end of this first decade of the twenty-first century, the line between media producers and consumers has blurred, and the unidirectional broadcast has partially fragmented into many different kinds of multidirectional conversations.

Access to tools and the invention of new media forms allow formerly passive media consumers to make and disseminate their own media. New technological frameworks have arisen that center on enabling this media creation: message boards, audience-driven review sites, blogs and comment systems, photo- and video-sharing websites, social networks, social news sites, bookmark-sharing sites, and microblogging platforms, to name some of the more prominent ones. These new frameworks have become more and more focused on enabling media creation, as this so-called amateur media becomes the raison d'être of these very professional media organizations. These sites are pointless without audience participation: from the audience's perspective, in order to experience the site you *have to become a media producer*, and from the organizations' perspective, without audience production their sites will fail. These media forms include a spectrum of engagement

from elaborate videos uploaded to YouTube to a simple "like" on Facebook. While old forms coexist with these new audience-driven forms and hybrids of the two, media participation is now part of media consumption.

Despite the widespread participant engagement and scholarly interest in this phenomenon, it has no definitive name. It has been given many names, a selection of the most prevalent of which include the corporate media favorite "user-generated content," Henry Jenkins's media-industries-focused "convergence culture," Jay Rosen's "the people formerly known as the audience," the politically infused "participatory media," Yochai Benkler's process-oriented "peer production," and Tim O'Reilly's computer-programming-oriented "Web 2.0." Each of these terms defines one separate aspect of the phenomenon and does so from the specific point of view of the different actors in this system. In order to understand the system as a whole, it is necessary to understand each of these separate terms and the perspective it comes from.

"User-generated content" stands out in this list of terms, as it refers to the material product, not the tools or process of this product's creation; it does address the author but only as an effect of its focus on the product, and it seems to retain a vision of a passive audience in which the users who are generating the content are not synonymous with the audience as a whole but are merely individual members of the audience that step into an intermediate role. This corporate term is very popular with commercial media organizations looking to explain their business plans to investors, but it is reviled by many of these so-called users, foregrounding a general conflict over the line in the sand between amateurs and professionals. Derek Powazek deconstructs the term in his 2006 post "Death to User-Generated Content":

> *User:* One who uses. Like, you know, a junkie.
> *Generated:* Like a generator, engine. Like, you know, a robot.
> *Content:* Something that fills a box. Like, you know, packing peanuts.
> So what's user-generated content? Junkies robotically filling boxes with packing peanuts. Lovely.[1]

He then proposes yet another term for the phenomenon, "authentic media." His deconstruction is intentionally cartoonish, but it expresses its point: the term is machine-like and disregards the personal nature of the media these individuals are creating.

As Henry Jenkins has argued in *Convergence Culture*, these new media forms converge with existing forms and with the media industries built around those forms, in an often uneasy coexistence.[2] These inversions of the tradi-

tional amateur/professional dialectic blur clearly defined author and audience roles. Powazek's critique is rooted in a proindividual, anticorporate ethos that privileges the authenticity of the individual amateur creator, but four years after his post, professional content has become a much larger part of the social media ecosystem. One marker of this transition is the makeup of the all-time most viewed videos on YouTube: in July 2010 only three of the top-twenty videos were nonprofessional, and the majority of the professional videos were studio-produced, high-budget music videos added to the site in the previous eighteen months. This inversion is well represented by "Lonelygirl15," a series of *amateur-style* videos of a fictional teenage girl named Bree; though the main character was played by an actor, led by a team of independent directors/producers, for the first four months the YouTube channel claimed the videos to be the authentic work of a individual amateur.[3] The goal for many of these media creators, including the creators of "Longelygirl15," is to become professionals through their amateur participation in these social media platforms.

Jay Rosen has theorized this phenomenon as a shift in audience and has contextualized this shift in terms of democratic theory. In his blog post of the same name, he speaks in the voice of "the people formerly known as the audience," who want to announce their active presence to the media and to let the media know that they are not going away (see Rosen, chapter 1 in this volume). Rosen closes his missive with a warning from "the people formerly known as the audience" that they are not just "eyeballs" that can be owned. Rather than thinking of "the people formerly known as the audience" as a market, Rosen wants the media to think of them as the public made real; in referring to the public, and the political processes that it implies, Rosen is engaging the same principles behind the term "participatory media." "Participatory media," and the closely related "citizen journalism," focus on news reporting and the political power involved with destabilizing the one-directional broadcast from a reporter to an audience into a multivoiced conversation among participants.[4] In discussions of "participatory media," participation in the media-creation process is often correlated with participation in the political process. Yochai Benkler's term "peer production" refers to the collaborative process of creating media over software-mediated platforms of the networked information economy, such as Wikipedia, Digg, and Slashdot.[5] Benkler's focus is on the process itself, including the presence of socially or technologically mediated rules and the possibility that these new processes are inherently more democratic.

The term "Web 2.0" is derived from O'Reilly Media's Web 2.0 Conference, first held in 2004. Tim O'Reilly, in his follow-up article "What Is Web

2.0?" defines "Web 2.0" as an upgraded computer-programming model that has enabled a set of participatory websites built on lightweight server-based applications that move rich data across platforms. The dense computer-programming jargon in this last sentence highlights the industry white-paper origins of the term. The term "Web 2.0" describes the tools for making this new media; it does not address the process, product, author, or audience. Though it was coined to describe a specific type of web programming, its prevalence outside the coterie of geeks shows how influential the term has become. This popular buzzword has been widely adopted by the marketing departments of Internet startups (supplanting the tainted "dot-com"), media outlets, and academics analyzing the phenomenon. In the process, the term has lost its tether to the web-programming models it espoused and has become just as closely linked to a design aesthetic and a marketing language. Emptied of its referent, it is an empty signifier: it is a brand. The many "Web 2.0 Bullshit Generator" web pages are poignant critiques of Web 2.0 as brand.[6] These simple applications generate random short sets of Web 2.0 terms. These phrases, such as "reinvent rss-capable communities," "incentivize citizen-media blogospheres," and "beta-test embedded wikis," combine these buzzwords to create meaningless, but convincing, marketing materials for a hypothetical Web 2.0 site. The phrases seem to work by deploying the signs of hip inclusive social-medianess, and yet they don't actually mean anything: they are the manifestation of Web 2.0 as branding material.

Each of these terms encapsulates a different aspect of, and comes from the different perspectives of the multiple actors of, the phenomenon of social media. This book uses the term "social media," both in the title and in this introduction. The goal of this book is not to argue for the term "social media" at the expense of all these other terms. The goal of this book is to bring examples from the multiple disciplines, perspectives, and agendas into one space. "Social media" is a broad enough term that it can encompass, while preserving, each of these perspectives and their respective terms.

The essays in this book are divided into six thematic parts: "Mechanisms," "Sociality," "Humor," "Money," "Law," and "Labor." The one question that runs through every one of these essays is whether social media is a good thing: is it beneficial for democracy, culture, law, labor, and creative expression? The field of technology studies asks this question of every new technology; the implicit and explicit answers to this question often veer to the extremes of techno-utopia and techno-dystopia, and social media is no exception. Notable examples at the extreme ends of this dialectic include beatific works like *What Would Google Do?*[7] which walks through the hypothetical appli-

cation wisdom of crowds-based algorithms to every possible area of society, to predictions of social destruction in works like *The Cult of the Amateur: How Today's Internet Is Killing Our Culture*.[8] While all the essays in this book address this theme in some way, some focus on it more than others. The hope for sharing, expression, and the power of new web tools appears strongest in the writings of Chris Anderson, Tim O'Reilly, Jay Rosen, and Clay Shirky. Conversely, C. W. Anderson, Ashley Dawson, Henry Jenkins, and Felix Stalder argue that the unfettered information flow, without the means to control it, turns into a spectacle that does anything but build meaningful political, social, or labor relationships between individuals.

The essays in part 1 provide analyses of the technical and social practices that lay the groundwork for social media. As discussed earlier, Jay Rosen speaks in the voice of "the people formerly known as the audience," who wish for the media makers to know that they exist and are not going away. In doing so, Rosen highlights the change in audience participation, with is the central shift in social practices; this social shift is enabled by technical shifts that are discussed by Tim O'Reilly. Yochai Benkler theorizes the social practice of sharing, a fundamental requirement for social media. Benkler offers models for what can be shared and asserts that these sharing economies can self-organize the use of these surpluses better than an exchange economy can. Siva Vaidhyanathan charts the cultural influence of the open-source software model, touching on the power of copyrights and alternative licenses, which is discussed at length in the section on the law. Tim O'Reilly describes the software models that have enabled the creation of social media platforms. As described earlier, a change in software-development practices, from isolated desktop application to a collaborative web-based platform, defines Web 2.0. In the collaboratively written essay "What Is Collaboration?," Adam Hyde, Mike Linksvayer, kanarinka, Marta Peirano, Sissu Tarka, Astra Taylor, Alan Toner, Mushon Zer-Aviv, and I trace the contours and processes of collaboration from the weak associations to the strong bonds.[9] The essay argues that sharing is a necessary precondition for collaboration but that strong collaboration requires intentionality and coordination.

Part 2 addresses how social media changes the social dynamics of its participants. danah boyd weighs the merits of being perpetually connected to a wireless network, and the information overload and responsibility that results from the deluge of information. boyd accepts the negative aspects of being always on in exchange for the positives, as many of us do, though psychologists and neuroscientists are beginning to reach different conclusions.[10] C. W. Anderson looks at journalism's changing perception of its audience and

how that reflects both journalism's and the audience's relationship to democracy. The rise of the algorithmic journalism performed by content farms may satisfy the search-query-based needs of its readership, but it undermines the democratic effect of journalism.

"Lulz" is the term of choice to describe the pleasure of the ends-justify-the-means pranks and humor that pervades chatrooms and image boards. E. Gabriella Coleman traces an alternate genealogy of hackers that does not start at MIT and end with open-source software but, rather, moves from phone phreakers through countercultural politics and ends with "Anonymous," the lulz-seeking Internet trolls on 4chan's infamous /b/ board. This alternate history presents a subculture of computer hackers birthed outside the university and invested in politics and transgression. Patrick Davison traces the evolution of the meme from its origins in Richard Dawkins's writings on evolutionary biology to the fast-track transformations of Internet memes on the anonymous image boards of 4chan. For Davison, the key to the success of Internet memes and their generative nature is the explicit removal of authorship, which he calls the "nonattribution meme."

In most histories, the Internet began as a self-defense mechanism for communicating during a nuclear war.[11] In the late '80s and early '90s it became a haven for academics, geeks, and other subcultures of the command line. By the mid-'90s money and profit had taken over; the dot-com bubble and crash, the current Web 2.0 balloon, and the Great Recession have marked the Internet alternately as a profit machine and an epic failure as such. Though money appears at the edges of many of the essays here as an explicit goal, a constraining factor, or an effect to be eliminated, Chris Anderson's "The Long Tail" takes it on directly, identifying one of the new business models of online retailers. These retailers stock inventories many times larger than those of brick-and-mortar stores. These long-tail businesses manage to make money off books, records, and other goods that were much too obscure for any previous retailer to stock, leading to a previously unimaginable number of audience choices. On the flip side, recent studies suggest that, though these businesses can profit from selling a very small amount of media objects from each of a very large number of creators, those creators may be worse off in this new system.[12] Other repercussions reverberate from these shifts in what we value and how we value it—including Anderson's exploration of free (as in beer) services in his book *Free! Why $0.00 Is the Future of Business*—the exponential growth in the cost of unique objects, and the rise of real economies for virtual goods.[13]

Lawrence Lessig and Fred von Lohmann address the way that the law impacts the creation of social media. Lessig's essay describes a shift in how

our culture writes, and the way that copyright law is at odds with this shift. Lessig compellingly argues that "writing" has evolved to include sound and moving image but that the copyright law governing writing has not evolved to reflect this cultural shift. This conflict between social practice and legal precedent criminalizes these new forms of expression. Lessig calls for legal reform and for the embrace of the licenses created by Creative Commons, an organization he helped found. Creative Commons licenses allow creators to exercise the rights guaranteed to them under their copyright: instead of "all rights reserved," these works have "some rights reserved." This book and all its essays are Creative Commons licensed. Fred von Lohmann approaches this legal conflict by looking at the different way the Digital Millennium Copyright Act (DMCA) treats these new forms of expression and how that affects their transmission. Existing laws governing non-Internet-based media distribution allow large monetary penalties for breaking "strict liability" copyright law, preventing the distribution of works that relies on fair-use provisions, unless the creator can prove compliance *before* distribution. The DMCA has a safe-harbor provision that allows sites like YouTube to publish these works and requires them to maintain a mechanism to adjudicate claims by copyright holders *after* distribution. This has allowed an explosion of online content and has allowed some creators to identify who is not going to sue them, but it has also led to massive removals of media from sites such as YouTube. Fred Benenson and I consider the shifts in ideology and methodology when applying these licenses to cultural works. Benenson looks at the intricacies of applying software-derived free-culture ideology to non-fungible creative works. In arguing that not all cultural works should have the same license, Benenson identifies a key difference between the utilitarian software tools that pioneered these license models and nonfungible works that are not intended to be further modified. Extending this discussion, I present three case studies that explore the failures and successes of applying open-source methodologies to Creative Commons–licensed noncode projects. Though this process takes its cues from software development, the arts and design communities have a different set of challenges in the process of creating peer-produced works.

The creation of a participatory audience foregrounds labor dynamics; when an audience participates in creating the media that it consumes, it links audience dynamics and labor relations and sometimes renders them interchangeable. Though these labor dynamics are more central in social media's production model, they are not new. Henry Jenkins has written extensively about fan culture and the tensions between creative fans and the proprietary

media empires they are fanatical about. In his essay here, which comes from his book *Convergence Culture*, Jenkins articulates some of the pitfalls of fan culture online and the instability of the trust between creative *Star Wars* fans and LucasArts' wavering support for fan fiction online. Clay Shirky considers the untold possibilities of our coming cognitive surplus. Cognitive surplus is the excess thought power available to society when we convert passive spectatorship into participation in social media. To put this massive capacity in context, the amount of time it has taken to create the entirety of Wikipedia is one hundred million hours, which is equivalent to the amount of time the population of the United States spends watching advertisements on television on any one weekend. Shirky sees this cognitive surplus, released from the drudgery of passive spectatorship, as a force (a *workforce*) that will transform media and society in ways we cannot yet conceive. Conversely, Felix Stalder considers the pitfalls of how our labor accumulates in databases and server farms. Stalder articulates how our labor is often exploited by the "surveillance economy" of analytics software and server logs. Lastly, Ashley Dawson self-reflexively returns us to the very enterprise of this book: academic publishing. Starting from a letter from his editor at University of Michigan Press announcing its digital publication initiative, Dawson asks whether the shift to digitally published scholarship and other forms of computationalism can really provide an escape from the dystopian reality of contemporary academic labor's reduced budgets, informal labor exacerbated by the asymmetry of power-law relationships, pressures of publishing conglomerates exacted through journal subscriptions, and the outcomes-focused mandate on professors to publish or perish. Dawson does see potential in some initiatives but warns that academics are unprepared for digital transformations. He emphasizes that technology, without changing the social context of its implementation, merely reinforces existing inequalities.

The process by which this book was created could never have happened without the use of social media as a tool for creation. Most of the essays in this volume exist on the Internet in one form or another; they are included here by virtue of their Creative Commons licenses. It is because these works have been licensed with free-culture licenses that I can bring them together in this collection, excerpting a few, editing others for print, and remixing Lessig's *Remix* talk into a written essay. In other cases, I was able to ask authors to extend shorter blog posts or to codify informal presentations documented by online video. The print form of these digital texts is but one of their transformations, transformations that you, the people formerly known as the audience, are free to continue: it is social media after all.

Copyright and licensing is powerful but never simple: the chapters in this book are mostly licensed with Attribution ShareAlike (CC BY-SA) licenses,[14] and after a thorough discussion, NYU Press agreed to license the book with an Attribution NonCommercial ShareAlike (CC BY-NC-SA) license.[15] You are free to transmit the whole book, to remix the book, to abridge or amend the book with more essays, or to translate the whole book into other languages or other media platforms, so long as you do so for noncommercial purposes and the work retains this same license. As each individual chapter has a license that permits commercial use, you can use all the chapters except this introduction and Henry Jenkins' chapter in any of the aforementioned ways, without the restriction on commercial use. You may use the Jenkins chapter, the title of the book, and this introduction for noncommercial uses. What form will your remix take?

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14. Yochai Benkler's chapter is licensed with an Attribution license, and Henry Jenkins's chapter is licensed with an Attribution NonCommercial ShareAlike license.

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Mechanisms

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The People Formerly
Known as the Audience

JAY ROSEN

That's what I call them. Recently I received this statement.

The people formerly known as the audience wish to inform media people of our existence, and of a shift in power that goes with the platform shift you've all heard about.

Think of passengers on your ship who got a boat of their own. The writing readers. The viewers who picked up a camera. The formerly atomized listeners who with modest effort can connect with each other and gain the means to speak— to the world, as it were.

Now we understand that met with ringing statements like these many media people want to cry out in the name of reason herself: *If all would speak, who shall be left to listen? Can you at least tell us that?*

The people formerly known as the audience do not believe this problem— too many speakers!—is our problem. Now for anyone in your circle still wondering who we are, a formal definition might go like this:

The people formerly known as the audience are those who were on the receiving end of a media system that ran one way, in a broadcasting pattern, with high entry fees and a few firms competing to speak very loudly while the rest of the population listened in isolation from one another—and who today are not in a situation like that *at all*.

- Once they were your printing presses; now that humble device, the blog, has given the press to us. That's why blogs have been called little First Amendment machines.[1] They extend freedom of the press to more actors.
- Once it was *your* radio station, broadcasting on *your* frequency. Now that brilliant invention, podcasting, gives radio to us. And we have found more uses for it than you did.

- Shooting, editing and distributing video once belonged to you, Big Media. Only you could afford to reach a TV audience built in your own image. Now video is coming into the user's hands, and audience-building by former members of the audience is alive and well on the web.
- You were once (exclusively) the editors of the news, choosing what ran on the front page. Now we can edit the news, and our choices send items to our own front pages.[2]
- A highly centralized media system had connected people "up" to big social agencies and centers of power but not "across" to each other. Now the horizontal flow, citizen-to-citizen, is as real and consequential as the vertical one.

The "former audience" is Dan Gillmor's term for us.[3] (He's one of our discoverers and champions.) It refers to the owners and operators of tools that were once exclusively used by media people to capture and hold their attention.

Jeff Jarvis, a former media executive, has written a law about us. "Give the people control of media, they will use it. The corollary: Don't give the people control of media, and you will lose. Whenever citizens can exercise control, they will."[4]

Look, media people. We are still perfectly content to listen to our radios while driving, sit passively in the darkness of the local multiplex, watch TV while motionless and glassy-eyed in bed, and read silently to ourselves as we always have.

Should we attend the theater, we are unlikely to storm the stage for purposes of putting on our own production. We feel there is nothing wrong with old-style, one-way, top-down media consumption. Big Media pleasures will not be denied us. You provide them, we'll consume them, and you can have yourselves a nice little business.

But we're not on your clock anymore.[5] Tom Curley, CEO of the Associated Press, has explained this to his people. "The users are deciding what the point of their engagement will be—what application, what device, what time, what place."[6]

We graduate from wanting media when we want it to wanting it without the filler, to wanting media to be way better than it is, to publishing and broadcasting ourselves when it meets a need or sounds like fun.[7]

Mark Thompson, director general of the BBC, has a term for us: The Active Audience ("who doesn't want to just sit there but to take part, debate, create, communicate, share").[8]

Another of your big shots, Rupert Murdoch, told American newspaper editors about us: "They want control over their media, instead of being controlled by it."[9]

Dave Winer, one of the founders of blogging, said it back in 1994: "Once the users take control, they never give it back."[10]

Online, we tend to form user communities around our favorite spaces. Tom Glocer, head of your Reuters, recognized it: "If you want to attract a community around you, you must offer them something original and of a quality that they can react to and incorporate in their creative work."[11]

We think you're getting the idea, media people. If not from us, then from your own kind describing the same shifts.

The people formerly known as the audience would like to say a special word to those working in the media who, in the intensity of their commercial vision, had taken to calling us "eyeballs," as in: "There is always a new challenge coming along for the eyeballs of our customers" (John Fithian, president of the National Association of Theater Owners in the United States).[12]

Or: "We already own the eyeballs on the television screen. We want to make sure we own the eyeballs on the computer screen" (Ann Kirschner, vice president for programming and media development for the National Football League).[13]

Fithian, Kirschner, and company should know that such fantastic delusions ("we own the eyeballs . . .") were the historical products of a media system that gave its operators an exaggerated sense of their own power and mastery over others. New media is undoing all that, which makes us smile.[14]

You don't own the eyeballs. You don't own the press, which is now divided into pro and amateur zones. You don't control production on the new platform, which isn't one-way. There's a new balance of power between you and us.

The people formerly known as the audience are simply the public made realer, less fictional, more able, less predictable. You should welcome that, media people. But whether you do or not, we want you to know we're here.

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Sharing Nicely

On Shareable Goods and the Emergence of
Sharing as a Modality of Economic Production

YOCHAI BENKLER

The world's fastest supercomputer and the second-largest commuter transportation system in the United States function on a resource-management model that is not well specified in contemporary economics. Both SETI@home, a distributed computing platform involving the computers of over four million volunteers, and carpooling, which accounts for roughly one-sixth of commuting trips in the United States, rely on social relations and an ethic of sharing, rather than on a price system, to mobilize and allocate resources. Yet they coexist with, and outperform, price-based and government-funded systems that offer substitutable functionality. Neither practice involves public goods, network goods, or any other currently defined category of economically "quirky" goods as either inputs or outputs. PCs and automobiles are privately owned, rival goods, with no obvious demand-side positive returns to scale when used for distributed computing or carpooling.[1] The sharing practices that have evolved around them are not limited to tightly knit communities of repeat players who know each other well and interact across many contexts. They represent instances when social sharing[2] is either utterly impersonal or occurs among loosely affiliated individuals who engage in social practices that involve contributions of the capacity of their private goods in patterns that combine to form large-scale and effective systems for provisioning goods, services, and resources.

This chapter in its original form serves as the introduction to a longer essay that seeks to do two things. The first three parts of the full essay are dedicated to defining a particular class of physical goods as "shareable goods" that systematically have excess capacity and to combining comparative transaction costs and motivation analysis to suggest that this excess capacity may better be harnessed through sharing relations than through secondary markets. These first three parts extend the analysis I have performed elsewhere

regarding sharing of creative labor, like free software and other peer production,[3] to the domain of sharing rival material resources in the production of both rival and nonrival goods and services. The characteristics I use to define shareable goods are sufficient to make social sharing and exchange of material goods feasible as a sustainable social practice. But these characteristics are neither absolutely necessary nor sufficient for sharing to occur. Instead, they define conditions under which, when goods with these characteristics are prevalent in the physical-capital base of an economy, it becomes feasible for social sharing and exchange to become more salient in the overall mix of relations of production in that economy. The fourth part of the full essay is then dedicated to explaining how my observation about shareable goods in the domain of physical goods meshes with the literature on social norms, social capital, and common property regimes, as well as with my own work on peer production. I suggest that social sharing and exchange is an underappreciated modality of economic production, alongside price-based and firm-based market production and state-based production,[4] whose salience in the economy is sensitive to technological conditions. The last part explores how the recognition of shareable goods and sharing as a modality of economic production can inform policy.

Shareable goods are goods that are (1) technically "lumpy" and (2) of "midgrained" granularity. By "lumpy" I mean that they provision functionality in discrete packages rather than in a smooth flow. A PC is "lumpy" in that you cannot buy less than some threshold computation capacity, but once you have provisioned it, you have at a minimum a certain amount of computation, whether you need all of it or not. By "granularity" I seek to capture (1) technical characteristics of the functionality-producing goods, (2) the shape of demand for the functionality in a given society, and (3) the amount and distribution of wealth in that society. A particular alignment of these characteristics will make some goods or resources "midgrained," by which I mean that there will be relatively widespread private ownership of these goods and that these privately owned goods will systematically exhibit slack capacity relative to the demand of their owners. A steam engine is large grained and lumpy. An automobile or PC is midgrained in the United States, Europe, and Japan but large grained in Bangladesh. Reallocating the slack capacity of midgrained goods—say, excess computer cycles or car seats going from A to B—becomes the problem whose solution can be provided by secondary markets, sharing, or management. I offer reasons to think that sharing may have lower transaction costs, improve the information on which agents who own these resources act, and provide better motivation for clearing excess

capacity. While economists might prefer to call these goods "indivisible" rather than "lumpy," that terminology is less intuitive to noneconomists, and, more importantly, it emphasizes a concern with how best to price capacity that is indivisible and coarsely correlated to demand, glossing over the way in which the granularity affects the pattern of distribution of investment in these goods in society. My own concern is how a particular subclass of indivisible goods—those that are midgrained as I define them here—creates a feasibility space for social sharing rather than requiring a particular model of second-best pricing. While indivisibilities do create challenges for efficient pricing, in my analysis they create conditions in which social relations may provide a more efficient transactional framework to provision and exchange those goods than would the price system.

In particular, both markets and managerial hierarchies require crisp specification of behaviors and outcomes. Crispness is costly. It is not a characteristic of social relations, which rely on fuzzier definitions of actions required and performed, of inputs and outputs, and of obligations. Furthermore, where uncertainty is resistant to cost-effective reduction, the more textured (though less computable) information typical of social relations can provide better reasons for action than can the persistent (though futile) search for crisply computable courses of action represented by pricing or managerial commands. Moreover, social sharing can capture a cluster of social and psychological motivations that are not continuous with, and may even be crowded out by, the presence of money. Pooling large numbers of small-scale contributions to achieve effective functionality—where transaction costs would be high and per-contribution payments must be kept low—is likely to be achieved more efficiently through social sharing systems than through market-based systems. It is precisely this form of sharing—on a large scale, among weakly connected participants, in project-specific or even ad hoc contexts—that we are beginning to see more of on the Internet; that is my central focus.

Social sharing and exchange is becoming a common modality of producing valuable desiderata at the very core of the most advanced economies—in information, culture, education, computation, and communications sectors. Free software, distributed computing, ad hoc mesh wireless networks, and other forms of peer production offer clear examples of such large-scale, measurably effective sharing practices. I suggest that the highly distributed capital structure[5] of contemporary communications and computation systems is largely responsible for the increased salience of social sharing as a modality of economic production in those environments. By lowering the capital costs

required for effective individual action, these technologies have allowed various provisioning problems to be structured in forms amenable to decentralized production based on social relations, rather than through markets or hierarchies.

My claim is not, of course, that we live in a unique moment of humanistic sharing. It is, rather, that our own moment in history suggests a more general observation: that the technological state of a society, particularly the extent to which individual agents can engage in efficacious production activities with material resources under their individual control, affects the opportunities for, and hence the comparative prevalence and salience of, social, market (both price based and managerial), and state production modalities. The capital cost of effective economic action in the industrial economy shunted sharing to its peripheries—to households in the advanced economies and to the global economic peripheries that have been the subject of the anthropology of gift or common property regime literatures. The emerging restructuring of capital investment in digital networks—in particular, the phenomenon of user-capitalized computation and communications capabilities—is at least partly reversing that effect. Technology does not determine the level of sharing. But it does set threshold constraints on the effective domain of sharing as a modality of economic production. Within the domain of the feasible, the actual level of sharing practices will be culturally driven and cross-culturally diverse.

The loose category of "social sharing" that I employ here covers a broad range of social phenomena. Carpooling can largely, though not exclusively, be explained in terms of instrumental exchange. Distributed computing projects look like cases of mass altruism among strangers. What justifies bringing such diverse practices under one umbrella term is that they are instances of productive cooperation that are based neither on the price system nor on managerial commands. Given the focus of current policy debates on improving the institutional conditions for market-based production of various desiderata, even at the expense of substitutable social practices, it becomes important to recognize the presence, sustainability, and relative efficiency of even a loosely defined broad alternative.

Once we come to accept the economic significance of this cluster of social practices, we will have to turn to mapping internal variations and understanding their workings and relationships to each other as economic phenomena. Even from the relatively limited review I offer here, it is clear that social production covers different forms of motivation and organization. There are instrumental and noninstrumental motivations. Instrumen-

tal motivations may, in turn, be material—the primary focus of the social norms, social capital, and common property regimes literatures—or social-relational—that is, focused on the production of relations of power within a society, a focus that has been central to the literature on the gift.[6] The gift literature, however, has meshed the instrumental production of social relations with the noninstrumental, mystical, or religious nature of gift giving. This noninstrumental form of motivation—though from a very nonmystical perspective—has also been the focus of the psychological literature on motivation crowding out. Understanding how the motivational and organizational forms of this modality operate will be important whether one seeks to engage in institutional design that takes into consideration the presence of social production as a potential source of welfare, or whether one is concerned with building a business model that harnesses the power of social production—be it for profit, like IBM's relationship with the GNU/Linux development community, or nonprofit, like NASA's relationship with the contributors to SETI@home. For now, however, all we need is to recognize that a broad set of social practices can be sustainable and efficient substitutes for markets, firms, and bureaucracies.

The policy implications of recognizing the relative importance of sharing-based solutions to economic problems are significant. As we manage the transition to a networked information economy, we face diverse questions regarding how best to regulate different areas of this economy: How should we regulate wireless communications systems? How should we regulate music distribution? Should we regulate the design of computers to assure that they are not used to access cultural products without authorization? Usually these policy debates, to the extent they are concerned with efficiency and welfare, assume that the role of policy is to optimize the institutional conditions of attaching prices to marginal actions so as to permit the price system to be the dominant modality of production. This may or may not be wise, but whether it is or is not can only be examined thoughtfully once we have a full picture of the alternatives. If we believe that there are only two alternatives—the price system and some form of hierarchy—we have a very different policy-choice space than if we believe that there is a third modality of production open to us, social production, that may under certain conditions be more efficient.

Radio and communications technologies have reached a point where our policy focus is changing. The Federal Communications Commission is creating an institutional framework to facilitate markets in shareable goods—unlicensed wireless devices and systems—that coproduce wireless transport capac-

ity. Originally, using such devices was prohibited in order to make the world safe for large-grained systems, like broadcast towers or cellular networks, that deliver wireless services on the basis of either the terms of a government license or markets in "spectrum." The music-copyright debate around peer-to-peer file sharing can also be explained in terms of the change in the type of goods used in distribution, from large-scale capital goods to midgrained shareable goods. Understood in these terms, solving this problem by squelching peer-to-peer sharing becomes implausible, both descriptively and prescriptively. Yet current policy analysis largely disregards how institutional changes will affect existing or emerging practices of sharing that may compete with, or substitute for, market-based production. If indeed we live in an economic system made up of price-based, hierarchy-based, and sharing-based modalities of production, if it is true that optimizing our institutional system for price-based production undermines productivity in the sharing modality, and if it is true that our communications, computation, and information sectors are undergoing technological changes that improve the efficiency of social sharing, then we are making systematically mistaken policy choices not on the peripheries of our economies and societies but at their very engines.

NOTES

1. Computers as communications devices do have demand-side returns to scale, or network externalities. But as processing units, the paramount value of personal computers is the intrinsic value of their computation speed and memory, not the network externalities they enable owners to capture. SETI@home and other distributed computing projects harness these intrinsic-value aspects of personal computers rather than their capacities as communication devices.

2. "Sharing" is an uncommon usage in the economics literature, though it is common in some of the anthropology literature. I choose it because it is broader in its application than other, more common, but narrower terms for associated phenomena—most importantly, "reciprocity" or "gift." I hesitate to use "reciprocity" because of its focus on more or less directly responsive reciprocated reward and punishment as a mechanism to sustain cooperation in the teeth of the standard assumptions about collective action. See Dan M. Kahan, The Logic of Reciprocity: Trust, Collective Action, and Law (Yale Law Sch., Pub.

Law Research Paper No. 31, and Yale Program for Studies in Law, Econ. & Pub. Policy, Research Paper No. 281, 2002), available at http://ssrn.com/abstract=361400. Given the presence of purely redistributive practices like tolerated theft and demand sharing in the anthropology literature, evidence of nonreciprocal prosocial behavior—see Bruno S. Frey & Stephan Meier, Pro-social Behavior, Reciprocity, or Both? (Inst. for Empirical Research in Econ., Univ. of Zurich, Working Paper No. 107, 2002)—and more generally our intuitive experiences of acts of humanity toward others whom we will never encounter again, I suspect that some forms of redistribution are nonreciprocal except in the broadest sense of the reciprocation of living in a humane society. Mutual aid and cooperation without the possibility of reciprocal exchange likely exists, the "Lion and the Mouse" fable notwithstanding. See, e.g., James Woodburn, *"Sharing Is Not a Form of Exchange": An Analysis of Property-Sharing in Immediate-Return Hunter-Gatherer Societies*, in Property Relations: Renewing the Anthropological Tradition 48 (C. M. Hann ed., Cambridge Univ. Press 1998). I hesitate to use the term "gift exchange" because the highly developed gift literature (see note 6), has focused very heavily on the production and reproduction of social relations through the exchange and circulation of things. As will soon become clear, I am concerned with the production of things and actions/services valued materially, through nonmarket mechanisms of social sharing. "Sharing," then, offers a less freighted name for evaluating mechanisms of social-relations-based economic production.

3.   Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 Yale L.J. 369 (2002).

4.   In this, my position tracks the tripartite mapping of the universe of organizational forms that resulted from the work on nonprofits in the early 1980s. See Henry B. Hansmann, *The Role of Nonprofit Enterprise*, 89 Yale L.J. 835 (1980); see also Burton A. Weisbrod, The Nonprofit Economy 1–15 (1988); Susan Rose-Ackerman, *Introduction*, in The Economics of Nonprofit Institutions: Studies in Structure and Policy 3, 3–17 (Susan Rose-Ackerman ed., 1986). Unlike the nonprofit literature, my focus is not within the boundaries of firms—whether for profit or nonprofit—but on sharing among individuals in informal associations more resembling markets in the price-based economy than firms.

5.   This is different from capital intensity. The activity may be capital intensive—like distributed computing—when you consider the total capital cost of the computers, network connections, and so on required for an effective unit of production, in comparison to the cost of labor involved. The capital is, however, highly distributed, which is the key characteristic that enables individual agency in the production processes.

6.   The anthropological literature on sharing and the gift has been vast, starting with Bronislaw Malinowski, Argonauts of the Western Pacific (1922), and Marcel Mauss, The Gift: Forms and Functions of Exchange in Archaic Societies (Ian Cunnison trans., Free Press 1954) (1925). A combination of a broad intellectual history and a major contemporary contribution to this line is Maurice Godelier, The Enigma of the Gift (Nora Scott trans., Univ. of Chi. Press 1999) (1996). See also James G. Carrier, *Property and Social Relations in Melanesian Anthropology*, in Property Relations, *supra* note 2, at 85, 85–97 (providing brief intellectual history of the literature); C. M. Hann, *Introduction: The Embeddedness of Property*, in Property Relations, *supra* note 2, at 1, 23–34 (same). As an alternative antithesis to the competition-of-all-against-all model of human society, an early manifestation of a focus on mutual aid and cooperation as a possible path for contemporary societies was Petr Kropotkin, Mutual Aid: A Factor of Evolution (Extending Horizons Books 1955) (1902).

Open Source as Culture/
Culture as Open Source

SIVA VAIDHYANATHAN

The "open source" way of doing things is all the rage. Companies as powerful and established as IBM boast of using Linux operating systems in its servers. Publications as conservative as *The Economist* have pronounced open-source methods "successful" and have pondered their applicability to areas of research and development as different from software as pharmaceutical research.[1]

It is striking that we have to employ phrases like "open source" and "free software" at all.[2] They are significant, powerful phrases simply because they represent an insurgent model of commercial activity and information policy. They challenge the entrenched status quo: the proprietary model of cultural and technological production.

But this has only recently been the case. The "open source" way is closer to how human creativity has always worked. Open source used to be the default way of doing things. The rapid adoption of proprietary information has been so intense and influential since the 1980s that we hardly remember another way or another time. However, through most of human history all information technologies and almost all technologies were "open source." And we have done pretty well as a species with tools and habits unencumbered by high restrictions on sharing, copying, customizing, and improving.

We have become so inured to the proprietary model, so dazzled and intimidated by its cultural and political power, that any commonsense challenge to its assumptions and tenets seems radical, idealistic, or dangerous. But in recent years the practical advantages of the "open source" model of creativity and commerce have become clear. The resulting clamor about the advantages and threats of open-source models have revealed serious faults in the chief regulatory system that governs global flows of culture and information: copyright.

The Rise of Proprietarianism

Copyright gets stretched way out of shape to accommodate proprietary software. Copyright was originally designed to protect books, charts, and maps. Later, courts and legislatures expanded to include recorded music, film, video, translations, public performance, and finally all media that now exist or have yet to be created. Software is special, though. It's not just expression. It is functional. It's not just information. It's action. In some ways, the inclusion of software among the copyrightable forms of creativity has complicated and challenged the intellectual-property tradition. Copyright and proprietary software have metastasized synergistically.

The proprietary model of software production dates to sometime in the 1970s, when mainframe software vendors like AT&T and Digital started asserting control over their source code, thus limiting what computer scientists could do to customize their tools. This was an insult to and offense against these scientists who were acclimated to the academic and scientific ideologies that privilege openness and nonmonetary reward systems. In a much more precise sense we can date the spark of the conflagration between the then-insurgent proprietary model and the then-dominant hacker culture (open source, although they didn't have a name for it then) to Bill Gates's 1976 open letter to the small but growing community of personal-computer hackers warning them that his new company, then spelled "Micro-Soft," would aggressively assert its intellectual-property claims against those who would trade tapes that carry the company's software. Since that date, despite frequently exploiting the gaps and safety valves of copyright protection on their rise to the heights of wealth and power, Microsoft and Gates have worked in correlation if not coordination with the steady valorization of intellectual-property rights as the chief locus of cultural and industrial policy in the world.[3]

According to the proprietary ideology, innovation would not occur without a strong incentive system for the innovator to exploit for commercial gain. "Fencing off" innovations becomes essential for firms and actors to establish markets and bargain away rights. Because innovation so often concerns the ephemeral, trade in the innovation requires excluding others from using, exploiting, or copying data, designs, or algorithms. The Clinton, Bush, and Blair administrations in the United States and United Kingdom embraced the proprietary model as the key to thriving through the deindustrialization of the developed world, thus locking in the advantages that educated, wired nation-states have over those that have been held in technologi-

cal and economic bondage for centuries. Proprietary models of innovation policy and market relations can be powerful: witness the remarkable successes and wealth of the global pharmaceutical industry or, for that matter, of Microsoft. But they can be just as powerful with limitations that allow for communal creation, revision, criticism, and adaptability: witness the culture of custom cars or the World Wide Web.[4]

In fact, as economist Richard Adkisson argues, the veneration of muscular intellectual-property rights as the foundation of innovation and creativity above all other forms has generated an unhealthy cultural and social condition, one which can generate suboptimal levels of investment, asset allocation, and policy choices. Adkisson indicts the widespread belief that intellectual-property rights are the best (perhaps only) of all possible arrangements for innovation, by alerting us to the "ceremonial status" these rights have assumed. "Ceremonial encapsulation occurs when ceremonial values are allowed to alter or otherwise limit the application of technologies instrumental in the process of social problem solving," Adkisson writes. Specifically, Adkisson warns that blind faith in high levels of intellectual-property protection is of the "future-binding type," in which technology and mythology act synergistically to legitimize elite control over technologies or other innovative or creative processes.[5]

The Return of the Jedi

Richard Stallman took a stand against the proprietary model long before the rest of us even realized its power and trajectory. A computer scientist working in the 1970s and 1980s for the artificial-intelligence project at MIT, Stallman grew frustrated that computer companies were denying him and other hackers access to their source code. Stallman found he was not allowed to improve the software and devices that he had to work with, even when they did not work very well. More important, Stallman grew alarmed that he was becoming contractually bound to be unkind and selfish. The user agreements that accompanied proprietary software forbade him from sharing his tools and techniques with others. As a scientist, he was offended that openness was being criminalized. As a citizen, he was a concerned that freedoms of speech and creativity were being constricted. As a problem solver, he set out to establish the Free Software Foundation to prove that good tools and technologies could emerge from a community of concerned creators. Leveraging the communicative power of technology newsletters and the postal system, Stallman sold tapes with his free (as in liberated) software on them.

By the time enough of his constituency had connected themselves through the Internet, he started coordinating projects and conversations among a diverse and distributed set of programmers.[6]

During the late 1990s a growing team of hackers struggled to build the holy grail of free software: an operating-system kernel that would allow an array of programs to work in coordination. The group, led by Linus Torvalds, created a system that became known as Linux. It has since become the chief threat to the ubiquity and dominance of Microsoft.[7]

While Linux and the GNU (free software) project have garnered the most attention in accounts of open-source development, the protocols and programs that enable and empower e-mail, the World Wide Web, IRC (Internet Relay Chat), and just about every other activity on the Internet all emerged from community-based project teams, often ad hoc and amateur. The resulting protocols are elegant, efficient, effective, and under constant revision. And they have empowered both the growth of the proprietary model and the open-source model of cultural production to reach expansive new markets and audiences.[8]

Each of these projects illuminates what Yochai Benkler calls "peer production." Benkler writes,

> The emergence of free software as a substantial force in the software development world poses a puzzle for [Ronald Coase's] organization theory. Free software projects do not rely either on markets or on managerial hierarchies to organize production. Programmers do not generally participate in a project because someone who is their boss instructed them, though some do. They do not generally participate in a project because someone offers them a price, though some participants do focus on long-term appropriation through money-oriented activities, like consulting or service contracts. But the critical mass of participation in projects cannot be explained by the direct presence of a command, a price, or even a future monetary return, particularly in the all-important microlevel decisions regarding selection of projects to which participants contribute. In other words, programmers participate in free software projects without following the normal signals generated by market-based, firm-based, or hybrid models.[9]

Economists assumed for decades that firms emerged to lower or eliminate transaction costs and coordination problems. But as it turns out, fast, efficient, and dependable communication, guided by protocols both social and digital (a process Benkler calls "integration"), can generate brilliant and powerful tools and expressions. Benkler concludes,

The strength of peer production is in matching human capital to information inputs to produce new information goods. Strong intellectual property rights inefficiently shrink the universe of existing information inputs that can be subjected to this process. Instead, owned inputs will be limited to human capital with which the owner of the input has a contractual—usually employment—relationship. Moreover, the entire universe of peer-produced information gains no benefit from strong intellectual property rights. Since the core of commons-based peer production entails provisioning without direct appropriation and since indirect appropriation—intrinsic or extrinsic—does not rely on control of the information but on its widest possible availability, intellectual property offers no gain, only loss, to peer production. While it is true that free software currently uses copyright-based licensing to prevent certain kinds of defection from peer production processes, that strategy is needed only as a form of institutional jujitsu to defend from intellectual property. A complete absence of property in the software domain would be at least as congenial to free software development as the condition where property exists, but copyright permits free software projects to use licensing to defend themselves from defection. The same protection from defection might be provided by other means as well, such as creating simple public mechanisms for contributing one's work in a way that makes it unsusceptible to downstream appropriation—a conservancy of sorts. Regulators concerned with fostering innovation may better direct their efforts toward providing the institutional tools that would help thousands of people to collaborate without appropriating their joint product, making the information they produce freely available rather than spending their efforts to increase the scope and sophistication of the mechanisms for private appropriation of this public good as they now do.[10]

Benkler's prescriptions seem like predictions. In recent years the governments of nation-states as diverse as South Africa, Brazil, and the People's Republic of China have adopted policies that would encourage the dissemination of open-source software.

More significantly, the open-source model has moved far beyond software. Musician and composer Gilberto Gil, the culture minister of Brazil, has released several albums under a Creative Commons license. Such licenses (under which this chapter lies as well) are modeled off of the GNU General Public License, which locks the content open. It requires all users of the copyrighted material to conform to terms that encourage sharing and building.[11]

Other significant extrasoftware projects based on the open-source model include Wikipedia, a remarkable compilation of fact and analysis written and reviewed by a committed team of peers placed around the world. And the scientific spheres have rediscovered their commitment to openness through the movement to establish and maintain open-access journals, thus evading the proprietary traps (and expenses) of large commercial journal publishers.[12] By 2004 citizen-based journalism, often known as "open-source journalism," had grown in importance and established itself as an important and essential element of the global information ecosystem.[13] Such experiments are sure to proliferate in response to the failures (market and otherwise) of proprietary media forms.[14]

How Open Source Changes Copyright

Copyright is a limited monopoly, granted by the state, meant to foster creativity by generating a system of presumed incentives. The copyright holder must have enough faith in the system to justify his or her investment. And the copyright holder's rights to exclude are limited by some public values such as education and criticism. This is the standard understanding of copyright law's role and scope. But while acknowledging the interests of the public, it omits the voice of the public itself. In other words, the system cannot thrive if the public considers it to be captured, corrupted, irrelevant, or absurd.[15]

The rise and success of open-source models fosters a general understanding that copyright is not a single right bestowed on a brilliant individual author but is instead a "bundle" of rights that a copyright holder (individual, corporation, organization, or foundation) may license. Most important, these experiments and projects show that "all rights reserved" need not be the default state of copyright protection. For many people, "some rights reserved" serves the interests of creators better than the absolutist proprietary model does.

As the rhetoric of open source and the politics of traditional knowledge and culture emerge in starker relief within the topography of copyright and cultural policy debates, their themes tend to converge. As anthropologist Vladimir Hafstein describes the tension between copyright systems as dictated by the industrialized world and modes of communal cultural production that are best (albeit not exclusively) demonstrated in developing nations, he uses terms that could just as easily be applied to technological peer production. "Creativity as a social process is the common denomina-

tor of these concepts and approaches," Hafstein writes. "From each of these perspectives, the act of creation is a social act. From the point of view of intertextuality, for example, works of literature are just as much a product of society or of discourse as they are of an individual author or, for that matter, reader." Traditional cultural knowledge, communally composed and lacking distinct marks of individual authorship, is "a node in a network of relations: not an isolated original, but a reproduction, a copy," Hafstein explains.[16] Nothing about Hafstein's descriptions of the politics of traditional knowledge offers a resolution to that particular source of friction in global intellectual-property battles. But the converging rhetorics reveal the extent to which innovation and creativity often (perhaps most often) sit outside the assumptions of incentives and protectionism on which high levels of corporate copyright protection rest.

The open-source model of peer production, sharing, revision, and peer review has distilled and labeled the most successful creative habits into a political movement. This distillation has had costs and benefits. It has been difficult to court mainstream acceptance for such a tangle of seemingly technical ideas when its chief advocates have been hackers and academics. Neither class has much power or influence in the modern global economy or among centers of policy decision-making. On the other hand, the brilliant success of overtly labeled open-source experiments, coupled with the horror stories of attempts to protect the proprietary model, has added common sense to the toolbox of these advocates.

NOTES

This chapter was originally published in *Open Source Annual 2005* (Berlin: Technische Universität). This work is licensed under the Creative Commons Attribution-ShareAlike license.

1. "An Open-Source Shot in the Arm?," *Economist*, 12 June 2004. Also see Steve Weber, *The Success of Open Source* (Cambridge: Harvard University Press, 2004).

2. Throughout this essay and in all of my work I intentionally conflate these two terms while being fully aware of the political distinction that Richard Stallman emphasizes in his defense of "free software." Stallman's point—that "open source" invites an emphasis on convenience and utility rather than freedom and community—was important to make in the 1990s. He lost the battle to control the terms, just as he has had to concede the rhetorical convenience and ubiquity of "LINUX" instead of the more accurate "GNU/ LINUX." I am confident that anyone who peers into the history or politics of the open-source movement will encounter Stallman's persuasive case for freedom and the GNU project's central contribution to the growth of the operating system we now call LINUX. See Richard Stallman, "The GNU Operating System and the Free Software Movement," in *Open Sources: Voices of the Open Source Revolution*, ed. Chris DiBona, Sam Ockman, and Mark Stone (Sebastopol, CA: O'Reilly, 1999).

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4

What Is Web 2.0?

Design Patterns and Business Models
for the Next Generation of Software

TIM O'REILLY

The bursting of the dot-com bubble in the fall of 2001 marked a turning point for the web. Many people concluded that the web was over-hyped, when in fact bubbles and consequent shakeouts appear to be a common feature of all technological revolutions.[1] Shakeouts typically mark the point at which an ascendant technology is ready to take its place at center stage. The pretenders are given the bum's rush, the real success stories show their strength, and there begins to be an understanding of what separates one from the other.

The concept of "Web 2.0" began with a conference brainstorming session between O'Reilly Media and MediaLive International. Dale Dougherty, web pioneer and O'Reilly vice president, noted that far from having "crashed," the web was more important than ever, with exciting new applications and sites popping up with surprising regularity. What's more, the companies that had survived the collapse seemed to have some things in common. Could it be that the dot-com collapse marked some kind of turning point for the web, such that a call to action such as "Web 2.0" might make sense? We agreed that it did, and so the Web 2.0 Conference was born.[2]

In the year and a half since, the term "Web 2.0" has clearly taken hold, with more than 9.5 million citations in Google. But there's still a huge amount of disagreement about just what "Web 2.0" means,[3] with some people decrying it as a meaningless marketing buzzword and others accepting it as the new conventional wisdom.

This essay is an attempt to clarify just what we mean by "Web 2.0." In our initial brainstorming, we formulated our sense of Web 2.0 by example (see table 4.1). The list went on and on. But what was it that made us identify one application or approach as "Web 1.0" and another as "Web 2.0"? (The question is particularly urgent because the Web 2.0 meme has become so

TABLE 4.1

Web 1.0	Web 2.0
DoubleClick	Google AdSense
Ofoto	Flickr
Akamai	BitTorrent
mp3.com	Napster
Britannica Online	Wikipedia
personal websites	blogging
evite	upcoming.org and EVDB
domain name speculation	search engine optimization
page views	cost per click
screen scraping	web services
publishing	participation
content management systems	wikis
directories (taxonomy)	tagging ("folksonomy")
stickiness	syndication

widespread that companies are now pasting it on as a marketing buzzword, with no real understanding of just what it means. The question is particularly difficult because many of those buzzword-addicted start-ups are definitely *not* Web 2.0, while some of the applications we identified as Web 2.0, like Napster and BitTorrent, are not even properly web applications!) We began trying to tease out the principles that are demonstrated in one way or another by the success stories of Web 1.0 and by the most interesting of the new applications.

1. The Web as Platform

Like many important concepts, Web 2.0 doesn't have a hard boundary but, rather, a gravitational core. You can visualize Web 2.0 as a set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of those principles, at a varying distance from that core. Figure 4.1 shows a "meme map" of Web 2.0 that was developed at a brainstorming session during FOO Camp, a conference at O'Reilly Media. It's very much a work in progress, but it shows the many ideas that radiate out from the Web 2.0 core.

Web 2.0 Meme Map

Flickr, del.icio.us: Tagging, not taxonomy

PageRank, eBay reputation, Amazon reviews: user as contributor

Blogs: Participation, Not publishing

BitTorrent: Radical Decentralization

Gmail, Google Maps and AJAX: Rich User Experiences

Google AdSense: customer self-service enabling the long tail

Wikipedia: Radical Trust

Strategic Positioning:
· The Web as Platform

User Positioning:
· You control your own data

Core Competencies:
· Services, not packaged software
· Architecture of Participation
· Cost-effective scalability
· Remixable data source and data transformations
· Software above the level of a single device
· Harnessing collective intelligence

"An attitude, not a technology"

Trust your users

The Long Tail

Small Pieces Loosely Joined (web as components)

Data as the "Intel Inside"

The perpetual beta

Software that gets better the more people use it

Play

Rich User Experience

Hackability

The Right to Remix: "Some rights reserved"

Emergent: User behavior not predetermined

Granular Addressability of content

Fig. 4.1. Web 2.0 meme map

For example, at the first Web 2.0 conference, in October 2004, John Battelle and I listed a preliminary set of principles in our opening talk. The first of those principles was "the web as platform." Yet that was also a rallying cry of Web 1.0 darling Netscape, which went down in flames after a heated battle with Microsoft. What's more, two of our initial Web 1.0 exemplars, Double-Click and Akamai, were both pioneers in treating the web as a platform. People don't often think of ad serving as "web services," but in fact, it was the first widely deployed web service and the first widely deployed "mashup" (to use another term that has gained currency of late). Every banner ad is served as a seamless cooperation between two websites, delivering an integrated page to a reader on yet another computer. Akamai also treats the network as the platform, and at a deeper level of the stack, building a transparent caching and content-delivery network that eases bandwidth congestion.

Nonetheless, these pioneers provided useful contrasts because later entrants have taken their solution to the same problem even further, understanding something deeper about the nature of the new platform. Both DoubleClick and Akamai were Web 2.0 pioneers, yet we can also see how it's possible to realize more of the possibilities by embracing additional Web 2.0 design patterns.

Let's drill down for a moment into each of these three cases, teasing out some of the essential elements of difference.

Netscape vs. Google

If Netscape was the standard bearer for Web 1.0, Google is most certainly the standard bearer for Web 2.0, if only because their respective initial public offerings were defining events for each era. So let's start with a comparison of these two companies and their positioning.

Netscape framed "the web as platform" in terms of the old software paradigm: its flagship product was the web browser, a desktop application, and its strategy was to use its dominance in the browser market to establish a market for high-priced server products. Control over standards for displaying content and applications in the browser would, in theory, give Netscape the kind of market power enjoyed by Microsoft in the PC market. Much like the "horseless carriage" framed the automobile as an extension of the familiar, Netscape promoted a "webtop" to replace the desktop and planned to populate that webtop with information updates and applets pushed to the webtop by information providers who would purchase Netscape servers.

In the end, both web browsers and web servers turned out to be commodities, and value moved "up the stack" to services delivered over the web platform.

Google, by contrast, began its life as a native web application, never sold or packaged but delivered as a service, with customers paying, directly or indirectly, for the use of that service. None of the trappings of the old software industry is present. No scheduled software releases, just continuous improvement. No licensing or sale, just usage. No porting to different platforms so that customers can run the software on their own equipment, just a massively scalable collection of commodity PCs running open-source operating systems plus homegrown applications and utilities that no one outside the company ever gets to see.

At bottom, Google requires a competency that Netscape never needed: database management. Google isn't just a collection of software tools; it's a specialized database. Without the data, the tools are useless; without the software, the data is unmanageable.

DoubleClick vs. Overture and AdSense

Like Google, DoubleClick is a true child of the Internet era. It harnesses software as a service, has a core competency in data management, and, as

noted earlier, was a pioneer in web services long before web services even had a name. However, DoubleClick was ultimately limited by its business model. It bought into the '90s notion that the web was about publishing, not participation; that advertisers, not consumers, ought to call the shots; that size mattered; and that the Internet was increasingly being dominated by the top websites as measured by MediaMetrix and other web ad-scoring companies.

As a result, DoubleClick proudly cites on its website "over 2000 successful implementations" of its software. Yahoo! Search Marketing (formerly Overture) and Google AdSense, by contrast, already serve hundreds of thousands of advertisers apiece.

Overture's and Google's success came from an understanding of what Chris Anderson refers to as "the long tail," the collective power of the small sites that make up the bulk of the web's content (see chapter 10 in this volume). DoubleClick's offerings require a formal sales contract, limiting its market to the few thousand largest websites. Overture and Google figured out how to enable ad placement on virtually any web page. What's more, they eschewed publisher/ad-agency-friendly advertising formats such as banner ads and popups in favor of minimally intrusive, context-sensitive, consumer-friendly text advertising.

The Web 2.0 lesson: *leverage customer self-service and algorithmic data management to reach out to the entire web, to the edges and not just the center, to the long tail and not just the head*.

Not surprisingly, other Web 2.0 success stories demonstrate this same behavior. eBay enables occasional transactions of only a few dollars between single individuals, acting as an automated intermediary. Napster (though shut down for legal reasons) built its network not by building a centralized song database but by architecting a system in such a way that every downloader also became a server and thus grew the network.

Akamai vs. BitTorrent

Like DoubleClick, Akamai is optimized to do business with the head, not the tail, with the center, not the edges. While it serves the benefit of the individuals at the edge of the web by smoothing their access to the high-demand sites at the center, it collects its revenue from those central sites.

BitTorrent, like other pioneers in the peer-to-peer (P2P) movement, takes a radical approach to Internet decentralization. Every client is also a server; files are broken up into fragments that can be served from multiple locations,

transparently harnessing the network of downloaders to provide both bandwidth and data to other users. The more popular the file, in fact, the faster it can be served, as there are more users providing bandwidth and fragments of the complete file.

BitTorrent thus demonstrates a key Web 2.0 principle: *the service automatically gets better the more people use it*. While Akamai must add servers to improve service, every BitTorrent consumer brings his or her own resources to the party. There's an implicit "architecture of participation," a built-in ethic of cooperation, in which the service acts primarily as an intelligent broker, connecting the edges to each other and harnessing the power of the users themselves.

2. Harnessing Collective Intelligence

The central principle behind the success of the giants born in the Web 1.0 era who have survived to lead the Web 2.0 era appears to be this, that they have embraced the power of the web to harness collective intelligence:

Hyperlinking is the foundation of the web. As users add new content, and new sites, it is bound in to the structure of the web by other users discovering the content and linking to it. Much as synapses form in the brain, with associations becoming stronger through repetition or intensity, the web of connections grows organically as an output of the collective activity of all web users.

Yahoo!, the first great Internet success story, was born as a catalog, or directory of links, an aggregation of the best work of thousands and then millions of web users. While Yahoo! has since moved into the business of creating many types of content, its role as a portal to the collective work of the net's users remains the core of its value.

Google's breakthrough in search, which quickly made it the undisputed search-market leader, was PageRank, a method of using the link structure of the web rather than just the characteristics of documents to provide better search results.

eBay's product is the collective activity of all its users; like the web itself, eBay grows organically in response to user activity, and the company's role is as an enabler of a context in which that user activity can happen. What's more, eBay's competitive advantage comes almost entirely from the critical mass of buyers and sellers, which makes any new entrant offering similar services significantly less attractive.

Amazon sells the same products as competitors such as Barnesandno-ble.com, and it receives the same product descriptions, cover images, and editorial content from its vendors. But Amazon has made a science of user engagement. It has an order of magnitude more user reviews, invitations to participate in varied ways on virtually every page—and, even more impor-tant, it uses user activity to produce better search results. While a Barne-sandnoble.com search is likely to lead with the company's own products, or sponsored results, Amazon always leads with "most popular," a real-time computation based not only on sales but on other factors that Amazon insid-ers call the "flow" around products. With an order of magnitude more user participation, it's no surprise that Amazon's sales also outpace competitors'.

Now, innovative companies that pick up on this insight and perhaps extend it even further are making their mark on the web:

Wikipedia, an online encyclopedia based on the unlikely notion that an entry can be added by any web user and edited by any other, is a radical experiment in trust, applying Eric Raymond's dictum (originally coined in the context of open-source software) that "with enough eyeballs, all bugs are shallow" to content creation.[4] Wikipedia is already in the top one hun-dred websites, and many people think it will be in the top ten before long. This is a profound change in the dynamics of content creation!

Sites like del.icio.us and Flickr, two companies that have received a great deal of attention of late, have pioneered a concept that some people call "folksonomy" (in contrast to taxonomy), a style of collaborative categoriza-tion of sites using freely chosen keywords, often referred to as tags.[5] Tagging allows for the kind of multiple, overlapping associations that the brain itself uses, rather than rigid categories. In the canonical example, a Flickr photo of a puppy might be tagged both "puppy" and "cute"—allowing for retrieval along natural axes-generated user activity.

Collaborative spam-filtering products like Cloudmark aggregate the indi-vidual decisions of e-mail users about what is and is not spam, outperform-ing systems that rely on analysis of the messages themselves.

It is a truism that the greatest Internet success stories don't advertise their products. Their adoption is driven by "viral marketing"—that is, recommen-dations propagating directly from one user to another. You can almost make the case that if a site or product relies on advertising to get the word out, it isn't Web 2.0.

Even much of the infrastructure of the web—including the Linux, Apache, MySQL, and Perl, PHP, or Python code involved in most web servers—relies on the peer-production methods of open source, in themselves an instance of collective, net-enabled intelligence.[6] There are more than one hundred thousand open-source software projects listed on SourceForge.net. Anyone can add a project, anyone can download and use the code, and new projects migrate from the edges to the center as a result of users putting them to work, an organic software-adoption process relying almost entirely on viral marketing.

The lesson: *network effects from user contributions are the key to market dominance in the Web 2.0 era.*

Software licensing and control over application programming interfaces (APIs)—the lever of power in the previous era—is irrelevant because the software never need be distributed but only performed, and also because without the ability to collect and manage the data, the software is of little use. In fact, *the value of the software is proportional to the scale and dynamism of the data it helps to manage.*

Google's service is not a server, though it is delivered by a massive collection of Internet servers; nor is it a browser, though it is experienced by the user within the browser. Nor does its flagship search service even host the content that it enables users to find. Much like a phone call, which happens not just on the phones at either end of the call but on the network in between, Google happens in the space between browser and search engine and destination content server, as an enabler or middleman between the user and his or her online experience.

While both Netscape and Google could be described as software companies, it's clear that Netscape belonged to the same software world as Lotus, Microsoft, Oracle, SAP, and other companies that got their start in the 1980s software revolution, while Google's fellows are other Internet applications like eBay, Amazon, Napster, and, yes, DoubleClick and Akamai.

Blogging and the Wisdom of Crowds

One of the most highly touted features of the Web 2.0 era is the rise of blogging. Personal home pages have been around since the early days of the web, and the personal diary and daily opinion column have been around much longer than that. So just what is the fuss all about?

A blog, at its most basic, is just a personal home page in diary format. But as Rich Skrenta notes, the chronological organization of a blog "seems like a trivial difference, but it drives an entirely different delivery, advertising and value chain."[7]

One of the things that has made a difference is a technology called RSS.[8] RSS is the most significant advance in the fundamental architecture of the web since early hackers realized that CGI could be used to create database-backed websites. RSS allows someone not just to link to a page but to subscribe to it, with notification every time that page changes. Skrenta calls this "the incremental web." Others call it the "live web."

Now, of course, "dynamic websites" (i.e., database-backed sites with dynamically generated content) replaced static web pages well over ten years ago. What's dynamic about the live web are not just the pages but the links. A link to a weblog is expected to point to a perennially changing page, with "permalinks" for any individual entry and notification for each change. An RSS feed is thus a much stronger link than, say, a bookmark or a link to a single page.

RSS also means that the web browser is not the only means of viewing a web page. While some RSS aggregators, such as Bloglines, are web based, others are desktop clients, and still others allow users of portable devices to subscribe to constantly updated content.

RSS is now being used to push not just notices of new blog entries but also all kinds of data updates, including stock quotes, weather data, and photo availability. This use is actually a return to one of its roots: RSS was born in 1997 out of the confluence of Dave Winer's "Really Simple Syndication" technology, used to push out blog updates, and Netscape's "Rich Site Summary," which allowed users to create custom Netscape home pages with regularly updated data flows. Netscape lost interest, and the technology was carried forward by blogging pioneer Userland, Winer's company. In the current crop of applications, though, we see the heritage of both parents.

But RSS is only part of what makes a weblog different from an ordinary web page. Tom Coates remarks on the significance of the permalink:

> It may seem like a trivial piece of functionality now, but it was effectively the device that turned weblogs from an ease-of-publishing phenomenon into a conversational mess of overlapping communities. For the first time it became relatively easy to gesture directly at a highly specific post on someone else's site and talk about it. Discussion emerged. Chat emerged. And—as a result—friendships emerged or became more entrenched. The permalink was the first—and most successful—attempt to build bridges between weblogs.[9]

In many ways, the combination of RSS and permalinks adds many of the features of NNTP, the Network News Protocol of the Usenet, onto HTTP, the web protocol. The "blogosphere" can be thought of as a new, peer-to-peer equivalent to Usenet and bulletin boards, the conversational watering holes of the early Internet. Not only can people subscribe to each other's sites and easily link to individual comments on a page, but also, via a mechanism known as trackbacks, they can see when anyone else links to their pages and can respond, either with reciprocal links or by adding comments.

Interestingly, two-way links were the goal of early hypertext systems like Xanadu. Hypertext purists have celebrated trackbacks as a step toward two-way links. But note that trackbacks are not properly two way—rather, they are really (potentially) symmetrical one-way links that create the effect of two-way links. The difference may seem subtle, but in practice it is enormous. Social networking systems like Friendster, Orkut, and LinkedIn, which require acknowledgment by the recipient in order to establish a connection, lack the same scalability as the web. As noted by Caterina Fake, cofounder of the Flickr photo-sharing service, attention is only coincidentally reciprocal. (Flickr thus allows users to set watch lists—any user can subscribe to any other user's photostream via RSS. The object of attention is notified but does not have to approve the connection.)

If an essential part of Web 2.0 is harnessing collective intelligence, turning the web into a kind of global brain, the blogosphere is the equivalent of constant mental chatter in the forebrain, the voice we hear in all of our heads. It may not reflect the deep structure of the brain, which is often unconscious, but is instead the equivalent of conscious thought. And as a reflection of conscious thought and attention, the blogosphere has begun to have a powerful effect.

First, because search engines use link structure to help predict useful pages, bloggers, as the most prolific and timely linkers, have a disproportionate role in shaping search-engine results. Second, because the blogging community is so highly self-referential, bloggers' paying attention to other bloggers magnifies their visibility and power. The "echo chamber" that critics decry is also an amplifier.

If blogging were merely an amplifier, it would be uninteresting. But like Wikipedia, blogging harnesses collective intelligence as a kind of filter. What James Surowiecki calls "the wisdom of crowds" comes into play, and much as PageRank produces better results than analysis of any individual document, the collective attention of the blogosphere selects for value.[10]

While mainstream media may see individual blogs as competitors, what is really unnerving is that the competition is with the blogosphere as a whole. This is not just a competition between sites but a competition between business models. The world of Web 2.0 is also the world of what Dan Gillmor calls "we, the media," a world in which "the former audience," not a few people in a back room, decides what's important.[11]

3. Data Is the Next Intel Inside

Every significant Internet application to date has been backed by a specialized database: Google's web crawl, Yahoo!'s directory (and web crawl), Amazon's database of products, eBay's database of products and sellers, MapQuest's map databases, Napster's distributed song database. As Hal Varian remarked in a personal conversation last year, "SQL is the new HTML." Database management is a core competency of Web 2.0 companies, so much so that we have sometimes referred to these applications as "infoware" rather than merely software.[12]

This fact leads to a key question: Who owns the data?

In the Internet era, one can already see a number of cases where control over the database has led to market control and outsized financial returns. The monopoly on domain-name registry initially granted by government fiat to Network Solutions (later purchased by Verisign) was one of the first great moneymakers of the Internet. While we've argued that business advantage via controlling software APIs is much more difficult in the age of the Internet, control of key data sources is not, especially if those data sources are expensive to create or amenable to increasing returns via network effects.

Look at the copyright notices at the base of every map served by MapQuest, maps.yahoo.com, maps.msn.com, or maps.google.com, and you'll see the line "Maps copyright NavTeq, TeleAtlas" or, with the new satellite-imagery services, "Images copyright Digital Globe." These companies made substantial investments in their databases (NavTeq alone reportedly invested $750 million to build its database of street addresses and directions. Digital Globe spent $500 million to launch its own satellite to improve on government-supplied imagery.) NavTeq has gone so far as to imitate Intel's familiar "Intel Inside" logo: cars with navigation systems bear the imprint "NavTeq Onboard." Data is indeed the "Intel Inside" of these applications, a sole source component in systems whose software infrastructure is largely open source or otherwise commodified.

The now hotly contested web-mapping arena demonstrates how a failure to understand the importance of owning an application's core data will eventually undercut its competitive position. MapQuest pioneered the web-mapping category in 1995, yet when Yahoo! and then Microsoft and most recently Google decided to enter the market, they were easily able to offer a competing application simply by licensing the same data.

Contrast, however, the position of Amazon.com. Like competitors such as Barnesandnoble.com, its original database came from ISBN registry provider R. R. Bowker. But unlike MapQuest, Amazon relentlessly enhanced the data, adding publisher-supplied data such as a cover image, a table of contents, an index, and sample material. Even more importantly, it harnessed its users to annotate the data, such that after ten years, Amazon, not Bowker, is the primary source for bibliographic data on books, a reference source for scholars and librarians as well as consumers. Amazon also introduced its own proprietary identifier, the ASIN, which corresponds to the ISBN when one is present and creates an equivalent name space for products without one. Effectively, Amazon "embraced and extended" its data suppliers.

Imagine if MapQuest had done the same thing, harnessing its users to annotate maps and directions, adding layers of value. It would have been much more difficult for competitors to enter the market just by licensing the base data.

The recent introduction of Google Maps provides a living laboratory for the competition between application vendors and their data suppliers. Google's lightweight programming model has led to the creation of numerous value-added services in the form of mashups that link Google Maps with other Internet-accessible data sources. Paul Rademacher's housingmaps.com, which combines Google Maps with Craigslist apartment-rental and home-purchase data to create an interactive housing search tool, is the preeminent example of such a mashup.

At present, these mashups are mostly innovative experiments, done by hackers. But entrepreneurial activity follows close behind. And already one can see that for at least one class of developer, Google has taken the role of data source away from NavTeq and inserted itself as a favored intermediary. We expect to see battles between data suppliers and application vendors in the next few years, as both realize just how important certain classes of data will become as building blocks for Web 2.0 applications.

The race is on to own certain classes of core data: location, identity, calendaring of public events, product identifiers, and name spaces. In many cases, where there is significant cost to create the data, there may be an opportunity for an Intel Inside–style play, with a single source for the data. In others, the

winner will be the company that first reaches critical mass via user aggregation and turns that aggregated data into a system service.

For example, in the area of identity, PayPal, Amazon's 1-click, and the millions of users of communications systems may all be legitimate contenders to build a network-wide identity database. (In this regard, Google's recent attempt to use cell-phone numbers as an identifier for Gmail accounts may be a step toward embracing and extending the phone system.) Meanwhile, start-ups like Sxip are exploring the potential of federated identity, in quest of a kind of "distributed 1-click" that will provide a seamless Web 2.0 identity subsystem. In the area of calendaring, EVDB is an attempt to build the world's largest shared calendar via a wiki-style architecture of participation. While the jury's still out on the success of any particular start-up or approach, it's clear that standards and solutions in these areas, effectively turning certain classes of data into reliable subsystems of the "Internet operating system," will enable the next generation of applications.

A further point must be noted with regard to data, and that is user concerns about privacy and their rights to their own data. In many of the early web applications, copyright is only loosely enforced. For example, Amazon lays claim to any reviews submitted to the site, but in the absence of enforcement, people may repost the same review elsewhere. However, as companies begin to realize that control over data may be their chief source of competitive advantage, we may see heightened attempts at control.

Much as the rise of proprietary software led to the Free Software movement, we expect the rise of proprietary databases to result in a Free Data movement within the next decade. One can see early signs of this countervailing trend in open data projects such as Wikipedia, in the Creative Commons, and in software projects like Greasemonkey, which allow users to take control of how data is displayed on their computer.

4. End of the Software Release Cycle

As noted earlier in the discussion of Google versus Netscape, one of the defining characteristics of Internet-era software is that it is delivered as a service, not as a product. This fact leads to a number of fundamental changes in the business model of such a company:

Operations must become a core competency. Google's or Yahoo!'s expertise in product development must be matched by an expertise in daily operations. So fundamental is the shift from software as artifact to software as service that *the*

software will cease to perform unless it is maintained on a daily basis. Google must continuously crawl the web and update its indices, continuously filter out link spam and other attempts to influence its results, and continuously and dynamically respond to hundreds of millions of asynchronous user queries, simultaneously matching them with context-appropriate advertisements.

It's no accident that Google's system administration, networking, and load-balancing techniques are perhaps even more closely guarded secrets than are their search algorithms. Google's success at automating these processes is a key part of its cost advantage over competitors.

It's also no accident that scripting languages such as Perl, Python, PHP, and now Ruby play such a large role at Web 2.0 companies. Perl was famously described by Hassan Schroeder, Sun's first webmaster, as "the duct tape of the Internet." Dynamic languages (often called scripting languages and looked down on by the software engineers of the era of software artifacts) are the tool of choice for system and network administrators, as well as for application developers building dynamic systems that require constant change.

Users must be treated as codevelopers, in a reflection of open-source development practices (even if the software in question is unlikely to be released under an open-source license). The open-source dictum, "release early and release often," in fact has morphed into an even more radical position, "the perpetual beta," in which the product is developed in the open, with new features slipstreamed in on a monthly, weekly, or even daily basis. It's no accident that services such as Gmail, Google Maps, Flickr, del.icio.us, and the like may be expected to bear a "Beta" logo for years at a time.

Real-time monitoring of user behavior to see just which new features are used, and how they are used, thus becomes another required core competency. A web developer at a major online service remarked, "We put up two or three new features on some part of the site every day, and if users don't adopt them, we take them down. If they like them, we roll them out to the entire site."

Cal Henderson, the lead developer of Flickr, recently revealed that the company deploys new builds up to every half hour.[13] This is clearly a radically different development model! While not all web applications are developed in as extreme a style as Flickr, almost all web applications have a development cycle that is radically unlike anything from the PC or client-server era. It is for this reason that a recent ZDNet editorial concluded that Microsoft won't be able to beat Google: "Microsoft's business model depends on everyone upgrading their computing environment every two to three years. Google's depends on everyone exploring what's new in their computing environment every day."[14]

While Microsoft has demonstrated enormous ability to learn from and ultimately best its competition, there's no question that this time, the competition will require Microsoft (and by extension, every other existing software company) to become a deeply different kind of company. Native Web 2.0 companies enjoy a natural advantage, as they don't have old patterns (and corresponding business models and revenue sources) to shed.

5. Lightweight Programming Models

Once the idea of web services became au courant, large companies jumped into the fray with a complex web-services stack designed to create highly reliable programming environments for distributed applications.

But much as the web succeeded precisely because it overthrew much of hypertext theory, substituting a simple pragmatism for ideal design, RSS has become perhaps the single most widely deployed web service because of its simplicity, while the complex corporate web-services stacks have yet to achieve wide deployment.

Similarly, Amazon.com's web services are provided in two forms: one adhering to the formalisms of the SOAP (Simple Object Access Protocol) web-services stack, the other simply providing XML data over HTTP, in a lightweight approach sometimes referred to as REST (Representational State Transfer). While high-value business-to-business (B2B) connections (like those between Amazon and retail partners like Toys "R" Us) use the SOAP stack, Amazon reports that 95 percent of the usage is of the lightweight REST service.

This same quest for simplicity can be seen in other "organic" web services. Google's recent release of Google Maps is a case in point. Google Maps' simple AJAX (Javascript and XML) interface was quickly decrypted by hackers, who then proceeded to remix the data into new services.

Mapping-related web services had been available for some time from GIS vendors such as ESRI as well as from MapQuest and Microsoft MapPoint. But Google Maps set the world on fire because of its simplicity. While experimenting with any of the formal vendor-supported web services required a formal contract between the parties, the way Google Maps was implemented left the data for the taking, and hackers soon found ways to creatively reuse that data.

There are several significant lessons here:

Support lightweight programming models that allow for loosely coupled systems. The complexity of the corporate-sponsored web-services stack is designed to enable tight coupling. While this is necessary in many cases, many of the most interesting applications can indeed remain loosely coupled and even fragile. The Web 2.0 mind-set is very different from the traditional IT mind-set!

Think syndication, not coordination. Simple web services, like RSS and REST-based web services, are about syndicating data outward, not controlling what happens when it gets to the other end of the connection. This idea is fundamental to the Internet itself, a reflection of what is known as the end-to-end principle.[15]

Design for "hackability" and remixability. Systems like the original web, RSS, and AJAX all have this in common: the barriers to reuse are extremely low. Much of the useful software is actually open source, but even when it isn't, there is little in the way of intellectual-property protection. The web browser's "View Source" option made it possible for any user to copy any other user's web page; RSS was designed to empower the user to view the content he or she wants, when it's wanted, not at the behest of the information provider; the most successful web services are those that have been easiest to take in new directions unimagined by their creators. The phrase "some rights reserved," which was popularized by the Creative Commons to contrast with the more typical "all rights reserved," is a useful guidepost.

Innovation in Assembly

Lightweight business models are a natural concomitant of lightweight programming and lightweight connections. The Web 2.0 mind-set is good at reuse. A new service like housingmaps.com was built simply by snapping together two existing services. Housingmaps.com doesn't have a business model (yet)—but for many small-scale services, Google AdSense (or perhaps Amazon Associates fees, or both) provides the snap-in equivalent of a revenue model.

These examples provide an insight into another key Web 2.0 principle, which we call "innovation in assembly." When commodity components are abundant, you can create value simply by assembling them in novel or effective ways. Much as the PC revolution provided many opportunities for innovation in assembly of commodity hardware, with companies like Dell making a science out of such assembly, thereby defeating companies whose

business model required innovation in product development, we believe that Web 2.0 will provide opportunities for companies to beat the competition by getting better at harnessing and integrating services provided by others.

6. Software above the Level of a Single Device

One other feature of Web 2.0 that deserves mention is the fact that it's no longer limited to the PC platform. Longtime Microsoft developer Dave Stutz pointed out in his parting advice to Microsoft that "useful software written above the level of the single device will command high margins for a long time to come."[16]

Of course, any web application can be seen as software above the level of a single device. After all, even the simplest web application involves at least two computers: the one hosting the web server and the one hosting the browser. And as we've discussed, the development of the web as platform extends this idea to synthetic applications composed of services provided by multiple computers.

But as with many areas of Web 2.0, where the "2.0-ness" is not something new but rather a fuller realization of the true potential of the web platform, this phrase gives us a key insight into how to design applications and services for the new platform.

To date, iTunes is the best exemplar of this principle. This application seamlessly reaches from the handheld device to a massive web back-end, with the PC acting as a local cache and control station. There have been many previous attempts to bring web content to portable devices, but the iPod/iTunes combination is one of the first such applications designed from the ground up to span multiple devices. TiVo is another good example.

iTunes and TiVo also demonstrate many of the other core principles of Web 2.0. They are not web applications per se, but they leverage the power of the web platform, making it a seamless, almost invisible part of their infrastructure. Data management is most clearly the heart of their offering. They are services, not packaged applications (although in the case of iTunes, it can be used as a packaged application, managing only the user's local data). What's more, both TiVo and iTunes show some budding use of collective intelligence, although in both cases, their experiments are at war with those of the intellectual property lobby. There's only a limited architecture of participation in iTunes, though the recent addition of podcasting changes that equation substantially.

This is one of the areas of Web 2.0 where we expect to see some of the greatest change, as more and more devices are connected to the new platform. What applications become possible when our phones and our cars are not consuming data but reporting it? Real-time traffic monitoring, flash mobs, and citizen journalism are only a few of the early warning signs of the capabilities of the new platform.

7. Rich User Experiences

As early as Pei Wei's Viola browser in 1992,[17] the web was being used to deliver "applets" and other kinds of active content within the web browser. Java's introduction in 1995 was framed around the delivery of such applets. JavaScript and then DHTML were introduced as lightweight ways to provide client-side programmability and richer user experiences. Several years ago, Macromedia coined the term "Rich Internet Applications" (which has also been picked up by open-source Flash competitor Laszlo Systems) to highlight the capabilities of Flash to deliver not just multimedia content but also GUI-style application experiences.

However, the potential of the web to deliver full-scale applications didn't hit the mainstream until Google introduced Gmail, quickly followed by Google Maps, web-based applications with rich user interfaces and PC-equivalent interactivity. The collection of technologies used by Google was christened "AJAX," in a seminal essay by Jesse James Garrett of web-design firm Adaptive Path. He wrote,

> Ajax isn't a technology. It's really several technologies, each flourishing in its own right, coming together in powerful new ways. Ajax incorporates:
>
> - standards-based presentation using XHTML and CSS;
> - dynamic display and interaction using the Document Object Model;
> - data interchange and manipulation using XML and XSLT;
> - asynchronous data retrieval using XMLHttpRequest;
> - and JavaScript binding everything together.[18]

AJAX is also a key component of Web 2.0 applications such as Flickr, now part of Yahoo!, 37signals' applications basecamp and backpack, as well as other Google applications such as Gmail and Orkut. We're entering an unprecedented period of user-interface innovation, as web developers are finally able to build web applications as rich as local PC-based applications.

Interestingly, many of the capabilities now being explored have been around for many years. In the late '90s, both Microsoft and Netscape had a vision of the kind of capabilities that are now finally being realized, but their battle over the standards to be used made cross-browser applications difficult. It was only when Microsoft definitively won the browser wars, and there was a single de facto browser standard to write to, that this kind of application became possible. And while Firefox has reintroduced competition to the browser market, at least so far we haven't seen the destructive competition over web standards that held back progress in the '90s.

We expect to see many new web applications over the next few years, both truly novel applications and rich web reimplementations of PC applications. Every platform change to date has also created opportunities for a leadership change in the dominant applications of the previous platform.

Gmail has already provided some interesting innovations in e-mail,[19] combining the strengths of the web (accessible from anywhere, deep database competencies, searchability) with user interfaces that approach PC interfaces in usability. Meanwhile, other mail clients on the PC platform are nibbling away at the problem from the other end, adding instant-messaging (IM) and presence capabilities. How far are we from an integrated communications client combining the best of e-mail, IM, and the cell phone, using Voice over Internet Protocol (VoIP) to add voice capabilities to the rich capabilities of web applications? The race is on.

It's easy to see how Web 2.0 will also remake the address book. A Web 2.0–style address book would treat the local address book on the PC or phone merely as a cache of the contacts you've explicitly asked the system to remember. Meanwhile, a web-based synchronization agent, Gmail style, would remember every message sent or received and every e-mail address and every phone number used and would build social networking heuristics to decide which ones to offer up as alternatives when an answer wasn't found in the local cache. Lacking an answer there, the system would query the broader social network.

A Web 2.0 word processor would support wiki-style collaborative editing, not just standalone documents. But it would also support the rich formatting we've come to expect in PC-based word processors. Writely is a good example of such an application, although it hasn't yet gained wide traction.[20]

Nor will the Web 2.0 revolution be limited to PC applications. Salesforce.com demonstrates how the web can be used to deliver software as a service, in enterprise-scale applications such as Customer Relations Management (CRM).

The competitive opportunity for new entrants is to fully embrace the potential of Web 2.0. Companies that succeed will create applications that learn from their users, using an architecture of participation to build a commanding advantage not just in the software interface but in the richness of the shared data.

Core Competencies of Web 2.0 Companies

In exploring the seven principles discussed in this essay, we've highlighted some of the principal features of Web 2.0. Each of the examples we've explored demonstrates one or more of those key principles but may miss others. Let's close, therefore, by summarizing what we believe to be the core competencies of Web 2.0 companies:

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-re-create data sources that get richer as more people use them
- Trusting users as codevelopers
- Harnessing collective intelligence
- Leveraging the long tail through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models, *and* business models

The next time a company claims that it's "Web 2.0," test its features against this list. The more points it scores, the more it is worthy of the name. Remember, though, that excellence in one area may be more telling than some small steps in all seven.

NOTES

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What Is Collaboration Anyway?

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Sharing Is the First Step

Information technology informs and structures the language of networked collaboration. Terms like "sharing," "openness," "user-generated content," and "participation" have become so ubiquitous that too often they tend to be conflated and misused. In an attempt to avoid the misuse of the term "collaboration" we will try to examine what constitutes collaboration in digital networks and how it maps to our previous understanding of the term.

User-generated content and social media create the tendency for confusion between sharing and collaboration. Sharing of content alone does not directly lead to collaboration. A common paradigm in many web services couples identity and content. Examples of this include blogging, microblogging, and video and photo sharing, which effectively say, "This is who I am. This is what I did." The content is the social object, and the author is directly attributed with it. This work is a singularity, even if it is shared with the world via these platforms, and even if it has a free-culture license on it. This body of work stands alone, and alone, this work is not collaborative.

In contrast, the strongly collaborative Wikipedia deemphasizes the tight content-author link. While the attribution of each contribution made by each author is logged on the history tab of each page, attribution is primarily used as a moderation and accountability tool. While most user-generated content platforms offer a one-to-many relationship, in which one user produces and uploads many different entries or media, wikis and centralized code-versioning systems offer a many-to-many relationship, in which many different users can be associated with many different entries or projects.

Social media platforms can become collaborative when they add an additional layer of coordination. On a microblogging platform like Twitter, this

layer might take the form of an instruction to "use the #iranelections hashtag on your tweets," or on a photo-sharing platform, it might be an invitation to "post your photos to the LOLcats group." These mechanisms aggregate the content into a new social object. The new social object includes the metadata of each of its constituent objects; the author's name is the most important of this metadata. This creates two layers of content. Each shared individual unit is included in a cluster of shared units. A single shared video is part of an aggregation of demonstration documentation. A single shared bookmark is included in an aggregation of the "inspiration" tag on the social bookmarking service delicious. A single blog post takes its place in a blogosphere discussion, and so on.

This seems similar to a single "commit" to an open-source project or a single edit of a Wikipedia article, but these instances do not maintain the shared unit/collaborative cluster balance. For software in a code-versioning system or a page on Wikipedia, the single unit loses its integrity outside the collaborative context and is indeed created to only function as a part of the larger collaborative social object.

Coordinating Mechanisms Create Contexts

Contributions such as edits to a wiki page or "commits" to a version-control system cannot exist outside the context in which they are made. A relationship to this context requires a coordinating mechanism that is an integral part of the initial production process. These mechanisms of coordination and governance can be both technical and social.

Wikipedia uses several technical coordination mechanisms, as well as strong social mechanisms. The technical mechanism separates each contribution, marks it chronologically, and attributes it to a specific username or IP address. If two users are editing the same paragraph and are submitting contradicting changes, the MediaWiki software will alert these users about the conflict and requires them to resolve it. Version-control systems use similar technical coordination mechanisms, marking each contribution with a time stamp and a username and requiring the resolution of differences between contributions if there are discrepancies in the code due to different versions.

The technical coordination mechanisms of the Wiki software lowers the friction of collaboration tremendously, but it doesn't take it away completely. It makes it much harder to create contributions that are not harmonious with the surrounding context. If a contribution is deemed inaccurate, or not an

improvement, a user can simply revert to the previous edit. This new change is then preserved and denoted by the time and user who contributed it.

Academic research into the techno-social dynamics of Wikipedia shows clear emergent patterns of leadership. For example, the initial content and structure outlined by the first edit of an article are often maintained through the many future edits years on.[1] The governance mechanism of the Wiki software does not value one edit over the other. Yet what is offered by the initial author is not just the initiative for the collaboration; it is also a leading guideline that implicitly coordinates the contributions that follow.

Wikipedia then uses social contracts to mediate the relationship of contributions to the collection as a whole. All edits are supposed to advance the collaborative goal—to make the article more accurate and factual. All new articles are supposed to be on relevant topics. All new biographies need to meet specific guidelines of notability. These are socially agreed upon contracts, and their fabric is always permeable. The strength of that fabric is the strength of the community.

An interesting example of leadership and of conflicting social pacts happened on the Wikipedia "Elephants" article. In the TV show *The Colbert Report* Stephen Colbert plays a satirical character of a right-wing television host dedicated to defending Republican ideology by any means necessary. For example, he constructs ridiculous arguments denying climate change. He is not concerned that this completely ignores reality, which he claims "has a liberal bias."

On July 31, 2006, Colbert ironically proposed the term "Wikiality" as a way to alter the perception of reality by editing a Wikipedia article. Colbert analyzed the interface in front of his audience and performed a live edit to the "Elephants" page, adding a claim that the elephant population in Africa had tripled in the past six months.

Colbert proposed his viewers follow a different social pact. He suggested that if enough of them helped edit the article on elephants to preserve his edit about the number of elephants in Africa, then that would become the reality, or the "Wikiality"—the representation of reality through Wikipedia. As he said, "If you're going against what the majority of people perceive to be reality, you're the one who's crazy." He also claimed that this would be a tough "fact" for the environmentalists to compete with, retorting, "Explain that, Al Gore!"[2]

It was great TV, but it created problems for Wikipedia. So many people responded to Colbert's rallying cry that Wikipedia locked the article on elephants to protect it from further vandalism.[3] Furthermore, Wikipedia banned the user Stephencolbert for using an unverified celebrity name, a

violation of Wikipedia's terms of use.[4] Colbert's and his viewers' edits were perceived as mere vandalism that was disrespectful of the social contract that the rest of Wikipedia adhered to, thus subverting the underlying fabric of the community. Yet they were following the social contract provided by their leader and his initial edit. It was their own collaborative social pact, enabled and coordinated by their own group. Ultimately, Wikipedia had to push one of its more obscure rules to its edges to prevail against Stephen Colbert and his viewers. The surge of vandals was blocked, but Colbert gave them a run for the money, and everyone else a laugh, all the while making a point about how we define the boundaries of contribution.

Does Aggregation Constitute Collaboration?

Can all contributions coordinated in a defined context be understood as collaboration? In early 2009 Israeli musician Kutiman (Ophir Kutiel) collected video clips posted on YouTube of hobbyist musicians and singers performing to their webcams. He then used one of the many illegal tools available online to extract the raw video files from YouTube. He sampled these clips to create new music videos. He writes of his inspiration,

> Before I had the idea about ThruYou I took some drummers from YouTube and I played on top of them—just for fun, you know. And then one day, just before I plugged my guitar to play on top of the drummer from YouTube, I thought to myself, you know—maybe I can find a bass and guitar and other players on YouTube to play with this drummer.[5]

The result was a set of seven music-video mashups which he titled "ThruYou—Kutiman Mixes YouTube." Each of these audiovisual mixes is so well crafted it is hard to remind yourself that when David Taub from NextLevelGuitar.com was recording his funk riff he was never planning to be playing it to the Bernard "Pretty" Purdie drum beat or to the user miquelsi's playing with the theremin at the Universeum, in Göteborg. It is also hard to remind yourself that this brilliantly orchestrated musical piece is not the result of a collaboration.

When Kutiman calls the work "ThruYou" does he mean "You" as in "us" his audience? "You" as in the sampled musicians? Or "You" as in YouTube? By subtitling it "Kutiman mixes YouTube" is he referring to the YouTube service owned by Google, or the YouTube users whose videos he sampled?

The site opens with an introduction/disclaimer paragraph:

What you are about to see is a mix of unrelated YouTube videos/clips edited together to create ThruYou. In Other words—what you see is what you get.

Check out the credits for each video—you might find yourself.

PLAY ►[6]

In the site Kutiman included an "About" video in which he explains the process and a "Credits" section where the different instruments are credited with their YouTube IDs (like tU8gmozj8xY and 6FX_84iWPLU) and linked to the original YouTube pages.

The user miquelsi did share the video of himself playing the Theremin on YouTube, but he did not intend to collaborate with other musicians. We don't even know if he really thought he was making music: it is very clear from the video that he doesn't really know how to play the Theremin, so when he titled his video "Playing the Theremin" he could have meant playing as music making or playing as amusement. It would be easy to focus on the obvious issues of copyright infringement and licensing, but the aspect of Kutiman's work we're actually interested in is the question of intention.

Is intention essential to collaboration? It seems clear that though these works were aggregated to make a new entity, they were originally shared as discrete objects with no intention of having a relationship to a greater context. But what about works that are shared with an awareness of a greater context, that help improve that context, but are not explicitly shared for that purpose?

Web creators are increasingly aware of "best practices" for search-engine optimization (SEO). By optimizing, web-page creators are sharing objects with a strong awareness of the context in which they are being shared, and in the process they are making the Google PageRank mechanism better and more precise. Their intention is not to make PageRank more precise, but by being aware of the context, they achieve that result. Although reductive, this does fit a more limited definition of collaboration.

The example of PageRank highlights the questions of coordination and intention. Whether or not they are optimizing their content and thus improving PageRank, web-content publishers are not motivated by the same shared goal that motivates Google and its shareholders. These individuals do coordinate their actions with Google's mechanism out of their own self-interest to achieve better search results, but they don't coordinate their actions in order to improve the mechanism itself. The same can be said about most Twitter users, most Flickr users, and the various musicians who have unintentionally contributed to YouTube's success and to Kutiman's ThruYou project.

Collaboration requires goals. There are multiple types of intentionality that highlight the importance of intent in collaboration. The intentional practice is different from the intentional goal. Optimizing a web page is done to intentionally increase search results, but it unintentionally contributes to making Google PageRank better. When we claim that intention is necessary for collaboration, we really are talking about intentional goals. Optimizing your site for Google search is a collaboration with Google only if you define it as your personal goal. Without these shared goals, intentional practice is a much weaker case of collaboration.

Collaborationism

As collaborative action can have more than one intent, it can also have more than one repercussion. These multiple layers are often a source of conflict and confusion. A single collaborative action can imply different and even contrasting group associations. In different group contexts, one intent might incriminate or legitimize the other. This group identity crisis can undermine the legitimacy of collaborative efforts altogether.

Collaboration can mean collaborating with an enemy. In a presentation at the Dictionary of War conference in Novi Sad, Serbia, in January 2008, Israeli curator Galit Eilat described the joint Israeli-Palestinian project "Liminal Spaces":

> When the word "collaboration" appeared, there was a lot of antagonism to the word. It has become very problematic, especially in the Israeli/Palestinian context. I think from the Second World War the word "collaboration" had a special connotation. From Vichy government, the puppet government, and later on the rest of the collaborations with Nazi Germany.[7]

While there was no doubt that "Liminal Spaces" was indeed a collaboration between Israelis and Palestinians, the term itself was not only contested; it was outright dangerous.

The danger of collaboration precedes this project. I remember one night in 1994 when I was a young soldier serving in an Israeli army base near the Palestinian city of Hebron, around 3:30 a.m. a car pulled off just outside the gates of our base. The door opened, and a dead body was dropped from the back seat on the road. The car then turned around and rushed back towards the city. The soldiers that examined the body found

it belonged to a Palestinian man. Attached to his back was a sign with the word "Collaborator."

This grim story clearly illustrates how culturally dependent and context-based a collaboration can be. While semantically we will attempt to dissect what constitutes the context of a collaboration, we must acknowledge the inherit conflict between individual identity and group identity. An individual might be a part of several collaborative or noncollaborative networks. Since a certain action like SEO optimization can be read in different contexts, it is often a challenge to distill individual identity from the way it intersects with group identities.

> The nonhuman quality of networks is precisely what makes them so difficult to grasp. They are, we suggest, a medium of contemporary power, and yet no single subject or group absolutely controls a network. Human subjects constitute and construct networks, but always in a highly distributed and unequal fashion. Human subjects thrive on network interaction (kin groups, clans, the social), yet the moments when the network logic takes over—in the mob or the swarm, in contagion or infection—are the moments that are the most disorienting, the most threatening to the integrity of the human ego.[8]

The term "group identity" itself is confusing, as it obfuscates the complexity of different individual identities networked together within the group. This inherent difficulty presented by the nonhuman quality of networks means that the confusion of identities and intents will persist. Relationships between individuals in groups are rich and varied. We cannot assume a completely shared identity and equal characteristics for every group member just by grouping them together.

We cannot expect technology (playing the rational adult) to solve this tension either, as binary computing often leads to an even further reduction (in the representation) of social life. As Ippolita, Geert Lovink, and Ned Rossiter point out, "We are addicted to ghettos, and in so doing refuse the antagonism of 'the political.' Where is the enemy? Not on Facebook, where you can only have 'friends.' What Web 2.0 lacks is the technique of antagonistic linkage."[9]

The basic connection in Facebook is referred to as "friendship" since there is no way for software to elegantly map the true dynamic nuances of social life. While "friendship" feels more comfortable, its overuse is costing us richness of our social life. We would like to avoid these binaries by offering variation and degrees of participation.

Criteria for Collaboration

"Collaboration" is employed so widely to describe the methodology of production behind information goods that it occludes as much as it reveals. In addition, governments, business, and cultural entrepreneurs apparently can't get enough of it, so a certain skepticism is not unwarranted. But even if overuse as a buzzword has thrown a shadow over the term, what follows is an attempt to try and construct an idea of what substantive meaning it could have and distinguish it from related or neighboring ideas such as cooperation, interdependence, or coproduction. This task seems necessary not least because if the etymology of the word is literally "working together," there is a delicate and significant line between "working with" and "being put to work by" . . .

Some products characterized as collaborative are generated simply through people's common use of tools, presence, or performance of routine tasks. Others require active coordination and deliberate allocation of resources. While the results may be comparable from a quantitative or efficiency perspective, a heterogeneity of social relations and design lie behind the outputs.

The intensity of these relationships can be described as sitting somewhere on a continuum from strong ties with shared intentionality to incidental production by strangers, captured through shared interfaces or agents, sometimes unconscious byproducts of other online activity.

Consequently we can set out both strong and weak definitions of collaboration, while remaining aware that many cases will be situated somewhere in between. While the former points toward the centrality of negotiation over objectives and methodology, the latter illustrates the harvesting capacity of technological frameworks where information is both the input and output of production.

Criteria for assessing the strength of a collaboration include:

Questions of Intention

Must the participant actively intend to contribute? Is willful agency needed? Or is a minimal act of tagging a resource with keywords, or mere execution of a command in an enabled technological environment (emergence), sufficient?

Questions of Goals

Is participation motivated by the pursuit of goals shared with other participants or individual interests?

Questions of (Self-)Governance

Are the structures and rules of engagement accessible? Can they be contested and renegotiated? Are participants interested in engaging on this level (control of the mechanism)?

Questions of Coordination Mechanisms

Is human attention required to coordinate the integration of contributions? Or can this be accomplished automatically?

Questions of Property

How is control or ownership organized over the outputs (if relevant)? Who is included and excluded in the division of the benefits?

Questions of Knowledge Transfer

Does the collaboration result in knowledge transfer between participants? Is it similar to a community of practice, described by Etienne Wenger as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."[10]

Questions of Identity

To what degree are individual identities of the participants affected by the collaboration toward a more unified group identity?

Questions of Scale

Questions of scale are key to group management and have a substantial effect on collaboration. The different variables of scale are often dynamic and can change through the process of the collaboration, thus changing the nature and the dynamics of the collaboration altogether.

Size—How big or small is the number of participants?
Duration—How long or short is the time frame of the collaboration?
Speed—How time consuming is each contribution? How fast is the decision-making process?
Space—Does the collaboration take place over a limited or extended geographic scale?
Scope—How minimal or complex is the most basic contribution? How extensive and ambitious is the shared goal?

Questions of Network Topology

How are individuals connected to each other? Are contributions individually connected to each other, or are they all coordinated through a unifying bottle-neck mechanism? Is the participation-network model highly centralized, is it largely distributed, or does it assume different shades of decentralization?

Questions of Accessibility

Can anyone join the collaboration? Is there a vetting process? Are participants accepted by invitation only?

Questions of Equality

Are all contributions largely equal in scope? Does a small group of participants generate a far larger portion of the work? Are the levels of control over the project equal or varied between the different participants?

Continuum Set

The series of criteria just outlined provides a general guide for the qualitative assessment of the cooperative relationship. In what follows, these criteria are used to sketch out a continuum of collaboration. The following clusters of cases illustrate a movement from weakest to strongest connections. This division is crude, as it sidelines the fact that within even apparently weak contexts of interaction there may be a core of people whose commitment is of a higher order (e.g., ReCaptcha).

The Weakest Link . . .

(1) Numerous technological frameworks gather information during use and feed the results back into the apparatus. The most evident example is Google, whose PageRank algorithm uses a survey of links between sites to classify their relevance to a user's query.

Likewise ReCaptcha uses a commonplace authentication in a two-part implementation, first to exclude automated spam and then to digitize words from books that were not recognizable by optical character recognition. Contributions are extracted from participants unconscious of the recycling of their activity into the finessing of the value chain. Website operators who integrate ReCaptcha, however, know precisely what they're doing and choose to transform a necessary defense mechanism for their

site into a productive channel of contributions to what they regard as a useful task.

(2) Aggregation services such as delicious and photographic archives such as Flickr, ordered by tags and geographic information, leverage users' self-interests in categorizing their own materials to enhance usability. In these cases the effects of user actions are transparent. Self-interest converges with the usefulness of the aggregated result. There is no active negotiation with the designers or operators of the system but acquiescence to the basic framework.

(3) Distributed computing projects such as SETI and Folding@Home require a one-off choice by users as to how to allocate resources, after which they remain passive. Each contribution is small, and the cost to the user is correspondingly low. Different projects candidate themselves for selection, and users have neither a role in defining the choice available nor an ongoing responsibility for the maintenance of the system. Nonetheless, the aggregated effect generates utility.

Stronger . . .

(4) P2P platforms like BitTorrent, eDonkey, and Limewire constitute a system in which strangers assist one another in accessing music, video, applications, and other files. The subjective preferences of individual users give each an interest in the maintenance of such informal institutions as a whole. Bandwidth contribution to the network guarantees its survival and promises the satisfaction of at least some needs, some of the time. Intention is required, especially in the context of attempts at its suppression through legal action and industry stigmatization. Links between individual users are weak, but uncooperative tendencies are disadvantaged by protocols requiring reciprocity or biasing performance in favor of generous participants (e.g., BitTorrent, emule).

(5) Slashdot, the technology-related news and discussion site, does not actually produce articles at all. Instead, stories are submitted by users, which are then filtered. Those published are either selected by paid staff or voted on by the user base. Following this, the stories are presented on the web page, and the real business of Slashdot begins: voluminous commentary ranging from additional information on the topic covered (of varying levels of accuracy) to analysis (of various degrees of quality) to speculation (of various degrees of pertinence), taking in jokes and assorted trolling along the way. This miasma is then ordered by the users themselves, a changing subset

of whom have evaluation powers over the comments, which they assess for relevance and accuracy on a sliding scale. The number and quality of comments presented is then determined by users themselves by configuring their viewing preferences. User moderations are in turn moderated for fairness by other users, in a process known as metamoderation.[11]

In addition to the news component of the site, Slashdot also provides all users with space for a journal (which predates the blog) and tools to characterize relations with other users as "friends" or "foes" (predating and exceeding Facebook). The software behind the site, slashcode, is free software which is used by numerous other web communities of a smaller scale.

(6) Vimeo, a portal for user-produced video, shelters a wide variety of subcultures/communities under one roof. Two factors stand out which distinguish it from other apparently similar sites: the presence of explicit collective experimentation and a high level of knowledge sharing. Members frequently propose themes and solicit contributions following a defined script and then assemble the results as a collection.

Several channels are explicitly devoted to teaching others techniques in film production and editing, but the spirit of exchange is diffuse throughout the site. Viewers commonly query the filmmaker as to how particular effects were achieved, equipment employed, and so on. The extent to which Vimeo is used for knowledge sharing distinguishes it from YouTube, where commentary regularly collapses into flame wars, and brings it close to Wenger's concept of a "community of practice," previously discussed.

Vimeo is nonetheless a private company whose full-time employees have the final word in terms of moderation decisions, but substantially the community flourishes on a shared set of norms which encourage supportive and constructive commentary and on a willingness to share know-how in addition to moving images.

. . . Intense

(7) Although there is something of an overreliance on Wikipedia as an example in discussions of collaboration and social media, its unusually evolved structure makes it another salient case. The overall goal is clear: construction of an encyclopedia capable of superseding one of the classical reference books of history.

The highly modular format affords endless scope for self-selected involvement on subjects of a user's choice. Ease of amendment combined with preservation of previous versions (the key qualities of wikis in general) enable

both highly granular levels of participation and an effective self-defense mechanism against destructive users who defect from the goal.

At the core of the project lies a group who actively self-identify themselves as Wikipedians and dedicate time to developing and promoting community norms, especially around the arbitration of conflicts. Jimmy Wales, the project's founder, remains the titular head of Wikipedia, and although there have been some conflicts between him and the community, he has in general conceded authority. But the tension remains without conclusive resolution.

(8) FLOSSmanuals, the organization that facilitated the writing of this text you are reading, was originally established to produce documentation for free software projects, a historically weak point of the Free Software community. The method usually involves the assembly of a core group of collaborators who meet face-to-face for a number of days and produce a book during their time together.

Composition of this text takes place on an online collective writing platform called booki, integrating wiki-like versioning history and a chat channel. In addition to those who are physically present, remote participation is actively encouraged. When the work is focused on technical documentation, the functionality of the software in question provides a guide to the shape of the text. When the work is conceptual, as in the case of this text, it is necessary to come to an agreed basic understanding through discussion, which can jumpstart the process. Once under way, both content and structure are continually refined, edited, discussed, and revised. On conclusion, the book is made freely available on the website under a Creative Commons license, and physical copies are available for purchase on demand.

(9) Closed P2P communities for music, film, and text, such as the now-suppressed Oink, build archives and complex databases. These commonly contain technical details about the quality of files (resolution, bit rate), samples to illustrate quality (screenshots), relevant sources of information elsewhere (IMDb links, track listing, artwork), descriptions of the plot, director, musician, or formal significance of the work.

In addition, most have a means of coordinating users such that delivery of the data is ensured. If someone is looking for a file currently unseeded, preceding downloaders are notified, alerting them to the chance to assist. When combined with the fixed rules of protocol operation and community-specific rules such as ratio requirements (whereby one must upload a specified amount in relation to the quantity downloaded), there is an effective scheme to encourage or even oblige cooperation. Numerous other tasks are assumed voluntarily, from the creation of subtitles, in the case of film, to the assembly

of thematic collections. All users participate in carrying the data load, and a significant number actively source new materials to share with other members and to satisfy requests.

(10) Debian is built on a clearly defined goal: the development and distribution of a GNU/Linux operating system consistent with the Debian Free Software Guidelines. These guidelines are part of a wider written "social contract," a code embodying the project's ethics, procedural rules, and framework for interaction. These rules are the subject of constant debate, and additions to the code base likewise often give rise to extended debates touching on legal, political, and ethical questions. The social contract can be changed by a general resolution of the developers.

Debian also exemplifies a "recursive community,"[12] in that participants develop and maintain the tools which support their ongoing communication. Developers have specified tasks and responsibilities, and the community requires a high level of commitment and attention. Several positions are appointed by election.

Nonhuman Collaboration

It is interesting to ask ourselves if humans are the only entities which might have agency in the world. Do you need language and consciousness to participate? Donna Haraway has observed that "it isn't humans that produced machines in some unilateral action—the arrow does not move all in one way. . . . There are very important nodes of energy in non-human agency, non-human actions."[13] Bruno Latour suggests it might be possible to extend social agency, rights, and obligations to automatic door closers, sleeping police officers, bacteria, public transport systems, sheep dogs, and fences.[14] Taking this view, perhaps we might begin to imagine ourselves as operating in collaboration with a sidewalk, an egg-and-cheese sandwich, our stomachs, or the Age of Enlightenment.

Most of our conversations about collaboration begin with the presumption of a kind of binary opposition between the individual and social agency. Latour solves this problem by suggesting that there are actor-networks—entities with both structure and agency. We ignore the nonhuman at our own peril, for all manner of nonhuman things incite, provoke, participate in, and author actions in the world. How might it inform and transform our conversations about collaboration if we imagined ourselves to be collaborating not only with people but with things, forces, networks, intellectual history, and bacteria?

NOTES

This chapter is excerpted from Adam Hyde et al., *Collaborative Futures*, FLOSSmanu-als.net, http://www.booki.cc/collaborativefutures/ (accessed July 20, 2010). This work is licensed under the Creative Commons Attribution-ShareAlike license.

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Sociality

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Participating in the Always-On Lifestyle

DANAH BOYD

I love filling out surveys, but I'm always stumped when I'm asked how many hours per day I spend online. I mean, what counts as online? I try to answer this through subtraction. I start by subtracting the hours that I sleep (~7.5 if I'm lucky). But then a little bird in the back of my brain wonders whether or not sleeping with my iPhone next to my bed really counts. Or maybe it counts when I don't check it, but what about when I check Twitter in the middle of the night when I wake up from a dream? I subtract the time spent in the shower (0.5) because technology and water are not (yet) compatible. But that's as far as I can usually get. I don't *always* check Wikipedia during dinner, but when there's a disagreement, the interwebz are always there to save the day. And, I fully admit, I definitely surf the web while on the toilet.

Y'see . . . I'm part of a cohort who is always-on. I consciously and loudly proclaim offline time through the declaration of e-mail sabbaticals when all content pushed my way is bounced rather than received. (There's nothing more satisfying than coming home from a vacation with an empty inbox and a list of people so desperate to reach me that they actually called my mother.) But this is not to say that I only have "a life" when I'm on digital sabbatical. I spend plenty of time socializing face-to-face with people, watching movies, and walking through cities. And I even spend time doing things that I'd prefer not to—grocery shopping, huffing and puffing on the treadmill, and so on. All of these activities are not in and of themselves "online," but because of technology, the online is always just around the corner. I can look up information, multitask by surfing the web, and backchannel with friends. I'm not really online, in that my activities are not centered on the digital bits of the Internet, but I'm not really offline either. I'm where those concepts break down. It's no longer about on or off really. It's about living in a world where being networked to people and information wherever and whenever

you need it is just assumed. I may not be always-on the *Internet* as we think of it colloquially, but I am always connected to the network. And that's what it means to be always-on.

There is an irony to all of this. My always-on-ness doesn't mean that I'm always-accessible-to-everyone. Just because my phone buzzes to tell me that a new message has arrived does not mean that I bother to look at it. This is not because I'm antiphone but because I'm procontext. Different social contexts mean different relationships to being always-on. They are not inherently defined by space but by a social construction of context in my own head. Sometimes I'm interruptible by *anyone* (like when I'm bored out of my mind at the DMV). But more often, I'm not interruptible because connection often means context shift, and only certain context shifts are manageable. So if I'm at dinner, I will look up a Wikipedia entry as a contribution to the conversation without checking my text messages. All channels are accessible, but it doesn't mean I will access them.

I am not alone. Like many others around me, I am perpetually connected to people and information through a series of devices and social media channels. This is often something that's described in generational terms, with "digital natives" being always-on and everyone else hobbling along trying to keep up with the technology. But, while what technology is available to each generation at key life stages keeps changing, being always-on isn't so cleanly generational. There are inequality issues that mean that plenty of youth simply don't have access to the tools that I can afford. But economic capital is not the only factor. Being always-on works best when the people around you are always-on, and the networks of always-on-ers are defined more by values and lifestyle than by generation. In essence, being always-on started as a subcultural practice, and while it is gaining momentum, it is by no means universal. There are plenty of teens who have no interest in being perpetually connected to information and people even if they can. And there are plenty of us who are well beyond our teen years who are living and breathing digital bits for fun. That said, many of the young are certainly more willing to explore this lifestyle than are their techno-fretful parents. So while being young doesn't guarantee deep engagement with technology, it is certainly correlated.

What separates those who are part of the always-on lifestyle from those who aren't is not often the use of specific tools. It's mostly a matter of approach. Instant messaging is a tool used by many but often in different ways and for different purposes. There are those who log in solely to communicate with others. And there are those who use it to convey presence and state of mind. Needless to say, the latter is much more a part of the always-

on ethos. Being always-on is not just about consumption and production of content but also about creating an ecosystem in which people can stay peripherally connected to one another through a variety of microdata. It's about creating networks and layering information on top. The goal of being connected is not simply to exchange high-signal content all the time. We also want all of the squishy, gooey content that keeps us connected as people. In our world, phatic content like posting what you had for breakfast on Twitter is AOK. Cuz it can enhance the social context. Of course, some people do go too far. But that's what teasing is meant for.

To an outsider, wanting to be always-on may seem pathological. All too often, it's labeled an addiction. The assumption is that we're addicted to the technology. The technology doesn't matter. It's all about the people and information. Humans are both curious and social critters. We want to understand and interact. Technology introduces new possibilities for doing so, and that's where the passion comes in. We're passionate about technology because we're passionate about people and information, and they go hand in hand. And once you're living in an always-on environment, you really notice what's missing when you're not. There's nothing I hate more than standing in a foreign country with my iPhone in hand, unable to access Wikipedia because roaming on AT&T is so prohibitively expensive as to make the Internet inaccessible. Instead, I find myself making lists of all the things that I want to look up when I can get online.

It's not just about instant gratification either. Sure, I can look up who is buried in the Pantheon later. But the reason that I want to know when I'm standing before it in Italy is because I want to know about the object in front of me whose signs are all in Italian. I want to translate those signs, ask questions about the architecture. And it's 4 a.m., and the guard tells me it's not his job to provide history lessons. What I want is to bring people and information into context. It's about enhancing the experience.

Of course, this doesn't mean it can't get overwhelming. Cuz it does. And I'm not always good at managing the overload. My RSS-feed reader has exploded, and there's no way that I can keep up with the plethora of status updates and Twitter messages posted by friends, colleagues, and intriguing humans that I don't know. E-mail feels like a chore, and I do everything possible to avoid having to log in to dozens of different sites to engage in conversations inside walled gardens. There's more news than I can possibly read on any given day.

So how do I cope? Realistically, I don't. I've started accepting that there's no way that I can manage the onslaught of contact, wade through the mess,

and find the hidden gems. I haven't completely thrown my hands up though. Instead, I've decided to take a laissez-faire approach to social media. I do my best, and when that's not good enough, I rely on people bitching loud and clear to make me reprioritize. And then I assess whether or not I can address their unhappiness. And if I can't, I cringe and hope that it won't be too costly. And sometimes I simply declare bankruptcy and start over.

As social media becomes increasingly pervasive in everyday life, more and more people will be overwhelmed by the information surrounding them. And they will have to make choices. Networked technologies allow us to extend our reach, to connect across space and time, to find people with shared interests and gather en masse for social and political purposes. But time and attention are scarce resources. Until we invent the sci-fi doohickey that lets us freeze time, no amount of aggregating and reorganizing will let us overcome the limitations presented by a scarcity of time and attention.

In the meantime, many of us are struggling to find balance. We create artificial structures in an effort to get there. I take digital sabbaticals. Others create technologies that restrict them so that they don't have face hard decisions at points when they're potentially vulnerable. For example, late-night surfing from link to link to link can be so enjoyable that it's easy to forget to sleep. But biology isn't very forgiving, so sometimes a time-out is necessary.

Many from the always-on crowd also try to embrace crazy strategies to optimize time as much as humanly possible. Proponents of polyphasic sleep argue that hacking your circadian rhythm can allow for more wake hours; I just think sleeping in small chunks means more loopy people out in the blogosphere. Of course, I fully admit that I've embraced the cult of GTD in an effort to reduce unnecessary cognitive load by doing inventories of various things.

Hacking time, hacking biology, hacking cognition—these are all common traits of people who've embraced an always-on lifestyle. Many of us love the idea that we can build new synaptic structures through our use of networked technologies. While many old-skool cyberpunks wanted to live in a virtual reality, always-on folks are more interested in an augmented reality. We want to be a part of the network.

There's no formula for embracing always-on practices, and we must each develop our own personal strategies for navigating a world with ever-increasing information. There are definitely folks who fail to find balance, but most of us find a comfortable way to fit these practices into everyday life without consequence. Of course, the process of finding balance may appear like we're feeling our way through a maze while blindfolded. We're all going

to bump into a lot of things along the way and have to reassess where we're going when we reach our own personal edges. But, in doing so, we will personalize the media rich environment to meet our needs and desires.

Social media skeptics often look at the output of those who are engaging with the newfangled services and shake their heads. "How can they be so public?" some ask. Others reject digital performances by asking, "Who wants to read what they want anyhow?" Publicness is one of the strange and yet powerful aspects of this new world. Many who blog and tweet are not writing for the world at large; they are writing for the small group who might find it relevant and meaningful. And, realistically, the world at large is not reading the details of their lives. Instead, they are taking advantage of the affordances of these technologies to connect with others in a way that they feel is appropriate.

Each technology has its affordances, and what's powerful about certain technology often stems from these affordances. Consider asynchronicity, an affordance of many social media tools. Years ago, I interviewed an HIV-positive man who started blogging. When I asked him about his decision to start, he told me that it helped him navigate social situations in a more comfortable manner. He did not use his real name on his blog, but his friends all knew where to find the blog. On this site, he wrote about his ups and downs with his illness, and his friends read this. He found that such a mediator allowed him to negotiate social boundaries with friends in new ways. He no longer had to gauge the appropriateness of the situation to suddenly declare his T-cell count. Likewise, his friends didn't have to overcome their uncertainty in social situations to ask about his health. He could report when he felt comfortable doing so, and they could read when they were prepared to know. This subtle shift in how he shared information with friends and how friends consumed it eased all sorts of tensions. Technology doesn't simply break social conventions—it introduces new possibilities for them.

It's also typically assumed that being always-on means facing severe personal or professional consequences. There is fear that participating in a public culture can damage one's reputation or that constant surfing means the loss of focus or that always having information at hand will result in a failure to actually know things. But aren't we living in a world where knowing how to get information is more important than memorizing it? Aren't we moving away from an industrial economy into an information one? Creativity is shaped more by the ability to make new connections than to focus on a single task. And why shouldn't we all have the ability to be craft our identity in a public culture? Personally, I've gained more professionally from being

public than I could have dreamed possible when I started blogging in 1997. For example, l'il ol' me had no idea that blogging controversial ideas backed with data might get me an invitation to the White House.

Ironically, the publicness of social media also provides privacy in new ways. Many of those who embrace the public aspects of social media find that the more public they are, the more they can carve off privacy. When people assume you share everything, they don't ask you about what you don't share. There are also ways to embed privacy in public in ways that provide a unique form of control over the setting. Certainly, people have always had private conversations while sitting in public parks. And queer culture is rife with stories of how gay and lesbian individuals signaled to one another in public arenas through a series of jewelry, accessories, and body language. Likewise, in-jokes are only meaningful to those who are in the know, whether they are shared in a group or online. And there are all sorts of ways to say things out loud that are only heard by a handful of people. These become tricks of the trade, skills people learn as they begin fully engaging in an always-on public culture.

Being always-on and living a public life through social media may complicate our lives in new ways, but participating can also enrich the tapestry of life. Those of us who are living this way can be more connected to those whom we love and move in sync with those who share our interests. The key to this lifestyle is finding a balance, a rhythm that moves us in ways that make us feel whole without ripping our sanity to shreds. I've lived my entire adult life in a world of networked information and social media. At times, I'm completely overwhelmed, but when I hit my stride, I feel like an ethereal dancer, energized by the connections and ideas that float by. And there's nothing like being connected and balanced to make me feel alive and in love with the world at large.

From Indymedia to Demand Media

*Journalism's Visions of Its Audience
and the Horizons of Democracy*

C. W. ANDERSON

This chapter focuses on journalism—a particular subcategory of media production where user-generated content has been adopted in significant but contested ways. Underlying the chapter is a more general claim that the tensions within U.S. journalism have relevance for understanding broader categories of media work. Building on earlier ethnographic work in newsrooms, the chapter contends that a fundamental transformation has occurred in journalists' understanding of their relationship to their audiences and that a new level of responsiveness to the agenda of the audience is becoming built into the DNA of contemporary newswork. This new journalistic responsiveness to the "people formerly known as the audience" is often contrasted with an earlier understanding of the news audience by journalists, the so-called traditional or professional view, in which the wants and desires of audience members are subordinated to journalists' expert news judgment about the stories that audience members need to know. In much of the popular rhetoric surrounding "Web 2.0" journalists' newfound audience responsiveness is represented as a democratic advance over older professional models, with the increasing journalistic attention paid to audience wants framed as concomitant with the general democratizing trends afforded by the Internet.

The primary claim of this chapter is that this simple dichotomy between audience ignorance and audience responsiveness obscures as much as it reveals and that multiple, complex, and contradictory visions of the news audience are buried within popular understandings of the relationship between journalism and Web 2.0. The chapter builds on work by writers as diverse as John Battelle[1] and Helen Nissenbaum,[2] who have convincingly argued that diverse socio-material combinations of technology, organizational structure, and human intentionality afford diverse democratic potenti-

alities and prefigure distinct publics; in particular, I argue that diverse materializations of the audience not only afford distinct publics but also stand as an intermediary between *visions* of an audience-as-public and the relationship between audiences and democracy. In short, the manner in which journalists imagine their audience has public consequences, and the relationship between audience responsiveness and democracy involves particular, not necessarily compatible, understandings of what democratic practice actually entails.

To flesh out these arguments, this chapter adopts a method that is primarily historio-critical and, following Max Weber, discusses ideal-types.[3] I trace the conception of audience in three outsider journalistic movements spanning the forty years since Watergate: the public journalism movement, the citizen journalism movement known as Indymedia, and, finally, the quasi-journalistic company Demand Media. While my arguments are primarily synthetic, each of my case studies stems from previous empirical scholarship: four years of newsroom fieldwork in Philadelphia, seven years of participant-observation with Indymedia collectives in New York City, and lengthy research into both the public journalism movement and, more recently, the growth of Demand Media and other so-called news content farms. Elaborating on this analysis, the second section of this chapter ties different visions of the audience into distinct strands of democratic theory. In this section, I hope to demonstrate how an embrace of "the people formerly known as the audience" can mean very different things, depending on the larger social and political context in which this articulation occurs. The chapter concludes with some general reflections on the implications of concepts like algorithmic public and algorithmic democracy, concepts which seem to be key socio-material categories in the digital era.

Journalism and Audiences

The Professional View

The relationship between the audience and the news industry examined here is not one in which media messages "impact" the audience in particular ways; nor is it one in which an audience "interprets" media messages in a variety of ways, depending on a variety of personal and demographic factors. Rather, the newsroom activities in this study are an example of what Joseph Turow has called the "industrial construction" of audiences:[4] "the ways that the people who create [media] materials think of" the people who consume that media, which in turn has "important implications for the texts

that viewers and readers receive in the first place."[5] As journalistic visions of the audience for journalism shift, these new visions ultimately affect editorial products.

Herbert Gans's landmark study *Deciding What's News*[6] has shaped the conventional academic wisdom regarding the relationship between journalists and their audiences for several decades. This 1979 ethnographic study of news-making processes at *CBS Evening News*, *NBC Nightly News*, *Newsweek*, and *Time* usefully distinguished between "qualitative" (letters to the editor and to individual journalists) and "quantitative" (audience research studies) forms of feedback.[7] Gans notes,

> I began this study with the assumption that journalists, as commercial employees, take the audience directly into account when selecting and producing news. . . . I was surprised to find, however, that they had little knowledge about the actual audience and rejected feedback from it. Although they had a vague image of the audience, they paid little attention to it; instead, they filmed and wrote for their superiors and themselves, assuming, as I suggested earlier, that what interested them would interest the audience.[8]

Gans argues that multiple factors play a role in journalists' relative disconnect from their audience: an inability to intellectually imagine an audience of millions of people, a distrust of audience news judgment, and the division between the editorial and marketing departments (creating a situation in which business personnel and news editors create a buffer between journalists and their audience). The key values in tension in Gans's study are professional incentives versus commercial imperatives. Journalists, adds Gans, are reluctant to accept any procedure which casts doubt on their professional autonomy. Within the boundaries of his study, professional values remain strong, and the preferences and needs of the audience are largely neglected during the news-making process.

It should be noted that Gans does nuance his observations to some degree. Gans writes that "in the last analysis, news organizations are overseen by corporate executives who are paid to show a profit, . . . [and] if corporate economic well-being is threatened, executives may insist that their news organizations adapt."[9] Additionally, Gans notes that local news production (which was not part of his 1979 study) has always been more sensitive to commercial and audience pressures than has national news. Despite these qualifications, most of the research from what Barbie Zelizer has called the golden

era of newsroom ethnography,[10] has echoed Gans's conclusions about the relative unimportance of the news audience to journalistic judgment. "Audience images," James Ettema et al. summarize, "seem to have minor influence on journalistic performance relative to other potential influence sources."[11] And while some scholars[12] have argued that the audience plays a larger role in *shaping* the news than is generally assumed by most ethnographers and media sociologists, even these authors have generally acknowledged that this shaping force is still the product of an "incomplete" understanding of the audience, one which is "not keyed in to demographic information."[13]

"The People Formerly Known as the Audience"

A radically new attitude toward audiences, emerging in recent years alongside the rise of digital technologies, social media, and user-generated content, can be referred to by the helpful new-media maxim[14] "the people formerly known as the audience." First articulated by media theorist and NYU professor Jay Rosen in an influential blogpost, the notion of "the former audience" and its relationship to journalism ultimately revolves around a series of digital technologies that shift the direction of communication from a one-to-many broadcasting system to a many-to-many conversational system. These technologies include social media like online commenting systems and Facebook, media for creative personal expression like blogs and podcasts, and new channels of distribution like Twitter. Rosen argues that this passively receptive audience is no longer the model for thinking about media consumption, especially when this new model treats consumption itself as part of the production of media. He writes that "the people formerly known as the audience . . . are those who were on the receiving end of a media system that ran one way, in a broadcasting pattern, with high entry fees and a few firms competing to speak very loudly while the rest of the population listened in isolation from one another—and who today are not in a situation like that at all."[15] All of these changes, Rosen and many others have argued, are impacting the profession of journalism, a profession whose autonomy was ultimately grounded in the kind of closed, mostly one-way system of communication now being displaced by the old model.[16] Although the notion of professionalized news decisions discussed in detail by Gans and others aren't usually directly cited in discussions of this new image of the audience, it seems likely that the practice of journalists "filming and writing for their superiors and themselves, assuming . . . that what interested them would interest the audience"[17] is one of the professional behaviors under serious stress in the new media environment.

Nevertheless, most of the recent scholarship examining whether the explosion of social media has affected journalism's agenda-setting function presents something of a mixed picture,[18] with a number of studies demonstrating the continued power of professional journalists to "decide what's news."[19] Other research has documented that many journalistic websites, while happy to adopt particular social media tools, have held back from a full-throated embrace of "the people formerly known as the audience."[20]

In light of this emerging class of empirical findings, it is important to add some historical and theoretical nuance to the perhaps overly simplistic dichotomy between a vision of the "people formerly knows as audience" and traditional journalistic professionalism. Two analyses in the pages that follow elaborate on what the audience is and how it has related to news production. First, I trace the conception of audience in three nontraditional journalistic experiments: the public journalism movement, the radical collective-reporting movement known as Indymedia, and, finally, the much-discussed media company Demand Media. Second, I tie these visions of the audience into distinct strands of democratic theory, to show how even an overt embrace of "the people formerly known as the audience" can mean very different things, depending on the context in which this embrace occurs.

Alternative Understandings of News Audiences: Public Journalism, Indymedia, Demand Media

The three organizations and movements I discuss in this section—public journalism, Indymedia, and Demand Media—should not be seen as representative in any meaningful sense. Rather, they might better serve as theoretical ideal types, in which particular characteristics of social reality are emphasized in order to create a class of abstract categories, categories which can then be used as the basis for further, less abstract empirical research. Each of these three institutions and movements has its own large analytical academic literature, and my brief description of them here should not be seen as comprehensive. For further information, readers are encouraged to follow the cited works.

The *public journalism movement* has been called "the best organized social movement inside journalism in the history of the American press" and has an institutional, theoretical, and practical history.[21] Institutionally, public journalism was a professional reform movement that emerged within the American press in the late 1980s, with its heyday in the early to mid-1990s, and which, as a distinct movement, can be said to have ended in the

first years of the twenty-first century. Theoretically, public journalism drew on strands of deliberative and participatory democratic theory, arguing that post-Watergate journalism had grown overly concerned with representing the points of view of political insiders, trucked in corrosive cynicism about the meaning and importance of political life, and lacked any meaningful understanding of journalism's relationship to democracy.[22] Critics contended that political journalism was overly obsessed with "horse-race" coverage and polls to the detriment of the coverage of actual public issues. As an antidote, public journalism reformers[23] argued that journalists should acknowledge themselves as democratic actors, should help *create* a public rather than just inform it, and should embrace a thick concept of democratic life centering on political deliberation rather than simply on elections and polls. Practically, public journalists working inside newsrooms undertook a number of professional and reportorial experiments in the heyday of the movement, including sponsoring deliberative forums to help highlight issues that local communities thought worthy of news coverage and sponsoring special election initiatives designed to transcend horse-race political reporting. Public journalism experiments were explicitly adopted at various newspapers, most notably the *Witchita-Eagle*.[24] On the broadest philosophical level, public journalism advocates explicitly cited Jürgen Habermas's notions of deliberative democracy and John Dewey's invocation of community conversation as normative principles that should guide journalistic coverage.

With the popularization and spread of the World Wide Web in the mid-1990s and an upsurge in left-wing social-movement activity in 1999 around the somewhat uneasily titled "antiglobalization movement," a new, less genteel challenge to traditional journalism emerged as a cluster of radically participatory citizen journalism websites grouped under the banner of the Indymedia movement. Indymedia's slogan sums up much of its emphasis during these years: "Don't hate the media, become the media." First launched during the 1999 World Trade Organization protests in Seattle, Indymedia was characterized by its strong political agenda, its decentralized and localized structure (there were Indymedia Centers (IMCs) in more than 150 cities worldwide at the movement's peak), and its notion of radically participatory journalism. As described by Biella Coleman,

> Indymedia centers are run as local collectives that manage and coordinate a news website; some also operate an affiliated media resource center for local activists. These websites give any user of the site (regardless of whether or not they are part of the collective) the ability to create, publish,

and access news reports of various forms—text, photo, video, and audio. The result is a free online source for unfiltered, direct journalism by activists, sometimes uploaded in the heat of the moment during a demonstration or political action. . . . Where traditional journalism holds editorial policies that are hidden in the hands of a few trained experts, Indymedia provides the alternative of "open publishing," a democratic process of creating news that is transparent and accessible to all, challenging the separation between consumers and producers of news.[25]

Unlike the public journalism movement, which was a reform movement primarily directed at journalistic professionals, Indymedia argued for a deprofessionalized vision of citizen journalism in which people would be their own reporters. And unlike the public journalism movement, which was relatively self-reflective about the theoretical underpinnings of various interventions into spheres of journalistic practice, Indymedia spokespeople were more likely to critique the operations of global capitalism from an anarchist or Marxist perspective rather than theorize deeply about their own status as new journalistic actors. Nevertheless, as we will see momentarily, it is certainly possible to reconstruct Indymedia's basic understanding of how it operated as a journalistic reform movement and how it related to its audience.

The first decade of the twenty-first century marks the beginning, but not necessarily the end, of a period of fundamental transformation in the worlds of journalism and digital technology. Starting in 1999 and continuing to the present, many authors and academics have chronicled the virtual disintegration of the American business model for local news under the impact of digital technologies and shifting patterns of advertising,[26] a precipitous decline in the cultural authority of traditional journalists (whose credentials were challenged by journalism thinkers and by an army of so-called citizen journalists),[27] and an explosion in the practices of audience measurement and behavioral tracking afforded by the digital traceability of the Internet. Of these three developments it is the increased ability of news organizations to monitor their audiences which has the most relevance for my discussion of a third outlier: algorithmic journalism.

The material traceability afforded by the web[28] presents journalism with a fundamentally new series of professional challenges and economic opportunities. All user behavior on a website is potentially capturable for analysis by server logfiles, and "whether the audience realizes it or not, their activity is tracked."[29] As journalism analyst Steve Outing noted in 2005, while report-

ers and editors at the news organizations analyzed by Gans operated largely in ignorance of their audience, "newspaper Web sites . . . have detailed traffic numbers at their disposal. Today's news editors know for a fact if sports articles are the biggest reader draw, or if articles about local crimes consistently outdraw political news. They can know how particular stories fared, and track the popularity of news topics."[30] While a growing body of research has documented the impact online metrics are having on newsrooms, an even more powerful form of quantitative journalistic decision-making has explicitly focused on base audience preferences. These companies learn what the audience searches for online, consider which of these will make them the most money, and choose their subjects solely on these computer-generated metrics. This methodology is powered by *algorithmic intelligence*, and the key practitioners of this new, algorithm-based technique of "deciding what's news" include communications companies like Demand Media, Seed, and Associated Content.[31]

In a widely discussed article, Daniel Roth of *Wired* magazine describes the role played by algorithms in both Demand Media's production and labor-compensation processes:

> Demand Media has created a virtual factory that pumps out 4,000 video clips and articles a day. It starts with an algorithm. The algorithm is fed inputs from three sources: *Search terms* (popular terms from more than 100 sources comprising 2 billion searches a day), *The ad market* (a snapshot of which keywords are sought after and how much they are fetching), and *The competition* (what's online already and where a term ranks in search results).
>
> Plenty of other companies—About.com, Mahalo, Answers.com—have tried to corner the market in arcane online advice. But none has gone about it as aggressively, scientifically, and single-mindedly as Demand. Pieces are not dreamed up by trained editors nor commissioned based on submitted questions. Instead they are assigned by an algorithm, which mines nearly a terabyte of search data, Internet traffic patterns, and keyword rates to determine what users want to know and how much advertisers will pay to appear next to the answers.
>
> The process is automatic, random, and endless. . . . It is a database of human needs.[32]

This chapter has argued that the dichotomy between professional and responsive visions of the news audience is overly simplistic and has sought

to highlight the actual complexity of news audience visions by discussing three outsider journalistic movements and organizations. Each of these movements can be seen as posing its own vision of journalism's relationship with its audience, visions that deeply complicate simplistic distinctions between audience power and audience irrelevance. In the next section I want to unpack these journalist-audience visions, before concluding with discussion of how these visions ultimately ground themselves in differing notions of communication and democracy.

A Genealogy of the Journalism-Audience Relationship

These four ideal-typical paradigms of journalistic practice—traditional journalism, public journalism, Indymedia journalism, and algorithmic journalism—offer very different models of audience. These models conceive of their audiences and their relationship to democracy in terms that have changed over time. In order to understand this shift, we need to ask how each of them

- thinks about the relationship between the news audience and journalistic institutions;
- thinks about the relationship of the audience to itself; and
- thinks about the relationship between the audience and political institutions.

It is helpful to organize this analysis in a table, with the four paradigms along the left side and the three perspectives on journalism, audiences, and politics along the top (table 7.1). From the perspective of *professional journalism*, news audiences are seen as rather ignorant consumers of media content; they are thus ignorant of both what news really "is" and what journalists do. Under this view, the agenda for what counts as news is determined by professional journalists, who provide it to an audience that can choose to either accept or reject it. The fact that professional journalists envision their audience as both "consumptive" and "easy to ignore" points to a tension that lies at the heart of this vision. Few producers (of media or other forms of consumer products) will operate under a consumption regime and yet argue that the consumers have little role to play in the determining the shape of the products they buy. Yet this is essentially the argument that traditional journalism has made. It is this tension that has periodically manifested itself in the battle between news professionals, who argue that journalism must provide the information citizens need ("citizens must eat their spinach"), and news populists, who argue that journalism must give an audience what it

TABLE 7.1
Journalistic Models and Their Visions of the New Audience

	The audience's relationship to journalism as . . .	The audience's internal relationship to itself as . . .	The audience's relationship to politics as . . .
Professional journalism sees . . .	consumptive, agenda receiving, occasionally as sources	atomistic, consumptive	disengaged, aggregated
Public journalism sees . . .	deliberative, agenda setting	A conversational public	engaged, communicative via deliberation
Indymedia journalism sees . . .	participatory, agenda setting; journalism provides audience with "ammunition"	agonistic, witnessing, and occupying public *sphericules*	engaged, confrontational, witnessing
Algorithmic journalism sees . . .	agenda setting, nonparticipatory, atomized	algorithmic, quantifiable	—

wants (and that any journalism in the public interest needs to coat itself in a wrapper of audience friendliness). The controversy is somewhat overdrawn, yet it speaks to a general truth. Journalists who see themselves as producers of consumer content would be expected to care deeply about what an army of news consumers wants.

In this analytic framework, members of professional journalism's atomized consumptive audience are discrete individuals who, in the tradition of both classic liberalism and market theory, both consume news and relate to each other in an individualized, utilitarian fashion. It is this vision of the audience that was the primary target of reformers in the *public journalism* movement; rather than an aggregate collection of autonomous individuals, the audience should be conceived as relating to itself as a *conversational public*. As Tanni Haas notes, visions of an audience composed of "engaged, responsible 'citizens' who are capable of active, democratic participation"[33] mirror James Carey's argument that "the public will begin to reawaken when

they are addressed as conversational partners and are encouraged to join the talk rather than sit passively as spectators before a discussion conducted by journalists and experts."[34] For theorists of public journalism, the audience relates to itself not as a collection of consumptive individuals but as a collection of citizens engaged in public dialogue about the important political issues of the day.

If, according to theorists of public journalism, the audience relates to itself as a deliberative body of citizens, then its relationship to the journalism profession must also be not only deliberative but potentially agenda setting as well. While most of public journalism's early reform efforts were directed at forcing the journalism establishment to see itself as an institution implicated in acts of public "creation" as well as public "inform-ation," questions quickly arose as to how reporters should engage with the agenda of that assembled public. Should local deliberative councils, convened by newspapers as part of public journalism initiatives, determine the topics covered by those newspapers? Or were they simply meant as feel-good exercises in mutual enlightenment? Should the deliberative citizenry be agenda setting? It was this tension that Michael Schudson pointed to when he claimed that public journalism does not remove control over the news from journalists themselves, . . . [and] in this regard, public journalism as a reform movement is conservative. . . . [It] stops short of offering a fourth model of journalism in a democracy, one in which authority is vested not in the market, not in a party, and not in journalists, but in the public. Nothing in public journalism removes the power from the journalists or the corporations they work for.[35]

It seems safe to summarize that the audience envisioned by public journalism theorists was thus both deliberative and *agenda setting in a weak sense*. Ultimately, the relationship between the audience-as-public and the institutions of journalism was mediated by highly formal mechanisms: public meetings, deliberative polls, and special reports. It was this formal character of the journalist-audience relationship that was shattered by the technological affordances[36] enabled by the Internet and the spread of digital production and distribution devices. I have summarized these developments, and the new vision of the audience that emerged with them, under the general category of "Indymedia journalism," although I think this shifting audience conception can be generalized to include many of the early experiments in digital content creation (blogs, citizen journalism websites, and so on). For Indymedia activists and theorists, the audience was not only strongly implicated in setting the news agenda, but the very distinction between a consumptive and agenda-setting audience was blurred to the point of non-

existence.[37] This blurring was the result of Indymedia's highly participatory character. In exhorting activists to "be the media," the promise was that ordinary people would create their own news agenda through the very act of doing journalism itself. The journalism undertaken by Indymedia's pro-sumptive[38] audience, finally, could not be separated from that audience's political activity. It would serve as a weapon in a variety of social-movement struggles and political protests.

This view of journalism as "political ammunition" was closely tied to Indymedia's status as a collection of left-wing social movements. A comparison with the audience envisioned by theorists of public journalism might be instructive here. Rather than a deliberative audience engaged in the civil discussion of political issues in order to advance the public good, Indymedia saw its audience as a rowdy collection of political partisans acting in support of a *particular* (yet still valuable) good. Or as John Durham Peters noted, in reference to the deliberative pretensions of public journalism,

> Public journalism is right to call for better sources of information and fresher forums of debate. But . . . the insistence on dialogue undervalues those modes of action that defy and interrupt conversation. St. Francis and Martin Luther King bore witness; they did not engage in conversation. Any account of democracy has to make room for moral stuntsmanship, for outrageous acts of attention getting employed by an Ezekiel or Gandhi, greens, antinuke activists, or even right-to-lifers. . . . Just as there is a dignity in dialogue, there can be a dignity in refusing to engage in dialog as well.[39]

It was the Indymedia movement which embodied this vision of the "witnessing," "stunt-oriented" public and sought to apply it to journalism. Finally, Indymedia never claimed to represent *the* public, as proponents of public journalism did. Indeed, for Indymedia theorists, the very existence of such a public was an illusion. Following in the tradition of Nancy Fraser and Todd Gitlin, Indymedia activists saw themselves as producing journalism for a particular set of public sphericules[40]—related to, but irreducible to, the larger public as a whole. They were the journalistic mouthpieces of a loosely connected series of "subaltern counterpublics"[41] or, in less formalized language, represented the return of the eighteenth-century party press to the journalistic stage.[42] The Indymedia vision of the audience was of an agonistic, agenda-setting, deeply participatory, fractured public.

With the emergence of Demand Media and its "content-farm" counterparts, the affordances of the Internet have swung from participation to

traceability and algorithmically oriented production. These forms of algorithmic journalism once again establish the wall between producer and consumer. While Demand Media's producers are multitudinous, the relationship between them and the central office is the relationship between a highly precarious freelancer and his or her employer, rather than that of the intrinsically motivated creator to the object of his or her temporary affiliation. This reintegration of the producer/consumer wall does not disempower the audience, however, for its wishes and wants are presumed to be understood better than ever before. As Demand Media founder Richard Rosenblatt noted in an interview with Jay Rosen, "We respect journalists very much. We think they need to use technology to help them figure out what audiences want and how to get value from their content more effectively. And there are big opportunities for them to increase quality by removing inefficiencies in the process of content creation."[43] The agenda-setting vision of the audience, common to both public journalism and Indymedia journalism, is combined with a consumptive, atomistic, and quantifiable vision of the audience taken from the professional model of journalism. Unlike the professional model, however, the tension between the vision of the audience as a consumptive organism and as subject to a professionally determined concept of "what counts" as important content is eliminated, in a direction entirely favorable to the audience. If the audience's needs and wants are entirely knowable, than why should they *not* be catered to, particularly if catering to those wants can lead to the implementation of a highly successful business model? The ultimate traceability of audience wants is determined through the algorithm, a complex and mathematically grounded socio-material black box that seems to do far more than simply aggregate preferences. In the vision of the audience embraced by Demand Media and its counterparts, the algorithm is a stand-in for journalistic judgment, and it eviscerates the barriers between content production and consumer demand. According to this new generation of algorithm-based news producers, it is in number crunching that the ultimate guarantor of both communicative democracy and business-model success can be found.

Democratic Horizons of the Journalism-Audience Relationship

In this final section, I want to tie each of the four ideal-typical visions discussed in this essay to particular visions of democracy. In this endeavor, I am inspired by the public journalism movement, which—alone among the models I have discussed—made its normative democratic commitments both

transparent and central to its organizing strategy. In this moment of profound journalistic upheaval I am convinced we need to supplement our very understandable debates over newsroom business models with a brief discussion of what kind of democracy we want our business models to serve. As I have articulated in this essay, traditional journalism understands democracy as an aggregative process. Public journalism, in opposition, puts forward a deliberative democratic model, while Indymedia theorists see democracy as a primarily agonistic exercise. Algorithmic journalism embraces an "algorithmic" understanding of democratic processes. It is this algorithmic vision of democracy that might represent the most intellectually interesting, if unsettling, model for both communication and democracy.

Public journalism embraced a strongly normative, deliberative conception of democracy. In it, the legitimacy of political decision-making is assumed to rest only on the force of the superior argument, advanced within a public sphere to which all potential participants have access. It is a process within which legitimation is forged through conversation and the dynamic process of mutual reason giving and preference formation that emerges out of that conversation. Operating from within the tradition of normative political theory, Amy Gutmann and Dennis Thompson define deliberative democracy as

> a form of government in which free and equal citizens (and their representatives) justify decisions in a process in which they give each other reasons that are mutually acceptable and generally acceptable, with the aim of reaching conclusions that are binding in the present on all citizens but open to challenge in the future.[44]

Public journalism advocates, and particularly its practitioners working within newsrooms in the 1980s and '90s, drew on the ideas of John Dewey, Jürgen Habermas, and James Carey in drawing the connection between their journalistic practices and their vision of democracy. As Cole Campbell, editor of the *Virginia-Pilot* and later the *St. Louis Post-Dispatch* told his colleagues at a forum in 1995, "To Dewey, the journalist is, at her best, a catalyst of conversation, and insiders and citizens alike are active participants in that conversation. The conversation in the end is the medium of democracy, not newspapers."[45]

Deliberative democracy, embraced by theorists and practitioners of public journalism, is best understood in contrast to both aggregative democracy (the default democratic vision of news traditionalists) and agonistic democracy, the democratic understanding advanced by Indymedia's citizen-reporters. Gutmann and Thompson define aggregative democracy this way:

The aggregative conception [of democracy], in contrast [to deliberative democracy], takes preferences as a given (though some versions would correct preferences based on misinformation). It requires no justification for the preferences themselves, but seeks only to combine them in ways that are efficient and fair. Under an aggregative conception of democracy, how should governments make decisions? . . . Aggregative theories offer two seemingly different but closely related methods. The first is a form of majoritarianism: put the question to the people and let them vote (or let them record their preferences in public opinion surveys. . . . Under the second method, officials take note of the expressed preferences but put them through an analytic filter.[46]

Unlike the theorists of public journalism, supporters of traditional professional journalism do not typically declare their allegiance to aggregative democracy. As the default democratic setting in both the United States and in journalism itself, they have no need to. Under this democratic vision, journalists are primarily counted on to provide the information, and to correct the misinformation, that is relied on by citizens to register informed preferences that will then be aggregated through either the political processes or in surveys. These traditional journalism institutions, as their primary contribution to democratic processes outside information provision, also occasionally conduct and report on public-opinion polls that provide a "snapshot" of the aggregative preferences of the public. Operating as atomistic individuals, citizens consume both information and media products that they then use to make political choices.

For most of the 1980s and '90s the dominant conceptions of democracy were either conversational or aggregative, and public journalism was the primary challenger to traditional journalistic practice. I want to argue that a third vision of democracy reemerged with the Indymedia movement in the first years of the twenty-first century, a vision that can be generally described as agonistic. Chantal Mouffe has been the primary proponent of this idea of democracy, contrasting it explicitly with Habermasian visions of political consensus achieved via deliberative talk and reason giving. Mouffe writes,

A well-functioning democracy calls for a vibrant clash of democratic political positions. If this is missing there is the danger that this democratic confrontation will be replaced by a confrontation among other forms of collective identification, as is the case with identity politics. Too much emphasis on consensus and the refusal of confrontation lead to apathy and

disaffection with political participation. . . . It is for that reason that the ideal of a pluralist democracy cannot be to reach a rational consensus in the public sphere. Such a consensus cannot exist.[47]

For Mouffe, disagreement is an unavoidable aspect of a democratic politics that does not efface difference.

For Indymedia journalists, like generations of political journalists before them, participatory journalism is fused with a vision of contentious politics that deemphasizes deliberation and reason giving (particularly when compared to deliberative notions of politics) and focuses primarily on protest, conflict, and challenge to authority. It is a radical form of citizen journalism far closer to what Peters, quoted earlier, called "[bearing] witness, . . . moral stuntsmanship, [and] outrageous acts of attention getting." As Bonnie Honig has written,

> The radical-pluralist approach finds its justification above all as a critique of political theorists that measure their success by the elimination of dissonance and conflict. Instead of confining politics to the tasks of building consensus or consolidating communities and identities, the radical pluralist approach aims to shift the emphasis of democratic politics to the processes of dislocation, contestation and resistance.[48]

This agonistic vision of democracy has a far greater resonance with highly politicized slices of citizen journalistic practice and "the contentious blogosphere"[49] than do either deliberative or aggregative theories.

The public vision embedded in theories of algorithmic journalism, finally, is not reducible to aggregative, deliberative, or agonistic forms of democratic life. As Daniel Roth noted earlier, Demand Media articles "are not dreamed up by trained editors nor commissioned based on submitted questions. Instead they are assigned by an algorithm" based off of user search requests and the prices that Demand Media can get for advertising on those pages. Roth calls it a "a database of human needs," though it should be added that it is specifically a database only of the profitable human needs. The audience described here is certainly not deliberative in a Habermasian sense,[50] nor is it agonistic in the manner conceived by Indymedia partisans at the dawn of the read-write web. If it is an aggregative audience, it is aggregative in a profoundly new way.

It is certainly possible to argue that companies like Demand Media have no relationship to democracy at all. Their organizational spokespeople would certainly make such a claim. But it seems to me that the vision of an algorithmic audience, as imagined by these emerging journalistic organizations, has

deeply political implications. Seen though the window of these new content farms and search engines, the algorithmic audience exists as highly traceable data, its every preference simultaneously known, denuded, and invisible. Its desires are "understood" through a complex assemblage of people, machines, and mathematical formulae. Its essence lies buried inside large-scale data sets. It appears to be endlessly quantifiable. And I would argue that the conception of *the public* that lies at the heart of this algorithmic view of the audience, instantiated at least in a preliminary form by Demand Media and similar companies, is a concept worthy of serious analysis. Though this analysis cannot begin here, I would argue that it is worth undertaking. Such a study would contribute to a "sociology of algorithms," and this sociology of algorithms could, in turn, represent a new analytic horizon for communications scholarship in the twenty-first century.[51]

NOTES

1. J. Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture* (New York: Portfolio, 2005).

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Humor

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8

Phreaks, Hackers, and Trolls

*The Politics of Transgression
and Spectacle*

E. GABRIELLA COLEMAN

Among academics, journalists, and hackers, it is common to define hackers not only by their inquisitive demeanor, the extreme joy they garner from uninterrupted hacking sprints, and the technological artifacts they create but also by the "hacker ethic." Journalist Steven Levy first defined the hacker ethic in *Hackers: Heroes of the Revolution*, published in 1984. The hacker ethic is shorthand for a mix of aesthetic and pragmatic imperatives: a commitment to information freedom, a mistrust of authority, a heightened dedication to meritocracy, and the firm belief that computers can be the basis for beauty and a better world.[1]

In many respects, the fact that academics, journalists, and many hackers refer to the existence of this ethic is testament not only to the superb account that Levy offers—it is still one of the finest and most thoroughgoing accounts on hacking—but to the fact that the hacker ethic in the most general sense can be said to exist. For example, many of the principles motivating free and open-source software (F/OSS) philosophy reinstantiate, refine, extend, and clarify many of those original precepts.[2]

However, over the years, the concept has been overly used and has become reified. Indeed as I learned more about the contemporary face of hacking and its history during the course of my fieldwork on free and open-source software hacking, I started to see significant problems in positing any simple connection between all hackers and an unchanging ethic. Falling back on the story of the hacker ethic elides tensions and differences that exist among hackers.[3] Although hacker ethical principles may have a common core—one might even say a general ethos—further inquiry soon demonstrates that, similar to any cultural sphere, we can easily identify variance, ambiguity, and, at times, even serious points of contention.

Take for instance the outlandish and probably not entirely serious (but not entirely frivolous) accusation launched by a hacker bearing a spectacular and provocative name, the "UNIX Terrorist." He is featured in the hacker e-zine *Phrack*, which reached its popular zenith in the late 1980s and the early 1990s.[4] The UNIX Terrorist claims that a class of so-called hackers, those who write free and open-source software, such as the Linux operating system and the enormously popular Firefox browser, are not deserving of the moniker "hacker":

> Nowadays, it is claimed that the Chinese and even women are hacking things. Man, am I ever glad I got a chance to experience "the scene" before it degenerated completely. And remember, kids, knowing how to program or wanting really badly to figure out how things work inside doesn't make you a hacker! Hacking boxes makes you a "hacker"! That's right! Write your local representatives at Wikipedia/urbandictionary/OED and let them know that hackers are people that gain unauthorized access/ privileges to computerized systems! Linus Torvalds isn't a hacker! Richard Stallman isn't a hacker! Niels Provos isn't a hacker! Fat/ugly, maybe! Hackers, no! And what is up with the use of the term "cracker"? As far as I'm concerned, that term applies to people that bypass copyright protection mechanisms. Vladimir Levin? hacker. phiber optik? hacker. Kevin Mitnick? OK maybe a gay/bad one, but still was a "hacker." Hope that's clear.[5]

Hackers do not universally invoke this type of policing between "good" and "bad" or "authentic" and "inauthentic."[6] Some hackers recognize the diversity of hacking and also acknowledge that, despite differences, hacking hangs together around a loose but interconnected set of issues, values, experiences, and artifacts. For instance, hackers tend to uphold a value for freedom, privacy, and access; they tend to adore computers—the cultural glue that binds them together; they are trained in highly specialized and technical esoteric arts, including programming, systems administration, and security research; some gain unauthorized access to technologies, though the degree of illegality greatly varies (and much of hacking is fully legal). Despite a parade of similarities, if we are to understand the political and cultural significance of hacking and its role in shaping and influencing segments of contemporary Internet cultures—such as Internet trolling—every effort must be made to address its ethical and social variability.

While Levy, and countless others, locate the birth of hacking at MIT and similar university institutions during the late 1950s, it may be more accu-

rate to identify MIT as the place where *one variant of hacking* got its start. Another variant began in the 1950s with telephone phreakers, who were the direct ancestors to underground hackers like the UNIX Terrorist. Phreakers studied, explored, and entered the phone system by re-creating the audio frequencies that the system used to route calls. Quite distinct from university-bred hackers whose ethical commitments exhibit a hyperextension of academic norms such as their elevation of meritocracy, these phone explorers exhibited other ethical and aesthetic sensibilities rooted in transgression (often by breaking the law or duping humans for information) and spectacle (often by mocking those in power). The institutional independence of phreakers, in combination with some early political influences, such as the Yippies (Youth International Party), made for a class of technologists whose aesthetic sensibilities and linguistic practices proved to be more daring, vivacious, audacious, and brash than what is commonly found in other genres of hacking, such as F/OSS.

As phreaking morphed into computer hacking in the late 1970s and early 1980s, this brash aesthetic tradition and the politics of transgression continued to grow in visibility and importance, especially evident in the literary genres—textfiles and zines—produced by the hacker underground. In recent times, the aesthetics of audaciousness has veritably exploded with Internet trolls—a class of geek whose raison d'être is to engage in acts of merciless mockery/flaming or morally dicey pranking. These acts are often delivered in the most spectacular and often in the most ethically offensive terms possible.[7]

The behavior of trolls cannot, of course, be explained only by reference to the hacker underground or phreakers; nonetheless, as this essay will illustrate, there is a rich aesthetic tradition of spectacle and transgression at play with trolls, which includes the irreverent legacy of phreakers and the hacker underground. This aesthetic tradition demonstrates an important political attribute of spectacle: the marked hyperbole and spectacle among phreakers, hackers, and trollers not only makes it difficult to parse out truth from lies; it has made it difficult to decipher and understand the cultural politics of their actions. This evasiveness sits in marked contrast to other genealogies of hacking that are far easier to culturally decipher.

This drive toward cultural obfuscation is common to other edgy youth subcultures, according to cultural theorist Dick Hebdige. One of his most valuable insights, relevant to phreakers, hackers, and trollers, concerns the way that some subcultural groups have "translate[d] the fact of being under scrutiny into the pleasures of being watched, and the elaboration of

surfaces which takes place within it reveals a darker will toward opacity, a drive against classification and control, a desire to exceed."[8] This description, which Hebdige used to describe the "costers," young and impoverished British boys who sold street wares and who flourished a century ago, could have just as well been written about phreakers, hackers, and trollers nearly a century later.

As the example of the UNIX Terrorist exemplifies, and as we will see below with other examples, these technologists "make a 'spectacle' of themselves, respond to surveillance as if they were expecting it, as if it were perfectly natural."[9] Even if they may vilify their trackers, they nonetheless take some degree of pleasure in performing the spectacle that is expected of them. Through forms of aesthetic audacity, a black hole is also created that helps shield these technologists from easy comprehension and provides some inoculation against forms of cultural co-optation and capitalist commodification that so commonly prey on subcultural forms.[10]

In the rest of the essay, I narrow my analysis to phreakers, underground hackers, and Internet trolls. The point here is not to fully isolate them from other types of hacking or tinkering, nor is it to provide, in any substantial manner, the historical connections between them. Rather it provides in broad strokes a basic historical sketch to illustrate the rich aesthetic tradition of spectacle that has existed for decades, all the while growing markedly in importance in recent years with Internet trolling.

1950–1960s: The Birth of Phone Exploration, Freaking, and Phreaking

Currently, the history of phone exploring, freaking, and phreaking exists only in fragments and scraps, although basic details have been covered in various books, public lectures, and Internet sites.[11] Most accounts claim Joe Engressia, also known as Joy Bubbles, as their spiritual father, although others were already experimenting with the phone network in this period. Blind since birth and with perfect pitch, Engressia spent countless hours playing at home with his phone. In 1957, at the age of eight, he discovered he could "stop" the phone by whistling at a certain pitch, later discovered to be a 2600 hertz tone, into the receiver. Eventually, the media showcased this blind whiz kid, and local coverage most likely inspired others to follow in his footsteps.

In the late 1950s, the first glimmerings of phone explorations thus flickered, although only sporadically. Largely due to a set of technological changes, phreaking glimmered more consistently in the 1960s, although it

was still well below general public view. By 1961, phreakers—although still not named as such—no longer had to rely on perfect pitch to make their way into the phone system. They were building and using an assortment of small electrical boxes, the most famous of these being the Blue Box. This device was used to replicate the tones used by the telephone switching system to route calls, enabling Blue Box users to act as if they were a telephone operator, facilitating their spelunking of the phone system and, for some, free phone calls. Phreakers drew up and released schematics, or detailed "Box plans," allowing others to construct them at home. Eventually, further technical discoveries enabled phreakers to set up telephone conferences, also known as "party lines," where they congregated together to chat, gossip, and share technological information.[12] By the late 1960s, a "larger, nationwide phone phreak community began to form," notes historian of phreaking Phil Lapsely, and "the term 'phone freak' condensed out of the ambient cultural humidity."[13] Its codes of conduct and technical aesthetics were slowly but surely boiling, thickening into a regularized set of practices, ethics, commitments, and especially jargon—a sometimes impenetrable alphabet soup of acronyms—that no author who has written on phreakers and subsequently hackers has ever left without remark.[14]

Hello World! The 1970s

In was only in the 1970s when phone freaking made its way out of its crevasse and into the public limelight through a trickle of highly influential journalistic accounts that also worked to produce the very technologists represented in these pieces. Thanks in particular to "Secrets of the Little Blue Box," a provocative account published in 1971, mainstream Americans were given a window into the spelunkers of the phone system. The article, authored by Ron Rosenbaum, who coined the term "phreaker,"[15] was an instant sensation, for it revealed, in astonishingly remarkable detail, the practices and sensual world of phreaking. It focused on a colorful cast of characters with "strange" practices, names, and obsessions, who, according to Rosenbaum, were barely able to control their technological urges: "A tone of tightly restrained excitement enters the Captain's voice," wrote Rosenbaum, "when he starts talking about Systems. He begins to pronounce each syllable with the hushed deliberation of an obscene caller."[16] Rosenbaum wrote such a compelling account of phreaking that it inspired a crop of young male teenagers and adults (including two Steves: Wozniak and Jobs) to follow in the footsteps of the phreakers he showcased. The most famous of the featured phreakers was

Captain Crunch, whose name references a toy whistle packaged in the sugary Cap'n Crunch brand cereal. Captain Crunch discovered that this whistle emitted the very 2600 hertz tone that provided one entryway into the phone system.

If journalists were spreading the word about these "renegade" technological enthusiasts throughout the 1970s, many phreakers and eventually hackers also took on literary pursuits of their own. In the 1980s they produced a flood of writing, often quite audacious in its form and content. In the early 1970s, however, the volume was only a steady trickle. In 1971, phreakers published a newsletter as part of their brief affiliation with an existing and well-known countercultural political movement, the Yippies. Founded in 1967, the Yippies, who resided on the far left of the political spectrum, became famous for promoting sexual and political anarchy and for the memorable and outrageous pranks they staged. Originally bearing the title *YIPL* (*Youth International Party Line*), the newsletter was later renamed *TAP* (the *Technical Assistance Program*). Over time, the editors of *TAP* dropped the overt politics, instead deriving "tremendous gut-level satisfaction from the sensation of pure technical power."[17]

For a number of years, however, *YIPL* blended technological knowledge with a clear political call to arms. For instance, the first issue, published in 1971, opens with a brief shout-out of thanks to the phreakers who contributed the technical details that would fill the pages of this DIY/rough-and-tumble newsletter: "We at YIPL would like to offer thanks to all you phreaks out there." And it ends with a clear political statement:

> YIPL believes that education alone cannot affect the System, but education can be an invaluable tool for those willing to use it. Specifically, YIPL will show you why something must be done immediately in regard, of course, to the improper control of the communication in this country by none other than bell telephone company.[18]

Published out of a small storefront office on Bleecker Street in Manhattan's then seedy East Village neighborhood, the YIPL newsletter offered technical advice for making free phone calls, with the aid of hand-drawn schematics on pages also peppered with political slogans and images. For instance, these included a raised fist, a call to "Strike the War Machine," and, important for our purposes here, the identification of AT&T as "Public Enemy Number 1."[19] A group of phreakers, who by and large had pursued their exploitations and explorations in apolitical terms, got married, at least for a brief period of

time, to an existing political movement. Although the marriage was brief, the Yippies nonetheless left their imprint on phreaking and eventually hacking.

Although phreakers were already in the habit of scorning AT&T, they had done so with at least a measure of respect.[20] The zines *YIPL*, *TAP*, and eventually *2600* signaled a new history of the phreakers' (and eventually hackers') scornful crusade against AT&T. For example, in 1984, when *TAP* ceased to be, the hacker magazine and organization *2600* got its start. Largely, although not exclusively, focusing on computers, *2600* paid homage to its phone-phreaking roots in choosing its name and spent over two decades lampooning and critiquing AT&T (among other corporations and the government) with notable vigor.

1980s: "To Make a Thief, Make an Owner; to Create Crime, Create Laws"—Ursula Le Guin

Arguably one of the most influential legacies of the Yippies was their role in amplifying the audacious politics of pranking, transgression, and mockery that already existed among phreaks. However, it took another set of legal changes in the 1980s for the politics of transgression and spectacle to reach new, towering heights. By the 1980s, phreaking was still alive and kicking but was increasingly joined by a growing number of computer enthusiasts, many of them preteens and teens, who extended the politics of transgression into new technological terrains. During this decade, the mainstream media also closely yoked the hacker to the figure of the criminal—often in spectacular terms as well—an image buttressed by legal changes that outlawed for the first time certain classes of computer intrusions.[21]

As in the past, other media representations also proved central in sparking the desire to hack, and few examples illustrate this better than the blockbuster 1983 movie *War Games*. Many hackers I interviewed, for example, recounted how watching the movie led to a desire to follow in the footsteps of the happy-go-lucky hacker figure David, whose smarts lead him to unwittingly hack his way into a government computer called WOPR, located at the North American Aerospace Defense Command Center (NORAD). After initiating a game of chess with the computer, David (unintentionally, of course) almost starts World War III. Most of the movie concentrates on his effort to stop the catastrophic end of the world by doing what hackers are famous for: subduing a recalcitrant and disobedient computer.

Apparently the movie appealed to a slew of nerdy types across Europe, Latin America, and the United States, leading them to incessantly demand

from their parents a PC and modem, which once they got, commanded their attention while they were logged on for hours on Bulletin Board Systems (BBSes). A BBS is a computerized meeting and announcement system where users could upload and download files, make announcements, play games, and have discussions. BBSes housed a wildly diverse mixture of information, from government UFO coverups to phreaking box schematics, as well as software to ingest.[22] They also functioned like virtual warehouses filled with vast amounts of stand-alone texts, including genres like textfiles and zines, both of which significantly expanded the reach of the hacker underground, often broadcasting their message in audacious tones.

Textfiles, which were especially popular among underground hackers, spanned an enormously versatile subject range: anarchism, bomb building, schematics for electronics, manifestos, humorous tirades, UNIX guides, proper BBS etiquette, anti-Scientology rants, ASCII (text-based) porn, and even revenge tactics. A quite common type of textfile was box plans, schematics for electronics that showed how to use the phone system or other communication devices for unexpected (and sometimes illegal) purposes. Each textfile bears the same sparse aesthetic stamp: ASCII text, at times conjoined with some crude ASCII graphics. This visual simplicity sharply contrasts with the more audacious nature of the content. Take for example a textfile from 1984: "the code of the verbal warrior,or, [sic] barney's bitch war manual," which offered (quite practical) advice on the art of bitching.

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><><><><><><><><><><><><><><><><>
   the glue ball bbs—————312-465-hack
   ><><><><><><><><><><><><><><><><><>


             barney badass's b-files
        ————————————————————-
        /////////////b-file #1////////////////
        the code of the verbal warrior,or,
           barney's bitch war manual
```

so you log onto a board and make a bee-line for your favorite sub-board. some people love pirate boards,some people like phreak boards. my passion is the trusty old standby,the bitch board.

   so you get in the 'argument den', or 'discussion board',or'nuclear bitch-fare'and start looking around for someone who you think you can out-rank.you know,insult,cut down,and generally verbally abuse. and so you

post,and,next thing you know,somebody appears to hate your guts. you've got an enemy. now what?

the main problem with 85% of all bitching that goes on on boards today, is that people just don't know how to handle the answer to that question. now what? do i keep it up? do i give up? do i insult his mother?

barney's bitch tip #1————-make up yor mind. either take the bitching completely seriously,or do not take it seriously at all. if you find yourself grinning at insults thrown at you by your opponent,then either cut it out immediately,or try grinning even wider when you're typing your reply. the benefit of this is that you can't be affected one way or the other by any thing that your opponent says.if you're taking it seriously,then you just keep glaring at your monitor,and remain determined to grind the little filth into submission. if you're using the lighthearted approach,then it's pretty dif- ficult to get annoyed by any kind of reference towards your mother/some chains/and the family dog,because,remember,you're not taking this seriously![23]

During the 1980s and through the 1990s, hackers were churning out these literary and political texts at rates that made it impossible for any individual to keep up with all of them. As cultural historian of hacking Douglas Thomas has persuasively argued, there was one publication, the electronic zine *Phrack*, that produced a shared footprint of attention among an otherwise sprawling crew of hackers and phreakers.[24] *Phrack* was particularly influential during its first decade of publication, and its style honored and amplified the brash aesthetics of hacking/phreaking as it spread news about the hacker underground.

One of the most important sections of the zine was the hacker "Pro-Phile," an example of which is the UNIX Terrorist's Pro-Phile that appears at the beginning of this essay. Thomas explains its importance in the following terms:

The Pro-Phile feature was designed to enshrine hackers who had "retired" as the elder statesmen of the underground. The Pro-Philes became a kind of nostalgic romanticizing of hacker culture, akin to the write-up one expects in a high school yearbook, replete with "Favorite Things" and "Most Memorable Experiences."[25]

This material was not simply meant for the hacker public to ingest alone. In the case of *Phrack*, the audience included law enforcement, for this was

the period when hackers were being watched closely and constantly. Like Hebdige's costers, hackers conveyed the message that they too were watching back. The cat-and-mouse game of surveillance and countersurveillance among underground hackers and law enforcement amplified the existing propensity for hyperbole and trash talking that existed among phreakers and hackers. Their mockery of law enforcement, for example, not only abounded in the content featured in *Phrack* but was reflected in the very form of the zine. For instance, the structure of the Pro-Phile mirrors (and mocks) the FBI's "Most Wanted" poster, listing such attributes as date of birth, height, eye color, and so on.[26]

Hackers' expert command of technology, their ability to so easily dupe humans in their quest for information, and especially their ability to watch the watchers made them an especially subversive force to law enforcement. With society unable to pacify hackers through mere representation or traditional capitalist co-optation, a string of hackers were not simply legally prosecuted but also persecuted, with their punishment often exceeding the nature of their crime.[27]

1990s: "In the United States Hackers Were Public Enemy No 1."—Phiber Optik

Throughout the 1990s, the hacker underground was thriving, but an increasing number of these types of hackers were being nabbed and criminally prosecuted.[28] Although there are many examples to draw on, the most famous case and set of trials concerns hacker and phone phreaker Kevin Mitnick.[29] Throughout the 1980s and 1990s, he was arrested and convicted multiple times for various crimes, including computer fraud and possessing illegal long-distance access cods. Eventually the FBI placed him on the FBI's "Most Wanted" list before they were able to track him down and arrest him in 1995, after a three-year manhunt. He was in jail for five years, although he spent over four of those as a pretrial detainee, during which time he was placed in solitary confinement for a year.[30] Mitnick explained in an interview why this extreme measure was taken: "because a federal prosecutor told the judge that if I got to a phone I could connect to NORAD (North American Aerospace Command) and somehow launch an ICBM (Intercontinental Ballistic Missile)."[31] Mitnick was unquestionably guilty of a string of crimes, although he never gained anything financially from his hacks. The extreme nature of his punishment was received as a warning message within the wider hacker community. "I was the guy

pinned up on the cross," Kevin Mitnick told a packed room of hackers a couple of years after his release, "to deter you from hacking."[32]

At the time of Mitnick's arrest, hackers took action by launching a "Free Kevin" campaign. Starting in the mid-1990s and continuing until Mitnick's release in January 2002, the hacker underground engaged in both traditional and inventively new political activities during a vibrant, multiyear campaign: they marched in the streets, wrote editorials, made documentaries, and publicized his ordeal during the enormously popular hacker conference HOPE (Hackers on Planet Earth), held roughly every two years in New York City since 1994.

2000–2010: Good Grief! The Masses Have Come to Our Internet

Although the Internet was becoming more accessible throughout the 1990s, it was still largely off-limits, even to most North American and European citizens. By 2000, the floodgates started to open wide, especially with the spread of cheaper Internet connections. A host of new social media technologies, including blogs, wikis, social networking sites, and video-sharing sites, were being built and used by geeks and nongeeks to post messages, to share pictures, to chatter aimlessly, to throw ephemeral thoughts into the virtual wind, and to post videos and other related Internet memes. Internet memes are viral images, videos, and catchphrases under constant modification by users, and with a propensity to travel as fast as the Internet can move them.

During the period when large droves of people were joining the Internet, post-9/11 terrorism laws, which mandated stiff punishments for cybercrimes, and the string of hacker crackdowns of the 1980s and 1990s most likely made for a more reserved hacker underground.[33] Without a doubt, cultural signs and signals of the hacker underground were and are still visible and vibrant. Hacker underground groups, such as Cult of the Dead Cow (CDC), continued to release software. Conferences popular among the underground, such as DEFCON and HOPE, continue to be wildly popular even to this day. Free from jail after two years, Kevin Mitnick delivered his humorous keynote address to an overflowing crowd of hackers at the 2004 HOPE conference, who listened to the figure who had commanded their political attention for over ten years.

Yet, with a few exceptions, the type of hacker Kevin Mitnick represents has become an endangered species in today's North American and European cultural landscape. Trolls, on the other hand, have proliferated beyond their more limited existence prior to this decade. Trolls have transformed what

were more occasional and sporadic acts, often focused on virtual arguments called flaming or flame wars, into a full-blown set of cultural norms and set of linguistic practices.[34] These codes are now so well established and documented that many others can, and have, followed in their footsteps.

Trolls work to remind the "masses" that have lapped onto the shores of the Internet that there is still a class of geeks who, as their name suggests, will cause Internet grief, hell, and misery; examples of trolling are legion. Griefers, one particular subset of troll, who roam in virtual worlds and games seeking to jam the normal protocols of gaming, might enact a relatively harmless prank, such as programming flying phalluses to pay a public visit in the popular virtual world Second Life during a high-profile CNET interview.[35] Other pranks are far more morally dicey. During a virtual funeral held in the enormously popular massively multiplayer online game *World of Warcraft*, for a young player who had passed away in real life, griefers orchestrated a raid and mercilessly killed the unarmed virtual funeral entourage.[36]

In the winter of 2007 and 2008, one group of trolls, bearing the name Anonymous, trolled the Church of Scientology after the church attempted to censor an internal video featuring Tom Cruise that had been leaked. (Eventually what was simply done for the sake of trolling grew into a more traditional protest movement.)[37] One participant in the raids describes the first wave of trolling as "ultra coordinated motherfuckary [*sic*]," a description fitting for many instances of trolling:

The unified bulk of anonymous collaborated though [*sic*] massive chat rooms to engage in various forms of ultra coordinated motherfuckary [*sic*]. For very short periods of time between Jan 15th and 23rd Scientology websites were hacked, DDos'ed to remove them from the Internet, the Dianteics [*sic*] telephone hot line was completely bombarded with prank calls . . . and the "secrets" of their religion were blasted all over the internet, I also personally scanned my bare ass and faxed it to them. Because fuck them.

If hackers in the 1980s and 1990 were "bred by boards," as Bruce Sterling has aptly remarked, trolls have been partly bred in one of the key descendants of boards: wildly popular image forums, like 4chan.org, which was founded in 2003.[38] 4chan houses a series of topic-based forums where participants—all of them anonymous—post and often comment on discussions or images, many of these being esoteric, audacious, creative, humorous, heavily Photoshopped, and often very grotesque or pornographic. In contrast to many websites, the

posts on 4chan, along with their commentary, images, and video, are not archived. They are also posted at such an unbelievably fast pace and volume that much of what is produced effectively vanishes shortly after it is posted and viewed. These rapid-fire conditions magnify the need for audacious, unusual, gross, or funny content. This is especially true on the most popular and infamous of 4chan boards, /b/, the "random" board whose reigning logic combines topical randomness with aesthetic, linguistic, and visual extremity. "If you like the upbeat metaphor of the Internet as hive mind," explains Rob Walker, "then maybe /b/ is one of the places where its unruly id lives."[39] This board is a haven for most anything and thus has birthed many acts of trolling.

Like phreakers and hackers, some trolls act as historical archivists and informal ethnographers. They record and commemorate their pranks, trivia, language, and cultural mores in astonishing detail on a website called Encyclopedia Dramatica (ED). ED is written in a style and genre that, like *Phrack*, pays aesthetic homage and tribute to the brashness that the trolls it chronicles constantly spew out. Take for example, the definition of "troll" and "lulz," a plural bastardization of laughing out loud ("lol"); lulz are often cited as the motivating emotional force *and* consequence of an act of trolling:

> A troll is more than the embodiment of the internet hate machine, trolls are the ultimate anti-hero, trolls fuck shit up. Trolls exist to fuck with people, they fuck with people on every level, from their deepest held beliefs, to the trivial. They do this for many reasons, from boredom, to making people think, but most do it for the lulz.[40]

> Lulz is laughter at someone else's expense. . . . This makes it inherently superior to lesser forms of humor. . . . The term lulz was coined by Jameth, and is the only good reason to do anything, from trolling to consensual sex. After every action taken, you must make the epilogic dubious disclaimer: "I did it for the lulz." Sometimes you may see the word spelled as luls but only if you are reading something written by a faggot. It's also Dutch for cock."[41]

As one will immediately notice, the very definition of "lulz" is a linguistic spectacle—one clearly meant to shock and offend through references to "cocks" and "faggots." Trolls have taken political correctness, which reached its zenith in the 1980s and the 1990s, by the horns and not only tossed it out the window but made a mockery of the idea that language, much like everything virtual, is anything that should be taken seriously.

Clearly, trolls value pranking and offensiveness for the pleasure it affords. But pleasure is not always cut from the same cloth; it is a multivalent emotion with various incarnations and a rich, multifaceted history. Common to F/OSS developers, hacker pleasure approximates the Aristotelian theory of eudaimonia described by philosopher Martha Nussbaum as "the unimpeded performance of the activities that constitute happiness."[42] Hackers, in pushing their personal capacities and technologies to new horizons, experience the joy of what follows from the self-directed realization of skills, goals, and talents—more often than not achieved through computing technologies.

The lulz, on the other hand, celebrates a form of bliss that revels and celebrates in its own raw power and thus is a form of joy that, for the most part, is divorced from a moral hinge—such as the ethical love of technology. If underground hackers of the 1980s and 1990s acted out in brashness often for the pleasure of doing so, and as a way to perform to the watching eyes of the media and law enforcement, it was still largely hinged to the collective love of hacking/building and understanding technology. There was a balance between technological exploration and rude-boy behavior, even within the hacker underground that held an "elitist contempt" for anyone who simply used technological hacks for financial gain, as Bruce Sterling has put it.[43]

At first blush, it thus might seem like trolls and griefers live by no moral code whatsoever, but among trolls and griefers, there is a form of moral restraint at work. However naive and problematic it is, this morality lies in the "wisdom" that one should keep one's pranking ways on the Internet. Nothing represents this better than the definition for "Chronic Troll Syndrome," also from Encyclopedia Dramatica. This entry uses the characteristically offensive and brash style to highlight the existence of some boundaries, although in reality this advice is routinely ignored:

> Chronic Troll Syndrome (CTS) is an internet disease (not to be confused with Internet Disease) that is generally present in trolls. It causes the given troll to be unable to tell the difference between internet and IRL [in real life] limits.
>
> As a result, the troll is no longer able to comprehend what is appropriate to say and do when dealing with IRL people in contrast with the Internets. Symptoms include being inconsiderate and generally asshatty to friends and family, the common offensive use of racial epithets, and a tendency to interfere in other people's business uninvited "for the laughs."[44]

As so many Internet scholars insist, one should question any such tidy division between the virtual world and meatspace; further trolling often exceeds

the bounds of speech and the Internet when trolls "dox" (revealing social security numbers, home addresses, etc.) individuals and send unpaid pizzas to target's home, for instance.[45] However problematic their division is, I would like to suggest that when trolls draw this cultural line in the sand, they are also commenting on the massification of the Internet—a position that is quite contemptuous of newcomers. Although trolling has existed in some form since people congregated online,[46] trolling proliferated and exploded at the moment the Internet became populated with non-technologically-minded people. The brash behavior of trolls is especially offensive to people unfamiliar with this world, and even for those familiar with this world, it can still be quite offensive. Their spectacle works in part as a virtual fence adorned with a sign bearing the following message: "keep (the hell) out of here, this is our Homeland."

This geeky commentary on the masses is not entirely new. Take, for instance, "September That Never Ended," an entry from an online glossary of hacker terms, the Jargon File:

> All time since September 1993. One of the seasonal rhythms of the Usenet used to be the annual September influx of clueless newbies who, lacking any sense of netiquette, made a general nuisance of themselves. This coincided with people starting college, getting their first internet accounts, and plunging in without bothering to learn what was acceptable. These relatively small drafts of newbies could be assimilated within a few months. But in September 1993, AOL users became able to post to Usenet, nearly overwhelming the old-timers' capacity to acculturate them; to those who nostalgically recall the period before, this triggered an inexorable decline in the quality of discussions on newsgroups. Syn. eternal September. See also AOL![47]

Already by 1993 geeks and hackers who considered the Internet as their particular romping grounds were remarking on the arrival of newcomers. This tradition of lamenting the "lame" behavior of "noobs" continues today; however, the tactics have changed among a class of technologists. Instead of reasoned debate, as is common with university and F/OSS hackers, among trolls, the preferred tactic of performing their "eliteness" is shocking spectacle and the creation of highly specialized and esoteric jargon: argot. As noted folklorist David Maurer has argued, argot functions primarily in three capacities: to encode technical expertise, to create boundaries between insiders and outsiders, and to maintain secrecy.[48]

The behavior of trolls, of course, cannot be explained only by their contempt of newcomers; as this essay has argued, there are multiple sources and a rich historical tradition at play, including the aesthetic legacy of phreakers

and the underground, who provided a rich, albeit less shocking, tradition of spectacle and brashness from which to draw on, extend, and reformulate. We must also give due weight to the condition of collective anonymity, which, as the psychosocial literature has so long noted, fans the fire of flaming and rude behavior.[49] Finally, with a number of important exceptions, their antics, while perhaps morally deplorable, are not illegal. The hacker crackdown of the 1980 and 1990s may have subdued illegal hacks, but it certainly did not eliminate the rude-boy behavior that often went along with them; in fact, it might have created a space that allowed trolling to explode as it has in the past few years.

How have underground hackers reacted to this class of technologists? Although there is no uniform assessment, the UNIX Terrorist, who opened this piece, ends his rant by analyzing "epic lulz." Engaging in the "lulz," he notes, provides "a viable alternative" both to the hacker underground and to open-source software development:

> Every day, more and more youngsters are born who are many times more likely to contribute articles to socially useful publications such as Encyclopedia Dramatica instead of 2600. Spreading terror and wreaking havoc for "epic lulz" have been established as viable alternatives to contributing to open source software projects. If you're a kid reading this zine for the first time because you're interested in becoming a hacker, fucking forget it. You're better off starting a collection of poached adult website passwords, or hanging out on 4chan. At least trash like this has some modicum of entertainment value, whereas the hacking/security scene had become some kind of fetid sinkhole for all the worst kinds of recycled academic masturbation imaginable. In summary, the end is fucking nigh, and don't tell me I didn't warn you . . . even though there's nothing you can do about it.
> Good night and good luck,
> the unix terrorist[50]

One obvious question remains: do trolls even deserve any place in the historical halls of hacking? I cannot answer this question here, for it is at once too early to make the judgment and not entirely my place to do the judging. One thing is clear: even if trolls are to be distinguished from underground hackers, they do not reside entirely in different social universes; trolling was common on BBSes, Usenet, and other Internet arenas where underground hacking thrived. There is a small class of the most elite griefers and trolls who use hacking as a weapon for their merciless mockery. Most telling may be the

UNIX Terrorist himself, and especially his rant; as the UNIX Terrorist's final words so clearly broadcast: underground hacking is notoriously irreverent and brash and thus helped to light an aesthetic torch that trolls not only have carried to the present but have also doused with gasoline.

Conclusion: Informational Tricksters or Just "Scum of the Earth Douchebags"?

Even while some of the actions of phreakers, hackers, and trolls may be ethically questionable and profoundly disquieting, there are important lessons to be drawn from their spectacular antics.[51] As political theorist and activist Stephen Duncombe has so insightfully argued, if carried out responsibly, a politics of spectacle can prove to be an invaluable and robust political tactic: "spectacle must be staged in order to dramatize the unseen and expose associations elusive to the eye."[52] The question that remains, of course, is whether there is *any* ethical substance to these spectacular antics, especially those of the troll, whose spectacle is often generated through merciless mocking, irreverent pranking, and at times, harassment.

If we dare consider these informational prankers in light of the trickster, then perhaps there may be some ethical substance to some, although certainly not all, of their actions. The trickster encompasses a wide range of wildly entertaining and really audacious mythical characters and legends from all over the world, from the Norse god Loki to the North American coyote. Not all tricksters are sanitized and safe, as Disney has led us to believe. Although clever, some are irreverent and grotesque. They engage in acts of cunning, deceitfulness, lying, cheating, killing and destruction, hell raising, and as their name suggests, trickery. Sometimes they do this to quell their insatiable appetite, to prove a point, at times just to cause hell, and in other instances to do good in the world. Tricksters are much like trolls: provocateurs and saboteurs. And according to Lewis Hyde, tricksters help to renew the world, in fact, to renew culture, insofar as their mythological force has worked to "disturb the established categories of truth and property and, by so doing, open the road to possible new worlds."[53]

The mythical notion of the trickster does seem to embody many of the attributes of the phreaker, hacker, and especially the contemporary Internet troll. But is it reasonable to equate the mythical trickster figure Loki and the tricksters in Shakespeare with figures that do not reside in myth (although Internet trolls certainly create myths), do not reside in fiction, but reside in the reality of the Internet? Given that trolls, in certain instances, have

caused mayhem in people's lives, does the moniker "trickster" act as an alibi, a defense, or an apology for juvenile, racist, or misogynist behavior?[54] Or is there a positive role for the troll to play on the Internet as site/place of constant play and performance? Is the troll playing the role of the trickster, or is the troll playing, you know, just for the lulz?

NOTES

1. Steven Levy, *Hackers: Heroes of the Computer Revolution* (New York: Delta, 1984), 39–46.

2. Samir Chopra and Scott Dexter, *Decoding Liberation: The Promise of Free and Open Source Software* (New York: Routledge, 2009); E. Gabriella Coleman, "Code Is Speech: Legal Tinkering, Expertise, and Protest among Free and Open Source Software Developers," *Cultural Anthropology* 24, no. 3 (2009): 420–454. Chris M. Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham: Duke University Press, 2008).

3. E. Gabriella Coleman and Golub Alex, "Hacker Practice: Moral Genres and the Cultural Articulation of Liberalism," *Anthropological Theory* 8, no. 3 (2008): 255–277; Tim Jordan, *Hacking: Digital Media and Technological Determinism* (London: Polity, 2008).

4. Douglas Thomas, *Hacker Culture* (Minneapolis: University of Minnesota Press, 2003).

5. "Phrack Prophile on the UNIX Terrorist," *Phrack*, November 8, 2008, http://phrack.org/issues.html?issue=65&id=2#article (accessed June 27, 2010).

6. It is far more common for hackers who do not engage in transgression to accuse transgressive hackers like the UNIX Terrorist of not being authentic hackers, instead being "crackers." See the entry for "cracker" in the tome of hacker lore, the Jargon File: http://catb.org/jargon/html/C/cracker.html.

7. Julian Dibbell, "Mutilated Furries, Flying Phalluses: Put the Blame on Griefers, the Sociopaths of the Virtual World," *Wired*, January 18, 2008, http://www.wired.com/gaming/virtualworlds/magazine/16-02/mf_goons (accessed July 10, 2009); Mattathias Schwartz, "Trolls among Us," *New York Times Magazine*, August 3, 2008, http://www.nytimes.com/2008/08/03/magazine/03trolls-t.html (accessed August 3, 2008).

8. Dick Hebdige, "Posing . . . Threats, Striking . . . Poses" (1983), in *The Subcultures Reader*, ed. Ken Gelder and Sarah Thornton (New York: Routledge, 1997), 403.

9. Ibid., 398.

10. Dick Hebdige, "Subculture: The Meaning of Style" (1979), in *The Subcultures Reader*, ed. Ken Gelder and Sarah Thornton, 393–405 (New York: Routledge, 1997).

11. Phil Lapsely is currently writing a comprehensive history of phone phreaking and has given various lectures on the topic. See http://www.historyofphonephreaking.org/.

12. For a presentation about these early phone conferences held in the 1980s and 1990s, see TProphet & Barcode's talk, "Phreaks, Confs and Jail," given at The Last HOPE conference, July 2008, http://securitytube.net/Phreaks,-Confs-and-Jail-(The-Last-HOPE)-video.aspx.

13. Phil Lapsely, "More on the Origin of 'Phreak,'" *The History of Phone Phreaking Blog*, April 4, 2010, http://blog.historyofphonephreaking.org/2010/04/more-on-origin-of-phreak.html (accessed April 4, 2010).

14. See Steven Levy, *Hackers: Heroes of the Computer Revolution* (New York: Delta, 1984), 39–46; Ron Rosenbaum, "Secrets of the Little Blue Box," *Esquire*, October 1971, available online at http://www.lospadres.info/thorg/lbb.html (accessed April 16, 2011); Levy, *Hackers*; and Bruce Sterling, *The Hacker Crackdown: Law and Disorder on the Electronic Frontier* (New York: Bantam, 1992).

15. Lapsely, "More on the Origin of 'Phreak.'"

16. Rosenbaum, "Secrets of the Little Blue Box."

17. Sterling, *The Hacker Crackdown*, 62.

18. "The Youth International Party Lines First Issue," *YIPL*, June 1971, 1 (on file with the author).

19. Ibid.

20. Rosenbaum, "Secrets of the Little Blue Box."

21. Helen Nissenbaum, "Hackers and the Contested Ontology of Cyberspace," *New Media and Society* 6, no. 2 (2004): 195–217.

22. Jason Scott has produced a seminal history of the BBS era in his documentary *BBS: The Documentary*. See http://www.bbsdocumentary.com/.

23. barney badass, "the code of the verbal warrior," http://www.textfiles.com/100/war-bitch.txt (accessed July 10, 2010).

24. Thomas, *Hacker Culture*.

25. Ibid., 92.

26. Ibid., 132.

27. Thomas, *Hacker Culture*; Sterling, *The Hacker Crackdown*. Among underground hackers, media representation and commodification were and still are largely ineffective tools to placate them. However, lucrative information-technology jobs, especially within the security industry, as Andrew Ross has noted, has led "two generations of hackers" to agonize "over accepting lucrative offers of employment within corporate or government IP security." Andrew Ross, *Nice Work If You Can Get It* (New York: NYU Press, 2009), 124.

28. Quotation in section title from Elinor Mills, "Q&A: Mark Abene, from 'Phiber Optik' to Security Guru," CNET News, June 23, 2009, http://news.cnet.com/8301-1009_3-10270582-83.html (accessed July 10, 2010).

29. Kevin Mitnick's case and others are covered in Thomas, *Hacker Culture*.

30. E. Gabriella Coleman and Golub Alex, "Hacker Practice: Moral Genres and the Cultural Articulation of Liberalism," *Anthropological Theory* 8, no. 3 (2008): 255–277; Thomas, *Hacker Culture*.

31. Elinor Mills, "Q&A: Kevin Mitnick, from Ham Operator to Fugitive to Consultant," CNET News, June 22, 2009, http://news.cnet.com/8301-1009_3-10269348-83.html (accessed July 10, 2010).

32. Quotation from Kevin Mitnick's keynote address delivered at the fifth HOPE conference, held in New York City, July 9–11, 2004, available online at http://www.the-fifth-hope.org/mp3/mitnick-1.mp3 and http://www.the-fifth-hope.org/mp3/mitnick-2.mp3 (accessed July 10, 2010).

33. This is difficult to empirically verify, yet it is not unreasonable to surmise that the well-publicized hacker arrests of the 1990s, combined with even stiffer penalties for computer intrusion mandated in the Patriot Act, would work to curb the most flagrant or potentially illegal behaviors or, alternatively, possibly make the underground burrow back into the recesses of its crevasses, away from the watchful eye of law enforcement.

34. Contemporary trolls encompass a wide range of subgroups, each with particular histories and techniques and some also harboring great distaste for other trolling groups.

35. Burci Bakioglu, "Spectacular Interventions of Second Life: Goon Culture, Griefing, and Disruption in Virtual Spaces," in special edition: "Cultures of Virtual Worlds," *Journal of Virtual Worlds Research* 3, no. 1 (2009), https://journals.tdl.org/jvwr/article/view/348; Dibbell, "Mutilated Furries, Flying Phalluses."

36. "WoW Funeral Raid," Playercraft.com, June 13, 2009, http://playercraft.com/famous/wow-funeral-raid/ (accessed June 10, 2009).

37. See http://www.whyweprotest.net/.

38. Sterling, *The Hacker Crackdown*.

39. Rob Walker, "When Funny Goes Viral," *New York Times Magazine*, July 12, 2010, http://www.nytimes.com/2010/07/18/magazine/18ROFL-t.html (accessed July 12, 2010).

40. Encyclopedia Dramatica, s.v. "Troll," http://encyclopediadramatica.com/Troll (accessed October 12, 2009).

41. Encyclopedia Dramatica, s.v. "Lulz," http://encyclopediadramatica.com/Lulz (accessed October 12, 2009).

42. Martha C. Nussbaum, "Mill between Aristotle and Bentham," *Daedalus* 133, no. 2 (2004): 64.

43. Sterling, *The Hacker Crackdown*.

44. Encyclopedia Dramatica, s.v. "Chronic Troll Syndrome," http://encyclopediadramatica.com/Chronic_Troll_Syndrome (accessed October 12, 2009).

45. E. Gabriella Coleman, "Ethnographic Approaches to Digital Media," *Annual Review of Anthropology* 39 (2010): 1–19; David Hakken, *Cyborgs@Cyberspace? An Ethnographer Looks to the Future* (New York: Routledge, 1999); T. L. Taylor, *Play between Worlds: Exploring Online Game Culture* (Cambridge: MIT Press, 2006).

46. Judith S. Donath, "Identity and Deception in the Virtual Community," in *Communities in Cyberspace*, ed. Mark A. Smith and Peter Kollock, 29–59 (London: Routledge, 1999).

47. Jargon File, s.v. "September That Never Ended," http://www.catb.org/~esr/jargon/html/S/September-that-never-ended.html.

48. David Maurer, *Whiz Mob: A Correlation of the Technical Argot of Pickpockets with Their Behavior* (Lanham, MD: Rowman and Littlefield, 1964).

49. Patricia Wallace, *The Psychology of the Internet* (New York: Cambridge University Press, 1999).

50. "Phrack Prophile on the UNIX Terrorist."

51. Quotation in section title from Encyclopedia Dramatica, s.v. "Troll," March 27, 2010, revision, http://web.archive.org/web/20100327134636/http://encyclopediadramatica.com/Troll (accessed July 5, 2011).

52. Stephen Duncombe, *Dream: Re-imagining Progressive Politics in an Age of Fantasy* (New York: New Press, 2007), 156–157.

53. Lewis Hyde, *Trickster Makes This World: Mischief, Myth, and Art* (New York: North Point, 1999), 13.

54. Although I am not answering this question here, I am certainly not posing it rhetorically. It is crucial to interrogate trolling in all its dimensions, roots, and consequences, which I am unable to do here, as the main purpose of this essay is to establish aesthetic linkages between phreakers, hackers, and trolls. Lisa Nakamura has written about online racism extensively. See Lisa Nakamura, *Digitizing Race: Visual Cultures of the Internet* (Minneapolis: University of Minnesota Press, 2008) and *Cybertypes: Race, Ethnicity, and Identity on the Internet* (New York: Routledge, 2002). Recently, she has explored the intersection between racism and griefing in a talk: "Don't Hate the Player, Hate the Game," June 16, 2010, available online at http://blogs.law.harvard.edu/mediaberkman/2010/06/16/lisa-nakamura-dont-hate-the-player-hate-the-game. Legal scholar Danielle Citron has examined cyberharassment of women in terms of discrimination, building on her previous work on legal barriers and opportunities for addressing online abuse. See Danielle Citron, "Law's Expressive Value in Combating Cyber Gender Harassment," *Michigan Law Review* 108 (2009): 373–416; and Danielle Citron, "Cyber Civil Rights," *Boston University Law Review* 89 (2009): 61–125. Not all cases of trolling are relevant to the issues raised by these scholars, but some of them certainly are pertinent.

The Language of Internet Memes

PATRICK DAVISON

In *The Future of the Internet—and How to Stop It*, Jonathan Zittrain describes the features of a *generative* network. A generative network encourages and enables creative production and, as a system, possesses leverage, adaptability, ease of mastery, accessibility, and transferability.[1] Notably absent from this list of characteristics, however, is security. Many of the characteristics that make a system generative are precisely the same ones that leave it vulnerable to exploitation. This zero-sum game between creativity and security implies a divided Internet. Those platforms and communities which value security over creativity can be thought of as the "restricted web," while those that remain generative in the face of other concerns are the "unrestricted web."

The restricted web has its poster children. Facebook and other social networking sites are growing at incredible speeds. Google and its ever-expanding corral of applications are slowly assimilating solutions to all our computing needs. Amazon and similar search-based commerce sites are creating previously unimagined economies.[2] Metaphorically, these sites, and countless others, make up the cities and public works of the restricted web. However, the unrestricted web remains the wilderness all around them, and it is this wilderness that is the native habitat of Internet memes.

The purpose of this essay is twofold. The first is to contribute to a framework for discussing so-called Internet memes. Internet memes are popular and recognizable but lack a rigorous descriptive vocabulary. I provide a few terms to aid in their discussion. The second purpose is to consider Foucault's "author function" relative to Internet memes, many of which are created and spread anonymously.

What Is an Internet Meme?

In 1979 Richard Dawkins published *The Selfish Gene*, in which he discredits the idea that living beings are genetically compelled to behave in ways that are "good for the species." Dawkins accomplishes this by making one point

clear: the basic units of genetics are not species, families, or even individuals but rather single genes—unique strands of DNA.[3]

At the end of the book, Dawkins discusses two areas where evolutionary theory might be heading next. It is here that he coins the term "meme." He acknowledges that much of human behavior comes not from genes but from culture. He proposes that any nongenetic behavior be labeled as a meme and then poses a question: can the application of genetic logic to memes be productive? To make the differences between genes and memes clear, I offer a short example of each.

Genes determine an organism's physical characteristics. A certain gene causes an organism to have short legs, or long, for instance. Imagine two zebra. The first has the short-leg gene, and the second the long. A lion attacks them. The short-legged zebra runs more slowly and is eaten. The long-legged zebra runs more quickly (because of its legs) and lives. At this point, there are more long-leg genes in the imaginary ecosystem than short-leg genes. If the long-legged zebra breeds and has offspring, those offspring with long legs will continue to survive at a higher rate, and more offspring of those offspring will contain the long-leg gene. The genes themselves are not thinking beings—the long-leg gene does not know it causes long-leggedness, nor does it care, but given that it bestows a property that interacts with the environment to allow more of itself to be produced, it is *successful*.[4]

Memes determine the behavior of an organism. They are either taught to an organism (you go to school and learn math) or learned through experience (you stick a finger in an outlet, get shocked, understand that outlets should be avoided). Imagine two soccer players. There are genetic factors which might make them better or worse at playing (long or short legs, for instance); however, their ability is also dependent on their understanding of the game. For this example, let us imagine that the two players are physically identical. However, one of them goes to practice, and the other does not. At practice, the coach teaches the attendant player about passing: you pass the ball to other players and increase the chance that your team will score. During a game, the attendant player is likely to pass and to experience success because of it. The truant player, having not learned the passing meme, will not pass, and that player's team will suffer because of it.

While genes rely on the physical process of reproduction to replicate, memes rely on the mental processes of observation and learning. In our example, the truant player comes to the game without the passing meme and suffers. That player is, however, able to observe the attendant player passing, and succeeding, and can decide to imitate the attendant player by passing as

well. The passing meme successfully replicates itself in a new organism without the all-or-nothing cycle of life and death. This highlights one of the critical differences between genes and memes: speed of transmission. Compared to genetic changes (which span generations upon generations), memetic changes happen in the blink of an eye. Offline memes, cultural cornerstones like language or religion, are hyperfast when compared to their genetic counterparts. Internet memes are even faster.

The other notable difference between genes and memes is their relative fidelity of form. In our zebra example, a zebra is granted physical characteristics based on a discrete combination of DNA. All the genes that Dawkins discusses are at their most basic made up of sequences of only four chemicals. The memes that I examine in this essay, however, are not made up of chemicals but of ideas and concepts. Our truant player may observe and learn the passing meme, but that process does not transfer an identical chemical "code" for passing. The meme is subject to interpretation and therefore to variation.

In Dawkins's original framing, memes described any cultural idea or behavior. Fashion, language, religion, sports—all of these are memes. Today, though, the term "meme"—or specifically "Internet meme"—has a new, colloquial meaning. While memes themselves have been the subject of entire books, modern Internet memes lack even an accurate definition. There are numerous online sources (Wikipedia, Urban Dictionary, Know Your Meme, Encyclopedia Dramatica) that describe Internet memes as the public perceives them, but none does so in an academically rigorous way. Given this, I have found the following new definition to be useful in the consideration of Internet memes specifically:

> *An Internet meme is a piece of culture, typically a joke, which gains influence through online transmission.*

While not all Internet memes are jokes, comparing them to offline jokes makes it clear what makes Internet memes unique: the speed of their transmission and the fidelity of their form.[5] A spoken joke, for instance, can only be transmitted as quickly as those individuals who know it can move from place to place, and its form must be preserved by memory. A printed joke, in contrast, can be transmitted by moving paper and can be preserved by a physical arrangement of ink. The speed of transmission is no longer limited by the movement of individuals, and the form of the joke is preserved by a medium, not memory.

Now, consider a joke that exists on the Internet. The speed of transmission is increased yet again, in an incredible way. Space is overcome: computers connect to one another through far-reaching networks. Time is overcome: the digitally represented information is available as long as the server hosting it remains online. A joke stored on a website can be viewed by as many people as want to view it, as many times as they want to, as quickly as they can request it.

An online joke's fidelity of form, however, is subject to a unique contradiction. Being digital, the joke is perfectly replicable. Copy and paste functions (or their equivalents) are ubiquitous, expected parts of software platforms.[6] However, a piece of digital media in the modern landscape of robust and varied manipulation software renders it also perfectly malleable. Individual sections of a piece of digital media can be lifted, manipulated, and reapplied with little effort.

Once I say that a piece of media, or a meme, is replicable and malleable, I must specify what *exactly* is being copied or changed. A meme can be separated into components. I propose three: the manifestation, the behavior, and the ideal.

The *manifestation* of a meme is its observable, external phenomena. It is the set of objects created by the meme, the records of its existence. It indicates any arrangement of physical particles in time and space that are the direct result of the reality of the meme.

The *behavior* of a meme is the action taken by an individual in service of the meme. The behavior of the meme creates the manifestation. For instance, if the behavior is photographing a cat and manipulating that photograph with software, the manifestation this creates is the ordered progression of pixels subsequently uploaded to the Internet.

The *ideal* of a meme is the concept or idea conveyed.[7] The ideal dictates the behavior, which in turn creates the manifestation. If the manifestation is a funny image of a cat and the behavior is using software to make it, then the ideal is something like "cats are funny."

When tracking the spread of a particular meme, it is useful to identify which of these three aspects is being replicated and which adapted. Dawkins prefigures this in his original chapter by theorizing that the principal tool for meme identification would be the perception of replication. This is important, because identifying the replication of memes is subjective. Sometimes this identification is easy: one person acts, and another person copies that person exactly. Other times the process of replication is less exact. This is why separating the manifestation, behavior, and ideal is useful. As long as one of the three components is passed on, the meme is replicating, even if mutating and adapting.

Early Internet Memes

In 1982 Scott E. Fahlman proposed a solution to a problem he and other users were experiencing when communicating via the Internet. Members who participated on the bulletin-board system at Carnegie Mellon would on occasion descend into "flame wars"—long threads of communication that are hostile or openly aggressive to other users. Fahlman believed that many of these disagreements arose out of misinterpreted humor. His solution to this problem was to add a specific marker to the end of any message that was a joke.[8] That marker was :-). I am going to assume that anyone reading this has seen this "emoticon" and understands that if rotated ninety degrees clockwise, the colon, hyphen, and close-parenthesis resemble a smiling face, a symbol lifted from pre-Internet time. This practice of contextualizing one's written messages with an emoticon to indicate emotional intent has become widespread. Today there are countless other pseudopictograms of expressions and objects which are regularly added to typed communication. Emoticons are a meme.

To leverage my framework, the manifestation of an emoticon is whatever combination of typed characters is employed as pseudopictogram. These can be in any medium—handwritten or printed on paper, displayed on a screen, any form capable of representing glyphs. The behavior is the act of constructing such an emoticon to contribute emotional meaning to a text. The ideal is that small combinations of recognizable glyphs represent the intent or emotional state of the person transmitting them.

If we analyze the emoticon meme from a genetic point of view which values survival and defines success through continued replication, it proves itself remarkably well situated. Emoticons can be very quickly used. Emoticons are easy to experiment with. The tools for making emoticons are included on every device we use to type. The primary glyphs used for many of the emoticons are glyphs used less often than the upper- and lower-case alphabets. Emoticons reference a previously existing source of meaning (human facial expressions) and therefore can be easily interpreted upon first encounter. More than just re-creating face-to-face meaning in textual communication, emoticons also add the possibility of a new level of meaning—a level impossible without them.

If all these factors were not true, perhaps emoticons would see less use. If keyboards full of punctuation were not already spread across the landscape, or if human facial expressions were not a cultural constant, maybe emoticons would disappear or be relegated to obscurity. As it stands, though, emoti-

cons not only pervade both online and offline communication but have also received significant formal support on many platforms.[9]

Emoticons come from the Internet's childhood, when bulletin boards and e-mails accounted for a bulk of the activity online. Another early meme came from its adolescence—1998, after the widespread adoption of the World Wide Web and during the heyday of GeoCities.[10] Deidre LaCarte, who was a Canadian art student at the time, made a GeoCities-hosted website as part of a contest with a friend to see who could generate the most online traffic. The website she created, popularly known as "Hamster Dance," consisted of row upon row of animated gifs, each one depicting a hamster dancing, all set to a distorted nine-second audio loop. As of January 1999 the site had amassed eight hundred views, total. Once 1999 began, however, without warning or clear cause, the site began to log as many as fifteen thousand views a day.[11] The comparison of these two early memes, Hamster Dance and emoticons, provides an opportunity to expand and clarify some of the vocabulary I use to discuss memes and to make two important distinctions.

Emoticons are a meme that serve a number of functions in the transmission of information. They can be used to frame content as positive or negative, serious or joking, or any number of other things. Hamster Dance essentially serves a single function: to entertain. This difference in function influences the primary modes of access for each of these memes. For the emoticon meme the behavior is to construct any number of emotional glyphs in any number of settings, while for the Hamster Dance meme the behavior is only a single thing: have people (themselves or others) view the Hamster Dance web page. The Hamster Dance page is a singular thing, a spectacle. It gains influence through its surprising centralization. It is a piece of content that seems unsuited given more traditional models of assessment of organizing people around a central location, but yet, that is precisely the function it serves.

Emoticons gain influence in exactly the opposite way. There was an original, single emoticon typed in 1982, but other emoticons do not drive people toward that single iteration. The emoticon has gained influence not by being surprisingly centralized but by being surprisingly distributed. Hamster Dance is big like Mt. Rushmore. Emoticons are big like McDonald's. This first distinction, then, is that the influence gained by memes can be both centralized and distributed.

The second distinction is closely related to the first. Just as Hamster Dance is characterized by many-in-one-location, and emoticons are characterized by individuals-in-many-locations, the two also differ in the nature of

Fig. 9.1. Hamster Dance (http://www.webhamster.com/)

the behavior they replicate. Many more people have used an emoticon, or concocted their own, than have seen the very first emoticon from 1982. In contrast, many more people have seen the original Hamster Dance site than have created their own Hamster Dance site. It is tempting, then, to say that this difference implies two categories of memetic behavior: use and view. It is more useful, though, to treat both of these behaviors as characteristics present in varying degrees for any given meme. These two behaviors connect directly to the previously mentioned states of replicable and malleable.[12] A piece of media's being replicable makes it easier for that media to gain influence through views. A piece of media's being malleable makes it easier for that media to gain influence through use. Engagement with a meme, then, takes the form of either use or viewing or, more in keeping with the terms of malleable and replicable, of transformation or transmission.

These distinctions help to account for the variety of phenomena popularly identified as Internet memes. Working from Dawkins's initial conception, the term "meme" can mean almost anything. By limiting the scope of what is meant by "Internet meme," the goal is not to create a basis for invalidating

the widespread use of the term but, rather, to provide an inclusive method for accounting for and relating the various phenomena labeled as such.

Current Internet Memes

All memes (offline and on) are capable of existing in layers. For instance, consider language. The meme of language is communication through speech. There are, however, multiple languages. Each individual language is a meme nested within the larger language meme. Additionally, within each individual language there are even more submemes: dialects, slang, jargon.

Internet memes follow the same structure. One very common, rather large meme is the image macro. An image macro is a set of stylistic rules for adding text to images. Some image macros involve adding the same text to various images, and others involve adding different text to a common image. Just like emoticons, which exist in an environment well suited to supporting their survival, image macros are able to thrive online because the software necessary for their creation and distribution is readily available.

There are countless submemes within the image macro meme, such as LOLcats, FAIL, demotivators. I am going to focus on just one: Advice Dog. The trope of this meme is that Advice Dog, a friendly looking dog at the center of a rainbow-colored background, is offering the viewer whatever advice is contained in the text above and below his head. The formula is simple:

1. Image of dog in center of rainbow
2. First line of advice
3. Second line of advice (usually a punch line)

Iterations of the Advice Dog meme vary not only in the specific text they use to communicate humor but also in the type of humor communicated. When Advice Dog gives someone advice, genuine good advice, it can be humorous simply by virtue of being attached to a bright background and smiling dog. Once it is established that the explicit function of Advice Dog is to give advice, though, having him give bad or unexpected advice is ironic. The text can also be transgressive, giving advice that is intentionally offensive or absurd, accompanied by text that is not advice at all.

In addition to having Advice Dog offer various kinds of advice, one can also have other figures deliver other kinds of messages. These are Advice Dog–like variants. Whether a "genuine" Advice Dog iteration or a simply an Advice Dog–like variant, all of these are contained within the larger Advice
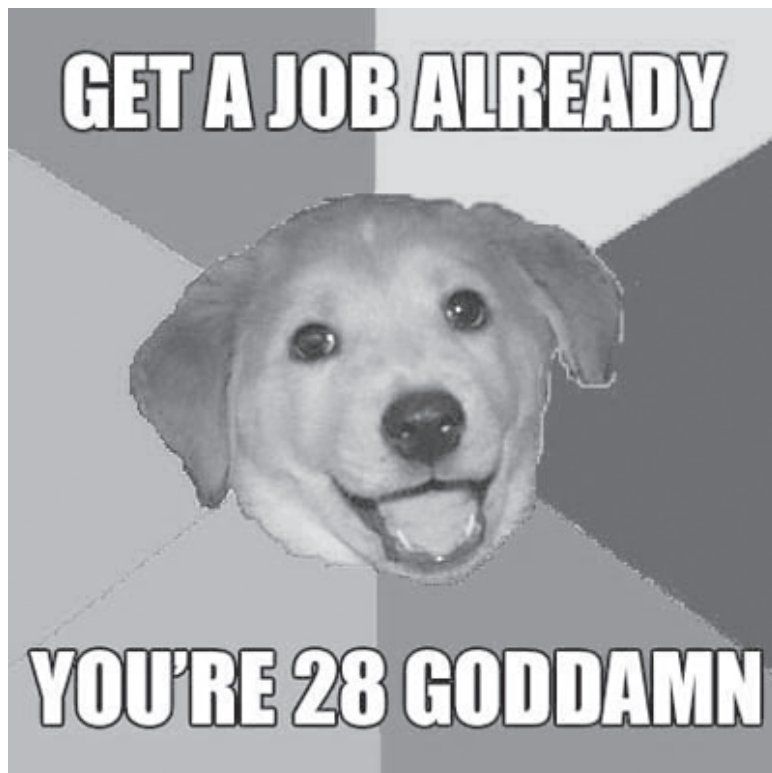
Fig. 9.2. Advice Dog meme
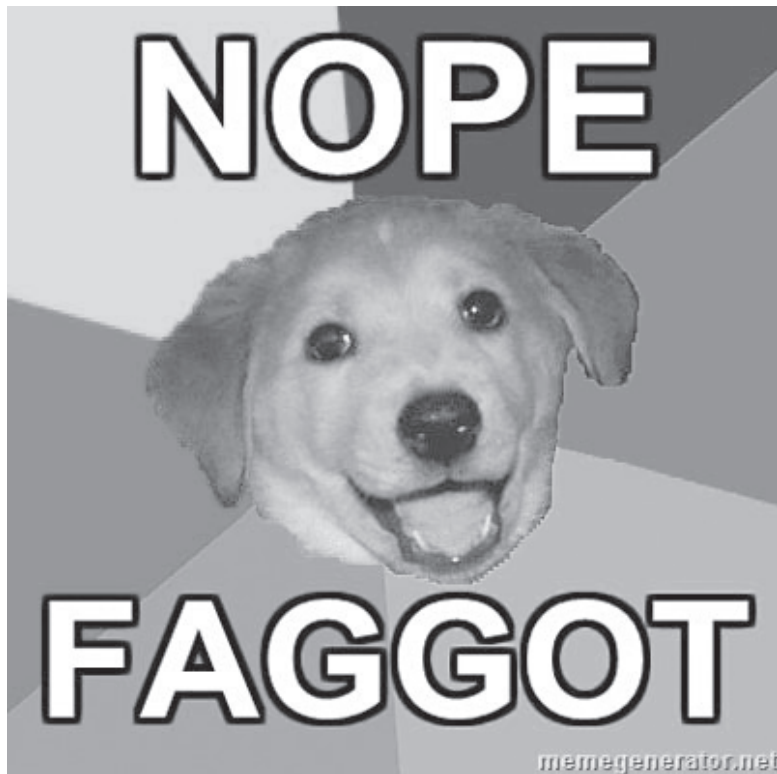
Figs. 9.3–9.5. More Advice Dog memes

Dog meme. The manifestations are the individual images, among which numerous replicated elements are obvious. The style of the background, the square format of the image, the central placement of a cropped figure—all of these remain constant (with consistent variation) from image to image. The behavior of the meme is a varied set of practices. Viewing and linking to various Advice Dog manifestations is part of the meme, as is saving and reposting the same. Creating original iterations with new text is part of the meme, as is creating or contributing to any of the Advice Dog–like variants in the same manner.

The ideal of the Advice Dog meme is harder to describe. The meaning conveyed by any single Advice Dog macro can vary wildly. Some have ironic meanings, while others have aggressive or offensive meanings. The subject can be a dog that gives advice or a child that celebrates success. So we can say that for Advice Dog, the ideal of the meme is not always replicated from instance to instance. With no qualities recognizable from iteration to iteration, it would seem there is no justification for linking them together as part of the same meme. However, what is replicated from instance to instance is the set of formal characteristics. We are able to identify each instance as part of the larger Advice Dog meme because of the similarities in form and regardless of the differences in meaning.

Attribution

The identification of memes relies on the identification of replications. One of the most common replicated elements that sets memes of the unrestricted web apart from memes of the restricted web is attribution. Attribution is the identification of an author for a piece of media. Attribution is central to much of the restricted web: YouTube is host to numerous copyright battles, fueled by rights holders' desire to derive worth from media attributed to them. Wikipedia encourages submissions from anyone but meticulously tracks participation and only allows images to be uploaded by their license holder. Creative Commons offers numerous alternative licenses for content creators, but attribution is common to every one.[13]

It is clear that many of the popular platforms of the Internet preserve and extend a historical prioritizing of attribution and authorship. Foucault, in his essay "What Is an Author?" writes that the author's name "performs a certain role with regard to narrative discourse, assuring a classificatory function. Such a name permits one to group together a certain number of texts, define them, differentiate them from and contrast them to others. In addi-

Figs. 9.6–9.11. Advice Dog variants: Courage Wolf, Politically-Neutral Dog, Depression Dog, Bachelor Frog, Rich Raven, Success Kid

tion, it establishes a relationship between the texts."[14] Foucault's concept of the "author function" is therefore similar in function to modern metadata. The author's name serves to classify and group together separate works, much in the same way tags and keywords allow distributed digital media to be searched and sorted. The Internet is a system filled with an incalculable amount of data. The question of where to find a piece of media has become just as relevant as the question of how to produce a piece of media. Attribution supports this model and fits within the modern practice of prioritizing metadata. Metadata is a meme. It is a meme that existed well before the Internet but that has, like other memes introduced to the Internet, achieved an accelerated rate of growth and change.

Then why do certain memes eschew attribution? The memes of the unrestricted web (Advice Dog is only one example) not only often disregard attribution and metadata; they are also frequently incorporated into systems and among practices that actively prevent and dismantle attribution.[15] Some people might argue that many Internet memes lack attribution because their creators have no stake in claiming ownership over worthless material. However, if the practice of attribution is a meme, then the practice of omitting attribution is also a meme, and insofar as it exists and replicates within certain populations, we must say that it is successful. The nonattribution meme possesses characteristics that make it likely to be replicated in others.

What, then, does the practice of anonymity offer to the individuals who enact it? In many ways, anonymity enables a type of freedom. This freedom can have obvious personal benefits if the material one is generating, sharing, or collecting is transgressive. For those Internet users who revel in the existence of racist, sexist, or otherwise offensive memes, a practice and system of anonymity protects them from the regulation or punishment that peers or authorities might attempt to enact in response to such material. However, there is an additional layer of freedom afforded by a lack of attribution. With no documented authors, there exists no intellectual property. Memes can be born, replicated, transmitted, transformed, and forwarded with no concern for rights management, monetization, citation, or licensing. This takes us full circle back to Zittrain's generative network and to the unrestricted web it implies. The prioritization of creative freedom over security is epitomized by the nonattribution meme.

The question I am left with, that I am as of yet unequipped to answer, is whether this thought process casts the nonattribution meme in the role of a metameme. If the presence of the nonattribution meme in a network makes that network more likely to be generative, and if being generative makes a

network a more fertile environment for the production and evolution of memes, then is nonattribution a meme that makes the creation of other memes more likely? Lastly, how important is the effect of this metameme when we consider a network (the Internet) whose platforms can require either attribution or anonymity?

NOTES

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1. Jonathan Zittrain, *The Future of the Internet—and How to Stop It* (New Haven: Yale University Press, 2008).

2. Chris Anderson, *The Long Tail* (New York: Hyperion, 2006).

3. Richard Dawkins, *The Selfish Gene* (New York: Oxford University Press, 1989).

4. The use of the word "successful" here is nontrivial. Dawkins explains that replication is a fundamental process for genetics. The earliest forms of life achieve their status as such by virtue of their ability to create copies of themselves. The process of evolution relies entirely on the particulars of the process of reproduction. The theoretical method of meme identification that Dawkins proposes is one that relies on identifying replications. Given all of this, success is always measured by volume of replication. Insofar as an entity (gene, meme, or otherwise) makes more of itself, it is successful.

5. These are the same two characteristics that differ so greatly between genes and memes. If memes transmit faster and are more adaptable than genes, then Internet memes are the most extreme example of that tendency: they are transmitted the fastest and are the most adaptable.

6. Nilay Patel, "iPhone Finally Gets Copy and Paste!," *engadget*, March 17, 2009, http://www.engadget.com/2009/03/17/iphone-finally-gets-copy-and-paste/ (accessed June 25, 2010).

7. I use "ideal" here specifically to reference a platonic ideal. The historical understanding of a platonic ideal is ultimately centralized. A single, theoretical ideal dictates characteristics down to individual manifestations. The ideals of memes operate in reverse. The ideal of a meme is the aggregate of all manifestations of that meme. This is a bottom-up rather than top-down organization.

8. Scott E. Fahlman, "Smiley Lore :-)," Scott E. Fahlman's Carnegie Mellon University web page, http://www.cs.cmu.edu/~sef/sefSmiley.htm (accessed June 25, 2010).

9. The "Gchat" functionality inside of Google's Gmail, for instance, not only automatically animates any of a number of popular emoticons; it also allows users to select from various styles of animation and provides buttons for inserting emoticons without typing.

10. GeoCities was an early website-hosting service from 1994 which allowed people with no programming knowledge to create their own websites for free. It was later acquired by Yahoo! in 1999 and then closed in 2009 (http://geocities.yahoo.com).

11. "Hamster Dance," Wikipedia, http://en.wikipedia.org/wiki/Hamster_dance (accessed June 25, 2010).

12. When considering the form of any given meme, one must consider how easily the form is copied and how easily the form is changed. As I have said, Internet memes are cultural units that are the most replicable and malleable.

13. Since the initial writing of this essay, Creative Commons has introduced a CC0 license, which does not require attribution.

14. Michel Foucault, "What Is an Author?," in *The Foucault Reader*, ed. Paul Rabinow, 101–120 (New York: Pantheon Books, 1984), 107.

15. 4chan.org is a website which has become the most popular example of a site that eschews attribution. It allows contributions from users with no registration process, which has led to a user base operating largely in anonymity.

Money

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The Long Tail

CHRIS ANDERSON

In 1988, a British mountain climber named Jo Simpson wrote a book called *Touching the Void*, a harrowing account of near death in the Peruvian Andes. It got good reviews, but, only a modest success, it was soon forgotten. Then, a decade later, a strange thing happened. Jon Krakauer wrote *Into Thin Air*, another book about a mountain-climbing tragedy, which became a publishing sensation. Suddenly *Touching the Void* started to sell again.

Random House rushed out a new edition to keep up with demand. Booksellers began to promote it next to their *Into Thin Air* displays, and sales rose further. A revised paperback edition, which came out in January, spent fourteen weeks on the *New York Times* bestseller list. That same month, IFC Films released a docudrama of the story to critical acclaim. Now, *Touching the Void* outsells *Into Thin Air* more than two to one. What happened? In short, Amazon.com recommendations. The online bookseller's software noted patterns in buying behavior and suggested that readers who liked *Into Thin Air* would also like *Touching the Void*. People took the suggestion, agreed wholeheartedly, wrote rhapsodic reviews. More sales, more algorithm-fueled recommendations, and the positive feedback loop kicked in.

Particularly notable is that when Krakauer's book hit shelves, Simpson's was nearly out of print. A few years ago, readers of Krakauer would never even have learned about Simpson's book—and if they had, they wouldn't have been able to find it. Amazon changed that. It created the *Touching the Void* phenomenon by combining infinite shelf space with real-time information about buying trends and public opinion. The result: rising demand for an obscure book.

This is not just a virtue of online booksellers: it is an example of an entirely new economic model for the media and entertainment industries, one that is just beginning to show its power. Unlimited selection is revealing truths about what consumers want and how they want to get it in service after service, from DVDs at Netflix to music videos on Yahoo! Launch to songs in the iTunes Music Store and Rhapsody. People are going deep into the catalog,

down the long, long list of available titles, far past what's available at Block-buster Video, Tower Records, and Barnes & Noble. And the more they find, the more they like. As they wander further from the beaten path, they discover their taste is not as mainstream as they thought (or as they had been led to believe by marketing, a lack of alternatives, and a hit-driven culture).

An analysis of the sales data and trends from these services and others like them shows that the emerging digital entertainment economy is going to be radically different from today's mass market. If the twentieth-century entertainment industry was about hits, the twenty-first will be equally about misses.

For too long we've been suffering the tyranny of lowest-common-denominator fare, subjected to brain-dead summer blockbusters and manufactured pop. Why? Economics. Many of our assumptions about popular taste are actually artifacts of poor supply-and-demand matching—a market response to inefficient distribution. The main problem, if that's the word, is that we live in the physical world and, until recently, most of our entertainment media did, too. But that world puts two dramatic limitations on our entertainment.

The first is the need to find local audiences. An average movie theater will not show a film unless it can attract at least fifteen hundred people over a two-week run; that's essentially the rent for a screen. An average record store needs to sell at least two copies of a CD per year to make it worth carrying; that's the rent for a half inch of shelf space. And so on for DVD rental shops, videogame stores, booksellers, and newsstands.

In each case, retailers will carry only content that can generates sufficient demand to earn its keep. But each can pull only from a limited local population—perhaps a ten-mile radius for a typical movie theater, less than that for music and bookstores, and even less (just a mile or two) for video-rental shops. It's not enough for a great documentary to have a potential national audience of half a million; what matters is how many it has in the northern part of Rockville, Maryland, and among the mall shoppers of Walnut Creek, California.

There is plenty of great entertainment with potentially large, even rapturous, national audiences that cannot clear that bar. For instance, *The Triplets of Belleville*, a critically acclaimed film that was nominated for the best-animated-feature Oscar this year, opened on just six screens nationwide. An even more striking example is the plight of Bollywood in America. Each year, India's film industry puts out more than eight hundred feature films. There are an estimated 1.7 million Indians in the United States. Yet the top-rated (according to Amazon's Internet Movie Database) Hindi-language

Total Inventory
Inventory in a Typical Store

Rhapsody	735,000 songs
Wal-Mart	39,000 songs*
Amazon	2.3 mil books
Barnes & Noble	130, 000 books*
Netflix	25,000 DVDS
Blockbuster	3,000 DVDs*

The New Growth Market
Obscure products you can't get anywhere but online

22%   25%   20%

Rhapsody   Amazon   Netflix

■ product not available in offline retail stores (% total sales)

Average number of plays per month on Rhapsody

6,000

2,000

1,000

39,000   100,000   200,000   500,000

Titles ranked by popularity

■ songs available at both Wal-Mart and Rhapsody

■ songs available only on Rhapsody

Fig. 10.1. *Anatomy of the long tail.* Online services carry far more inventory than traditional retailers. Rhapsody, for example, offers nineteen times as many songs as Wal-Mart's stock of thirty-nine thousand tunes. The appetite for Rhapsody's more obscure tunes (charted in light grey) makes up the so-called Long Tail. Meanwhile, even as consumers flock to mainstream books, music, and films (bottom), there is real demand for niche fare found only online.[1]

film, *Lagaan: Once Upon a Time in India*, opened on just two screens, and it was one of only a handful of Indian films to get any US distribution at all. In the tyranny of physical space, an audience too thinly spread is the same as no audience at all.

The other constraint of the physical world is physics itself. The radio spectrum can carry only so many stations, and a coaxial cable so many TV channels. And, of course, there are only twenty-four hours a day of programming. The curse of broadcast technologies is that they are profligate users of limited resources. The result is yet another instance of having to aggregate large audiences in one geographic area—another high bar, above which only a fraction of potential content rises.

The past century of entertainment has offered an easy solution to these constraints. Hits fill theaters, fly off shelves, and keep listeners and viewers from touching their dials and remotes. Nothing wrong with that; indeed,

sociologists will tell you that hits are hardwired into human psychology, the combinatorial effect of conformity and word of mouth. And to be sure, a healthy share of hits earn their place: great songs, movies, and books attract big, broad audiences.

But most of us want more than just hits. Everyone's taste departs from the mainstream somewhere, and the more we explore alternatives, the more we're drawn to them. Unfortunately, in recent decades such alternatives have been pushed to the fringes by pumped-up marketing vehicles built to order by industries that desperately need them.

Hit-driven economics is a creation of an age without enough room to carry everything for everybody. Not enough shelf space for all the CDs, DVDs, and games produced. Not enough screens to show all the available movies. Not enough channels to broadcast all the TV programs, not enough radio waves to play all the music created, and not enough hours in the day to squeeze everything out through either of those sets of slots.

This is the world of scarcity. Now, with online distribution and retail, we are entering a world of abundance. And the differences are profound.

To see how, meet Robbie Vann-Adibé, the CEO of Ecast, a digital juke-box company whose barroom players offer more than 150,000 tracks—and some surprising usage statistics. He hints at them with a question that visitors invariably get wrong: "What percentage of the top ten thousand titles in any online media store (Netflix, iTunes, Amazon, or any other) will rent or sell at least once a month?"

Most people guess 20 percent, and for good reason: we've been trained to think that way. The 80-20 rule, also known as Pareto's principle (after Vilfredo Pareto, an Italian economist who devised the concept in 1906), is all around us. Only 20 percent of major studio films will be hits. Same for TV shows, games, and mass-market books—20 percent all. The odds are even worse for major-label CDs, of which fewer than 10 percent are profitable, according to the Recording Industry Association of America.

But the right answer, says Vann-Adibé, is 99 percent. There is demand for nearly every one of those top ten thousand tracks. He sees it in his own juke-box statistics; each month, thousands of people put in their dollars for songs that no traditional jukebox anywhere has ever carried.

People get Vann-Adibé's question wrong because the answer is counterintuitive in two ways. The first is we forget that the 20 percent rule in the entertainment industry is about hits, not sales of any sort. We're stuck in a hit-driven mind-set—we think that if something isn't a hit, it won't make money and so won't return the cost of its production. We assume, in other words,

that only hits deserve to exist. But Vann-Adibé, like executives at iTunes, Amazon, and Netflix, has discovered that the "misses" usually make money, too. And because there are so many more of them, that money can add up quickly to a huge new market.

With no shelf space to pay for and, in the case of purely digital services like iTunes, no manufacturing costs and hardly any distribution fees, a miss sold is just another sale, with the same margins as a hit. A hit and a miss are on equal economic footing, both just entries in a database called up on demand, both equally worthy of being carried. Suddenly, popularity no longer has a monopoly on profitability.

The second reason for the wrong answer is that the industry has a poor sense of what people want. Indeed, we have a poor sense of what we want. We assume, for instance, that there is little demand for the stuff that isn't carried by Wal-Mart and other major retailers; if people wanted it, surely it would be sold. The rest, the bottom 80 percent, must be subcommercial at best.

But as egalitarian as Wal-Mart may seem, it is actually extraordinarily elitist. Wal-Mart must sell at least one hundred thousand copies of a CD to cover its retail overhead and make a sufficient profit; less than 1 percent of CDs do that kind of volume. What about the sixty thousand people who would like to buy the latest Fountains of Wayne or Crystal Method album or any other nonmainstream fare? They have to go somewhere else. Bookstores, the megaplex, radio, and network TV can be equally demanding. We equate mass market with quality and demand, when in fact it often just represents familiarity, savvy advertising, and broad, if somewhat shallow, appeal. What do we really want? We're only just discovering, but it clearly starts with more.

To get a sense of our true taste, unfiltered by the economics of scarcity, look at Rhapsody, a subscription-based streaming music service (owned by RealNetworks) that currently offers more than 735,000 tracks. Chart Rhapsody's monthly statistics and you get a "power law" demand curve that looks much like any record store's, with huge appeal for the top tracks, tailing off quickly for less popular ones. But a really interesting thing happens once you dig below the top forty thousand tracks, which is about the amount of the fluid inventory (the albums carried that will eventually be sold) of the average real-world record store. Here, the Wal-Marts of the world go to zero—either they don't carry any more CDs, or the few potential local takers for such fringy fare never find it or never even enter the store.

The Rhapsody demand, however, keeps going. Not only is every one of Rhapsody's top one hundred thousand tracks streamed at least once each

month, but the same is true for its top two hundred thousand, top three hundred thousand, and top four hundred thousand. As fast as Rhapsody adds tracks to its library, those songs find an audience, even if it's just a few people a month, somewhere in the country.

This is the Long Tail.

You can find everything out there on the Long Tail. There's the back catalog, older albums still fondly remembered by longtime fans or rediscovered by new ones. There are live tracks, B-sides, remixes, even (gasp) covers. There are niches by the thousands, genre within genre within genre: imagine an entire Tower Records devoted to '80s hair bands or ambient dub. There are foreign bands, once priced out of reach in the Import aisle, and obscure bands on even more obscure labels, many of which don't have the distribution clout to get into Tower at all.

Oh, sure, there's also a lot of crap. But there's a lot of crap hiding between the radio tracks on hit albums, too. People have to skip over it on CDs, but they can more easily avoid it online, since the collaborative filters typically won't steer you to it. Unlike the CD, where each crap track costs perhaps one-twelfth of a fifteen-dollar album price, online it just sits harmlessly on some server, ignored in a market that sells by the song and evaluates tracks on their own merit.

What's really amazing about the Long Tail is the sheer size of it. Combine enough nonhits on the Long Tail and you've got a market potentially as big as the hits. Take books: The average Barnes & Noble carries 130,000 titles. Yet a quarter of Amazon's book sales already come from outside its top 130,000 titles. Consider the implication: if the Amazon statistics are any guide, the market for books that are not even sold in the average bookstore is at least a third as large as the market for those that are. And that's a growing fraction. The potential book market may be half again as big as it appears to be, if only we can get over the economics of scarcity. Venture capitalist and former music-industry consultant Kevin Laws puts it this way: "The biggest money is in the smallest sales."

The same is true for all other aspects of the entertainment business, to one degree or another. Just compare online and offline businesses: the average Blockbuster carries fewer than three thousand DVDs. Yet a fifth of Netflix rentals are outside its top three thousand titles. Rhapsody streams more songs each month beyond its top ten thousand than it does its top ten thousand. In each case, the market that lies outside the reach of the physical retailer is big and getting bigger.

When you think about it, most successful businesses on the Internet are about aggregating the Long Tail in one way or another. Google, for instance,

makes most of its money off small advertisers (the long tail of advertising), and eBay is mostly tail as well—niche and one-off products. By overcoming the limitations of geography and scale, just as Rhapsody and Amazon have, Google and eBay have discovered new markets and expanded existing ones.

This is the power of the Long Tail. The companies at the vanguard of it are showing the way with three big lessons. Call them the new rules for the new entertainment economy.

Rule 1: Make Everything Available

If you love documentaries, Blockbuster is not for you. Nor is any other video store—there are too many documentaries, and they sell too poorly to justify stocking more than a few dozen of them on physical shelves. Instead, you'll want to join Netflix, which offers more than a thousand documentaries—because it can. Such profligacy is giving a boost to the documentary business; last year, Netflix accounted for half of all US rental revenue for *Capturing the Friedmans*, a documentary about a family destroyed by allegations of pedophilia.

Netflix CEO Reed Hastings, who's something of a documentary buff, took this newfound clout to PBS, which had produced *Daughter from Danang*, a documentary about the children of US soldiers and Vietnamese women. In 2002, the film was nominated for an Oscar and was named best documentary at Sundance, but PBS had no plans to release it on DVD. Hastings offered to handle the manufacturing and distribution if PBS would make it available as a Netflix exclusive. Now *Daughter from Danang* consistently ranks in the top fifteen on Netflix documentary charts. That amounts to a market of tens of thousands of documentary renters that did not otherwise exist.

There are any number of equally attractive genres and subgenres neglected by the traditional DVD channels: foreign films, anime, independent movies, British television dramas, old American TV sitcoms. These underserved markets make up a big chunk. The availability of offbeat content drives new customers to Netflix—and anything that cuts the cost of customer acquisition is gold for a subscription business. Thus the company's first lesson: embrace niches.

Netflix has made a good business out of what's unprofitable fare in movie theaters and video rental shops because it can aggregate dispersed audiences. It doesn't matter if the several thousand people who rent *Doctor Who* episodes each month are in one city or spread, one per town, across the country—the economics are the same to Netflix. It has, in short, broken the tyr-

Documentaries Available

Amazon				17,061
Netflix	1,180			
Local Blockbuster	75			
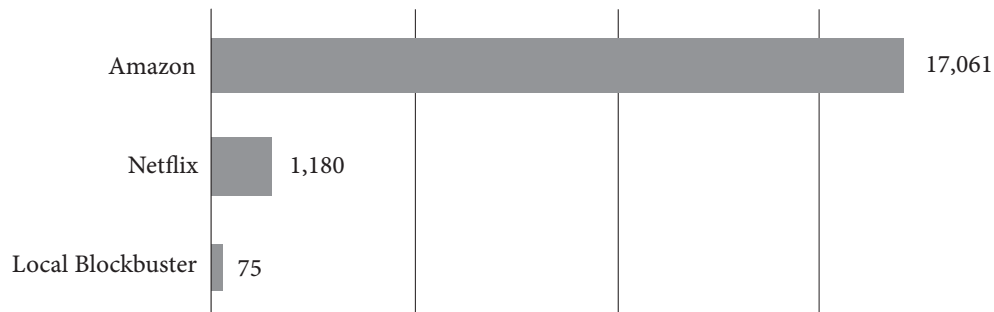
Fig. 10.2. *The documentary niche gets richer.* More than forty thousand documentaries have been released, according to the Internet Movie Database. Of those, Amazon.com carries 40 percent, Netflix 3 percent, and the average Blockbuster just 0.2 percent.[2]

anny of physical space. What matters is not where customers are, or even how many of them are seeking a particular title, but only that some number of them exist, anywhere.

As a result, almost anything is worth offering on the off chance it will find a buyer. This is the opposite of the way the entertainment industry now thinks. Today, the decision about whether or when to release an old film on DVD is based on estimates of demand, availability of extras such as commentary and additional material, and marketing opportunities such as anniversaries, awards, and generational windows (Disney briefly rereleases its classics every ten years or so as a new wave of kids come of age). It's a high bar, which is why only a fraction of movies ever made are available on DVD.

That model may make sense for the true classics, but it's way too much fuss for everything else. The Long Tail approach, by contrast, is to simply dump huge chunks of the archive onto bare-bones DVDs, without any extras or marketing. Call it the "Silver Series" and charge half the price. Same for independent films. This year, nearly six thousand movies were submitted to the Sundance Film Festival. Of those, 255 were accepted, and just two dozen have been picked up for distribution; to see the others, you had to be there.

Why not release all 255 on DVD each year as part of a discount Sundance series? In a Long Tail economy, it's more expensive to evaluate than to release. Just do it! The same is true for the music industry. It should be securing the rights to release all the titles in all the back catalogs as quickly as it can—thoughtlessly, automatically, and at industrial scale. (This is one of those rare moments when the world needs more lawyers, not fewer.) So too

for videogames. Retro gaming, including simulators of classic game consoles that run on modern PCs, is a growing phenomenon driven by the nostalgia of the first joystick generation. Game publishers could release every title as a ninety-nine-cent download three years after its release—no support, no guarantees, no packaging.

All this, of course, applies equally to books. Already, we're seeing a blurring of the line between in and out of print. Amazon and other networks of used booksellers have made it almost as easy to find and buy a second-hand book as it is a new one. By divorcing bookselling from geography, these networks create a liquid market at low volume, dramatically increasing both their own business and the overall demand for used books. Combine that with the rapidly dropping costs of print-on-demand technologies and it's clear why any book should always be available. Indeed, it is a fair bet that children today will grow up never knowing the meaning of "out of print."

Rule 2: Cut the Price in Half, Now Lower It

Thanks to the success of Apple's iTunes, we now have a standard price for a downloaded track: ninety-nine cents. But is it the right one? Ask the labels and they'll tell you it's too low: Even though ninety-nine cents per track works out to about the same price as a CD, most consumers just buy a track or two from an album online, rather than the full CD. In effect, online music has seen a return to the singles-driven business of the 1950s. So from a label perspective, consumers should pay more for the privilege of purchasing à la carte to compensate for the lost album revenue.

Ask consumers, on the other hand, and they'll tell you that ninety-nine cents is too high. It is, for starters, ninety-nine cents more than Kazaa. But piracy aside, ninety-nine cents violates our innate sense of economic justice: if it clearly costs less for a record label to deliver a song online, with no packaging, manufacturing, distribution, or shelf space overheads, why shouldn't the price be less, too?

Surprisingly enough, there's been little good economic analysis on what the right price for online music should be. The main reason for this is that pricing isn't set by the market today but by the record label demicartel. Record companies charge a wholesale price of around sixty-five cents per track, leaving little room for price experimentation by the retailers.

That wholesale price is set to roughly match the price of CDs, to avoid dreaded "channel conflict." The labels fear that if they price online music lower, their CD retailers (still the vast majority of the business) will revolt or,

more likely, go out of business even more quickly than they already are. In either case, it would be a serious disruption of the status quo, which terrifies the already spooked record companies. No wonder they're doing price calculations with an eye on the downsides in their traditional CD business rather than the upside in their new online business.

But what if the record labels stopped playing defense? A brave new look at the economics of music would calculate what it really costs to simply put a song on an iTunes server and adjust pricing accordingly. The results are surprising.

Take away the unnecessary costs of the retail channel—CD manufacturing, distribution, and retail overheads. That leaves the costs of finding, making, and marketing music. Keep them as they are, to ensure that the people on the creative and label side of the business make as much as they currently do. For a popular album that sells three hundred thousand copies, the creative costs work out to about $7.50 per disc, or around sixty cents a track. Add to that the actual cost of delivering music online, which is mostly the cost of building and maintaining the online service rather than the negligible storage and bandwidth costs. Current price tag: around seventeen cents a track. By this calculation, hit music is overpriced by 25 percent online—it should cost just seventy-nine cents a track, reflecting the savings of digital delivery.

Putting channel conflict aside for the moment, if the incremental cost of making content that was originally produced for physical distribution available online is low, the price should be, too. Price according to digital costs, not physical ones.

All this good news for consumers doesn't have to hurt the industry. When you lower prices, people tend to buy more. Last year, Rhapsody did an experiment in elastic demand that suggested it could be a lot more. For a brief period, the service offered tracks at ninety-nine cents, seventy-nine cents, and forty-nine cents. Although the forty-nine-cent tracks were only half the price of the ninety-nine-cent tracks, Rhapsody sold three times as many of them.

Since the record companies still charged sixty-five cents a track—and Rhapsody paid another eight cents per track to the copyright-holding publishers—Rhapsody lost money on that experiment (but, as the old joke goes, made it up in volume). Yet much of the content on the Long Tail is older material that has already made back its money (or been written off for failing to do so): music from bands that had little record-company investment and was thus cheap to make, or live recordings, remixes, and other material that came at low cost.

```
Creation Costs
    Artist                $1.50
    Marketing and Profit  $5.00
    Publishing            $0.96
    ─────────────────────────────
                          $7.46        →      Divided by 12 tracks
                                                      =
              +                               $0.62/track

Production Costs                                      +
    Packaging             $0.75            $.017 online delivery cost
    Distribution          $2.00                       ↓
    Retail markup         $5.00            $0.79/song
    ─────────────────────────────
                          $7.76

                    ↓

              $15.21/CD
```

Fig. 10.3. *The real cost of music.* Online music services don't incur packaging, distribution, and retail fees—and they should charge accordingly.[3]

Such "misses" cost less to make available than hits, so why not charge even less for them? Imagine if prices declined the further you went down the Tail, with popularity (the market) effectively dictating pricing. All it would take is for the labels to lower the wholesale price for the vast majority of their content not in heavy rotation; even a two- or three-tiered pricing structure could work wonders. And because so much of that content is not available in record stores, the risk of channel conflict is greatly diminished. The lesson: pull consumers down the tail with lower prices.

How low should the labels go? The answer comes by examining the psychology of the music consumer. The choice facing fans is not how many songs to buy from iTunes and Rhapsody but how many songs to buy rather than download for free from Kazaa and other peer-to-peer networks. Intuitively, consumers know that free music is not really free: aside from any legal risks, it's a time-consuming hassle to build a collection that way. Labeling is inconsistent, quality varies, and an estimated 30 percent of tracks are defective in one way or another. As Steve Jobs put it at the iTunes Music Store launch, you may save a little money downloading from Kazaa, but "you're working for under minimum wage." And what's true for music is doubly true

for movies and games, where the quality of pirated products can be even more dismal, viruses are a risk, and downloads take so much longer.

So free has a cost: the psychological value of convenience. This is the "not worth it" moment when the wallet opens. The exact amount is an impossible calculus involving the bank balance of the average college student multiplied by his or her available free time. But imagine that for music, at least, it's around twenty cents a track. That, in effect, is the dividing line between the commercial world of the Long Tail and the underground. Both worlds will continue to exist in parallel, but it's crucial for Long Tail thinkers to exploit the opportunities between twenty and ninety-nine cents to maximize their share. By offering fair pricing, ease of use, and consistent quality, you can compete with free.

Perhaps the best way to do that is to stop charging for individual tracks at all. Danny Stein, whose private equity firm owns eMusic, thinks the future of the business is to move away from the ownership model entirely. With ubiquitous broadband, both wired and wireless, more consumers will turn to the celestial jukebox of music services that offer every track ever made, playable on demand. Some of those tracks will be free to listeners and advertising supported, like radio. Others, like eMusic and Rhapsody, will be subscription services. Today, digital music economics are dominated by the iPod, with its notion of a paid-up library of personal tracks. But as the networks improve, the comparative economic advantages of unlimited streamed music, either financed by advertising or a flat fee (infinite choice for $9.99 a month), may shift the market that way. And drive another nail in the coffin of the retail music model.

Rule 3: Help Me Find It

In 1997, an entrepreneur named Michael Robertson started what looked like a classic Long Tail business. Called MP3.com, it let anyone upload music files that would be available to all. The idea was the service would bypass the record labels, allowing artists to connect directly to listeners. MP3.com would make its money in fees paid by bands to have their music promoted on the site. The tyranny of the labels would be broken, and a thousand flowers would bloom.

But it didn't work out that way. Struggling bands did not, as a rule, find new audiences, and independent music was not transformed. Indeed, MP3.com got a reputation for being exactly what it was: an undifferentiated mass of mostly bad music that deserved its obscurity.

#340: Britney Spears

#1010: Pink

#5153: No Doubt

#32,195: The Selecter

Amazon Sales Rank
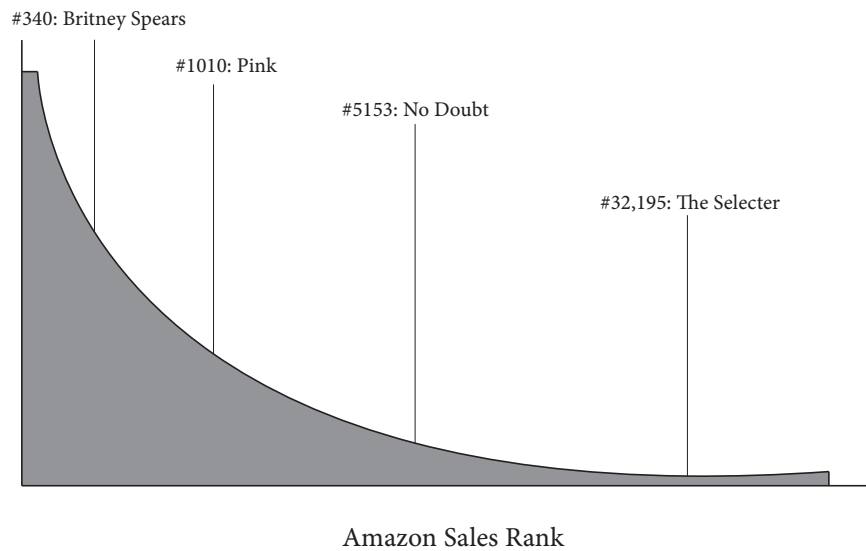
Fig. 10.4. *"If you like Britney, you'll love . . ."* Just as lower prices can entice consumers down the Long Tail, recommendation engines drive them to obscure content they might not find otherwise.[4]

The problem with MP3.com was that it was only Long Tail. It didn't have license agreements with the labels to offer mainstream fare or much popular commercial music at all. Therefore, there was no familiar point of entry for consumers, no known quantity from which further exploring could begin.

Offering only hits is no better. Think of the struggling video-on-demand services of the cable companies. Or think of Movielink, the feeble video-download service run by the studios. Due to overcontrolling providers and high costs, they suffer from limited content: in most cases just a few hundred recent releases. There's not enough choice to change consumer behavior, to become a real force in the entertainment economy.

By contrast, the success of Netflix, Amazon, and the commercial music services shows that you need both ends of the curve. Their huge libraries of less mainstream fare set them apart, but hits still matter in attracting consumers in the first place. Great Long Tail businesses can then guide consumers further afield by following the contours of their likes and dislikes, easing their exploration of the unknown.

For instance, the front screen of Rhapsody features Britney Spears, unsurprisingly. Next to the listings of her work is a box of "similar artists." Among them is Pink. If you click on that and are pleased with what you hear, you may do the same for Pink's similar artists, which include No Doubt. And on No Doubt's page, the list includes a few "followers" and "influencers," the last of which includes the Selecter, a 1980s ska band from Coventry, England. In

PHYSICAL RETAILERS
Profit threshold for physical stores
(like Tower Records)

HYBRID RETAILERS
Profit threshold for stores
with no retail overhead
(like Amazon.com)

PURE DIGITAL RETAILERS
Profit threshold for stores
with no physical goods
(like Rhapsody)

SALES

TITLES
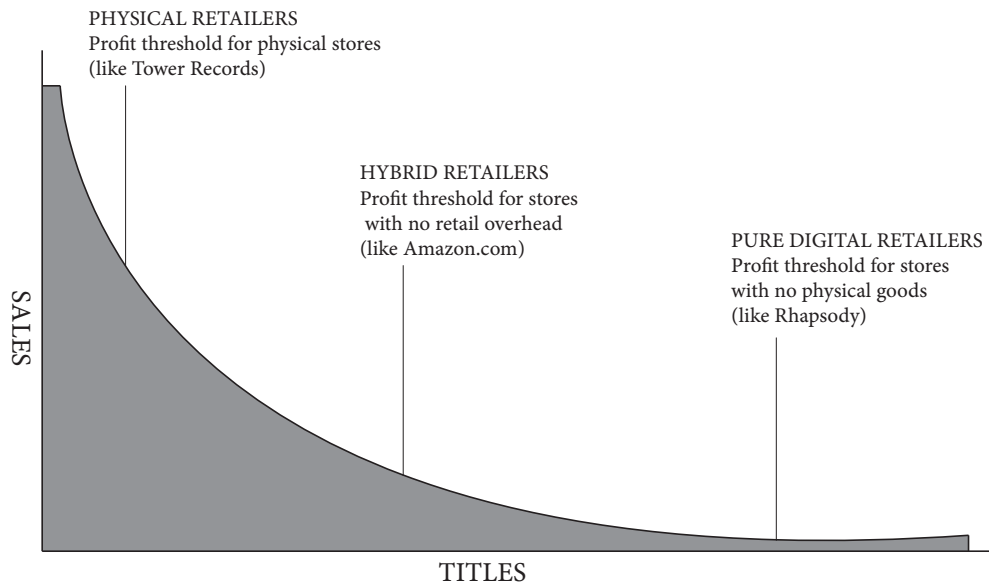
Fig. 10.5. *The bit player advantage.* Beyond bricks and mortar, there are two main retail models—one that gets halfway down the Long Tail and another that goes all the way. The first is the familiar hybrid model of Amazon and Netflix, companies that sell physical goods online. Digital catalogs allow them to offer unlimited selection along with search, reviews, and recommendations, while the cost savings of massive warehouses and no walk-in customers greatly expands the number of products they can sell profitably. Pushing this even further are pure digital services, such as iTunes, which offer the additional savings of delivering their digital goods online at virtually no marginal cost. Since an extra database entry and a few megabytes of storage on a server cost effectively nothing, these retailers have no economic reason not to carry everything available.

three clicks, Rhapsody may have enticed a Britney Spears fan to try an album that can hardly be found in a record store.

Rhapsody does this with a combination of human editors and genre guides. But Netflix, where 60 percent of rentals come from recommendations, and Amazon do this with collaborative filtering, which uses the browsing and purchasing patterns of users to guide those who follow them ("Customers who bought this also bought . . ."). In each, the aim is the same: use recommendations to drive demand down the Long Tail.

This is the difference between push and pull, between broadcast and personalized taste. Long Tail business can treat consumers as individuals, offering mass customization as an alternative to mass-market fare.

The advantages are spread widely. For the entertainment industry itself, recommendations are a remarkably efficient form of marketing, allowing smaller films and less mainstream music to find an audience. For consumers,

the improved signal-to-noise ratio that comes from following a good recommendation encourages exploration and can reawaken a passion for music and film, potentially creating a far larger entertainment market overall. (The average Netflix customer rents seven DVDs a month, three times the rate at brick-and-mortar stores.) And the cultural benefit of all of this is much more diversity, reversing the blanding effects of a century of distribution scarcity and ending the tyranny of the hit.

Such is the power of the Long Tail. Its time has come.

NOTES

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Law

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REMIX

How Creativity Is Being Strangled by the Law

LAWRENCE LESSIG

I've written five books. Four of these books are extraordinarily depressing. I like depressing, deep, dark stories about the inevitable destruction of great, fantastic ideas. After my first child was born, my thinking began to shift some, and I wrote *Remix*, which is quite new in the collection because it's a fundamentally happy book or, at least, mostly a happy book. It's optimistic. It's about how certain fantastic ideas will win in this cultural debate. Though the problem is that I'm not actually used to this optimism; I'm not used to living in a world without hopelessness. So I'm actually moving on from this field to focus on a completely hopeless topic, solving problems of corruption, actually. Completely hopeless. But I am happy to come here to talk about this most recent book.

I want to talk about it by telling you some stories, making an observation, and constructing an argument about what we need to do to protect the opportunity that technology holds for this society. There are three stories.

The first one is very short. A very long time ago, the elite spoke Latin, and the vulgar, the rest of the people, spoke other languages: English, French, and German. The elite ignored the masses. The masses ignored the elite. That's the first story. Very short, as I promised.

Here's number two: In 1906, John Philip Sousa traveled to the United States Congress to talk about phonographs, a technology he called the "talking machines." John Philip Sousa was not a fan of the talking machines. He was quoted as saying, "These talking machines are going to ruin the artistic development of music in this country. When I was a boy, in front of every house in the summer evenings, you would find young people together singing the songs of the day or the old songs. Today you hear these infernal machines going night and day. We will not have a vocal cord left. The vocal cords will be eliminated by a process of evolution, as was the tail of man when he came from the ape."[1]

I want you to focus on this picture of "young people together singing the songs of the day or even old songs." This is culture. You could call it a kind of read/write culture. It's a culture where people participate in the creation and re-creation of their culture. It is read/write, and Sousa's fear was that we would lose the capacity to engage in this read/write creativity because of these "infernal machines." They would take it away, displace it, and in its place, we'd have the opposite of read/write creativity: a kind of read-only culture. A culture where creativity is consumed, but the consumer is not a creator. A culture that is top down: a culture where the "vocal cords" of the millions of ordinary people have been lost.

Here is story three: In 1919, the United States voted itself dry as it launched an extraordinary war against an obvious evil—a war against the dependence on alcohol, a war inspired by the feminist movement, a war inspired by ideas of progressive reform, and a war that was inspired by the thought that government could make us a better society. Ten years into that war, it was pretty clear this war was failing. In places around the country, they asked how we could redouble our efforts to win the war. In Seattle, the police started to find ways to fight back against these criminals using new technology: the wiretap. Roy Olmstead and eleven others found themselves the target of a federal investigation into his illegal production and distribution of alcohol. His case, *Olmstead v. the United States* (1928), was heard by the Supreme Court to decide whether the wiretap was legal.[2] When the police tapped the phones of Olmsted and his colleagues, they didn't get a judge's permission, or a warrant, they just tapped the phones. The Supreme Court looked at the Fourth Amendment to the Constitution, which protects against "unreasonable searches and seizures." Chief Justice Taft concluded that the wiretap was not proscribed by this amendment. He said the Fourth Amendment was designed to protect against trespassing. But wiretapping doesn't involve any necessary trespass: they didn't enter Olmstead's home to attach anything to the wires; they attached the wiretap after the wires left Olmsted's home. There was no trespass, therefore no violation of the Fourth Amendment.

Louis Brandeis, in voicing his dissent, argued vigorously for a different principle. Brandeis said the objective of the Fourth Amendment was to protect against a certain form of invasion, so as to protect the privacy of people. He argued that how you protect privacy is a function of technology, and we need to translate the old protections from one era into a new context. He used the phrase "time works changes," citing *Weems v. United States* (1910). Brandeis lost in that case and the wiretap won, but the war that the wiretap was aiding was quickly recognized to be a failure. By 1933 people recog-

nized this failure in increased costs they hadn't even anticipated when they first enacted this prohibition: the rise in organized crime and the fall in civil rights. They were also seeing a vanishing benefit from this war: everybody still drank. They realized that maybe the costs of this war were greater than the benefits. And so, in 1933 the Twenty-First Amendment repealed the Eighteenth Amendment, and Prohibition ended. Importantly, what was repealed was not the aim of fighting the dependence on alcohol but the idea of using war to fight this dependence.

Those are the stories, and here's the observation. In a sense that should be obvious, writing is an extraordinarily democratic activity. I don't mean that we vote to decide what people can write. I mean that everyone should have the capacity to write. Why do we teach everyone to write and measure education by the capacity people have to write? By "write," I mean more than just grade-school knowledge to make shopping lists and send text messages on cell phones. More specifically, between ninth grade and college, why do we waste time on essays on Shakespeare or Hemingway or Proust? What do we expect to gain? Because, as an academic, I can tell you the vast majority of this writing is just crap. So why do we force kids to suffer, and why do we force their professors to suffer this "creativity"?

The obvious answer is that we learn something. In the process of learning how to write, we at least learn respect for just how hard this kind of creativity is, and that respect is itself its own value. In this democratic practice of writing, which we teach everyone, we include quoting. I had a friend in college who wrote essays that were all exactly like this: strings of quotes from other people's writings that were pulled together in a way that was so convincing that he never got anything less than an A+ in all of his university writing classes. Now, he would take and use and build upon other people's words without permission of the other authors: *so long as you cite*. In my view, plagiarism is the only crime for which the death penalty is appropriate. So long as you cite, you can take whatever you want and use it for your purpose in creating. Imagine if the rule were different; imagine you went around and asked for permission to quote. Imagine how absurd it would be to write the Hemingway estate and ask for permission to include three lines in an essay about Hemingway for your English class. When you recognize how absurd it is, you've recognized how this is an essentially democratic form of expression; the freedom to take and use freely is built into our assumptions about how we create what we write.

Here's the argument. I want to think about writing or, more broadly, *creating* in a digital age. What should the freedom to write, the freedom to quote,

the freedom to remix be? Notice the parallels that exist between this question and the stories that I've told. As with the war of Prohibition, we, in the United States, are in the middle of a war. Actually, of course, we're in the middle of many wars, but the one I want to talk about is the copyright war, those which my friend the late Jack Valenti used to refer to as his own "terrorist war."[3] Apparently the terrorists in this war are our children. As with the war Sousa launched, this war is inspired by artists and an industry terrified that changes in technology will effect a radical change in how culture gets made. As with the Twenty-First Amendment, these wars are raising an important new question: Are the costs of this war greater than its benefits? Or, alternatively, can we obtain the benefits without suffering much of the costs?

Now, to answer that question, we need to think first about the benefits of copyright. Copyright is, in my view, an essential solution to a particular unavoidable economic problem. It may seem like a paradox, but we would get less speech without copyright. Limiting the freedom of some people to copy creates incentives to create more speech. That's a perfect and happy story, and it should function in exactly this way. But, as with privacy, the proper regulation has to reflect changes in technology. As the technology changes, the architecture of the proper regulation is going to change. What made sense in one period might not make sense in another. We need to adjust, in order to achieve the same value in a different context. So with copyright, what would the right regulation be?

The first point of regulation would be to distinguish, as Sousa did, between the amateur and the professional. Copyright needs to encourage both. We need to have the incentives for the professional and the freedom for the amateur. We can see something about how to do this by watching the evolution of digital technologies in the Internet era. The first stage begins around 2000, which is a period of extraordinary innovation to extend read-only culture. Massively efficient technology enables people to consume culture created elsewhere. Apple's iTunes Music Store allows you to download culture for ninety-nine cents, though only to an iPod and, of course, only to *your* iPod (and a few other iPods whose owners you trust with your iTunes login). This is an extraordinarily important and valuable part of culture, which my colleague Paul Goldstein used to refer to as the "celestial jukebox."[4] This step is critically important, as it gives people access to extraordinary diversity for the first time in human history. That is one stage.

A second stage begins around 2004, a reviving of Sousa's read/write culture. The poster child for this culture is probably something like Wikipedia, but the version I want to focus on is something I call "remix." Think about

remix in the context of music. Everybody knows the Beatles' *White Album*. It inspired Jay Z's *Black Album*, which inspired DJ Danger Mouse's *Grey Album*, which literally synthesizes the tracks so that the *White Album* and *Black Album* together produce something gray. That's 2004: two albums synthesized together in what came to be known as a mashup. The equivalent today is something like the work of Girl Talk, who synthesizes up to 280 different songs together into one particular song. Think in the same context about film: in 2004, with a budget of $218, Jonathan Caouette's *Tarnation* makes its debut in wowing Cannes and wining the 2004 Los Angeles International Film Festival.[5] Caouette took twenty years of Super-8 and VHS home movies and an iMac given to him by a friend to create an incredibly moving documentary about his life and relationship with his mentally ill mother. On a more modest but more prevalent level, YouTube is full of something called anime music videos. These videos are anime, the Japanese cartoons sweeping America today. It is not just kids making them, but we'll just pretend for a second that it is kids who take the original video and reedit it to a different sound track. It can be banal or interesting. And almost all of this read/write has emerged on YouTube.

Many people focus on the copyrighted TV shows that are digitized and posted onto YouTube overnight. I want you to think about the call-and-response pattern that YouTube inspires, where someone will create something and then someone else will create another version of the same thing. A hip-hop artist named Soulja Boy created a song called "Crank Dat," which featured a dance called "The Superman." The beat was catchy; the lyrics were literally a set of instructions on how to reproduce the dance. The original music video was a low-budget demonstration of the steps required to reproduce the dance.[6] And reproduce it did.[7] That how-to video has been viewed over forty million times as of June 2009. There are hundreds, if not thousands, of videos of the Soulja Boy Superman dance—each one building on the next: cartoon characters, people of all ethnicities, Internet celebrities, politicians.[8] The point is these are increasingly conversations between young people from around the world. YouTube has become a platform where people talk to each other. It's the modern equivalent of what Sousa spoke of when he spoke of "the young people together, singing the songs of the day or the old songs." But rather than gathering on the front lawn, they now do it with digital technologies, sharing creativity with others around the world.

Just today I discovered a remix of the presidential debates that emphasizes the prevalence of talking points through remix.[9] Many people saw the "Yes We Can" video featuring famous musicians singing along to one of Barack

Obama's speeches.[10] This kind of pastiche of songs, sounds, and words has become a natural way to express politics that maybe a decade ago would not have been understandable.[11] My favorite is Johan Soderberg's "Bush Blair Endless Love," which edits their speeches to a love song by Diana Ross and Lionel Ritchie.[12] I'm very sad, but this is one of the last times I get to share this one, as Bush's term is ending shortly.

Remix has nothing to do with technique, because the techniques this work employs have been available to filmmakers and videographers from the beginning of those forms of expression. What's important here is that the technique has been democratized for anyone who has access to a fifteen-hundred-dollar computer. Anyone can take images, sounds, video from the culture around us and remix them in ways that speak to a generation more powerfully than raw text ever could. That's the key. This is just *writing* for the twenty-first century. We who spend our lives writing have to recognize that nonmultimedia, plain alphanumeric text in the twenty-first century is the Latin from the Middle Ages. The words, images, sounds, and videos of the twenty-first century speak to the vulgar; they are the forms of expression that are understood by most people. The problem is that the laws governing quoting in these new forms of expression are radically different from the norms that govern quoting from text. In this new form of expression that has swept through online communities that use digital technology, permission is expected first. Why is there this difference?

It is a simple, technical clause in the law, a conflict between two architectures of control. One architecture, copyright, is triggered every time a copy is made. The other architecture, digital technology, produces a copy in every single use of culture. This is radical change in the way copyright law regulated culture.

Think, for example, about a book that is regulated in physical space by copyright law. An important set of uses of a book constitute *free* uses of a book, because to read a book is not to produce a copy. To give someone a book is not a fair use of a book; it's a *free* use of a book, because to give someone a book is not to *produce* a copy of a book. To sell a book requires no permission from the copyright owner, because to sell a book is not to produce a copy. To sleep on a book is an unregulated act in every jurisdiction around the world because sleeping on a book does not produce a copy. These unregulated uses are balanced with a set of regulated uses that create the incentives necessary to produce great new works. If you want to publish a book, you need permission from the copyright owner. In the American tradition, there is a thin sliver of "fair use," exceptions that would otherwise have been

regulated by the law but which the law says ought to remain free to create the incentive for people to build upon or critique earlier work.

Enter the Internet, where every single use produces a copy: we go from this balance between unregulated, regulated, and fair uses to a presumptive rule of regulated uses merely because the platform through which we get access to our culture has changed, rendering this read/write activity presumptively illegal. DJ Danger Mouse knew he could never get permission from the Beatles to remix their work. Caouette discovered he could wow Cannes for $218, then discovered it would cost over $400,000 to clear the rights to the music in the background of the video that he had shot. Anime music videos are increasingly getting takedowns and notices from lawyers who are not happy about the one thousand hours of remixed video needed to create the anime music videos. And back to my favorite example of "Bush Blair Endless Love": I don't care what you think about Tony Blair, I don't care what you think about George Bush, and I don't care what you think about the war. The one thing that you cannot say about this video is what the lawyers said when they were asked for permission to synchronize those images with that soundtrack. The lawyers said no, you can't have our permission, because "it's not funny." So the point here is to recognize that no one in Congress ever thought about this. There was no ATM-RECA Act, the "Act to Massively Regulate Every Creative Act" Act. This is the unintended consequence of the interaction between two architectures of regulation, and, in my view, this is problem number one: the law is fundamentally out of sync with the technology. And, just as with the Fourth Amendment, this needs to be updated. Copyright law needs an update.

Problem number two is what those who live in Southern California typically think of as problem number one: piracy or, more specifically, peer-to-peer piracy. Piracy is the "terrorism" that Jack Valenti spoke of when he called kids terrorists. Now, I think this is a problem; I don't support people using technology to violate other people's rights. In my book *Free Culture* and in *Remix*, I repeatedly say you should not use peer-to-peer networks to copy without the permission of the copyright owner. But all of that acknowledged, we need to recognize that this war of prohibition has not worked; it has not changed the bad behavior. Here's a chart of peer-to-peer simultaneous users (see fig. 11.1). The one thing we learn from this chart is that peer-to-peer users don't seem to read the Supreme Court's briefs: the arrow marks the date that the Supreme Court declared completely, unambiguously, that this is presumptively illegal. After the ruling, the number of users did not decrease.

Fig. 11.1. Average simultaneous P2P users
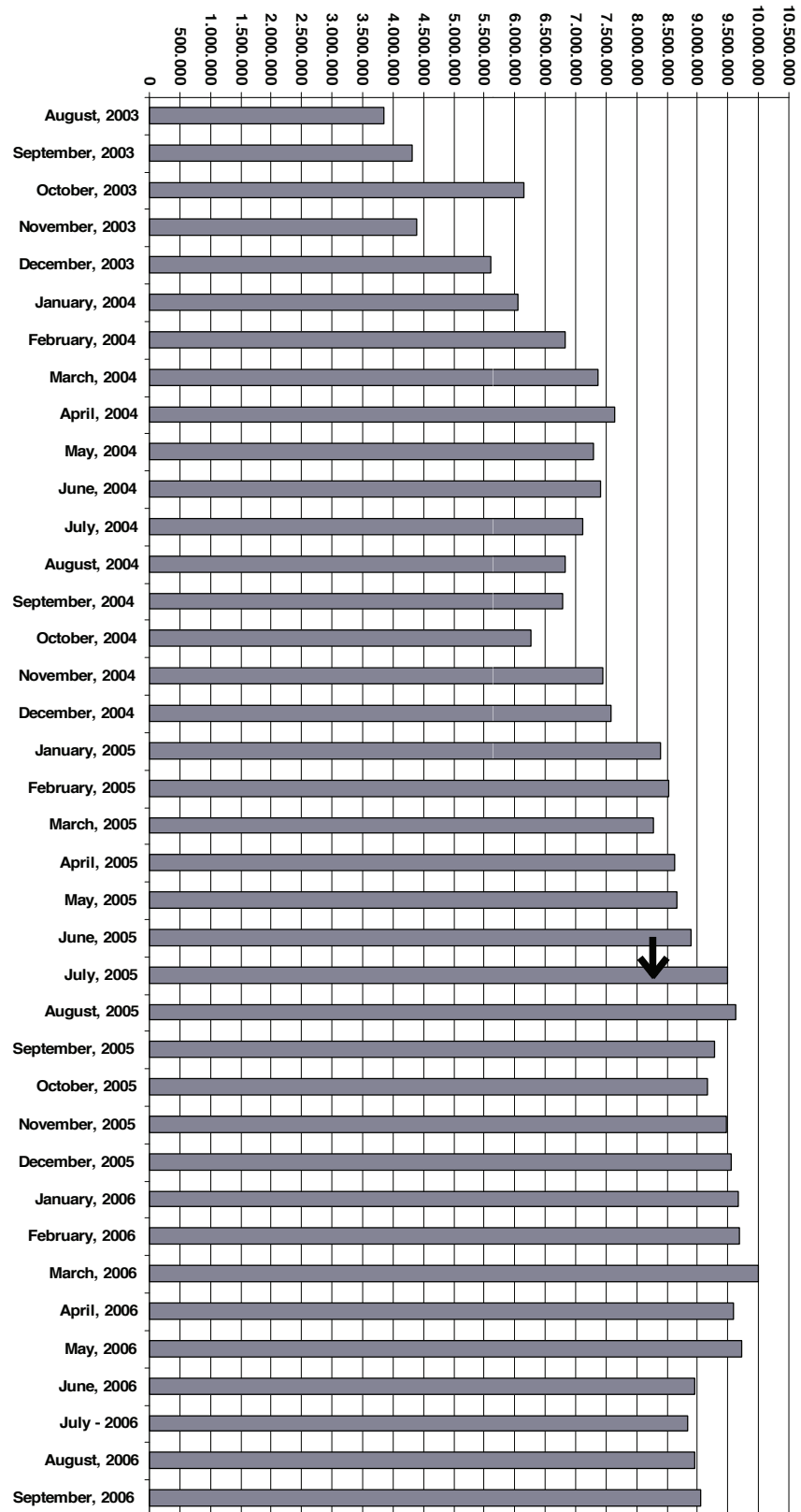
All this war has done is produce a generation of "criminals." That part of the story is very ugly, unhappy, and sad. It is the sort of inspiration that I used for my last book, *Free Culture*. But times have changed, and the story in *Remix* is a story of change, a change that is inspired by what I think of as the third stage in this development: the development of hybrid economies.

To understand a hybrid economy, first think about what "economies" means. Economies are repeated practices of exchange, over time between at least two parties. I want to identify three such economies. First, there are commercial economies. At the grocery store it is a quid pro quo: you get a certain number of bananas for a certain number of dollars. Money is how we speak in this economy. Second, there are economies where money is not part of the exchange. For example, two kids playing on the playground is a sharing economy. Friends going out to lunch sharing their time with each other is a sharing economy. And romantic love is a sharing economy. They are economies, because they exist over time, but, for these economies, money is *not* how we speak. Indeed, if we introduced money into these economies, we would radically change them. Imagine if two friends were planning a lunch date, and one says, "How about next week?" and the other one says, "Nah, how about fifty dollars instead?" Or consider that when money is introduced into romantic relationships, it radically changes the meaning of that economy for both parties involved. These are both rich and important economies that coexist with the commercial economy. They don't necessarily compete, but we want lives where we have both.

Now the Internet, of course, has produced both commercial and sharing economies. The Internet has commercial economies where people leverage knowledge to produce financial value, and it has sharing economies like Wikipedia or free sound resources like FreeSound.org or SETI@home, where people make their resources available to discover information about the universe. The Internet also has hybrid economies, which I want to focus on.

A hybrid economy is one where a commercial entity leverages a sharing economy or a sharing entity leverages a commercial economy. I'm not going to talk about the second case. I want to focus on the first case, where commercial economies leverage sharing economies. So here are some examples, obvious examples. Flickr, from its very birth, was a photo-sharing site that built sharing into its DNA. Indeed, it facilitated sharing by setting "public" as the default viewing state for all uploaded images and giving people the option to license their photos explicitly under a Creative Commons license. This sharing enabled community creation. Yahoo bought Flickr with the goal of leveraging value out of this sharing economy. Likewise, Yelp has exploded,

as thousands of people around the world share reviews of hotels or restaurants. These shared reviews, which people do for free, produce value for Yelp. Second Life began as a virtual world filled with big blue oceans and beautiful green fields, but through literally hundreds and thousands of hours of volunteer labor by people from around the world creating objects, places, and buildings, they have produced an extraordinarily rich environment that attracts people to Second Life and which profits the company, Linden Labs.[13]

These are examples of what I think of as a hybrid. Once you see these examples, you will begin to see hybrids everywhere. Is Amazon really a commercial economy in this sense? Because, though it is selling books, much of the value of Amazon comes from the enormous amount of activity that people devote toward helping other people navigate the products which Amazon tries to sell. Apple is doing this. Even Microsoft gets this deep down in its DNA. Of course, Microsoft builds much of its support through volunteers who spend an enormous amount of their time not helping their local church but helping other people run Microsoft products more simply. Now this is not an accident. Mark Smith, a very bright former academic, works in something called the Community Technologies Group at Microsoft. This group develops all sorts of technologies to gauge the health of these communities, to encourage these communities to be more healthy so that other people want to spend more unpaid time helping Microsoft get richer. This dynamic is extraordinary. And it's no surprise, then, that at a conference about a year and one-half ago, I heard Steve Ballmer declare that every single successful Internet business will be a hybrid business. I think there is enormous promise in these hybrid combinations of free culture and free markets. This presents an enormous potential for the Internet economy to drive value back into these creative industries. That is the argument for what I think can happen, but this takes us doing something to produce it.

I want to identify two kinds of changes. The first change is a very technical legal change: the law needs to give up the obsession with the copy. As discussed earlier, copyright law is triggered on the production of every copy. This is, to use a technical and legal term, insane. I believe the law needs to focus on meaningful activity; in a digital world, the copy is not a meaningful activity. Meaningful activity, instead, is a function of the context of the copy's use. Context will help us distinguish between copies and remixes. We need to distinguish between taking someone's work and just duplicating it versus doing something with the work that creates something new. Context will help us distinguish between the professional and amateur. The copyright law, as it exists right now, presumptively regulates all this in the same way.

Never before in the history of copyright law has it regulated so broadly. In my view, it makes no sense to regulate this broadly right now. Instead, copyright law needs to focus on professional work being copied without being remixed. It needs to effectively guarantee professionals can control copies of their works that are made available commercially. Amateurs making remixes need to have free use, not fair use; they need to be exempted from the law of copyright. Amateurs need to be able to remix work without worrying about whether a lawyer would approve their remix or not. And between these two very easy cases, there are two very hard cases, professional remixes and amateur copying, cases where the law of fair use needs to continue to negotiate to make sure that sufficient incentives are created while leaving important creativity free. Now, if you look at this and you have any conservative instincts inside you, you might recognize this as a kind of conservative argument. I am arguing in favor of deregulating a significant space of culture and focusing regulation where the regulators can convince us that it will be doing some good. That's change number one.

Change number two is about peer-to-peer piracy. As discussed earlier, we have to recognize we're a decade into a war on piracy that has totally failed. In response to totally failed wars, some continue to wage that same war against the enemy. That was Jack Valenti's instinct. My instinct is the opposite. It's to stop suing kids and to start suing for peace. For the past decade, the very best scholars around the country have created an enormous number of proposals for ways to facilitate compensation to artists without breaking the Internet, proposals like compulsory licenses or the voluntary collective license.[14] But as you look at all of these proposals, what we should recognize is what the world would have been like if we had had these proposals a decade ago. Number one, artists would have more money; of course, artists get nothing from peer-to-peer file sharing, and they don't get anything when lawyers sue to stop peer-to-peer file sharing (because any money collected goes to the lawyers, not the artists). Number two, we would have more competition in businesses; the rules would be clearer, so there would be more businesses that could get venture capital to support them as they innovate around ways to make content more easily accessible. Number three, and the point that is most important to me, is that we would not have a generation of criminals surrounding us. We need to consider these proposals now. We need this legal change.

The law needs to change, but so do we. We need to find ways to chill control-obsessed individuals and corporations that believe the single objective of copyright law is to control use, rather than thinking about the objective of

copyright law as to create incentives for creation. We need to practice respect for this new generation of creators. For example, there is a kind of hybrid which I unfairly refer to as a Darth Vader hybrid. This name was inspired by the Star Wars MashUps site that enables users to remix this thirty-year-old franchise through access to video footage from the films, into which you can upload and insert your own material. You can integrate your own music and pictures into the *Star Wars* series. But if you read the terms of service for this site, the mashups are all owned by Lucas Film.[15] Indeed, Lucas Film has a worldwide perpetual license to exploit all content you upload for free, without any recognition back to the original creator. Yes, this is a hybrid economy, but an economy where the creator doesn't have any rights. Instead, it's a sharecropping economy in the digital age. This is an important understanding to track because people are increasingly taking notice of the way hybrid economies work and wondering whether there is justice in it. Om Malik asks, does "this culture of participation . . . build businesses on our collective backs? . . . Whatever 'the collective efforts' are, they are going to boost the economic value of those entities. Will they share in their upside? Not likely!"[16]

We increasingly arrive at this question: what is a *just* hybrid? I don't think we know the answer to that question completely. I do think we have some clues. Neither historical nor digital sharecropping is a just hybrid. So how, then, can we express this respect? One way to express this respect is to practice it. Companies can practice it, and you can practice it by doing as Radiohead, Nine Inch Nails, Girl Talk, Beastie Boys, David Byrne, Spoon, Fort Minor, Danger Mouse, Gilberto Gil, Thievery Corporation, Matmos, Cee-Lo, Le Tigre, and My Morning Jacket have done, making your works available in ways that expressly permit people to share and build upon your works. Many companies are already doing this, companies like Flickr, Blip TV, Picasa, Fotonaut, Yahoo, and, I promise, before the end of next year, Wikipedia.[17] All of these entities build encouragement on top of Creative Commons licenses—licenses which we launched in 2003 and which over the past six years have exploded in numbers so that there are probably more than 150 million digital objects out there that are licensed under Creative Commons licenses. This is a way to say to creators, "We respect the creativity you have produced. We give you a freedom to express that respect to others." And it's an opportunity for us to say "happy birthday" to Creative Commons because it turns six today. And you can say "happy birthday" by giving money at https://support.creativecommons.org/. But of course you can't sing "Happy Birthday," because it is still under copyright, and we haven't cleared those rights. That's what we need to do, and your support is really critical.

I want to end with just one more story. I was asked to go the Association of the Bar of the City of New York and speak in a beautiful room with red velvet curtains and red carpet. The event had many different aspects. The room was packed with artists and creators and at least some lawyers. All of these people were there because they were eager to learn how they could create using digital technologies, while respecting the law of fair use. The people who organized this conference had a lawyer speak on each of the four factors in fair use for fifteen minutes, with the thought that, by the end of the hour, we'd have an audience filled with people who understood the law of fair use. As I sat there and watched in the audience, I was led to a certain kind of daydreaming. I was trying to remember what this room reminded me of. And then I recalled when I was a kid in my early twenties, I spent a lot of time traveling the Soviet system, seeing great halls where the annual conventions took place. I recognized that the room had reminded me of the Soviet system's extraordinary tribunals. I began to wonder, when was it in the history of the Soviet system that the system had failed, and what could you have said to convince people of that? 1976 was way too early: it was still puttering along at that point. And 1989 was too late: if you didn't get it by then, you weren't going to get it. So when was it? Between 1976 and 1988, if you could have convinced members of the Politburo that the system had failed, what could you have said to them to convince them? For them to know that this romantic ideal that they grew up with had crashed and burned and yet to continue with the Soviet system was to reveal a certain kind of insanity. Because, as I sat in that room and listened to lawyers insisting, "Nothing has changed. The same rules apply. It's the pirates who are the deviants," I increasingly recognize that it is we who are insane, that the existing system of copyright simply could never work in the digital age. Either we will force our kids to stop creating, or they will force on us a revolution around copyright law. In my view, both options are not acceptable.

Copyright extremists need to recognize that there is a growing movement of abolitionism out there. Kids were convinced that copyright was for another century and that in the twenty-first century it is just not needed. Now, I am not an abolitionist. I believe copyright is an essential part of a creative economy. It makes a creative economy rich in both the monetary and cultural sense. In this sense, I'm more like Gorbachev in this debate than Yeltsin. I'm just an old Communist trying to preserve copyright against these extremisms—extremisms that will, in my view, destroy copyright as an important part of creative culture and industries.

Now, you may not be concerned about the survival of copyright. You may say, "Whatever. If it disappears, my machines will still run." If that's not

enough to get you into this battle, let me try one last effort. What you know is that there is no way for us to kill this form of creativity. We can only criminalize it. We can't stop our kids from creating in these new ways; we can only drive that creativity underground. We can't make our kids passive the way I, at least, was. We can only make them "pirates." The question is, is that any good? Our kids live in an age of prohibition. All sorts of aspects of their life are against the law. They live their life against the law. That way of living is extraordinarily corrosive. It is extraordinarily corrupting of the rule of law and ultimately corrupting to the premise of a democracy. If you do nothing else, after you've supported Creative Commons, you need to support this movement to stop this war now.

NOTES

This chapter was transcribed and edited by Michael Mandiberg from a talk given at the Computer History Museum in Mountain View, California, December 16, 2008. Lessig gave versions of this stump-style speech to share his ideas on free culture and promote Creative Commons. He kept the basic structure of a series of stories, observations, and a call to arms but updated the examples in the later part to reflect the rapid changes in digital culture. I have tried to preserve Lessig's powerful didactic, spoken presentation style, while streamlining the transcript to be effective in print form. The video of this talk is available at http://lessig.blip.tv/file/1591892/ (accessed May 31, 2009). This chapter is licensed CC BY.

1. United States Congress, House Committee on Patents, *Arguments before the Committee on Patents of the House of Representatives, Conjointly with the Senate Committee on Patents, on H.R. 19853, to Amend and Consolidate the Acts Respecting Copyright: June 6, 7, 8, and 9, 1906* (Washington, DC: Government Printing Office, 1906), http://books.google. com/books?id=zmE0AAAAMAAJ&printsec=titlepage#PPA24,M1 (accessed May 31, 2009).

2. Olmstead v. United States, 277 U.S. 438 (1928).

3. Amy Harmon, "Black Hawk Download: Pirated Videos Thrive Online," *New York Times*, January 17, 2002, http://www.nytimes.com/2002/01/17/technology/circuits/17VIDE. html (accessed May 31, 2009).

4. Paul Goldstein, *Copyright's Highway: From Gutenberg to the Celestial Jukebox* (Stanford: Stanford University Press, 2003).

5. Patricia Aufderheide and Peter Jaszi, "Untold Stories: Collaborative Research on Documentary Filmmakers' Free Speech and Fair Use," *Cinema Journal* 46, no. 2 (2007): 133–139, http://www.acsil.org/resources/rights-clearances-1/nps240.tmp.pdf (accessed July 20, 2010).

6. Soulja Boy, "How to Crank That—instructional video!," YouTube, originally posted April 2007, reposted August 2, 2007, http://www.youtube.com/watch?v=sLGLum5SyKQ (accessed May 31, 2009). At this point, Soulja Boy is still a self-produced amateur, without a label. Interscope signed him and made an official music video for the song: Soulja Boy, "Crank That," YouTube, August 9, 2007, http://www.youtube.com/watch?v=8UFIYGkROII

(accessed July 20, 2010). The premise of the official video is to reenact the discovery of Soulja Boy on YouTube: the hip-hop producer Mr. Collipark, who signed him to Interscope, is trying to understand the Soulja Boy phenomenon, after watching his children dance and surfing YouTube and seeing all of the videos that build on each other. He instant messages with Soulja Boy, eventually signing him to a record deal.

7. Ironically, after Interscope signed the artist, some of these fan videos have been subject to DMCA takedowns: see Kevin Driscoll, "Soulja Boy, Why Take My Crank Dat Video Down?," response video posted on YouTube, May 31, 2009, http://www.youtube.com/watch?v=wkeaxXLIjhs.

8. A tiny sampling of the Soulja Boy meme includes BEA5TED, "Soulja Boy—Crank Dat Pinocchio," YouTube, January 5, 2008, http://www.youtube.com/watch?v=aUM6NLeWQDc (accessed July 20, 2010); djtj1216, "Dora the Explorer (Crank Dat Soulja Boy)," YouTube, July 13, 2007, http://www.youtube.com/watch?v=vgMgLjMghuk (accessed July 20, 2010); Eric Schwartz, aka Smooth-E, "Crank That Kosha Boy," YouTube, December 5, 2007, http://www.youtube.com/watch?v=90YDBtCN-hk (accessed July 20, 2010); Barelypolitical, "Obama Girl . . . Does Soulja Boy . . . with Mike Gravel," YouTube, May 9, 2008, http://www.youtube.com/watch?v=RkZwF96IOyA (accessed July 20, 2010); Jordan Ross, "Crank That Soldier Boy," YouTube, July 21, 2007, http://www.youtube.com/watch?v=7ZE2OzguWHo (accessed July 20, 2010).

9. 236.com, "Synchronized Presidential Debating," YouTube, October 28, 2008, http://www.youtube.com/watch?v=wfd5g8Y_Jqo (accessed May 31, 2009).

10. will.i.am et al., "Yes We Can," YouTube, February 2, 2008, http://www.youtube.com/watch?v=jjXyqcx-mYY (accessed May 31, 2009).

11. For example, think about how differently this video treats editing and remix than the famous "We Are the World" video of the previous generation.

12. Johan Soderberg, "Read My Lips: Eternal Love," 2001–2004, http://www.soderberg.tv (accessed July 20, 2010).

13. *Editor's Note*: Not only is this labor unpaid, but it is done by customers who pay for the privilege to do this unpaid work; customers are charged a fee for monthly virtual land use, which we might call rent.

14. For more on the Electronic Frontier Foundation's alternate schema, see http://www.eff.org/wp/better-way-forward-voluntary-collective-licensing-music-file-sharing (accessed May 31, 2009).

15. See http://www.starwars.com/welcome/about/mashup-copyright (accessed May 31, 2009).

16. Om Malik, "Web 2.0, Community & the Commerce Conundrum," GigaOM.com, October 18, 2005, http://gigaom.com/2005/10/18/web-20-the-community-the-commerce-conundrum/ (accessed May 31, 2009).

17. In May 2009, the Wikipedia Community voted to switch from the GFDL license to a Creative Commons license: http://meta.wikimedia.org/wiki/Licensing_update/Result (accessed May 31, 2009).

Your Intermediary Is Your Destiny

FRED VON LOHMANN

Of Bouncers and Doormen

Although digital technologies are famous for "disintermediating" creators and audiences, the vast majority of video creators still depend on intermediaries to reach their audiences. Whether creators are making a film for theatrical distribution, a documentary for public broadcasters, or a humorous short for YouTube, they will be dependent on one or more commercial entities to carry their video to its intended audience. Consequently, it can be valuable for creative artists in the video arena to understand how the intermediaries on whom they intend to depend see the world.

Copyright is one critical issue that constrains intermediaries that carry video content. As any video creator who has struggled with "clearances" can attest, copyright is an omnipresent issue for video, arising whenever music is used in a production, a clip is taken from an existing film or television program, or a TV show appears in the background of a shot. The reality is that virtually all modern video creativity involves the use of some preexisting copyrighted work.

Because copyright is so often an issue of concern to intermediaries, it behooves video creators to understand how their intended intermediaries view copyright. In particular, it can be useful to understand that, thanks to the vagaries of copyright law, very different rules apply to traditional offline and newer online video distributors.

Traditional offline intermediaries, like television networks, theatrical distributors, and DVD distributors, often face very strict copyright rules, as is described in more detail later in this chapter. As a result, they have developed what has been called a "clearance culture"—the expectation that express permission will have been obtained for every copyrighted work that appears in a video.[1] This focus on clearances often goes hand in hand with an insistence on "errors and omissions" (often referred to as "E and O") insurance to cover them if any mistakes in clearances leads to a copyright-infringement law-

suit. In other words, the legal staffs of traditional offline intermediaries are like doormen, minding the velvet rope—they have to be satisfied before your video will be put on the air, in theaters, or sold on DVD.

Internet intermediaries like YouTube, in contrast, face a different set of copyright rules, rules that make them far more willing to adopt an "upload first, ask questions later" approach to video creators. This does not mean "anything goes"—if a copyright owner complains about an unauthorized use of material, the intermediary may have to take steps to remove the allegedly infringing content. And, of course, the video creator can be sued directly for copyright infringement. But, as a general matter, the legal departments of online video-hosting platforms are more like bouncers than doormen—they do not have to be consulted before the video is uploaded but, rather, get involved only if someone complains.

This nevertheless is a critical distinction: in the online context, video creators who have educated themselves on principles of copyright and believe that they are on the right side of the law (or willing to take the risk of being on the wrong side) are able to reach an audience of millions. This "lawyer-free" level of access to a mass-media platform has not previously been available in the offline world.

This represents a huge opportunity for video creators and a boon for audiences. For most of the modern media age, creators and audiences have only been entitled to see the material that risk-averse lawyers have been willing to put on the air. Thanks to the Internet and its different copyright rules for intermediaries, for the first time, we are all getting the opportunity to see the full scope of creativity in video. And, as a result of the different level of access for creators, the resulting creativity online often looks different from the material shown on prime-time TV or in theaters.

Traditional Media Intermediaries: Doormen Minding the Velvet Rope

Why are traditional media distributors, whether TV networks or theatrical and DVD distributors, so obsessed with "clearing" all the rights to every little thing before they will broadcast or distribute it?

The reason so many network lawyers seem so flint-hearted about copyright clearances arises directly from the copyright law rules they live under. Copyright law gives to copyright owners a number of exclusive rights, including the right to make reproductions, public performances, public displays, distributions, and derivative works.[2] Copyright law is what lawyers

call a "strict liability" offense—people can be held liable even if they did not intend or know that they were infringing a copyright. So, for example, if the song that plays over the end credits of a film turns out not to have been cleared with the copyright owner, every theater that shows the film can be liable for copyright infringement (for publicly performing the song as part of the film), even if the theaters' owners had no idea that the song was not properly cleared. This strongly influences how an intermediary views copyright: if any copyright was infringed in a production, the intermediaries can be held legally responsible, even if they had no reason to suspect and even if they were (erroneously) assured that all the rights were cleared.

The penalties for copyright infringement are also potentially severe. If copyright owners have registered their works, they are generally entitled to a "statutory damages" award of between $750 and $30,000 for each work infringed, even if the infringement actually caused no harm at all.[3] In the preceding example, perhaps the owner of the copyright in the song that played over the end credits would have licensed the song for $500. Or perhaps the use of the song actually helped sell more copies of the song. The copyright owner would nevertheless be entitled to statutory damages from every theater that showed the film.

And it can get even worse. Unlike most other areas of commercial law, in copyright cases, copyright owners can often "pierce the corporate veil." That means that the copyright owner can not only sue the theater but can also go after the personal assets (e.g., houses and personal bank accounts) of the theater executives. Moreover, copyright lawsuits are expensive, irrespective of the outcome, and can result in legal fees reaching into the hundreds of thousands of dollars.

One of the reasons for these draconian rules is to put intermediaries in the hot seat and thereby to help copyright owners stop copyright infringement. But these same features in copyright law also have a chilling effect on intermediaries, leaving them unwilling to accept any risk at all, even for activities that do not infringe copyright. This leaves video creators facing a "clearance culture": intermediaries who insist on documented clearances for every scrap of copyrighted material that appears in any film or video that lands at their door and an insurance policy to stand behind any promises made by a shallow-pocketed production company. After all, if anything goes wrong, the copyright owner will probably sue the intermediary, as the entity with the deeper pockets to pay any judgments and attorneys' fees.

Internet Intermediaries: Bouncers at the Bar

Online intermediaries live by a very different set of copyright rules, by necessity. If the same sorts of rules described in the preceding section applied to the online intermediaries that provide digital storage and telecommunications services for every bit of data on the Internet, there simply would be no Internet.[4] No company could hope to vet every e-mail message, website, file transfer, and instant message for copyright infringement. The same is true for online video-hosting sites. If every video on YouTube had to first be vetted by a lawyer and insured by an errors-and-omissions policy, the videos on YouTube would be measured in the thousands, not the tens of millions.

Fortunately, as part of the Digital Millennium Copyright Act (DMCA) of 1998, Congress enacted a copyright "safe harbor" for many kinds of online intermediaries.[5] Thanks to these safe-harbor provisions, online video-hosting providers (like YouTube) can store and transmit video on behalf of their users without suffering the kind of "strict liability" that offline video distributors face. In order to qualify for the safe harbor, however, these online intermediaries have to establish a "notice-and-takedown" system—in other words, they have to establish a procedure whereby a copyright owner can notify them when an infringing video appears on the site.[6] After being notified, the online service provider must promptly disable access to the video.

The same law also provides that users whose videos have been removed may file a "counter-notice" if they believe that the "takedown" notice was incorrectly sent.[7] Once a counter-notice is sent, the copyright owner has approximately two weeks to sue, or else the video can be restored by the intermediary without fear of further copyright liability. Online service providers like YouTube also must establish a policy of terminating the accounts of "repeat infringers." For example, if a YouTube user receives multiple "takedown" notices for videos posted in her account, her account may be suspended or canceled.[8]

These two mechanisms—the "notice-and-takedown" system and "repeat infringer" policies—give copyright owners considerable power to police their content online. Many entertainment companies know how to use this power—Viacom, for example, once sent more than one hundred thousand takedown notices to YouTube on a single day.[9] Sometimes the power to remove content has been abused as a mechanism for censorship.[10]

But this "safe harbor" approach is nevertheless very different from the one that faces traditional offline video distributors. Thanks to the "safe har-

bors," intermediaries no longer have to rely on lawyers to be the "doormen," demanding clearances and insurance before accepting a video for distribution. Instead, where online intermediaries like YouTube are concerned, they can let their lawyers act as "bouncers"—let users post the videos first and only remove those that attract complaints under the "notice-and-takedown" system. So long as they abide by the requirements of the DMCA's safe harbors, online intermediaries will be sheltered from monetary liability arising from the infringing videos uploaded by users.

New Opportunities to Find an Audience

Where video creators are concerned, the different copyright rules for online intermediaries have opened up an incredible new set of opportunities to find an audience. Consider many of the new forms of "mashup" creativity that have flowered online. The "Vote Different" video, for example, recut and repurposed Apple's iconic "1984" television commercial as a campaign commercial critical of then-senator Hilary Clinton.[11] The video has been viewed more than six million times on YouTube. Given the unlikelihood that clearance could have been obtained from Apple for this use of its commercial, it is unlikely that any television station would have accepted the ad for broadcast, even if the creator could have found the money to buy air time. Similarly, entire genres of "remix" creativity have flourished on YouTube, genres that would have been barred from DVD, TV, and theatrical release due to rights-clearance complexities.

Another example is "The Hunt for Gollum," an entirely original fan-created "prequel" to Peter Jackson's film version of *The Lord of the Rings*.[12] A two-year effort that involved more than 150 people, this forty-minute short film was done without obtaining clearances from either the Tolkien estate or New Line Cinema. As a result, it would have been almost impossible to distribute the resulting short film through traditional offline channels. Nevertheless, thanks to the very different set of copyright rules that apply to online intermediaries, the fan-creators of "The Hunt for Gollum" were able to find a home on the Internet for their film. In the end, the copyright owners chose not to complain about the film, creating an object lesson in the benefits of asking forgiveness after the fact, rather than permission beforehand. To date, the film has been viewed more than three million times. The film has even been accepted for screening at a number of film festivals, presumably because the lawyers were reassured by the lack of legal action by the copyright owners of *The Lord of the Rings*.

This is not to say that copyright can be ignored online. Just because an *intermediary* may be protected by the DMCA's "safe harbors" does not mean that the creator of a video is immune from copyright-infringement liability. It just means that the *creator* is not putting the intermediary in the position of having to put its own assets on the line for every video it hosts. In other words, if video creators are willing to stand behind their videos, they can now find an audience without first having to satisfy a scrum of lawyers and insurance adjusters. But as the creators, they are still answerable for the use any copyrighted material that appears in their productions.

There are two principal ways to deal with uncleared copyrighted materials that might appear in a video production. The first is to consider whether the use might be excused under an exception or limitation to copyright. Although copyright law contains a number of exceptions and limitations, the one that is most often relevant when recognizable copyrighted materials are at issue is "fair use." The fair-use doctrine allows a court to evaluate an otherwise unauthorized use against four nonexclusive factors:

1. The nature and character of the use (transformative uses and noncommercial uses are favored)
2. The nature and character of the work used (news reports and other factual works are given less protection than are more creative works)
3. The amount and substantiality of the portion used
4. The effect of the use on the market for the work used

Although there is an increasing number of free resources available online to help explain how fair use applies to different video creators, it remains a complicated subject, and you should consult a qualified copyright lawyer for advice before jumping to conclusions about whether your use might be a fair use.[13]

A second way to deal with uncleared materials is to find out who the copyright owner in question might be and how that copyright owner has dealt with productions similar to yours in the past. Some copyright owners will have no objection to certain kinds of uses of their content, particularly noncommercial uses. For example, several major video-game companies have published "licenses" or guidelines for "machinima"—the emerging genre of films created inside video games.[14] Similarly, Warner Brothers and J. K. Rowling have been supportive of many kinds of noncommercial fan-created works building on the Harry Potter franchise.[15] And, as described earlier, "The Hunt for Gollum" has not been targeted for legal action by New Line Cinema or the Tolkien estate. Often fan communities will have an under-

standing of what kinds of activities a copyright owner will find "unobjection-able," even if they will not go so far as granting a written clearance.

The "notice-and-takedown" procedure also provides copyright owners a mechanism to express their objection to a video without resorting immediately to litigation in court. This can give creators a bit of a buffer in which to experiment. A copyright owner does not have to send a takedown notice before suing in court, but often a takedown notice sent to an online intermediary is a faster, cheaper way for copyright owners to achieve their goals. This is particularly true when the putative infringer has shallow pockets and is unlikely to be able to cough up an amount of money that would make a court fight economically sensible. As a result, posting a video and waiting to see whether it attracts a takedown notice from the copyright owner can be an inexpensive way to test a copyright owner's preferences.

Conclusion

The nice thing about the "clearance culture" that dominates offline media is its simplicity: if a video creator lacks clearances for everything, he or she is not going to get distribution for the video. The new opportunities in online distribution are exciting but more complicated, requiring that a video creator learn the basics of copyright law, fair use, and enforcement habits of particular copyright owners. Careful creators will want to consult with a qualified lawyer, as well as carefully researching whether the copyright owners in question are likely to object and, if so, how strenuously. While all of this can be time-consuming, it can also let video creators reach global audiences in ways that were never before possible.

NOTES

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1. *See* Patricia Aufderheide & Peter Jaszi, *Untold Stories: Creative Consequences of the Rights Clearance Culture for Documentary Filmmakers* (Center for Social Media 2004), available at http://www.centerforsocialmedia.org/sites/default/files/UNTOLDSTORIES_Report.pdf (accessed July 17, 2010)

2. The U.S. Copyright Act is contained in Title 17 of the U.S. Code, available at http://www.copyright.gov/title17/ (accessed July 17, 2010). The exclusive rights are set forth in 17 U.S.C. § 106.

3. See 17 U.S.C. § 504(c).

4. *See generally* Center for Democracy and Technology, *Intermediary Liability: Protecting Internet Platforms for Expression and Innovation* (2010), available at http://www.cdt.org/paper/intermediary-liability-protecting-internet-platforms-expression-and-innovation (accessed July 17, 2010).

5. *See* 17 U.S.C. § 512.

6. *See* 17 U.S.C. § 512(c)(3); *see generally* Citizen Media Law Project, *Copyright Claims Based on User Content* (last modified Oct. 29, 2009), available at http://www.citmedialaw. org/legal-guide/copyright-claims-based-user-content (accessed July 17, 2010).

7. *See* 17 U.S.C. § 512(g); *see generally* Citizen Media Law Project, *Responding to a DMCA Takedown Notice Targeting Your Content* (last modified May 8, 2008), available at http://www.citmedialaw.org/legal-guide/responding-dmca-takedown-notice-targeting-your-content (accessed July 17, 2010).

8. *See* YouTube, *What Will Happen If You Upload Infringing Content* (last modified Oct. 9, 2010), available at http://www.google.com/support/youtube/bin/answer. py?hl=en&answer=143456 (accessed July 17, 2010).

9. *See* Candace Lombardi, *Viacom to YouTube: Take Down Pirated Clips*, CNET News, Feb. 2, 2007, available at http://news.cnet.com/Viacom-to-YouTube-Take-down-pirated-clips/2100-1026_3-6155771.html (accessed July 17, 2010).

10. *See* Wendy Seltzer, *Free Speech Unmoored in Copyright's Safe Harbor: Chilling Effects of the DMCA on the First Amendment*, 24 Harv. J.L. & Tech. 171 (2010), available at http:// papers.ssrn.com/sol3/papers.cfm?abstract_id=1577785 (accessed July 17, 2010).

11. Available at http://www.youtube.com/watch?v=6h3G-lMZxjo (accessed July 17, 2010).

12. Available at http://www.thehuntforgollum.com/ (accessed July 17, 2010).

13. The American University's Center for Social Media maintains an excellent collection of documents that describe "best practices" for fair use for a variety of different genres of video creators. *See* http://www.centerforsocialmedia.org/resources/fair_use/ (accessed July 17, 2010).

14. *See*, *e.g.*, Microsoft, *Game Content Usage Rules*, available at http://www.xbox.com/ en-US/community/developer/rules.htm (accessed July 17, 2010); World of Warcraft, *Letter to the Machinimators of the World*, available at http://web.archive.org/web/20101107211345/ http://www.worldofwarcraft.com/community/machinima/letter.html (accessed July 1, 2011).

15. *See* Comments of Jeremy Williams, Warner Brothers Senior Vice President, in the Intellectual Property Colloquium, *Derivative Work*, available at http://ipcolloquium.com/ mobile/2009/09/derivative-work/ (accessed July 17, 2010).

On the Fungibility and Necessity of Cultural Freedom

FRED BENENSON

> For these Utopians, free culture is a glimpse of ideal world where knowledge can be used, studied, modified, built upon, distributed, and shared without restriction.
>
> —Benjamin Mako Hill, "Wikimedia and
> the Free Culture Movement," 2007[1]

I've been involved in the copyright-reform and free-culture space for almost a decade. I've protested record companies, organized free-culture art shows, and released thousands of my own photos under various Creative Commons licenses. Throughout my time as a free-culture creator and activist, I was consistently confronted with a difficult question to answer: how free, exactly, should I make my work? Moreover, how free should I encourage others to make their work? Many other people have been thinking hard about this question, and while some have offered definitions, I remain unconvinced that there is one prescriptive solution for the future of cultural production, online or off. I'm most interested in attempting to answer these questions in light of what could be considered party lines in the free-culture space. On one side there are the free-software advocates whose deep dedication to the principles established by Richard Stallman and the Free Software Foundation in the late 1980s continues to nurture an unprecedented ecosystem of free and open-source software. On the other side is a newer generation of creators who casually share and remix their creations using Creative Commons licenses. This essay is not meant to pit these two perspectives against each other (in fact, relations between the two organizations are and have always been excellent) but, rather, to offer an explanation of why they appear to be so oppositional. I hope to demonstrate that there's a core confusion occurring when we attempt to reconcile answers to these questions. Ultimately I believe this confusion can be mitigated if we acknowledge the fundamental differences between cultural and utilitarian works.

To begin with, let's take a look at an example of where these two perspectives collided. On December 8, 2007, Michael David Crawford sent an e-mail to the Creative Commons Community list asking for advice on how to decide on a license for his "magnum opus."[2] Crawford was deliberating between the Attribution-NoDerivatives license and the Attribution-Non-Commercial-NoDerivatives license. As public licenses go, the Creative Commons community considers these two choices as being the most restrictive. In the first instance, Crawford would have allowed only whole duplication of his work without modification; in the second, he would have allowed only whole duplication of his work so long as it was noncommercial. The only freedoms Crawford was interested in granting his audience would be those of sharing and, possibly, commercial use.

The cc-community list that Crawford posted to is a large e-mail list with a membership consisting of dozens of creators, lawyers, authors, programmers, and cultural advocates who are interested in discussing Creative Commons and their licenses. Creators interested in releasing their work under CC often pose questions to the list in order to facilitate their decision-making process.

Crawford had titled his self-designated "magnum opus" "Living with Schizoaffective Disorder." His e-mail linked to the work inside a subdirectory named "Madness/" on his personal web server, where it was rendered with simple HTML formatting.[3] Crawford's intention was eventually to release the work as a fifty-page PDF. In Crawford's initial e-mail to the Creative Commons list, he emphasized that since "the piece is a very personal story, and expresses some very deeply-held personal opinions," he was not interested in allowing others to remix it.

Crawford went on to summarize his illness and his motivations for writing "Living": "I have a lot of reason to believe that writing Living . . . was the best thing I have done in my entire life, and may well in the end be the best thing I will have ever done."[4]

He was interested in having others benefit and share his work and was looking toward Creative Commons as the legal structure that would enable him to do so. Crawford clearly wanted his work to be shared so that it could benefit others like him. But he was wary of allowing the work to be commercially exploited as well. He stated that he feared traditional book publishers might release his work as "a best-seller" and not give him "a cut of the profits."[5] Crawford concluded his message by noting that he regularly receives many encouraging missives from others with similar diagnoses and believes there to be a strong demand for a work exploring his disease from a personal perspective.

Our culture depends on original work being shared, reused, and remixed. Without public licensing schemes that standardize these terms and mores, copyright law necessarily silos every new creative work. By merely fixing a minimally original work in a medium (for example, typing a manuscript and saving it) authors are automatically availed of the full strength of "All Rights Reserved" copyright until seventy years after their death. Moreover, anyone who infringes on the copyright of another can be held liable for fines up to $150,000 per infringement.[6]

There are countless stories of naive Internet remixers and sharers accidentally stumbling into a thicket of copyright litigation. And while the Digital Millennium Copyright Act's Section 512 has mitigated this risk on behalf of service providers like YouTube, individual creators still face an uncertain landscape when noncommercially sharing and remixing others' work online.[7] But this essay is not about those stories or those lawsuits. This essay is about the efforts aimed at maneuvering new modes of cultural production out of those waters. Creative Commons licenses represent one of the most substantial efforts in that respect.

At the end of Crawford's message he solicits arguments for or against his potential license choices. Crawford's criteria for licensing the work may seem intuitive and uncontroversial to the lay reader, but only seven hours after posting, a response from a list member named Drew Roberts encouraged him, unsuccessfully, to abandon consideration of both the NoDerivatives stipulation and the NonCommercial stipulation.[8] Roberts encouraged Crawford to pick either one of the two most "liberal" CC licenses—either Attribution or Attribution-ShareAlike. If Crawford were to have chosen the CC Attribution (abbreviated as CC BY), then his work would be closest to the uncontrollable public domain, and the only requirement for reusing it, or portions of it, would be to credit Crawford as the original author and note that the original work was under a Creative Commons license. Doing this would explicitly invite modified and derivative versions of Crawford's work.

Similarly, if Crawford chose Roberts's other suggestion, the Creative Commons copyleft license, Attribution-ShareAlike (abbreviated CC BY-SA), then others could use "Living" so long as they redistributed modified versions of the work under the same license. Some people identify the act of securing the freedom of downstream copies or derivatives under the same terms as the original as "copyleft" or "viral licensing." Roberts went on to detail ways in which Crawford could leverage his copyleft in order to prevent his work from being commercially exploited in the ways he feared. After one response from another list member commending Crawford on his courage

to release his deeply personal work in order to help others, but not weighing in on the licensing question, activity on the thread petered out. To this date, Crawford has made no indication as to how he intends on licensing "Living," and the page where the essay resides still indicates that the work is under an "All Rights Reserved" copyright.

The exchange between Drew Roberts and Michael Crawford on the cc-community list represented an ongoing rift in the Creative Commons and free-culture community between those who believe in "free licenses" to the exclusion of "nonfree licenses" (those including NonCommercial and NoDerivatives terms) and those who believe that these options allow for greater flexibility in cultural productions.

This conflict represents a larger schism dogging user-generated content: what are the ethical and just ways that users should share work? Is there a "right" way to release or license a work? Are non-commercially-licensed works necessarily unethical?

A very vocal minority of those using Creative Commons licenses and engaged in the community believe that Creative Commons should offer only the Attribution and Attribution-ShareAlike options for its licenses. All culture, they believe, should be able to be peer produced and should be licensed, released, and distributed in ways that facilitate derivatives and sharing. For the purpose of this essay, I'll call this the fundamentalist perspective of user-generated utopianism. My interest is in exploring the viability of user-generated utopianism and answering the question of whether *all* culture should be available to be remixed and reused unconditionally. Should we license it as such? Specifically, what are the ethical and practical considerations we should take into account when trying to convince creators like Michael Crawford to allow their work to be peer produced?

To understand user-generated utopianism, it is first important to understand that Creative Commons is a single legal project created to facilitate sharing of cultural artifacts, and it is not the first. Richard Stallman's Free Software Foundation created the General Public License (GPL) in 1989 in order to codify Stallman's belief that there should be four basic freedoms of software.[9] Linus Torvalds chose the Free Software Foundation's GPL for his fledgling software kernel, called Linux, in order to encourage others to help him work on it.[10] If Torvalds had not licensed his work under the GPL, or any other free license, he would have risked the potential of a future copyright lawsuit by anyone developing the code with him. Without the GPL, a rogue developer could have claimed exclusive rights over his or her additions to the kernel, and the integrity of the project would have been jeopardized. The

GPL also enabled Torvalds to make an implicit guarantee to his codevelopers because it legally prevented him from co-opting their work and restricting the kernel's distribution. The GPL ensures that Torvalds's kernel remains open and available for anyone to build on its code and release his or her own versions of it, so long as his or her code is distributed alongside as well.

The GPL was a precondition for the success of the Linux ecology in that it provided a legal and social tool that could enforce a community of practice within a specific field of developers and hobbyists. First launched in 2002, the Creative Commons license suite attempted to provide a similar set of legal tools and licenses for cultural producers. Whereas the GPL shouldn't be used for nonsoftware media, the CC licenses were not intended for software distribution.

For the most part, those who call for a definition of free culture, or for Creative Commons to rescind its NonCommercial and NoDerivatives licenses, are current or past members of the free-software community. The majority are software programmers who acutely understand the benefits of the GPL for peer-produced free software and who are keen to port the model to other cultural productions. The only licenses that persevered over the years were those that preserved the freedoms established by the FSF, with the GPL being the most notable and popular example, but noncopyleft licenses like Berkeley Software Distribution (BSD) are also included. These free-software advocates criticize Creative Commons for not articulating a specific social movement like Stallman did for free software (i.e., the free-software definition) and worry that CC will jeopardize the future of free culture by offering licenses that enable creators to release work gratis but not freely. So is a utopia like they envision possible? What would happen if all work necessarily allowed peer production like all free software does? To answer this question, it is useful to consider the concept of a fungible object.

A fungible object has individual units that are capable of mutual substitution. A hammer is an example of a physical object that is explicitly fungible. If one hammer is more or less the same as another hammer, the two are substitutable and therefore fungible (especially if the same company manufactures both hammers). Functional software applications are also largely fungible; this is especially true of lower-level applications such as drivers or operating-system tools such as compilers. The general fungibility of software reflects how software objects are largely defined by their utility. The first set of applications Richard Stallman wrote for the GNU project were, by definition, fungible because they replaced the proprietary UNIX versions of the C compilers and shell utilities that MIT's media lab had become dependent on.

Consequently, we can exchange software applications for one another (e.g., one application that is fungible for another), so long as their core functionality remains the same. Linux's growth can be attributed to its fungibility, because the kernels of operating systems are fungible. By 2006, dozens of different kernels (from Microsoft Windows to Apple OS X to Ubuntu GNU/Linux) had been developed for various hardware configurations, but all continue to serve essentially the same purpose.

If hammers, operating systems, and other tools are prime examples of fungible objects, art provides us with some interesting examples of nonfungible objects. A work of art's ostensible purpose is to cover a bare wall, and as such, an anonymous store-bought painting or photograph is effectively exchangeable for another. This easy replaceability disappears when you consider famous works of art: the Louvre would certainly not accept any kind of replacement for the "Mona Lisa," despite the availability of any other works that might cover the wall in a similar way. We aren't interested in using these types of objects for any particular use. We want to enjoy them. We want to admire them for their perfection, their history, or their uniqueness but not for their utility. A work of art does not have to be useful in order to be successful.

It is essential, then, that we're not interested in using an artwork in the utilitarian sense in order to properly appreciate it. We don't hang pictures to obscure blemishes on the wall; we hang them to appreciate them for their own sake. Along with famous works of art, we should also understand that personal works are nonfungible. Michael Crawford's "Living with Schizoaffective Disorder" is a perfect example of a nonfungible work because, while it may be a useful guide for those who have this disorder, it is particular to Crawford and his views, so much so that he believes that it cannot be substituted or modified.

It stands to reason that Crawford chose to prohibit derivatives of his work because he believed it was a nonfungible work. Crawford did not want others to modify the work to a point where a derivative could be substituted for the original. The effort and meaning Crawford had poured into his writing would need to remain coupled to his identity as its author, because the work was *about* him, much like all artistic work is to some extent *about* its creator. "Living" was meant to stand on its own as a finished product representing its author and his life, so it would be wrong to think of it as being capable of being revisable by others. This starkly contrasts with Torvalds's intentions when he released his work, the Linux kernel, under the GPL. Whatever future versions might be derived from his initial version, he was only too

happy to see the work modified and improved. Similarly, Torvalds's work, while superficially tied to his identity (the name "Linux" derives from his given name), wasn't so much about Torvalds as it was about a specific tool that needed to exist.

Wikipedia provides another example, as the peer-produced encyclopedia is, despite its depth and unique character, composed of fungible articles. There are many other encyclopedias that not only predate its existence but also continue to compete with it. Peer production on Wikipedia is made possible not only by its particularly liberal copyright license (which happens to be the Creative Commons Attribution-ShareAlike license) but also by the nature of its content. For example, an article on bitumen can be substituted by any other article on bitumen, so long as it properly describes the subject in an encyclopedic way. Direct knowledge is another fungible entity: a fact is a fact is a fact, and it is void of any nonfungible uniqueness. Both copyright and, to some extent, patent law acknowledge this reality, as they both have substantial precedent for preventing ownership of facts, obvious ideas, short phrases, or even databases.

User-generated utopianism challenges us to believe that all cultural objects are effectively fungible. This conclusion feels problematic mainly because it requires us to tell creators like Michael Crawford that they must release their work freely for others to build on and that they are essentially wrong and misguided in their intentions to protect their work in the ways they choose. Dictating to authors and creators what they can and can't do with their work is a remarkably unpopular challenge and is one reason why a licensing regime like Creative Commons has made its mission about the creator's choice, not adhesion to an ideological purity.

User-generated utopians will defend their position by pointing out that authors can produce "authorized" versions of their work, thereby attenuating the risk of others' misinterpreting the meaning and purpose of their work. The strategy that free-software advocates argue for is to distribute "authorized" versions of work so that they are omnipresent and free. The argument is that this authorized version defeats any commercial advantage of potential freeriders who might download the work and try to resell it. By making free-software projects ubiquitous and freely distributable, software developers have neutralized the potential commercial market for exploitation. In other words, it's impossible to pirate a work if it's already available on GitHub for download. But this approach has less appeal for cultural producers. If Pfizer were to use a freely licensed version of Crawford's personal essay in an advertising pamphlet for antidepressants, Crawford would probably have felt that

the integrity of his work had been compromised, despite having offered the work for free and authorizing his own version of it. For some creators, like Crawford, neutralizing potential commercial competition is not enough of an incentive to release their work freely. They need to know that the integrity of their work will be preserved in some capacity in future generations. It's unclear whether free-software principles applied to cultural works have anything to offer in this regard.

So there's a strong moral case to be made that fungible works should always be free to be built on and remixed. They can be swapped out for better, more efficient versions. They can be modified, they can break, they can be fixed, and most importantly, they can be collaborated on. But can the same be said for artistic works? Must creators necessarily confront and accept all of these potentialities when releasing their work? We loosely use the term "successful" when speaking about creative works, but we don't mean it in the same way that a new kernel module is successful at fixing a longstanding hardware incompatibility. Kernel modules either work or they don't, but it is hard to make this argument for art, especially in light of a multipolar culture which is constantly reevaluating and interpreting itself.

The hard-line argument for the freedom of fungible works (i.e., tools) makes a lot of sense in this light, but it makes less sense when applied to cultural works. To argue that all cultural works are, or should be, fungible, we risk denigrating and confusing a work with the tools required to create it. This argument shouldn't be confused as one against remixing or pastiche. I hold the remix in the highest possible cultural esteem, and I truly believe that all culture is a conversation requiring generations of experimentation and revolution. And it's clear that copyright law needs to be reformed and that its terms must be reduced. Despite this, I remain unconvinced that all culture must necessarily be regarded as replaceable and modifiable, like all of our tools effectively are.

To put it another way, I do not see it as a valuable or interesting strategy to disintegrate the notion of authorship completely when encouraging creators to share their works. Copyright law may have created perverse incentives (for example, encouraging creators to invest in lawyers and lawsuits rather than in future creation) and may remain unenforceable in light of technological innovation, but it was created with the understanding that recognizing authors as unique creators helped them conceive and produce new work.

In the end, I'm most worried that if we succeed in convincing creators that their works are no different from their tools, we might end up disincentivizing them to create in the first place. So while it is unclear whether

copyright law will ever be reformed in a meaningful manner, I hope I've presented some compelling reasons that demonstrate that there are still plenty of opportunities for authors and publishers to continue experimenting with the rights they offer to the public.

NOTES

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1.   Benjamin Mako Hill, "Wikipedia and the Free Culture Movement," *Why Give Blog* (last modified November 8, 2008), Wikimedia Foundation, http://meta.wikimedia.org/wiki/Fundraising_2007/Why_Give_blog/Wikipedia_and_the_Movement_for_Free_Culture (accessed July 20, 2010).

2.   Michael D. Crawford, "[cc-community] Help me decide on a license," message to the Creative Commons Community list, December 8, 2007, http://lists.ibiblio.org/pipermail/cc-community/2007-December/002778.html (accessed July 20, 2010).

3.   Michael D. Crawford, "Living with Schizoaffective Disorder," http://www.geometricvisions.com/schizoaffective-disorder/ (accessed June 29, 2011).

4.   Ibid.

5.   Ibid.

6.   United States Copyright Office, "Highlights of Copyright Amendments in URAA," 2010, http://www.copyright.gov/circs/circ38b.pdf (accessed July 20, 2010).

7.   17 U.S.C. §§ 512, 1201–1205.

8.   Drew Roberts, "Re: [cc-community] Help me decide on a license," message to the Creative Commons Community list, December 8, 2007, http://lists.ibiblio.org/pipermail/cc-community/2007-December/002781.html (accessed July 20, 2010).

9.   The four essential freedoms according to the Free Software Foundation are (1) "the freedom to run the program, for any purpose," (2) "the freedom to study how the program works, and change it to make it do what you wish," (3) "the freedom to redistribute copies so you can help your neighbor," and (4) "the freedom to distribute copies of your modified versions to others." Free Software Foundation, "The Free Software Definition," 1996, http://www.gnu.org/philosophy/free-sw.html (accessed July 20, 2010).

10. Linus Torvalds, "Free minix-like kernel sources for 386-AT," message to the comp.os.minix Usenet group, October 5, 1991, http://groups.google.com/group/comp.os.minix/msg/2194d253268b0a1b (accessed July 20, 2010).

Giving Things Away Is Hard Work

Three Creative Commons Case Studies

MICHAEL MANDIBERG

Open-source software and the free-culture movement have created vibrant and thriving sharing-based online communities. These communities and individuals have created an enormous quantity of open-source and free-culture projects. Many examples of these are well-known and much heralded: Wikipedia, Linux, WordPress, and the like. These success stories primarily revolve around code- and/or text-focused projects and are much less common among other work whose medium is not code or text. While one could disagree from a semiotic or a materialist perspective, code and text are effectively immaterial in relationship to other forms of physical creation. A copy of the original is merely a keystroke's effort, and the basic tools to create or modify the original are so commonplace as to be universal: a keyboard and a mouse. Obviously one also needs fluency in the human or computer language of the project, but one does not need access to expensive or specialized materials or tools; nor does one need the physical skills of a craftsperson in the medium.

Unlike code- or text-based practices, art, design, and other creations that are manifest in nondigital forms require production outside of the keyboard-mouse-language toolset. While there may be a code- or text-based set of instructions, the final form of the project usually must be transformed into a physical object, either through a machine like a printer or laser cutter, a physical technology like a circuit board or paint, or an offline social process like agreements and collaborations with people or business entities that have the tools or knowledge to realize a project. It seems that this additional step often makes it more difficult to realize a physical project. Despite this difficulty, or maybe *because* of this challenge, there are examples of artists, designers, and engineers working in this model, myself included. After producing three years of art/design work with open licenses, I want to look back and consider the results.[1] The central question I seek to answer is if and how an art or design

idea/project/product is helped, hindered, or not affected at all by its open licensing model. I have chosen three key examples from my creative practice and explore their successes and failures as a way of assessing this question.

A Genealogy

"Open source" is a term used to refer to computer software for which the source code can be viewed, modified, and used by anyone. As the story goes, once upon a time all software was open source. In 1980, MIT researcher Richard Stallman was using one of the first laser printers. It took so long to print documents that he decided he would modify the printer driver so that it sent a notice to the user when the print job was finished. Unlike previous printer drivers, this software only came in its compiled version. Stallman asked Xerox for the source code. Xerox would not let him have the source code. Stallman got upset and wrote a manifesto, and the Free Software movement began.[2] Later, Eric Raymond, a fellow computer programmer, published *The Cathedral and the Bazaar*, which popularized the term "open source."[3] The two terms are frequently referred to by the acronym I use in this essay: FLOSS, which stands for "free/libre/open-source software."[4]

More recently this concept has been extended from code to other forms of cultural production via Creative Commons licenses and what has become known as the free-culture movement.[5] The Creative Commons licenses provide a legal tool for applying FLOSS licensing to media other than computer code: text, image, sound, video, design, and so on. Many websites that are focused on fostering creative communities, like Flickr or Vimeo, incorporate this license into their content-upload process. Creative Commons estimates that there are 135 million Creative Commons–licensed works on Flickr alone.[6] While this has been a very successful initiative, most of these millions of works are digital. They are infinitely copyable, quickly transferable, and easily distributable. What I seek to answer is what happens when this license is applied to works that are not exclusively digital. What happens when the license is applied to cultural objects whose materiality prevents them from being effortlessly copyable.

Inside this larger free-culture community, there are groups of engineers, artists, and designers using open licenses for physical objects which are not as easily reproduced.[7] The genealogy of the move to license physical works with Creative Commons licenses that I trace here comes out of Limor Fried's work as an R&D fellow at the Eyebeam Center for Art and Technology's OpenLab. Located in New York City, Eyebeam is like a think tank, where

artists, engineers, designers, and programmers work together on projects dedicated to public-domain research and development. In a sense, it is not so much a think tank as a *make* tank. I was a resident, fellow, and senior fellow at Eyebeam from 2006 to 2010, and my time at Eyebeam has strongly influenced my work and, thus, this essay.

One of the requirements for working in the Eyebeam OpenLab is that all work is published with an open license; this stipulation is written into the contract that all R&D fellows sign.[8] This is easy to comply with as a programmer, but Fried primarily worked in what is known as physical computing, which is the intersection between computer and electrical engineering, and experimental art and design. Fried and Jonah Peretti, the director of R&D at the time, spent some time trying to figure out the right way to comply with the contract. In the end, the decision was made to publish a full instruction set and to make available DIY kits with the circuit board and all components.

At Eyebeam, one of the central goals is to be copied. At my orientation in 2006, then senior fellows James Powderly and Evan Roth of the Graffiti Research Lab gave a presentation of their work, tracing their LED Throwies project from its original form, a simple LED with a magnet and a battery, through the modifications made by hackers and aficionados across the world (one had a timed blinker, another used a photosensor to turn on only at night to conserve battery, someone offered LED Throwies for sale).[9] They noted that the form of distribution that generated the most views of the project was not their blog or their video on YouTube but their instruction set at Instructables.com, a site that allows creators to give instructions on how to make things. The point of their presentation was that the life of a project as a social phenomenon is its most important form and is often the primary form to be evaluated for success. The sharing of the project creates participation. And participation is at the edge of the beginnings of community.[10] It is not quite community, but it is one of the preconditions for community.

One of the most important points about this example, and a point that Powderly and Roth emphasized, is that these were ideas they would not have come up with by themselves, or if they had come up with the idea, they would not have had the time to execute it. They had one idea, which they shared with the world. People thought the original idea was interesting, but these people had their own ideas to contribute. The end result is something that is much greater than the original idea and something that could not have been created without the contribution of others.

That is the optimistic side of the Eyebeam model, a model influenced by Peretti and R&D technical director Michael Frumin. The flip side is that

success is also measured in pure numbers: YouTube, Vimeo, and Flickr views, incoming links ritualistically tracked via analytics software, Diggs, blog posts, and overall hits. This became known as "The Famo."[11] Powderly, Roth, and Jamie Wilkinson coined the phrase, and by the time I arrived at Eyebeam, there were plans to create a complete Famo-meter, which would pull all the statistics from every possible source of views, hits, referrals, and rankings and crown a king of Famo. They even created and taught a class at Parsons (The New School for Design) in which the final grade was entirely determined by Famo.[12]

Famo is relevant here because in order to be copied, a project has to be viewed many, many times. As codified in the 1% rule (or the 90-9-1 principle), a very small number of people are committed enough to take up a project and modify it.[13] If you have lots of eyes on a project, it is much more likely that someone will also put his or her hands on it. In the process of being copied, a change is made. No copy is a direct copy: every copy is a mutation in some form.[14] When the ultimate goal is to change culture, the intermediary goal is to get copied.

One Example

Limor Fried was one of the first people to laser-etch the top of a laptop and publicly share the results.[15] She and her partner and collaborator Phil Torrone figured out the process for etching laptops (specifically Apple's Powerbooks), and then she did something really crucial: she published the instructions on her website with an open license. As a result, she created an industry. There is now a growing number of commercial engravers who focus on using the laser cutter as an artistic tool to engrave laptops, cell phones, Moleskine notebooks, leather accessories, fingernails, and so on. For example, etchstar was built off Fried and Torrone's published materials;[16] the business was purchased for an undisclosed sum by the Microsoft-funded Wallop and is now known as Coveroo.[17]

When I was in Portland, Oregon, in 2008, I was introduced to Joe Mansfield, who runs an engraving business called Engrave Your Tech. I met him right as he was scaling up from individual projects to larger runs and big architectural projects. He had just broken the news to the rest of the Moleskine-notebook fan community that despite initial disavowals, the Chinese manufacturer of the notebooks includes PVC in the covers, and they therefore could not be lasercut.[18] It was clear when I met Mansfield that he was pretty well established in the scene. When I told him I was working out of

Eyebeam, he looked at me blankly. I said, "You know, Eyebeam, where Limor Fried, a.k.a. Lady Ada, came up with the idea to use the laser cutter to do what you make a living doing?" And he said that the name seemed familiar somehow. You could argue that this is a failure, because people using this technology do not know who created this use, but I would argue that this is a success: the practice has become so pervasive that the origins are no longer important.

Three Case Studies

I'm going to talk about three projects and try to evaluate their success in the terms I have laid out thus far. Notably, these three projects are design projects, not artworks; artworks would activate a different set of terms for success. I want to view all of these through the cycle of taking things and making them better I have laid out earlier in this chapter: participation breeds creative mutation, and creative mutation leads to better ideas through this collaborative process.

Steve Lambert and I made a laser-cut lampshade for compact fluorescent bulbs (CFLs) that we called the Bright Idea Shade. We identified a problem and tried to come up with a solution for it. The Eyebeam space is two dark converted industrial buildings; most recently one side was an S&M club, and the other was a taxi garage. When Eyebeam first moved in, it was only one floor with twenty-five-foot ceilings. When it was built out for office and work space, the architects lit the space with bare silver-tipped incandescent light bulbs in raw porcelain fixtures. This was very much in vogue during the 1995–2005 loft conversions in New York and San Francisco. It looks great in photographs and is an inexpensive solution, but it became a problem when we started to switch out our incandescent bulbs for CFLs. The bulbs were now *really* just bare bulbs. We needed a solution that made it possible to use CFLs without blinding ourselves.

After some initial tests, we settled on a polygon solution, based on an Instructable, which was based on a *ReadyMade* magazine project, which was based on the work of several designers from the '60s and '70s who each claim authorship of the original shape.[19] We consulted with an intellectual-property lawyer, who of course would not actually give us an answer as to any potential legal liability. But from our discussion with him and the transformative changes we made, we felt comfortable making the project public.

To recap an earlier point: in order to get hands on a project, you have to get a lot of eyes on it first. We followed the internal Eyebeam model iden-

tified by Peretti, Powderly, and Roth and created an interrelated video and Instructable.com instruction set.[20] This video showed how exciting the project was and then explicitly stated that the whole purpose of the video was to give the idea away. The video clearly said that we wanted someone to take the idea and manufacture it and encouraged people to make money off the idea in the process. Through our Attribution-ShareAlike license (CC BY-SA) and our text in the video, we made it clear that we expected no money. We just wanted someone to make it.

Steve Lambert and I are artists, designers, educators, and activists, but we are not business people. When we design things, we generally make prototypes and give them away. It's great for code, but maybe it's not so great for objects. Many, many people who saw this video wanted to buy a Bright Idea Shade. But it isn't for sale. It is free, but not as in beer. All the patterns and instructions are there, but you have to do it yourself. A manufacturer could do it and then sell the kits, but manufacturers aren't used to this idea of taking someone's ideas, prototypes, and intellectual property for free.

There are business questions and problems with fabricating and marketing a free-culture product. Despite the fact that this project generated several million impressions in video, image, and blog views, there was only one failed lead, and that was from Urban Outfitters. When I tell people that Urban Outfitters was our only lead, they often laugh, as Urban Outfitters' business model is perceived to be focused on copying artists and designers and selling the infringing derivative work on the cheap. I had a direct connection to someone at the top of the company's design team. We offered the project to them, and they wouldn't copy us when we handed it to them.

There is a lot of fear built into this process by the law and capitalism. Intellectual-property law creates fear that companies *do* have some unknowable liability because there are competing claims on the original shape, and we may not have done enough to modify the original shape to make the new work outside the original copyright. It does not help that no lawyer can give an authoritative answer on this question, so the large company with highly suable assets shies away. Companies also fear that if they invest to streamline the production process, brand the product, and create a market, their competitor will jump in and produce it cheaper, and their effort will be for naught. If this did happen, it would be great for the end user/consumer/citizen who wants to use CFLs, but it is not so great for the bottom line of the profit-driven company that invested the time and money into producing the first version.

Part of me wonders about Urban Outfitters and the rest of the corporate design community that perpetually poaches art for their own uses. I jokingly

think that they can't even do anything legitimately. They actually have to rip off someone's art. Playfully, I think that maybe if we said, "Don't touch this. This is our artwork!" maybe they would have copied it. But I know this is a simple and incomplete response. There are larger problems that this example highlights. I came to realize that there were better ways of getting this kind of project scaled up and distributed, and to accept that we pitched the product and gave it away for free, and it didn't work. The lesson learned is that giving things away is hard work.

I took that lesson into my next major project, *Digital Foundations: An Intro to Media Design*, a textbook that integrates Bauhaus pedagogy and art-historical examples into a software-focused design primer.[21] I coauthored this book with xtine burrough. Though this project is closer to the code and text projects I referred to in the introduction, it involves so much design work that it is not copyable and translatable like software or wikis. This book teaches the formal principles and exercises of the Bauhaus Basic Course through the Adobe Creative Suite. One prime example of this strategy is the chapter on color theory. We teach color theory using Josef Albers's classic Bauhaus exercises, which defined the modern artistic use of color, showing the interrelationship of color's components: hue, value, and saturation. We point out the way these principles have been directly integrated into the computer interface used to select colors. This is a classic exercise from the traditional Studio Foundations course that introduces students to the basic techniques and formal characteristics of art and design. The classrooms where these studio classes used to take place have been converted into computer labs, and more and more curricula skip this traditional analog foundations course and instead go straight into a computer class. Students are not trained in the basic formal principles of visual composition: balance, harmony, symmetry, dynamism, negative space, and so on, nor do they learn color theory or basic drawing.

We made a number of strategic decisions at the beginning that attempted to avoid the problems Lambert and I encountered with the Bright Idea Shade. Instead of waiting for someone to find the book and publish it, we went through the traditional book-proposal process. Once we had the publisher excited about the book, we then started negotiating the Creative Commons license on the work. Before the work was even finished, we actively worked to give the work away by partnering with an organization called FLOSSmanuals to translate the book from the proprietary Adobe design applications like Photoshop and Illustrator to the FLOSS design applications like GIMP and Inkscape.

We wrote the book on a wiki, which at the time was rather unusual for textbook writing.[22] It was so unusual that we were concerned about the publisher's reaction. We decided to go ahead with it, as it was the most effective way for the two of us to collaborate, share the results with our peers who were providing feedback, and test the exercises from the book in our classes as we were writing them. When we did show the publisher, they were thrilled. They sent the site around to everyone in the company as an example of how they could start to adopt new peer production techniques for their books.

We wrote it on a wiki with the Creative Commons license we were in the process of negotiating with the publisher. We only used public-domain or Creative Commons–licensed images. After nine months of negotiating, during which time we wrote the majority of the book, we finally signed a Creative Commons–licensed contract with the publisher, AIGA Design Press/ New Riders, which is an imprint of Peachpit Press, which is a division of Pearson, one of the largest publishers in the world. Their legal department took nine months to churn its wheels and finally agreed to a Creative Commons license. We licensed this work with a Creative Commons license on principle and also because I was contractually obliged to do so by my contract with Eyebeam. Most importantly, we did it out of the hope that this time we would be able to succeed at giving the work away.

As I mentioned, we were building plans with FLOSSmanuals to translate the book into FLOSS software. Run by Adam Hyde, FLOSSmanuals' mission is to create free manuals for free software. For *Digital Foundations*, FLOSSmanuals assembled a team in New York and ported the whole book to open-source applications like Inkscape, GIMP, and Processing. In a three-day book sprint, eight to ten people per day, with a wide range of technical experience, "FLOSSified" the whole book.[23] I attended the sprint primarily to observe and advise but did almost no actual translation; burrough did not attend. Since then, Jennifer Dopazo, at the time a graduate student in NYU's Interactive Telecommunications Program, led a translation of the whole book into Spanish.[24] This book has been published and is going to be released in an extremely low-cost newsprint edition sponsored by Media Lab Prado in Madrid and distributed for free to design centers, schools, Internet cafes, co-working spaces, and community centers. In addition, there are active translations into French, Farsi, Mandarin Chinese, Finnish, and German.

We succeeded in giving the project away, and the project continues to evolve into new transformations and uses. We were able to achieve this because we were more strategic at an earlier stage than Lambert and I were with the Bright Idea Shade. We formed a partnership early and made sure

that it was an open partnership that allowed us to make further partnerships with other individuals and organizations that were interested in the material we covered in the book and in the process by which we made the book.

The materiality of the two projects differentiates them in a way that may be instructive. *Digital Foundations* has taken multiple physical forms: a trade paperback technical book published in an initial 2008 run of eight thousand copies, with a 2009 reprint of four thousand copies; two print-on-demand books published by FLOSSmanuals; and in the future, as five thousand copies of a newsprint edition.[25] It has also taken multiple digital forms: the whole book is up on a wiki; the full FLOSS version is available in English and Spanish from the FLOSSmanuals.net website, where partially translated versions also live; and I put the entire master design file for the original book up as a torrent file on Clear Bits, a legal torrent site.[26] *Digital Foundations* was also closer in form to the more successful text/code-based examples discussed in the introduction, though the significant design work in the book differentiates it from these text/code examples. Conversely, the Bright Idea Shade was necessarily a physical object. It was effectively a prototype for a kit that could have been manufactured in large scale. Its digital form was a set of vector files that a laser cutter could use to cut copies and an instruction set on Instructables.com: these were not the product; they were procedural tools that would help get to the end product. The Bright Idea Shade was rooted in physical materiality, while *Digital Foundations* was whole both in physical and digital forms.

The demands of participation were very different between the two projects. For *Digital Foundations* we were able to make the process of sharing into a collaborative process, and one which accessed collaborators who had a range of experience, from expert to novice software users, to translators in multiple languages. Some of the most helpful participants in the translation book sprint were the people who had no experience with the FLOSS software into which we were translating the book; these contributors' responsibility was simply to work their way through the finished chapters, following the new instructions, and successfully completing each step along the way. When they got confused or encountered errors, the translators knew they had to rewrite that section. In the process they learned the software. With the translation process, contributions could be large or small. Though Dopazo translated the majority of the Spanish version, she did have collaborators translate and proofread. It is not all or nothing, and many small contributions led to a complete project. Conversely, the Bright Idea Shade was all or nothing. We were not trying to find a person to collaborate with but, rather, a company that had very specific capabilities. We were looking for a

company to commit to the large-scale production of the design prototype we had created. This was not possible through collaboration; this did not access multiple skill levels; nor did it allow for incremental production. It was an all-or-nothing proposition, and as a result, it was not successful.

Some time after we made the Bright Idea Shade, I covered my bicycle in black retroreflective vinyl. "Retroreflective" is a technical term that means that the material reflects directly back in the direction of a light source. This is the same reflective material on the backs of running shoes and night safety vests. I called the project Bright Bike, made a video, and released it online.[27] By this time I was beginning to see the flaws with the plan for the Bright Idea Shade and to see the potential successes of the way we were planning the *Digital Foundations* project. I tried to include some of this knowledge in the plan for the Bright Bike.

The vinyl comes in sizes starting at thirty-foot-long, fifteen-inch-wide rolls, but the initial kit required only six feet of fifteen-inch-wide vinyl. Eyebeam sold six-foot sections of the vinyl out of the Eyebeam Bookstore, but that was only accessible to people who happened to stop by in person. In an effort to expand that range, we approached our vinyl supplier to see if they would be willing to sell six-foot lengths of vinyl cut for the Bright Bike project. The supplier was interested, as the company happened to be run by an avid cyclist. They sold the vinyl in six-foot lengths to correspond to the Instructable that had the directions on it.[28]

We achieved some success. Despite the kits' being buried deep in the vinyl supplier's website, people did order them. Somewhere along the way I also realized that, like it or not, I was going to have to become a businessman, if only a small-scale DIY one. In this, I turned to Limor Fried's practice as an example. During her time at Eyebeam, she and Torrone had started a business called Adafruit Industries, selling the DIY kits she was making.[29] I made revisions to the original design, creating two different DIY kits that take five and fifteen minutes to apply each.[30] I made a about one hundred of these kits on a friend's vinyl cutter, sent out one e-mail, and quickly sold out. I launched a fundraising campaign via the crowdfunding site Kickstarter.com which raised $2,500 from eighty-six different "project backers" who each received rewards in the form of DIY kits.[31] Their support allowed me to buy a bulk order of the expensive vinyl and to make dedicated jigs, so I could fabricate the kits quickly (hand cutting with jigs proved faster and more accurate than using a vinyl cutter).

Presently, I have shipped wholesale orders to a bicycle shop in Portland, Oregon, and to several design boutiques and bike shops in San Francisco and Amsterdam. I have an assistant who cuts and ships kits one day a week. The

revenue from the kits is paying the wages of the assistant and for new supplies of the vinyl. The project is creating enough profit to sustain itself. By sustaining the project, I am creating the possibility for more people to get it in their hands, in the hope that one of them will use their hands and transform the project. It appears that this strategy is working: a number of Flickr users have posted creative applications of the kits, and I recently discovered that a bike shop to which I gave a sample has derived a modified version of the kit which they are putting on all of the bikes they sell.[32]

I was at a family event, and a distant cousin came up to me to talk about the Bright Bike kits. She thought it was a great idea, but she was very concerned that I patent the idea as soon as possible, lest "one of the big bike manufacturers steal it from you and make a lot of money and leave you with nothing." I told her that it would be wonderful if that happened, because I was really interested in design for bike safety and that a major bike manufacturer could scale up the project much larger than an individual like me could. I also told her that based on my past experience, it was pretty unlikely that her fears would play out but that I still hoped they might.

NOTES

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1. One of the potential pitfalls of this essay is trying to define the boundary between the two categories I am setting up. I do not set up this binary for the sake of defining borders and establishing categories but, rather, to articulate different modes of production. In reality, this is a continuum, with some interesting cases floating in the middle. A digitized photograph is code, but the image itself has to be inputted and outputted from the computer. Additionally, it cannot be reworked quite as easily as code/text. While interesting, the exploration of these boundary cases is not the focus of this essay.

2. Richard Stallman, "The GNU Manifesto," http://www.gnu.org/gnu/manifesto.html; and Free Software Foundation, "The Free Software Definition," http://www.gnu.org/philosophy/free-sw.html (accessed June 25, 2010). One of Richard Stallman's most creative contributions to this movement was the General Public License or GPL, http://www.gnu.org/licenses/gpl.html. Software licensed with the GPL is required to maintain that license in all future incarnations; this means that code that starts out open has to stay open. You cannot close the source code. This is known as a "copyleft" license.

3. Eric Raymond, *The Cathedral and the Bazaar* (Sebastopol, CA: O'Reilly, 2001).

4. There is much debate in the subcultures of the free-culture movement about what terms to use. Some argue that the term "open source" is a neutered version of "free software" that caters to corporate entities like IBM that see the business potential in a software-authoring model that is built around sharing and group work but cannot allow the word "free" to enter into their business lexicon. While these disputes arise from time to time, the term "FLOSS" (or "FOSS") is used as a catchall acronym to refer to both terms.

5. For more on the mechanics of Creative Commons licenses, please see http://creativecommons.org/about/licenses/.

6. Mike Linksvayer, "Creative Commons Licenses on Flickr: Many More Images, Slightly More Freedom," *Creative Commons Blog*, March 10, 2010, http://creativecommons.org/weblog/entry/20870 (accessed June 25, 2010).

7. There are even limitations beyond the materiality of the works: one group of leading artist-engineers is currently working with Creative Commons on making it possible to license an electronic circuit via an open license, as it is currently not possible to fully do so. For video documentation, see Eyebeam, "Opening Hardware," March 17, 2010, http://eyebeam.org/projects/opening-hardware (accessed April 11, 2010).

8. Eyebeam has changed its internal structure to adapt to changing needs of its fellows and resident artists: at the time of Fried's fellowship, there were multiple labs with different licensing requirements. Due to external factors like the growing importance of free culture and internal factors like the fellows' desire to all work in one shared lab, the organization collapsed the labs into one lab. Fellows are no longer designated "R&D fellow" or "production fellow" but are simply "fellows," and all contracts require open licenses.

9. Graffiti Research Lab, "LED Throwies," Instructables, 2006, http://www.instructables.com/id/LED-Throwies. For modifications, see projects tagged "Throwies" on Instructables.com: http://www.instructables.com/tag/throwies/ (accessed June 25, 2010). LED Throwies for sale: Hebei Ltd., http://www.hebeiltd.com.cn/?p=throwies (accessed June 25, 2010).

10. Lewis Hyde, *The Gift* (New York: Vintage, 1979); Adam Hyde et al., *Collaborative Futures*, FLOSSmanuals.net, 2010, http://www.booki.cc/collaborativefutures/ (accessed June 25, 2010).

11. The term "Famo" comes from the URL www.internetfamo.us; without the TLD (top-level domain ".us"), the word "famous" is cut to "famo."

12. James Powderly, Evan Roth, and Jamie Wilkinson, "Internet Famous Class, 2007–2008," http://internetfamo.us/class/ (accessed June 25, 2010).

13. Ben McConnell, "The 1% Rule: Charting Citizen Participation," *Church of the Customer Blog*, May 3, 2006, http://customerevangelists.typepad.com/blog/2006/05/charting_wiki_p.html (accessed June 29, 2011); Julia Angwin and Geoffrey A. Fowler, "Volunteers Log Off as Wikipedia Ages," *Wall Street Journal*, November 27, 2009, http://online.wsj.com/article/SB125893981183759969.html (accessed June 25, 2010).

14. For an edge case of this idea, see Michael Mandiberg, AfterSherrieLevine.com, 2001.

15. Limor Fried and Phil Torrone, "Adafruit Laser Information Wiki," LadyAda.net, first posted December 2005, last updated March 5, 2010, http://www.ladyada.net/wiki/laserinfo/start (accessed July 20, 2010).

16. Phil Torrone, personal interview, July 1, 2010.

17. Camille Ricketts, "Microsoft Social App Co. Wallop Rebrands as Coveroo," Deals & More, December 17, 2008, http://deals.venturebeat.com/2008/12/17/microsoft-social-app-co-wallop-rebrands-as-coveroo/ (accessed July 20, 2010).

18. Vaporized PVC releases deadly chlorine gas.

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Quentin Tarantino's *Star Wars*?

Grassroots Creativity Meets the Media Industry

HENRY JENKINS

Shooting in garages and basement rec rooms, rendering F/X on home computers, and ripping music from CDs and MP3 files, fans have created new versions of the *Star Wars* (1977) mythology. In the words of *Star Wars or Bust* director Jason Wishnow, "This is the future of cinema—*Star Wars* is the catalyst."[1]

The widespread circulation of *Star Wars*–related commodities has placed resources into the hands of a generation of emerging filmmakers in their teens or early twenties. They grew up dressing as Darth Vader for Halloween, sleeping on Princess Leia sheets, battling with plastic light sabers, and playing with Boba Fett action figures. *Star Wars* has become their "legend," and now they are determined to remake it on their own terms.

When AtomFilms launched an official *Star Wars* fan film contest in 2003, they received more than 250 submissions. Although the ardor has died down somewhat, the 2005 competition received more than 150 submissions.[2] And many more are springing up on the web via unofficial sites such as The-Force.net, which would fall outside the rules for the official contest. Many of these films come complete with their own posters or advertising campaigns. Some websites provide updated information about amateur films still in production.

Fans have always been early adapters of new media technologies; their fascination with fictional universes often inspires new forms of cultural production, ranging from costumes to fanzines and, now, digital cinema. Fans are the most active segment of the media audience, one that refuses to simply accept what they are given but, rather, insists on the right to become full participants.[3] None of this is new. What has shifted is the visibility of fan culture. The web provides a powerful new distribution channel for amateur cultural production. Amateurs have been making home movies for decades; these movies are going public.

When Amazon introduced DVDs of *George Lucas in Love* (1999), perhaps the best known of the *Star Wars* parodies, it outsold the DVD of *Star Wars Episode I: The Phantom Menace* (1999) in its opening week.[4] Fan filmmakers, with some legitimacy, see their works as "calling cards" that may help them break into the commercial industry. In spring 1998, a two-page color spread in *Entertainment Weekly* profiled aspiring digital filmmaker Kevin Rubio, whose ten-minute, $1,200 film, *Troops* (1998), had attracted the interests of Hollywood insiders.[5] *Troops* spoofs *Star Wars* by offering a *Cops*-like profile of the stormtroopers who do the day-in, day-out work of policing Tatooine, settling domestic disputes, rounding up space hustlers, and trying to crush the Jedi Knights. As a result, the story reported, Rubio was fielding offers from several studios interested in financing his next project. Lucas admired the film so much that he gave Rubio a job writing for the *Star Wars* comic books. Rubio surfaced again in 2004 as a writer and producer for *Duel Masters* (2004), a little-known series on the Cartoon Network.

Fan digital film is to cinema what the punk DIY culture was to music. There, grassroots experimentation generated new sounds, new artists, new techniques, and new relations to consumers which have been pulled more and more into mainstream practice. Here, fan filmmakers are starting to make their way into the mainstream industry, and we are starting to see ideas—such as the use of game engines as animation tools—bubbling up from the amateurs and making their way into commercial media.

If, as some have argued, the emergence of modern mass media spelled the doom for the vital folk culture traditions that thrived in nineteenth-century America, the current moment of media change is reaffirming the right of everyday people to actively contribute to their culture. Like the older folk culture of quilting bees and barn dances, this new vernacular culture encourages broad participation, grassroots creativity, and a bartering or gift economy. This is what happens when consumers take media into their own hands. Of course, this may be altogether the wrong way to talk about it—since in a folk culture, there is no clear division between producers and consumers. Within convergence culture, everyone's a participant—although participants may have different degrees of status and influence.

It may be useful to draw a distinction between interactivity and participation, words that are often used interchangeably but which, in this essay, assume rather different meanings.[6] Interactivity refers to the ways that new technologies have been designed to be more responsive to consumer feedback. One can imagine differing degrees of interactivity enabled by different communication technologies, ranging from television, which allows us only

to change the channel, to video games that can allow consumers to act upon the represented world. Such relationships are of course not fixed: the introduction of TiVo can fundamentally reshape our interactions with television. The constraints on interactivity are technological. In almost every case, what you can do in an interactive environment is prestructured by the designer.

Participation, on the other hand, is shaped by the cultural and social protocols. So, for example, the amount of conversation possible in a movie theater is determined more by the tolerance of audiences in different subcultures or national contexts than by any innate property of cinema itself. Participation is more open-ended, less under the control of media producers and more under the control of media consumers.

Initially, the computer offered expanded opportunities for interacting with media content, and as long as it operated on that level, it was relatively easy for media companies to commodify and control what took place. Increasingly, though, the web has become a site of consumer participation that includes many unauthorized and unanticipated ways of relating to media content. Though this new participatory culture has its roots in practices that have occurred just below the radar of the media industry throughout the twentieth century, the web has pushed that hidden layer of cultural activity into the foreground, forcing the media industries to confront its implications for their commercial interests. Allowing consumers to interact with media under controlled circumstances is one thing; allowing them to participate in the production and distribution of cultural goods—on their own terms—is something else altogether.

Grant McCracken, the cultural anthropologist and industry consultant, suggests that in the future, media producers must accommodate consumer demands to participate, or they will run the risk of losing the most active and passionate consumers to some other media interest that is more tolerant: "Corporations must decide whether they are, literally, in or out. Will they make themselves an island or will they enter the mix? Making themselves an island may have certain short-term financial benefits, but the long-term costs can be substantial."[7] As we have seen, the media industry is increasingly dependent on active and committed consumers to spread the word about valued properties in an overcrowded media marketplace, and in some cases they are seeking ways to channel the creative output of media fans to lower their production costs. At the same time, they are terrified of what happens if this consumer power gets out of control, as they claim occurred following the introduction of Napster and other file-sharing services. As fan productivity goes public, it can no longer be ignored by the media industries, but it cannot be fully contained or channeled by them, either.

One can trace two characteristic responses of media industries to this grassroots expression: starting with the legal battles over Napster, the media industries have increasingly adopted a scorched-earth policy toward their consumers, seeking to regulate and criminalize many forms of fan participation that once fell below their radar. Let's call them the prohibitionists. To date, the prohibitionist stance has been dominant within old media companies (film, television, the recording industry), though these groups are to varying degrees starting to reexamine some of these assumptions. So far, the prohibitionists get most of the press—with lawsuits directed against teens who download music or against fan webmasters getting more and more coverage in the popular media. At the same time, on the fringes, new media companies (Internet, games, and to a lesser degree, the mobile phone companies) are experimenting with new approaches that see fans as important collaborators in the production of content and as grassroots intermediaries helping to promote the franchise. We will call them the collaborationists.

The *Star Wars* franchise has been pulled between these two extremes both over time (as it responds to shifting consumer tactics and technological resources) and across media (as its content straddles between old and new media). Within the *Star Wars* franchise, Hollywood has sought to shut down fan fiction, later to assert ownership over it, and finally to ignore its existence; they have promoted the works of fan video makers but also limited what kinds of movies they can make; and they have sought to collaborate with gamers to shape a massively multiplayer game so that it better satisfies player fantasies.

Folk Culture, Mass Culture, Convergence Culture

At the risk of painting with broad strokes, the story of American arts in the nineteenth century might be told in terms of the mixing, matching, and merging of folk traditions taken from various indigenous and immigrant populations. Cultural production occurred mostly on the grassroots level; creative skills and artistic traditions were passed down mother to daughter, father to son. Stories and songs circulated broadly, well beyond their points of origin, with little or no expectation of economic compensation; many of the best ballads or folktales come to us today with no clear marks of individual authorship. While new commercialized forms of entertainment—the minstrel shows, the circuses, the showboats—emerged in the mid- to late nineteenth century, these professional entertainments competed with thriving local traditions of barn dances, church sings, quilting bees, and campfire

stories. There was no pure boundary between the emergent commercial culture and the residual folk culture: the commercial culture raided folk culture, and folk culture raided commercial culture.

The story of American arts in the twentieth century might be told in terms of the displacement of folk culture by mass media. Initially, the emerging entertainment industry made its peace with folk practices, seeing the availability of grassroots singers and musicians as a potential talent pool, incorporating community sing-alongs into film exhibition practices, and broadcasting amateur-hour talent competitions. The new industrialized arts required huge investments and thus demanded a mass audience. The commercial entertainment industry set standards of technical perfection and professional accomplishment few grassroots performers could match. The commercial industries developed powerful infrastructures that ensured that their messages reached everyone in America who wasn't living under a rock. Increasingly, the commercial culture generated the stories, images, and sounds that mattered most to the public.

Folk culture practices were pushed underground—people still composed and sang songs, amateur writers still scribbled verse, weekend painters still dabbled, people still told stories, and some local communities still held square dances. At the same time, grassroots fan communities emerged in response to mass media content. Some media scholars hold on to the useful distinction between mass culture (a category of production) and popular culture (a category of consumption), arguing that popular culture is what happens to the materials of mass culture when they get into the hands of consumers—when a song played on the radio becomes so associated with a particularly romantic evening that two young lovers decide to call it "our song," or when a fan becomes so fascinated with a particular television series that it inspires her to write original stories about its characters. In other words, popular culture is what happens as mass culture gets pulled back into folk culture. The culture industries never really had to confront the existence of this alternative cultural economy because, for the most part, it existed behind closed doors and its products circulated only among a small circle of friends and neighbors. Home movies never threatened Hollywood, as long as they remained in the home.

The story of American arts in the twenty-first century might be told in terms of the public reemergence of grassroots creativity as everyday people take advantage of new technologies that enable them to archive, annotate, appropriate, and recirculate media content. It probably started with the photocopier and desktop publishing; perhaps it started with the videocassette

revolution, which gave the public access to moviemaking tools and enabled every home to have its own film library. But this creative revolution has so far culminated with the web. To create is much more fun and meaningful if you can share what you can create with others, and the web, built for collaboration within the scientific community, provides an infrastructure for sharing the things average Americans are making in their rec rooms. Once you have a reliable system of distribution, folk culture production begins to flourish again overnight. Most of what the amateurs create is gosh-awful bad, yet a thriving culture needs spaces where people can do bad art, get feedback, and get better. After all, much of what circulates through mass media is also bad by almost any criteria, but the expectations of professional polish make it a less hospitable environment for newcomers to learn and grow. Some of what amateurs create will be surprisingly good, and some artists will be recruited into commercial entertainment or the art world. Much of it will be good enough to engage the interest of some modest public, to inspire someone else to create, to provide new content which, when polished through many hands, may turn into something more valuable down the line. That's the way the folk process works, and grassroots convergence represents the folk process accelerated and expanded for the digital age.

Given this history, it should be no surprise that much of what the public creates models itself after, exists in dialogue with, reacts to or against, and/or otherwise repurposes materials drawn from commercial culture. Grassroots convergence is embodied, for example, in the work of the game modders, who build on code and design tools created for commercial games as a foundation for amateur game production, or in digital filmmaking, which often directly samples material from commercial media, or adbusting, which borrows iconography from Madison Avenue to deliver an anticorporate or anticonsumerist message. Having buried the old folk culture, this commercial culture becomes the common culture. The older American folk culture was built on borrowings from various mother countries; the modern mass media builds upon borrowings from folk culture; the new convergence culture will be built on borrowings from various media conglomerates.

The web has made visible the hidden compromises that enabled participatory culture and commercial culture to coexist throughout much of the twentieth century. Nobody minded, really, if you photocopied a few stories and circulated them within your fan club. Nobody minded, really, if you copied a few songs and shared the dub tape with a friend. Corporations might know, abstractly, that such transactions were occurring all around them, every day, but they didn't know, concretely, who was doing it. And even if

they did, they weren't going to come bursting into people's homes at night. But, as those transactions came out from behind closed doors, they represented a visible, public threat to the absolute control the culture industries asserted over their intellectual property.

With the consolidation of power represented by the Digital Millennium Copyright Act of 1998, American intellectual property law has been rewritten to reflect the demands of mass media producers—away from providing economic incentives for individual artists and toward protecting the enormous economic investments media companies made in branded entertainment; away from a limited-duration protection that allows ideas to enter general circulation while they still benefit the common good and toward the notion that copyright should last forever; away from the ideal of a cultural commons and toward the ideal of intellectual property. As Lawrence Lessig notes, the law has been rewritten so that "no one can do to the Disney Corporation what Walt Disney did to the Brothers Grimm."[8] One of the ways that the studios have propped up these expanded claims of copyright protection is through the issuing of cease-and-desist letters intended to intimidate amateur cultural creators into removing their works from the web. In such situations, the studios often assert much broader control than they could legally defend: someone who stands to lose their home or their kid's college funds by going head-to-head with studio attorneys is apt to fold. After three decades of such disputes, there is still no case law that would help determine to what degree fan fiction is protected under fair-use law.

Efforts to shut down fan communities run in the face of what we have learned so far about the new kinds of affective relationships advertisers and entertainment companies want to form with their consumers. Over the past several decades, corporations have sought to market branded content so that consumers become the bearers of their marketing messages. Marketers have turned our children into walking, talking billboards who wear logos on their T-shirts, sew patches on their backpacks, plaster stickers on their lockers, hang posters on their walls, but they must not, under penalty of law, post them on their home pages. Somehow, once consumers choose when and where to display those images, their active participation in the circulation of brands suddenly becomes a moral outrage and a threat to the industry's economic well-being.

Today's teens—the so-called Napster generation—aren't the only ones who are confused about where to draw the lines here; media companies are giving out profoundly mixed signals because they really can't decide what kind of relationships they want to have with this new kind of consumer. They

want us to look at but *not* touch, buy but *not* use, media content. This contradiction is felt perhaps most acutely when it comes to cult media content. A cult media success depends on courting fan constituencies and niche markets; a mainstream success is seen by the media producers as depending on distancing themselves from them. The system depends on covert relationships between producers and consumers. The fans' labor in enhancing the value of an intellectual property can never be publicly recognized if the studio is going to maintain that the studio alone is the source of all value in that property. The Internet, though, has blown their cover, since those fan sites are now visible to anyone who knows how to Google.

Some industry insiders—for example, Chris Albrecht, who runs the official *Star Wars* film competition at AtomFilms, or Raph Koster, the former MUDder who has helped shape the *Star Wars Galaxies* (2002) game—come out of these grassroots communities and have a healthy respect for their value. They see fans as potentially revitalizing stagnant franchises and providing a low-cost means of generating new media content. Often, such people are locked into power struggles within their own companies with others who would prohibit grassroots creativity.

"Dude, We're Gonna Be Jedi!"

George Lucas in Love depicts the future media mastermind as a singularly clueless USC film student who can't quite come up with a good idea for his production assignment, despite the fact that he inhabits a realm rich with narrative possibilities. His stoner roommate emerges from behind the hood of his dressing gown and lectures Lucas on "this giant cosmic force, an energy field created by all living things." His sinister next-door neighbor, an archrival, dresses all in black and breathes with an asthmatic wheeze as he proclaims, "My script is complete. Soon I will rule the entertainment universe." As Lucas races to class, he encounters a brash young friend who brags about his souped-up sports car and his furry-faced sidekick who growls when he hits his head on the hood while trying to do some basic repairs. His professor, a smallish man, babbles cryptic advice, but all of this adds up to little until Lucas meets and falls madly for a beautiful young woman with buns on both sides of her head. Alas, the romance leads to naught as he eventually discovers that she is his long-lost sister.

George Lucas in Love is, of course, a spoof of *Shakespeare in Love* (1998) and of *Star Wars* itself. It is also a tribute from one generation of USC film students to another. As co-creator Joseph Levy, a twenty-four-year-old recent

graduate from Lucas's alma mater, explained, "Lucas is definitely the god of USC. . . . We shot our screening-room scene in the George Lucas Instructional Building. Lucas is incredibly supportive of student filmmakers and developing their careers and providing facilities for them to be caught up to technology."[9] Yet what makes this film so endearing is the way it pulls Lucas down to the same level as countless other amateur filmmakers and, in so doing, helps to blur the line between the fantastical realm of space opera ("A long, long time ago in a galaxy far, far away") and the familiar realm of everyday life (the world of stoner roommates, snotty neighbors, and incomprehensible professors). Its protagonist is hapless in love, clueless at filmmaking, yet somehow he manages to pull it all together and produce one of the top-grossing motion pictures of all time. *George Lucas in Love* offers us a portrait of the artist as a young geek.

One might contrast this rather down-to-earth representation of Lucas—the auteur as amateur—with the way fan filmmaker Evan Mather's website (http://www.evanmather.com/) constructs the amateur as an emergent auteur.[10] Along one column of the site can be found a filmography, listing all of Mather's productions going back to high school, as well as a listing of the various newspapers, magazines, websites, and television and radio stations that have covered his work—*La Republica*, *Le Monde*, the *New York Times*, *Wired*, *Entertainment Weekly*, CNN, NPR, and so forth. Another sidebar provides up-to-the-moment information about his works in progress. Elsewhere, you can see news of the various film-festival screenings of his films and whatever awards they have won. More than nineteen digital films are featured with photographs, descriptions, and links for downloading them in multiple formats.

Another link allows you to call up a glossy, full-color, professionally designed brochure documenting the making of *Les Pantless Menace* (1999), which includes close-ups of various props and settings, reproductions of stills, score sheets, and storyboards, and detailed explanations of how he was able to do the special effects, soundtrack, and editing for the film (fig. 15.1). We learn, for example, that some of the dialogue was taken directly from Commtech chips that were embedded within Hasbro *Star Wars* toys. A biography provides some background:

Evan Mather spent much of his childhood running around south Louisiana with an eight-millimeter silent camera staging hitchhikings and assorted buggery. . . . As a landscape architect, Mr. Mather spends his days designing a variety of urban and park environments in the Seattle

area. By night, Mr. Mather explores the realm of digital cinema and is the renowned creator of short films which fuse traditional hand drawn and stop motion animation techniques with the flexibility and realism of computer generated special effects.

Though his background and production techniques are fairly ordinary, the incredibly elaborate, self-conscious, and determinedly professional design of his website is anything but. His website illustrates what happens as this new amateur culture gets directed toward larger and larger publics.

TheForce.net's Fan Theater, for example, allows amateur directors to offer their own commentary. The creators of *When Senators Attack IV* (1999), for example, give "comprehensive scene-by-scene commentary" on their film: "Over the next 90 pages or so, you'll receive an insight into what we were thinking when we made a particular shot, what methods we used, explanations to some of the more puzzling scenes, and anything else that comes to mind."[11] Such materials mirror the tendency of recent DVD releases to include alternative scenes, cut footage, storyboards, and director's commentary. Many of the websites provide information about fan films under production, including preliminary footage, storyboards, and trailers for films that may never be completed. Almost all of the amateur filmmakers create posters and advertising images, taking advantage of Adobe PageMaker and Adobe Photoshop. In many cases, the fan filmmakers produce elaborate trailers. These materials facilitate amateur film culture. The making-of articles share technical advice; such information helps to improve the overall quality of work within the community. The trailers also respond to the specific challenges of the web as a distribution channel: it can take minutes to download relatively long digital movies, and the shorter, lower-resolution trailers (often distributed in a streaming video format) allow would-be viewers to sample the work.

All of this publicity surrounding the *Star Wars* parodies serves as a reminder of what is the most distinctive quality of these amateur films—the fact that they are so public. The idea that amateur filmmakers could develop such a global following runs counter to the historical marginalization of grassroots media production. In the book *Reel Families: A Social History of Amateur Film* (1995), film historian Patricia R. Zimmermann offers a compelling history of amateur filmmaking in the United States, examining the intersection between nonprofessional film production and the Hollywood entertainment system. While amateur filmmaking has existed since the advent of cinema, and while periodically critics have promoted it as a grass-

Fig. 15.1. Fan filmmaker Evan Mather's *Les Pantless Menace* creates anarchic comedy through creative use of *Star Wars* action figures. (Reprinted with the permission of the artist)

roots alternative to commercial production, the amateur film has remained, first and foremost, the "home movie" in several senses of the term: first, amateur films were exhibited primarily in private (and most often, domestic) spaces lacking any viable channel of public distribution; second, amateur films were most often documentaries of domestic and family life; and third, amateur films were perceived to be technically flawed and of marginal interest beyond the immediate family. Critics stressed the artlessness and spontaneity of amateur film in contrast with the technical polish and aesthetic sophistication of commercial films. Zimmermann concludes, "[Amateur film] was gradually squeezed into the nuclear family. Technical standards, aesthetic norms, socialization pressures and political goals derailed its cultural construction into a privatized, almost silly, hobby."[12] Writing in the early 1990s, Zimmermann saw little reason to believe that the camcorder and the VCR would significantly alter this situation. The medium's technical limitations made it difficult for amateurs to edit their films, and the only public means of exhibition were controlled by commercial media makers (as in programs such as *America's Funniest Home Videos*, 1990).

Digital filmmaking alters many of the conditions that led to the marginalization of previous amateur filmmaking efforts—the web provides an exhibition outlet moving amateur filmmaking from private into public space; digital editing is far simpler than editing Super-8 or video and thus opens up a space for amateur artists to reshape their material more directly; the home PC has even enabled the amateur filmmaker to mimic the special effects associated with Hollywood blockbusters like *Star Wars*. Digital cinema is a new chapter in the complex history of interactions between amateur

filmmakers and the commercial media. These films remain amateur, in the sense that they are made on low budgets, produced and distributed in non-commercial contexts, and generated by nonprofessional filmmakers (albeit often by people who want entry into the professional sphere). Yet many of the other classic markers of amateur film production have disappeared. No longer home movies, these films are public movies—public in that, from the start, they are intended for audiences beyond the filmmaker's immediate circle of friends and acquaintances; public in their content, which involves the reworking of popular mythologies; and public in their dialogue with the commercial cinema.

Digital filmmakers tackled the challenge of making *Star Wars* movies for many different reasons. As *George Lucas in Love* co-creator Joseph Levy has explained, "Our only intention . . . was to do something that would get the agents and producers to put the tapes into their VCRs instead of throwing them away."[13] *Kid Wars* (2000) director Dana Smith is a fourteen-year-old who had recently acquired a camcorder and decided to stage scenes from *Star Wars* involving his younger brother and his friends, who armed themselves for battle with squirt guns and Nerf weapons. *The Jedi Who Loved Me* (2000) was shot by the members of a wedding party and intended as a tribute to the bride and groom, who were *Star Wars* fans. Some films—such as *Macbeth* (1998)—were school projects. Two high school students—Bienvenido Concepcion and Don Fitz-Roy—shot the film, which creatively blurred the lines between Lucas and Shakespeare, for their high school advanced-placement English class. They staged light-saber battles down the school hallway, though the principal was concerned about potential damage to lockers; the Millennium Falcon lifted off from the gym, though they had to composite it over the cheerleaders who were rehearsing the day they shot that particular sequence. Still other films emerged as collective projects for various *Star Wars* fan clubs. *Boba Fett: Bounty Trail* (2002), for example, was filmed for a competition hosted by a Melbourne, Australia, Lucasfilm convention. Each cast member made his or her own costumes, building on previous experience with science-fiction masquerades and costume contests. Their personal motives for making such films are of secondary interest, however, once they are distributed on the web. If such films are attracting worldwide interest, it is not because we all care whether Bienvenido Concepcion and Don Fitz-Roy got a good grade on their Shakespeare assignment. Rather, what motivated faraway viewers to watch such films is their shared investment in the *Star Wars* universe.

Amateur filmmakers are producing commercial- or near-commercial-quality content on minuscule budgets. They remain amateur in the sense that

they do not earn their revenue through their work (much the way we might call Olympic athletes amateur), but they are duplicating special effects that had cost a small fortune to generate only a decade earlier. Amateur filmmakers can make pod racers skim along the surface of the ocean or land speeders scatter dust as they zoom across the desert. They can make laser beams shoot out of ships and explode things before our eyes. Several fans tried their hands at duplicating Jar Jar's character animation and inserting him into their own movies, with varying degrees of success. The light-saber battle, however, has become the gold standard of amateur filmmaking, with almost every filmmaker compelled to demonstrate his or her ability to achieve this particular effect. Many of the *Star Wars* shorts, in fact, consist of little more than light-saber battles staged in suburban dens and basements, in empty lots, in the hallways of local schools, inside shopping malls, or more exotically against the backdrop of medieval ruins (shot during vacations). Shane Faleux used an open-source approach to completing his forty-minute opus, *Star Wars: Revelations* (2005), one of the most acclaimed recent works in the movement (fig. 15.2). As Faleux explained, "*Revelations* was created to give artisans and craftsmen the chance to showcase their work, allow all those involved a chance to live the dream, and maybe—just maybe—open the eyes in the industry as to what can be done with a small budget, dedicated people, and undiscovered talent."[14] Hundreds of people around the world contributed to the project, including more than thirty different computer-graphics artists, ranging from folks within special-effects companies to talented teenagers. When the film was released via the web, more than a million people downloaded it.

As amateur filmmakers are quick to note, Lucas and Steven Spielberg both made Super-8 fiction films as teenagers and saw this experience as a major influence on their subsequent work. Although these films are not publicly available, some of them have been discussed in detail in various biographies and magazine profiles. These "movie brat" filmmakers have been quick to embrace the potentials of digital filmmaking, not simply as a means of lowering production costs for their own films but also as a training ground for new talent. Lucas, for example, told *Wired* magazine, "Some of the special effects that we redid for *Star Wars* were done on a Macintosh, on a laptop, in a couple of hours. . . . I could have very easily shot the Young Indy TV series on Hi-8. . . . So you can get a Hi-8 camera for a few thousand bucks, more for the software and the computer for less than $10,000 you have a movie studio. There's nothing to stop you from doing something provocative and significant in that medium."[15] Lucas's rhetoric about the potentials of digital

Fig. 15.2. Publicity materials created for *Star Wars: Revelations*, a forty-minute opus made through the combined efforts of hundreds of fan filmmakers worldwide.

filmmaking has captured the imagination of amateur filmmakers, and they are taking on the master on his own ground.

As Clay Kronke, a Texas A&M University undergraduate who made *The New World* (1999), explained, "This film has been a labor of love. A venture into a new medium. . . . I've always loved light sabers and the mythos of the Jedi and after getting my hands on some software that would allow me to actually become what I had once only admired at a distance, a vague idea soon started becoming a reality. . . . Dude, we're gonna be Jedi."[16] Kronke openly celebrates the fact that he made the film on a $26.79 budget, with most of the props and costumes part of their preexisting collections of *Star Wars* paraphernalia, that the biggest problem they faced on the set was that their plastic light sabers kept shattering, and that its sound effects included "the sound of a coat hanger against a metal flashlight, my microwave door, and myself falling on the floor several times."

The mass marketing of *Star Wars* inadvertently provided many of the resources needed to support these productions. *Star Wars* is, in many ways, the prime example of media convergence at work. Lucas's decision to defer salary for the first *Star Wars* film in favor of maintaining a share of ancillary profits has been widely cited as a turning point in the emergence of this new strategy of media production and distribution. Lucas made a ton of money, and Twentieth Century Fox Film Corporation learned a valuable lesson. Kenner's *Star Wars* action figures are thought to have been the key in reestablishing the value of media tie-in products in the toy industry, and John Williams's score helped

to revitalize the market for soundtrack albums. The rich narrative universe of the *Star Wars* saga provided countless images, icons, and artifacts that could be reproduced in a wide variety of forms. Despite the lengthy gap between the release dates for *Return of the Jedi* (1983) and *The Phantom Menace* (1999), Lucasfilm continued to generate profits from its *Star Wars* franchise through the production of original novels and comic books, the distribution of video tapes and audio tapes, the continued marketing of *Star Wars* toys and merchandise, and the maintenance of an elaborate publicity apparatus, including a monthly glossy newsletter for *Star Wars* fans.

Many of these toys and trinkets were trivial when read in relation to other kinds of transmedia storytelling: they add little new information to the expanding franchise. Yet they took on deeper meanings as they became resources for children's play or for digital filmmaking. The amateur filmmakers often make use of commercially available costumes and props, sample music from the soundtrack album and sounds of *Star Wars* videos or computer games, and draw advice on special-effects techniques from television documentaries and mass-market magazines. For example, the makers of *Duel* described the sources for their soundtrack: "We sampled most of the light saber sounds from *The Empire Strikes Back* Special Edition laserdisc, and a few from *A New Hope*. *Jedi* was mostly useless to us, as the light saber battles in the film are always accompanied by music. The kicking sounds are really punch sounds from *Raiders of the Lost Ark*, and there's one sound—Hideous running across the sand—that we got from *Lawrence of Arabia*. Music, of course, comes from *The Phantom Menace* soundtrack."[17] The availability of these various ancillary products has encouraged these filmmakers, since childhood, to construct their own fantasies within the *Star Wars* universe. One fan critic explained, "Odds are if you were a kid in the seventies, you probably fought in schoolyards over who would play Han, lost a Wookiee action figure in your backyard and dreamed of firing that last shot on the Death Star. And probably your daydreams and conversations weren't about William Wallace, Robin Hood or Odysseus, but, instead, light saber battles, frozen men and forgotten fathers. In other words, we talked about our legend."[18] The action figures provided this generation with some of their earliest avatars, encouraging them to assume the role of a Jedi Knight or an intergalactic bounty hunter, enabling them to physically manipulate the characters to construct their own stories.

Not surprisingly, a significant number of filmmakers in their late teens and early twenties have turned toward those action figures as resources for their first production efforts. *Toy Wars* (2002) producers Aaron Halon and Jason VandenBerghe launched an ambitious plan to produce a shot-

by-shot remake of *Star Wars: A New Hope*, cast entirely with action figures. These action-figure movies require constant resourcefulness on the part of the amateur filmmakers. Damon Wellner and Sebastian O'Brien, two self-proclaimed "action-figure nerds" from Cambridge, Massachusetts, formed Probot Productions with the goal of "making toys as alive as they seemed in childhood." The Probot website (www.probotproductions.com) offers this explanation of their production process:

> The first thing you need to know about Probot Productions is that we're broke. We spend all our $$$ on toys. This leaves a very small budget for special effects, so we literally have to work with what we can find in the garbage. . . . For sets we used a breadbox, a ventilation tube from a dryer, cardboard boxes, a discarded piece from a vending machine, and milk crates. Large Styrofoam pieces from stereo component boxes work very well to create spaceship-like environments![19]

No digital filmmaker has pushed the aesthetics of action-figure cinema as far as Evan Mather. Mather's films, such as *Godzilla versus Disco Lando*, *Kung Fu Kenobi's Big Adventure*, and *Quentin Tarantino's Star Wars*, represent a no-holds-barred romp through contemporary popular culture. The rock-'em, sock-'em action of *Kung Fu Kenobi's Big Adventure* takes place against the backdrop of settings sampled from the film, drawn by hand, or built from LEGO blocks, with the eclectic and evocative soundtrack borrowed from Neil Diamond, *Mission Impossible* (1996), *Pee-Wee's Big Adventure* (1985), and *A Charlie Brown Christmas* (1965). Disco Lando puts the moves on everyone from Admiral Ackbar to Jabba's blue-skinned dancing girl, and all of his pickup lines come from the soundtrack of *The Empire Strikes Back*. Mace Windu "gets medieval" on the Jedi Council, delivering Samuel L. Jackson's lines from *Pulp Fiction* (1994) before shooting up the place. The camera focuses on the bald head of a dying Darth Vader as he gasps, "Rosebud." Apart from the anarchic humor and rapid-fire pace, Mather's films stand out because of their visual sophistication. Mather's own frenetic style has become increasingly distinguished across the body of his works, constantly experimenting with different forms of animation, flashing or masked images, and dynamic camera movements.

Yet, if the action-figure filmmakers have developed an aesthetic based on their appropriation of materials from the mainstream media, then the mainstream media has been quick to imitate that aesthetic. Nickelodeon's short-lived *Action League Now!!!* (1994), for example, had a regular cast of char-

acters consisting of mismatched dolls and mutilated action figures. In some cases, their faces had been melted or mangled through inappropriate play. One protagonist had no clothes. They came in various size scales, suggesting the collision of different narrative universes that characterizes children's action-figure play. MTV's *Celebrity Deathmatch* (1998) created its action figures using claymation, staging World Wrestling Federation–style bouts between various celebrities, some likely (Monica Lewinsky against Hillary Clinton), some simply bizarre (the rock star formerly known as Prince against Prince Charles).

Or consider the case of the Cartoon Network's *Robot Chicken* (a stop-motion animation series) produced by Seth Green (formerly of *Buffy the Vampire Slayer* and *Austin Powers*) and Matthew Senreich: think of it as a sketch-comedy series where all of the parts are played by action figures. The show spoofs popular culture, mixing and matching characters with the same reckless abandon as a kid playing on the floor with his favorite collectibles. In its rendition of MTV's *The Real World*, Superman, Aquaman, Batman, Wonder Woman, Cat Woman, the Hulk, and other superheroes share an apartment and deal with real-life issues, such as struggles for access to the bathroom or conflicts about who is going to do household chores. Or, in its take on *American Idol*, the contestants are zombies of dead rock stars, and the judges are breakfast-cereal icons—Frankenberry (as Randy), Booberry (as Paula), and Count Chocula (as Simon).

The series originated as part of a regular feature in *Toy Fare*, a niche magazine which targets action-figure collectors and model builders. Seth Green, a fan of the publication, asked the magazine's contributors to help him put together a special animated segment for Green's forthcoming appearance on *The Conan O'Brien Show*, which in turn led to an invitation to produce a series of web toons for Sony's short-lived but highly influential Screenblast, which in turn led to an invitation to produce a television series as part of the Cartoon Network's "Adult Swim" lineup. We can thus trace step by step how this concept moves from the fan subculture across a range of sites noted for cult media content.[20] News coverage of the series stresses Seth Green's own status as a toy collector and often describes the challenges faced by the program's "toy wrangler," who goes onto eBay or searches retro shops for the specific toys needed to cast segments, blurring the line between amateur and commercial media-making practices.[21]

The web represents a site of experimentation and innovation, where amateurs test the waters, developing new practices and themes and generating materials that may well attract cult followings on their own terms. The most

commercially viable of those practices are then absorbed into the main-stream media, either directly through the hiring of new talent or the development of television, video, or big-screen works based on those materials, or indirectly, through a second-order imitation of the same aesthetic and thematic qualities. In return, the mainstream media materials may provide inspiration for subsequent amateur efforts, which push popular culture in new directions. In such a world, fan works can no longer be understood as simply derivative of mainstream materials but must be understood as themselves open to appropriation and reworking by the media industries.

"The 500-Pound Wookiee"

Fans take reassurance that Lucas and his cronies, at least sometimes, take a look at what fans have made and send them his blessing. In fact, part of the allure of participating in the official *Star Wars* fan cinema competition is the fact that Lucas personally selects the winner from finalists identified by AtomFilms' Chris Albrecht and vetted by staffers at LucasArts. There is no doubt that Lucas personally likes at least some form of fan creativity. As Albrecht explains, "Hats off to Lucas for recognizing that this is happening and giving the public a chance to participate in a universe they know and love. There's nothing else like this out there. No other producer has gone this far."[22] On other levels, the company—and perhaps Lucas himself—has wanted to control what fans produced and circulated. Jim Ward, vice president of marketing for Lucasfilm, told *New York Times* reporter Amy Harmon in 2002, "We've been very clear all along on where we draw the line. We love our fans. We want them to have fun. But if in fact somebody is using our characters to create a story unto itself, that's not in the spirit of what we think fandom is about. Fandom is about celebrating the story the way it is."[23] Lucas wants to be "celebrated" but not appropriated.

Lucas has opened up a space for fans to create and share what they create with others but only on his terms. The franchise has struggled with these issues from the 1970s to the present, desiring some zone of tolerance within which fans can operate while asserting some control over what happens to his story. In that history, there have been some periods when the company was highly tolerant and others when it was pretty aggressive about trying to close off all or some forms of fan fiction. At the same time, the different divisions of the same company have developed different approaches to dealing with fans: the games division has thought of fans in ways consistent with how other game companies think about fans (and is probably on the more

permissive end of the spectrum), and the film division has tended to think like a motion-picture company and has been a bit less comfortable with fan participation. I make this point not to say LucasArts is bad to fans—in many ways, the company seems more forward thinking and responsive to the fan community than most Hollywood companies—but to illustrate the ways the media industry is trying to figure out its response to fan creativity.

In the beginning, Lucasfilm actively encouraged fan fiction, establishing a no-fee licensing bureau in 1977 that would review material and offer advice about potential copyright infringement.[24] By the early 1980s, these arrangements broke down, allegedly because Lucas had stumbled onto some examples of fan erotica that shocked his sensibilities. By 1981, Lucasfilm was issuing warnings to fans who published zines containing sexually explicit stories, while implicitly giving permission to publish nonerotic stories about the characters as long as they were not sold for profit: "Since all of the *Star Wars* saga is PG-rated, any story those publishers print should also be PG. Lucasfilm does not produce any X-rated *Star Wars* episodes, so why should we be placed in a light where people think we do?"[25] Most fan erotica was pushed underground by this policy, though it continued to circulate informally. The issue resurfaced in the 1990s: fan fiction of every variety thrived on the "electronic frontier." One website, for example, provided regularly updated links to fan and fan-fiction websites for more than 153 films, books, and television shows, ranging from *Airwolf* (1984) to *Zorro* (1975).[26] *Star Wars* zine editors poked their heads above ground, cautiously testing the waters. Jeanne Cole, a spokesperson for Lucasfilm, explained, "What can you do? How can you control it? As we look at it, we appreciate the fans, and what would we do without them? If we anger them, what's the point?"[27]

Media scholar Will Brooker cites a 1996 corporate notice that explains, "Since the internet is growing so fast, we are in the process of developing guidelines for how we can enhance the ability of *Star Wars* fans to communicate with each other without infringing on *Star Wars* copyrights and trademarks."[28] The early lawless days of the Internet were giving way to a period of heightened corporate scrutiny and expanding control. Even during what might be seen as a "honeymoon" period, some fans felt that Lucasfilm was acting like a "500-pound Wookiee," throwing its weight around and making threatening noises.[29]

Lucasfilm's perspective seemed relatively enlightened, even welcoming, when compared with how other media producers responded to their fans. In the late 1990s, Viacom experimented with a strong-arm approach to fan culture—starting in Australia. A representative of the corporation called

together leaders of fan clubs from across the country and laid down new guidelines for their activities.[30] These guidelines prohibited the showing of series episodes at club meetings unless those episodes had previously been made commercially available in that market. (This policy has serious consequences for Australian fans because they often get series episodes a year or two after they air in the United States, and the underground circulation and exhibition of video tapes had enabled them to participate actively in online discussions.) Similarly, Viacom cracked down on the publication and distribution of fanzines and prohibited the use of *Star Trek* (1966) trademarked names in convention publicity. Their explicitly stated goal was to push fans toward participation in a corporately controlled fan club.

In 2000, Lucasfilm offered *Star Wars* fans free web space (www.starwars.com) and unique content for their sites, but only under the condition that whatever they created would become the studio's intellectual property. As the official notice launching this new "Homestead" explained, "To encourage the on-going excitement, creativity, and interaction of our dedicated fans in the online *Star Wars* community, Lucas Online (http://www.lucasfilm.com/divisions/online/) is pleased to offer for the first time an official home for fans to celebrate their love of *Star Wars* on the World Wide Web."[31] Historically, fan fiction had proven to be a point of entry into commercial publication for at least some amateurs, who were able to sell their novels to the professional book series centering on the various franchises. If Lucasfilm Ltd. claimed to own such rights, they could publish them without compensation, and they could also remove them without permission or warning.

Elizabeth Durack was one of the more outspoken leaders of a campaign urging her fellow *Star Wars* fans not to participate in these new arrangements: "That's the genius of Lucasfilm's offering fans web space—it lets them both look amazingly generous *and* be even more controlling than before. . . . Lucasfilm doesn't hate fans, and they don't hate fan websites. They can indeed see how they benefit from the free publicity they represent—and who doesn't like being adored? This move underscores that as much as anything. But they're also scared, and that makes them hurt the people who love them."[32] Durack argued that fan fiction does indeed pay respect to Lucas as the creator of *Star Wars*, yet the fans also wanted to hold on to their right to participate in the production and circulation of the *Star Wars* saga that had become so much a part of their lives: "It has been observed by many writers that *Star Wars* (based purposely on the recurring themes of mythology by creator George Lucas) and other popular media creations take the place in modern America that culture myths like those of the Greeks or Native

Americans did for earlier peoples. Holding modern myths hostage by way of corporate legal wrangling seems somehow contrary to nature."

Today, relations between LucasArts and the fan-fiction community have thawed somewhat. Though I haven't been able to find any official statement signaling a shift in policy, *Star Wars* fan fiction is all over the web, including on several of the most visible and mainstream fan sites. The webmasters of those sites say that they deal with the official production company all the time on a range of different matters, but they have never been asked to remove what once might have been read as infringing materials. Yet what Lucas giveth, he can also taketh away. Many fan writers have told me that they remain nervous about how the "Powers That Be" are apt to respond to particularly controversial stories.

Lucas and his movie-brat cronies clearly identified more closely with the young digital filmmakers who were making "calling card" movies to try to break into the film industry than they did with female fan writers sharing their erotic fantasies. By the end of the 1990s, however, Lucas's tolerance of fan filmmaking had given way to a similar strategy of incorporation and containment. In November 2000, Lucasfilm designated the commercial digital-cinema site AtomFilms.com as the official host for *Star Wars* fan films. The site would provide a library of official sound effects and run periodic contests to recognize outstanding amateur accomplishment. In return, participating filmmakers would agree to certain constraints on content: "Films must parody the existing *Star Wars* universe, or be a documentary of the *Star Wars* fan experience. No 'fan fiction'—which attempts to expand on the *Star Wars* universe—will be accepted. Films must not make use of copyrighted *Star Wars* music or video, but may use action figures and the audio clips provided in the production kit section of this site. Films must not make unauthorized use of copyrighted property from any other film, song, or composition."[33] Here, we see the copyright regimes of mass culture being applied to the folk culture process.

A work like *Star Wars: Revelations* would be prohibited from entering the official *Star Wars* competition because it sets its own original dramatic story in the interstices between the third and fourth *Star Wars* films and thus constitutes "fan fiction." Albrecht, the man who oversees the competition, offered several explanations for the prohibition. For one thing, Lucas saw himself and his company as being at risk for being sued for plagiarism if he allowed himself to come into contact with fan-produced materials that mimicked the dramatic structure of the film franchise should anything in any official *Star Wars* material make use of similar characters or situations.

For another, Albrecht suggested, there was a growing risk of consumer confusion about what constituted an official *Star Wars* product. Speaking about *Revelations*, Albrecht suggested, "Up until the moment the actors spoke, you wouldn't be able to tell whether that was a real *Star Wars* film or a fan creation because the special effects are so good. . . . As the tools get better, there is bound to be confusion in the marketplace." In any case, Lucasfilm would have had much less legal standing in shutting down parody, which enjoys broad protections under current case law, or documentaries about the phenomenon itself, which would fall clearly into the category of journalistic and critical commentary. Lucasfilm was, in effect, tolerating what it legally must accept in return for shutting down what it might otherwise be unable to control.

These rules are anything but gender neutral: though the gender lines are starting to blur in recent years, the overwhelming majority of fan parody is produced by men, while "fan fiction" is almost entirely produced by women. In the female fan community, fans have long produced "song videos" that are edited together from found footage drawn from film or television shows and set to pop music. These fan vids often function as a form of fan fiction to draw out aspects of the emotional lives of the characters or otherwise get inside their heads. They sometimes explore underdeveloped subtexts of the original film, offer original interpretations of the story, or suggest plotlines that go beyond the work itself. The emotional tone of these works could not be more different from the tone of the parodies featured in the official contests—films such as *Sith Apprentice*, where the Emperor takes some would-be stormtroopers back to the board room; *Anakin Dynamite*, where a young Jedi must confront "idiots" much like his counterpart in the cult success *Napoleon Dynamite* (2004); or *Intergalactic Idol* (2003), where audiences get to decide which contestant really has the force. By contrast, Diane Williams's *Come What May* (2001), a typical song vid, uses images from *The Phantom Menace* to explore the relationship between Obi-Wan Kenobi and his mentor, Qui-Gon Jinn. The images show the passionate friendship between the two men and culminate in the repeated images of Obi-Wan cradling the crumbled body of his murdered comrade following his battle with Darth Maul. The images are accompanied by the song "Come What May," taken from the soundtrack of Baz Luhrmann's *Moulin Rouge!* (2001) and performed by Ewan McGregor, the actor who also plays the part of Obi-Wan Kenobi in *Phantom Menace*.

Whether AtomFilms would define such a work to be a parody would be a matter of interpretation: while playful at places, it lacks the broad comedy of

most of the male-produced *Star Wars* movies, involves a much closer iden-
tification with the characters, and hints at aspects of their relationship that
have not explicitly been represented on screen. *Come What May* would be
read by most fans as falling within the slash subgenre, constructing erotic
relations between same-sex characters, and would be read melodramatically
rather than satirically. Of course, from a legal standpoint, *Come What May*
may represent parody, which doesn't require that the work be comical but
simply that it be appropriate and transform the original for the purposes of
critical commentary. It would be hard to argue that a video that depicts Obi-
Wan and Qui-Gon as lovers does not transform the original in a way that
expands its potential meanings. Most likely, this and other female-produced
song videos would be regarded as fan fiction; *Come What May* would also
run afoul of AtomFilms' rules against appropriating content from the films
or from other media properties.

These rules create a two-tier system: some works can be rendered more
public because they conform to what the rights holder sees as an acceptable
appropriation of their intellectual property, while others remain hidden from
view (or at least distributed through less official channels). In this case, these
works have been so cut off from public visibility that when I ask *Star Wars*
digital filmmakers about the invisibility of these mostly female-produced
works, most of them have no idea that women were even making *Star Wars*
movies.

Anthropologist and marketing consultant Grant McCracken has expressed
some skepticism about the parallels fans draw between their grassroots cul-
tural production and traditional folk culture: "Ancient heroes did not belong
to everyone, they did not serve everyone, they were not for everyone to do
with what they would. These commons were never very common."[34] For the
record, my claims here are altogether more particularized than the sweeping
analogies to Greek myths that provoked McCracken's ire. He is almost cer-
tainly right that who could tell those stories, under what circumstances, and
for what purposes reflected hierarchies operating within classical culture. My
analogy, on the other hand, refers to a specific moment in the emergence
of American popular culture, when songs often circulated well beyond their
points of origin, lost any acknowledgment of their original authorship, were
repurposed and reused to serve a range of different interests, and were very
much part of the texture of everyday life for a wide array of nonprofessional
participants. This is how folk culture operated in an emergent democracy.

I don't want to turn back the clock to some mythic golden age. Rather, I
want us to recognize the challenges posed by the coexistence of these two

kinds of cultural logic. The kinds of production practices we are discussing here were a normal part of American life over this period. They are simply more visible now because of the shift in distribution channels for amateur cultural productions. If the corporate media couldn't crush this vernacular culture during the age when mass media power went largely unchallenged, it is hard to believe that legal threats are going to be an adequate response to a moment when new digital tools and new networks of distribution have expanded the power of ordinary people to participate in their culture. Having felt that power, fans and other subcultural groups are not going to return to docility and invisibility. They will go farther underground *if they have to*—they've been there before—but they aren't going to stop creating.

This is where McCracken's argument rejoins my own. McCracken argues that there is ultimately no schism between the public interest in expanding opportunities for grassroots creativity and the corporate interest in protecting its intellectual property: "Corporations will allow the public to participate in the construction and representation of its creations or they will, eventually, compromise the commercial value of their properties. The new consumer will help create value or they will refuse it. . . . Corporations have a right to keep copyright but they have an interest in releasing it. The economics of scarcity may dictate the first. The economics of plenitude dictate the second."[35] The expanding range of media options, what McCracken calls the "economics of plenitude," will push companies to open more space for grassroots participation and affiliation—starting perhaps with niche companies and fringe audiences but eventually moving toward the commercial and cultural mainstream. McCracken argues that those companies that loosen their copyright control will attract the most active and committed consumers, and those that ruthlessly set limits will find themselves with a dwindling share of the media marketplace.[36] Of course, this model depends on fans and audience members acting collectively in their own interest against companies that may tempt them with entertainment that is otherwise tailored to their needs. The production companies are centralized and can act in a unified manner; fans are decentralized and have no ability to ensure conformity within their rights. And so far, the media companies have shown a remarkable willingness to antagonize their consumers by taking legal actions against them in the face of all economic rationality. This is going to be an uphill fight under the best of circumstances. The most likely way for it to come about, however, may be to create some successes that demonstrate the economic value of engaging the participatory audience.

Design Your Own Galaxy

Adopting a collaborationist logic, the creators of massively multiplayer online role-playing games (MMORPGs) have already built a more open-ended and collaborative relationship with their consumer base. Game designers acknowledge that their craft has less to do with prestructured stories than with creating the preconditions for spontaneous community activities. Raph Koster, the man LucasArts placed in charge of developing *Star Wars Galaxies*, built his professional reputation as one of the prime architects of *Ultima Online* (1997). He was the author of an important statement of players' rights before he entered the games industry, and he has developed a strong design philosophy focused on empowering players to shape their own experiences and build their own communities. Asked to describe the nature of the MMORPG, Koster famously explained, "It's not just a game. It's a service, it's a world, it's a community."[37] Koster also refers to managing an online community, whether a noncommercial MUD or a commercial MMORPG, as an act of governance: "Just like it is not a good idea for a government to make radical legal changes without a period of public comment, it is often not wise for an operator of an online world to do the same."[38]

Players, he argues, must feel a sense of "ownership" over the imaginary world if they are going to put in the time and effort needed to make it come alive for themselves and for other players. Koster argues, "You can't possibly mandate a fictionally involving universe with thousands of other people. The best you can hope for is a world that is vibrant enough that people act in manners consistent with the fictional tenets."[39] For players to participate, they must feel that what they bring to the game makes a difference, not only in terms of their own experiences but also the experiences of other players. Writing about the challenges of meeting community expectations on *Ultima Online*, Koster explains, "They want to shape their space, and leave a lasting mark. You must provide some means for them to do so."[40] Richard Bartle, another game designer and theorist, agrees: "Self expression is another way to promote immersion. By giving players free-form ways to communicate themselves, designers can draw them more deeply into the world—they feel more of a part of it."[41]

Koster is known as a strong advocate of the idea of giving players room to express themselves within the game world:

Making things of any sort does generally require training. It is rare in any medium that the naïf succeeds in making something really awesome or

popular. By and large it is people who have taught themselves the craft and are making conscious choices. But I absolutely favor empowering people to engage in these acts of creation, because not only does talent bubble up but also economies of scale apply. If you get a large enough sample size, you will eventually create something good.

As Koster turned his attention to developing *Star Wars Galaxies*, he realized that he was working with a franchise known in all of its details by hardcore fans who had grown up playing these characters with action figures or in their backyard and who wanted to see those same fantasies rendered in the digital realm. In an open letter to the *Star Wars* fan community, Koster described what he hoped to bring to the project:

> *Star Wars* is a universe beloved by many. And I think many of you are like me. You want to be there. You want to feel what it is like. Even before we think about skill trees and about Jedi advancement, before we consider the stats on a weapon or the distance to Mos Eisley and where you have to go to pick up power converters—you want to just *be* there. Inhale the sharp air off the desert. Watch a few Jawas haggle over a droid. Feel the sun beat down on a body that isn't your own, in a world that is strange to you. You don't want to know about the stagecraft in those first few moments. You want to feel like you are offered a passport to a universe of limitless possibility. . . . My job is to try to capture that magic for you, so you have that experience."[42]

Satisfying fan interests in the franchise proved challenging. Koster told me, "There's no denying it—the fans know *Star Wars* better than the developers do. They live and breathe it. They know it in an intimate way. On the other hand, with something as large and broad as the *Star Wars* universe, there's ample scope for divergent opinions about things. These are the things that lead to religious wars among fans, and all of a sudden you have to take a side because you are going to be establishing how it works in this game."

To ensure that fans bought into his version of the *Star Wars* universe, Koster essentially treated the fan community as his client team, posting regular reports on the web about many different elements of the game's design, creating an online forum where potential players could respond and make suggestions, ensuring that his staff regularly monitored the online discussion and posted back their own reactions to the community's recommendations. By comparison, the production of a *Star Wars* film is shrouded by secrecy.

Koster compares what he did with the test-screening or focus-group process many Hollywood films endure, but the difference is that much of that testing goes on behind closed doors, among select groups of consumers, and is not open to participation by anyone who wants to join the conversation. It is hard to imagine Lucas setting up a forum site to preview plot twists and character designs with his audience. If he had done so, he would never have included Jar Jar Binks or devoted so much screen time to the childhood and adolescence of Anakin Skywalker, decisions that alienated his core audience. Koster wanted *Star Wars* fans to feel that they had, in effect, designed their own galaxy.

Games scholars Kurt Squire and Constance Steinkuehler have studied the interactions between Koster and his fan community. Koster allowed fans to act as "content generators creating quests, missions, and social relationships that constitute the *Star Wars* world," but more importantly, fan feedback "set the tone" for the *Star Wars* culture:

> These players would establish community norms for civility and role playing, giving the designers an opportunity to effectively *create* the seeds of the *Star Wars Galaxies* world months before the game ever hit the shelves. . . . The game that the designers promised and the community expected was largely player-driven. The in-game economy would consist of items (e.g., clothing, armor, houses, weapons) created by players with its prices also set by players through auctions and player-run shops. Cities and towns would be designed by players, and cities' mayors and council leaders would devise missions and quests for other players. The Galactic Civil War (the struggle between rebels and imperials) would frame the game play, but players would create their own missions as they enacted the *Star Wars* saga. In short, the system was to be driven by *player interaction*, with the world being created less by designers and more by players themselves.[43]

Players can adopt the identities of many different alien races, from Jawas to Wookiees, represented in the *Star Wars* universe, assume many different professional classes—from pod racers to bounty hunters—and play out many different individual and shared fantasies. What they cannot do is adopt the identity of any of the primary characters of the *Star Wars* movies, and they have to earn the status of Jedi Knight by completing a series of different in-game missions. Otherwise, the fiction of the game world would break down as thousands of Han Solos tried to avoid capture by thousands of Boba Fetts. For the world to feel coherent, players had to give up their childhood fantasies of

being the star and instead become a bit player, interacting with countless other bit players, within a mutually constructed fantasy. What made it possible for such negotiations and collaborations to occur was the fact that they shared a common background in the already well-established *Star Wars* mythology. As Squire and Steinkuehler note, "Designers cannot require Jedis to behave consistently within the *Star Wars* universe, but they *can* design game structures (such as bounties) that elicit Jedi-like behavior (such as placing a high reward on capturing a Jedi which might produce covert action on the part of Jedis)."[44]

Coming full circle, a growing number of gamers are using the sets, props, and characters generated for the *Star Wars Galaxies* game as resources to produce their own fan films. In some cases, they are using them to do their own dramatic reenactments of scenes from the movie or to create, gasp, their own "fan fiction." Perhaps the most intriguing new form of fan cinema to emerge from the game world is the so-called Cantina Crawl.[45] In the spirit of the cantina sequence in the original *Star Wars* feature film, the game created a class of characters whose function in the game world is to entertain the other players. They were given special moves that allow them to dance and writhe erotically if the players hit complex combinations of keys. Teams of more than three-dozen dancers and musicians plan, rehearse, and execute elaborate synchronized musical numbers: for example, The Gypsies' *Christmas Crawl 1* featured such numbers as "Santa Claus Is Coming to Town" and "Have Yourself a Merry Little Christmas"; blue-skinned and tentacle-haired dance girls shake their bootie, lizard-like aliens in Santa caps play the sax, and guys with gills do boy-band moves while twinkly snowflakes fall all around them (fig. 15.3). Imagine what *Star Wars* would have looked like if it had been directed by Lawrence Welk! Whatever aesthetic abuse is taking place here, one has to admire the technical accomplishment and social coordination that goes into producing these films. Once you put creative tools in the hands of everyday people, there's no telling what they are going to make with them—and that's a large part of the fun.

Xavier, one of the gamers involved in producing the Cantina Crawl videos, would turn the form against the production company, creating a series of videos protesting corporate decisions which he felt undermined his engagement with the game. Ultimately, Xavier produced a farewell video announcing the mass departure of many loyal fans. The fan-friendly policies Koster created had eroded over time, leading to increased player frustration and distrust. Some casual players felt the game was too dependent on player-generated content, while the more creative players felt that upgrades actually restricted their ability to express themselves and marginalized the

Fig. 15.3. Each character in this musical number from
The Gypsies' *Christmas Crawl 1*, made using the *Star
Wars Galaxies* game, is controlled by a separate player.

Entertainer class from the overall experience. At the same time, the game
failed to meet the company's own revenue expectations, especially in the face
of competition from the enormously successful *World of Warcraft*.

In December 2005, the company announced plans to radically revamp
the game's rules and content, a decision that resulted in massive defections
without bringing in many new customers. A statement made by Nancy
MacIntyre, the game's senior director at LucasArts, to the *New York Times*
illustrates the huge shift in thinking from Koster's original philosophy to this
"retooled" franchise:

> We really just needed to make the game a lot more accessible to a much
> broader player base. There was lots of reading, much too much, in the
> game. There was a lot of wandering around learning about different abili-
> ties. We really needed to give people the experience of being Han Solo or
> Luke Skywalker rather than being Uncle Owen, the moisture farmer. We
> wanted more instant gratification: kill, get treasure, repeat. We needed to
> give people more of an opportunity to be a part of what they have seen in
> the movies rather than something they had created themselves.[46]

Over a concise few sentences, MacIntyre had stressed the need to simplify
the content, had indicated plans to recenter the game around central char-
acters from the films rather than a more diverse range of protagonists, had
dismissed the creative contributions of fans, and had suggested that *Star Wars
Galaxies* would be returning to more conventional game mechanics. This
"retooling" was the kind of shift in policy without player input that Koster had
warned might prove fatal to these efforts. Thanks to the social networks that

fans have constructed around the game, soon every gamer on the planet knew that MacIntyre had called her players idiots in the *New York Times*, and many of them departed for other virtual worlds which had more respect for their participation—helping, for example, to fuel the early growth of *Second Life*.

Where Do We Go from Here?

It is too soon to tell whether these experiments in consumer-generated content will have an influence on the mass media companies. In the end, it depends on how seriously, if at all, we should take their rhetoric about enfranchising and empowering consumers as a means of building strong brand loyalties. For the moment, the evidence is contradictory: for every franchise which has reached out to court its fan base, there are others that have fired out cease-and-desist letters. As we confront the intersection between corporate and grassroots modes of convergence, we shouldn't be surprised that neither producers nor consumers are certain what rules should govern their interactions, yet both sides seem determined to hold the other accountable for their choices. The difference is that the fan community must negotiate from a position of relative powerlessness and must rely solely on its collective moral authority, while the corporations, for the moment, act as if they had the force of law on their side.

Ultimately, the prohibitionist position is not going to be effective on anything other than the most local level unless the media companies can win back popular consent; whatever lines they draw are going to have to respect the growing public consensus about what constitutes fair use of media content and must allow the public to participate meaningfully in their own culture. To achieve this balance, the studios are going to have to accept (and actively promote) some basic distinctions: between commercial competition and amateur appropriation, between for-profit use and the barter economy of the web, between creative repurposing and piracy.

Each of these concessions will be hard for the studios to swallow but necessary if they are going to exert sufficient moral authority to rein in the kinds of piracy that threaten their economic livelihood. On bad days, I don't believe the studios will voluntarily give up their stranglehold on intellectual property. What gives me some hope, however, is the degree to which a collaborationist approach is beginning to gain some toehold within the media industries. These experiments suggest that media producers can garner greater loyalty and more compliance to legitimate concerns if they court the allegiance of fans; the best way to do this turns out to be giving them some

stake in the survival of the franchise, ensuring that the provided content more fully reflects their interests, creating a space where they can make their own creative contributions, and recognizing the best work that emerges. In a world of ever-expanding media options, there is going to be a struggle for viewers the likes of which corporate media has never seen before. Many of the smartest folks in the media industry know this: some are trembling, and others are scrambling to renegotiate their relationships with consumers. In the end, the media producers need fans just as much as fans need them.

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Gin, Television, and Social Surplus

CLAY SHIRKY

I was recently reminded of something I read in college, way back in the last century, by a British historian who argued that the critical technology for the early phase of the Industrial Revolution was gin. The transformation from rural to urban life was so sudden, and so wrenching, that the only thing society could do to cope was to drink itself into a stupor for a generation. The stories from that era are amazing: there were gin pushcarts working their way through the streets of London. And it wasn't until society woke up from that collective bender that we actually started to create the institutional structures that we associate with the Industrial Revolution today. Things such as public libraries and museums, increasingly broad education for children, elected leaders didn't happen until the presence all of those people together stopped being perceived as a crisis and started seeming like an asset. It wasn't until people started thinking of this as a vast civic surplus that they could design for, rather than just dissipate, that we started to get what we now think of as an industrial society.

If I had to pick the critical technology for the twentieth century, the bit of social lubricant without which the wheels would have come off the whole enterprise, I would say it was the sitcom. Starting with the Second World War, a whole series of things happened, including rising GDP per capita, rising educational attainment, rising life expectancy, and, critically, a rising number of people who were working five-day work weeks. For the first time, society forced an enormous number of its citizens to manage something they had never had to manage before—free time. What did we do with that free time? Well, mostly we spent it watching TV.

We did that for decades. We watched *I Love Lucy*. We watched *Gilligan's Island*. We watch *Malcolm in the Middle*. We watch *Desperate Housewives*. *Desperate Housewives* essentially functioned as a kind of cognitive heat sink, dissipating thinking that might otherwise have built up and caused society to overheat. And it's only now, as we're waking up from that collective bender, that we're starting to see the cognitive surplus as an asset rather than as a

crisis. We're seeing things being designed to take advantage of that surplus, to deploy it in ways more engaging than just having a TV in everybody's basement.

This hit me in a conversation I had about two months ago. I was being interviewed by a TV producer to see whether I should be on their show, and she asked me, "What are you seeing out there that's interesting?" I started telling her about the Wikipedia article on Pluto. You may remember that Pluto got kicked out of the planet club a couple of years ago, so all of a sudden there was a lot of activity on Wikipedia. The talk pages light up, people are editing the article like mad, and the whole community is in a ruckus, asking, "How should we characterize this change in Pluto's status?" A little bit at a time they move the article—fighting offstage all the while—from stating that "Pluto is the ninth planet" to "Pluto is an odd-shaped rock with an odd-shaped orbit at the edge of the solar system."[1]

So I tell her all this stuff, and I think, "Okay, we're going to have a conversation about authority or social construction or whatever." That wasn't her question. She heard this story, and she shook her head and said, "Where do people find the time?" That was her question. And I just kind of snapped. And I said, "No one who works in TV gets to ask that question. You know where the time comes from. It comes from the cognitive surplus you've been masking for fifty years." How big is that surplus? If you take Wikipedia as a kind of unit, all of Wikipedia, the whole project—every page, every edit, every talk page, every line of code, in every language that Wikipedia exists in—that represents something like the cumulation of one hundred million hours of human thought. I worked this out with Martin Wattenberg at IBM; it's a back-of-the-envelope calculation, but it's the right order of magnitude, about one hundred million hours of thought.

And television watching? Two hundred billion hours, in the United States alone, every year. Put another way, now that we have a unit, that's two thousand Wikipedia projects a year spent watching television. Or put still another way, in the United States, we spend one hundred million hours every weekend just watching the ads. This is a pretty big surplus. People who ask, "Where do they find the time?" when they look at things like Wikipedia don't understand how tiny that entire project is, as a carve-out of this collective asset that's finally being dragged into what Tim O'Reilly calls an architecture of participation.[2]

Now, the interesting thing about this kind of surplus is that society doesn't know what to do with it at first—hence the gin, hence the sitcoms. If people knew what to do with a surplus with reference to the existing social institu-

tions, then it wouldn't be a surplus, would it? It's precisely when no one has any idea how to deploy something that people have to start experimenting with it, in order for the surplus to get integrated, and the course of that integration can transform society.

The early phase for taking advantage of this cognitive surplus, the phase I think we're still in, is all special cases. The physics of participation is much more like the physics of weather than it is like the physics of gravity. We know all the forces that combine to make these kinds of things work: there's an interesting community over here, there's an interesting sharing model over there, those people are collaborating on open-source software. But despite knowing the inputs, we can't predict the outputs yet because there's so much complexity.

The way you explore complex ecosystems is you just try lots and lots and lots of things, and you hope that everybody who fails, fails informatively so that you can at least find a skull on a pikestaff near where you're going. That's the phase we're in now.

I will just pick one small example, one I'm in love with. A couple of weeks ago one of my students at New York University's Interactive Telecommunications Program forwarded me a project started by a professor in Brazil, in Fortaleza, named Vasco Furtado. It's a Wiki map for crime in Brazil.[3] If there's an assault, burglary, mugging, robbery, rape, or murder, you can go and put a push-pin on a Google map; you can characterize the assault, and you start to see a map of where these crimes are occurring.

This already exists as tacit information. Anybody who knows a town has some sense of this street knowledge: "Don't go there. That street corner is dangerous. Don't go in this neighborhood. Be careful there after dark." It's something society knows without society really knowing it, which is to say there's no public source where you can take advantage of it. And if the cops have that information, they are certainly not sharing. In fact, one of the things Furtado says in starting the Wiki crime map is, "This information may or may not exist someplace in society, but it's actually easier for me to try to rebuild it from scratch than to try and get it from the authorities who might have it now."

Maybe this will succeed or maybe it will fail. The normal case of social software is still failure; most of these experiments don't pan out. But the ones that do are quite incredible, and I hope that this one succeeds. Even if it doesn't, it's illustrated the point already, which is that someone working alone, with really cheap tools, has a reasonable hope of carving out enough of the cognitive surplus, the desire to participate, and the collective goodwill

of the citizens to create a resource you couldn't have imagined existing even five years ago.

That's the answer to the question, "Where do they find the time?" Or, rather, that's the numerical answer. Beneath that question was another thought, this one not a question but an observation. In this same conversation with the TV producer, I talked about *World of Warcraft* guilds. As I was talking, I could sort of see what she was thinking: "Losers. Grown men sitting in their basement pretending to be elves."

At least they're doing something.

Did you ever see that episode of *Gilligan's Island* where they almost get off the island, and then Gilligan messes up and then they don't? I saw that one. I saw that one a lot when I was growing up. Every half hour that I watched that was a half an hour I wasn't posting to my blog, editing Wikipedia, or contributing to a mailing list. Now I had an ironclad excuse for not doing those things, which is none of those things existed then. I was forced into the channel of media the way it was, because it was the only option. Now it's not, and that's the big surprise. However lousy it is to sit in your basement and pretend to be an elf, I can tell you from personal experience it is worse to sit in your basement and try to figure if Ginger or Mary Ann is cuter. I'm willing to raise that to a general principle: it's better to do something than to do nothing. Even LOLcats, even cute pictures of kittens made even cuter with the addition of cute captions, hold out an invitation to participation. One of the things a LOLcat says to the viewer is, "If you have some sans-serif fonts on your computer, you can play this game too." That message—"I can do that, too"—is a big change.

This is something that people in the media world don't understand. Media in the twentieth century was run as a single race of consumption. How much can we produce? How much can you consume? Can we produce more, and, if so, can you consume more? The answer to that question has generally been yes. In actuality, media is a triathlon; it's three different events. People like to consume, but they also like to produce, and they like to share.

What's astonished people who were committed to the structure of the previous society, prior to trying to take this surplus and do something interesting, is that they're discovering that when you offer people the opportunity to produce and to share, they'll take you up on that offer. It doesn't mean that we'll never sit around mindlessly watching *Scrubs* on the couch; it just means we'll do it less.

The cognitive surplus we're talking about is so large that even a small change could have huge ramifications. Let's say that everything stays 99

percent the same, that people watch 99 percent as much television as they used to, but 1 percent of that is carved out for producing and for sharing. The Internet-connected population watches roughly a trillion hours of TV a year. That's about five times the size of the annual U.S. TV consumption. One percent of that is one hundred Wikipedia projects per year worth of participation.

I think that's going to be a big deal. Don't you?

Well, the TV producer did not think this was going to be a big deal; she was not digging this line of thought. Her final question to me was essentially, "Isn't this all just a fad?" She more-or-less saw it alongside the flagpole-sitting of the early twenty-first century: it's fun to go out and produce and share a little bit, but then people are going to eventually realize, "This isn't as good as doing what I was doing before," and settle down. I made a spirited argument that, no, this wasn't the case, that this was in fact a big one-time shift, more analogous to the Industrial Revolution than to flagpole-sitting.

I argued that this isn't the sort of thing society grows out of. It's the sort of thing that society grows into. I'm not sure she believed me, in part because she didn't want to believe me but also in part because I didn't have the right story yet. Now I do.

I was having dinner with a group of friends about a month ago, and one of them was talking about sitting with his four-year-old daughter watching a DVD. In the middle of the movie, apropos of nothing, she jumps up off the couch and runs around behind the screen. It seems like a cute moment. Maybe she's going back there to see if Dora is really back there or whatever. That wasn't what she was doing. She started rooting around in the cables. Her dad asked her what she was doing, and she stuck her head out from behind the screen and said, "Looking for the mouse."

Here's something four-year-olds know: a screen that ships without a mouse ships broken. Here's something four-year-olds know: media that is targeted at you but doesn't include you may not be worth sitting still for. Those are things that make me believe that this is a one-way change. Four-year-olds, who are soaking most deeply in the current environment, who won't have to go through the trauma that I have to go through of trying to unlearn a childhood spent watching *Gilligan's Island*, just assume that media includes consuming, producing, and sharing.

This has also become my motto, when people ask me what we are doing—and when I say "we," I mean the larger society trying to figure out how to deploy this cognitive surplus, but I also mean we, the people who are working hammer and tongs at figuring out the next good idea—I'm going to tell

them: We're looking for the mouse. We're going to look at every place that a reader or a listener or a viewer or a user has been locked out, has been served up passive or a fixed or a canned experience, and ask ourselves, "If we carve out a little bit of the cognitive surplus and deploy it here, could we make a good thing happen?" And I'm betting the answer is yes.

NOTES

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Between Democracy and Spectacle

The Front-End and Back-End of the Social Web

FELIX STALDER

As more of our data, and the programs to manipulate and communicate this data, move online, there is a growing tension between the dynamics on the front-end (where users interact) and on the back-end (to which the owners have access). If we look at the front-end, the social media of Web 2.0 may well advance semiotic democracy, that is, "the ability of users to produce and disseminate new creations and to take part in public cultural discourse."[1] However, if we consider the situation from the back-end, we can see the potential for Spectacle 2.0, where new forms of control and manipulation, masked by a mere simulation of involvement and participation, create the contemporary version of what Guy Debord called "the heart of the unrealism of the real society."[2] Both of these scenarios are currently being realized. How these relate to one another, and which is dominant in which situation and for which users, is not yet clear and is likely to remain highly flexible. The social meaning of the technologies is not determined by the technologies themselves; rather, it will be shaped and reshaped by how they are embedded into social life, advanced, and transformed by the myriad of individual actors, large institutions, practices, and projects that constitute contemporary reality.

Unfortunately, much of the current analysis focuses primarily on the front-end and thus paints an overly utopian and very one-sided picture. There are, of course, critical analyses that focus on the back-end, yet they also paint a very one-sided picture of technological dominance.[3] Both of these are characterized by extensive biases which are the result of two very common, if unacknowledged, assumptions. In a nutshell, the first one could be stated like this: all forms of social life involve communication; thus, changes in communication (technology) directly affect all forms of social life. This idea, first advanced by Marshall McLuhan in the early 1960s, has been a frequent theme in the techno-utopian (and dystopian) perspective ever since.

Rather than considering how social actors are able to appropriate new technologies to advance their existing, material agendas, the changes in the organization of the digital are taken to be so powerful that they simply impact on the material reality. Understanding the properties of the new modes of communication provides a privileged vantage point from which to understand a broad range of social transformations. Thus, the vectors of change are unidirectional. Such an analysis presents a simple dichotomy between the old and new, with the new replacing the old.[4]

The other very common assumption could be stated like this: conflicts are the result of miscommunication and a lack of information about the other side. Thus, improved communication leads to cooperation. This could well be the oldest utopian promise of communication technology. Just two years before the outbreak of World War I, Marconi famously predicted that his invention, radio, "will make war impossible, because it will make war ridiculous."[5] Today, building on the fact that it is individuals who have a vastly increased array of communication technologies at their disposal, this second assumption has inspired a new wave of communitarianism, envisioned as a blossoming of bottom-up, voluntary communities. This provides the current discourse with a particular populist character, different from earlier manifestations of techno-utopianism which focused on the technocratic elite's[6] influential vision of the postindustrial society. Yet, like these, it is the result of a rather linear extension of a technological property into the social. This time, the focus lies on the fact that in the realm of the digital, sharing means multiplying, rather than dividing as it does with respect to material goods. Since digital data is nonrivalrous, the social relationships mediated by the digital are assumed to exhibit a similar tendency.[7]

At its best, such a perspective is perceptive to early changes in the modes of social communication. Yet these two underlying assumptions limit our ability to understand the issues necessary to turn the semiotic possibilities into democratic ones. A case in point for the current, utopian discourse is Clay Shirky's *Here Comes Everybody*, widely lauded in the blogosphere as a "masterpiece,"[8] because it expresses elegantly the widely shared beliefs within this community. His central claim, memorably phrased, is that "we are used to a world where little things happen for love, and big things happen for money. . . . Now, though, we can do big things for love."[9] Before the massive adoption of digital social tools, the projects that could be realized without need for money were necessarily small, because only a small number of people could cooperate informally. Any bigger effort required a formal organization (business, government, NGO, or other), which created an

overhead requiring funding, which, in turn, required an even more formal type of organization capable of raising and managing those funds. In other words, the act of organization itself, even of unpaid volunteers, was a complex and expensive task. It is supposed to have dramatically changed. Now, even large group efforts are no longer dependent on the existence of a formal organization, with its traditionally high overheads. Shirky argues that we can now organize a new class of interests, in a radically new way, that are "valuable to someone but too expensive to be taken on in any institutional way, because the basic and unsheddable costs of being an institution in the first place make those activities not worth pursuing."[10]

The technologies that allow love to scale are all easy to use by now: e-mail, web forums, blogs, wikis, and open publication platforms such as Blogger, Flickr, and YouTube. But that is precisely the point. Only now that they are well understood, and can be taken for granted, are they beginning to unfold their full social potential. For Shirky, what distinguishes Web 2.0 from Web 1.0 is less functionality than accessibility. What only geeks could do ten to fifteen years ago, everybody can do today (in Shirky's world, the digital divide has been closed, even though at the moment only 60 percent of US households have broadband).[11] The empowering potential of these tools is being felt now, precisely because they allow everyone—or, more precisely, every (latent) group to organize itself without running into limits of scale. These newly organizable groups create "postmanagerial organizations," based on ad hoc coordination of a potentially large number of volunteers with very low overheads.

For Shirky, organizing without organizations has become much easier for three reasons. First, failure is cheap. If all it takes is five minutes to start a new blog, there is little risk involved in setting one up. Indeed, it's often easier to try something out than to evaluate its chances beforehand. This invites experimentations which sometimes pay off. If a project gains traction, there is no ceiling to limit its growth. There is little structural difference between a blog read by ten or ten thousand people. Second, since everyone can publish their own material, it is comparatively easy for people with common interests to find each other. Trust is quickly established, based on everyone's published track record. Perhaps most importantly, it takes only a relatively small number of highly committed people to create a context where large numbers of people who care only a little can act efficiently, be it that they file a single bug report, do a small edit on a wiki, contribute a few images, or donate a small sum to the project. The result is an explosion of social cooperation, ranging from simple data sharing, or social cooperation within the domain of the digital, to full-blown collective action in the material world.

So far so good. Things get more complicated when the focus shifts beyond the digital. Despite correctly pointing out that "communication tools don't get socially interesting until they get technologically boring,"[12] Shirky remains squarely focused on them, linearly extending their properties into the social. Hence, he has no doubt that we are witnessing nothing short of a social revolution that "cannot be contained in the institutional structure of society."[13] The explosion of voluntary projects is taken to amount to the erosion of the power differentials between formally and informally organized interests or, more generally, between conventional organizations following strategic interests and people following authentic interests, a.k.a. love. "This is," as Shirky concludes, "leading to an epochal change."[14]

The characteristic limitations of this type of analysis are present in the four assertions that run through the book: First, voluntary user contributions are, indeed, expressions of authentic personal opinions ("love") with no connection to institutional agendas ("money"). Second, there is a free market of ad hoc communities where institutions play no role. Third, this is a world beyond economics. And, finally, (virtually) all forms of cooperation are beneficial.

Can Money Buy Love?

Over the last decades, trust in mass media has declined. It is widely seen as biased and in the hands of special interests. In January 2004, this trust dipped for good below 50 percent in the United States.[15] New modes of communication can be less institutional and commercial and are often perceived as more authentic (at least as far as one's preferred info-niche is concerned). After all, if someone is not making money or following orders, why should she publish anything other than her own opinion derived from a personal interest in the topic? However, it is clear by now that this is not always the case. What appears to be authentic, user-generated content often turns out to be part of a (viral) marketing campaign, a public-relations strategy, or other organized efforts by *hidden persuaders*. One of the first famous cases of a company hiding behind a fictional "user" in a social platform was the case of lonelygirl15. In June 2006, a teenage girl started to post intriguing entries about herself on YouTube, quickly building up enormous popularity. About three months later, it was revealed that the girl was a scripted character portrayed by a New Zealand actress, professionally produced by a young company trying to break into the entertainment industry.[16] Whether this should be understood as a hoax or interactive entertainment is beside the point.

More important is the fact that it is easy to pass off institutional contributions as personal ones. Editors of the "letters section" in newspapers have known this for a long time.

A similar problem occurs on Wikipedia, where many entries are modified by affected parties with strategic goals and no commitment to the "neutral point of view." The enormous popularity of the encyclopedia means that every PR campaign now pays attention to it. The same holds true in the blogosphere, where conflicts of interests, or direct sponsorship, often remain unacknowledged or willfully hidden. The strategies and effects of astroturfing (the faking of grassroots involvement by paid operatives) on the social web are different from case to case. Wikipedia, which has a very strong community dedicated to fighting such abuse (in part with help of custom-made tools such as WikiScanner), has an impressive track record of weeding out drastic and clumsy interventions, although the exact number of persistent, subtle interventions remains structurally unknowable. Extreme cases of blogola (pay for play on blogs) are uncovered through distributed, ad hoc coordinated research (like the one that revealed the real story of lonelygirl15), but there are many mundane cases that never attract enough eyeballs. Indeed, by focusing a lot of attention on one particular case, a large number of others will necessarily be ignored. The problem is endemic enough for the Federal Trade Commission (FTC) to propose an update of its 1980 guidelines "for editorials and testimonials in ads" to clarify how companies can court bloggers to write about their products.[17] Whether such regulation based on the old advertisement model can be effective is far from clear.

A more open practice of how business can reframe new forms of free cooperation is advanced as "crowdsourcing." In this context, "free" is understood as in "free beer," not "free speech" (to turn Richard Stallman's famous definition of "free software" on its head). In the *Wired* article which popularized the term, the very first example serves to illustrate how much cheaper user-generated (rather than professional) stock photography is for a large institutional client and how much money the founders of the mediating platform made by selling their service to the world's largest photo agency (created from the fortune of a very nondigital oil dynasty).[18] In refreshing clarity, it is celebrated that one side (business and institutions) can make or save lots of money, whereas the other side (the individual amateurs) do not, since for them, as Howe generously grants, "an extra $130 [per year] does just fine."[19] Continuing in this vein, he arrives at the logical conclusion:

For the last decade or so, companies have been looking overseas, to India or China, for cheap labor. But now it does not matter where the laborers are—they might be down the block, they might be in Indonesia—as long as they are connected to the network. . . . Hobbyists, part-timers, and dabblers suddenly have a market for their efforts, as smart companies in industries as disparate as pharmaceuticals and television discover ways to tap the latent talent of the crowd. The labor isn't always free, but it costs a lot less than paying traditional employees. It's not outsourcing; it's crowdsourcing.[20]

It's a bit of a confused statement since corporate outsourcing was already dependent on network connectivity (think of call centers in India), and the economic "market" for the crowd is admittedly minute. However, the main point is clear: there is now an even cheaper labor pool than China's, possibly right around the corner and highly educated. It is a strange economy in which one side is in it more for play, and the other only for money. Howe cannot explain how social and economic dimensions relate to one another, even when given the longer length of his follow-up book,[21] but he is very clear on how good this can be for corporations. Part of why this works so well for institutions is that the high turnover rate in the crowd masks the high burnout rate. This is one of the reasons why the size of the community matters, because with a larger community, any one individual matters less. Thus, what is sustainable on a systemic level (where the institutions operate) turns out to be unsustainable on the personal level (where the users operate).

But not all is bad. A constructive redrawing of the boundaries between community and commercial dynamics is taking place in the free and open-source software (FOSS) movement. Over the past decade, complex and mostly productive relationships between companies and FOSS projects have been created. Today, most of the major projects are supported by one or often multiple commercial companies. They directly and indirectly fund and staff foundations which serve the community of programmers; they donate resources or employ key developers. Today, up to 85 percent of Linux kernel developers are paid for their work.[22] This has led to a professionalization of these projects, with results ranging from better-quality management to more predictable release cycles and better-managed turnover of key staff. Thanks to legally binding software licenses—the GPLv2 in the case of the Linux kernel—and a growing understanding of the particulars of relationships between companies and communities, the overall effect of the influx of money into labors of love has been to strengthen, rather than weaken, the FOSS movement.

On the level of individual contributions to cooperative efforts, we are seeing complex and new ways in which the domain of "money" is enmeshed with the domain of "love." Positioning the two as mutually exclusive reminds one of the nineteenth-century conception of the private as the sphere of harmony independent of the competitive world of the economy. Rather, we need to develop an understanding of which forms of enmeshing are productive for the realization of semiotic democracy, and which social arrangements and institutional frameworks can promote them; at the same time, we need to take precautions against the negative forms of strategic interventions that are leading to the creation of Spectacle 2.0. This would also help to address the second major limitation of the Web 2.0 discourse.

The Institutional Side of Ad Hoc

The social web enables astonishingly effective yet very lightly organized cooperative efforts on scales previously unimaginable. However, this is only half of the story; this is the half of the story which plays out on the front-end. We cannot understand the full story if we do not take into account the other half, which play out on the back-end. New institutional arrangements make these ad hoc efforts possible in the first place. There is a shift in the location of the organizational intelligence away from the individual organization toward the provider of the infrastructure. It is precisely because so much organizational capacity resides now in the infrastructure that individual projects do not need to (re)produce this infrastructure and thus appear to be lightly organized. If we take the creation of voluntary communities and the provision of new infrastructures as the twin dimensions of the social web, we can see that the phenomenon as a whole is characterized by two contradictory dynamics. One is decentralized, ad hoc, cheap, easy to use, community oriented, and transparent. The other is centralized, based on long-term planning, very expensive, difficult to run, corporate, and opaque. If the personal blog symbolizes one side, the data center represents the other. All the trappings of conventional organizations, with their hierarchies, formal policies, and orientation toward money, which are supposed to be irrelevant on the front-end, are dominant on the back-end. Their interactions are complex, in flux, and hard to detect form the outside. Sometimes, though, a glitch reveals some aspects, like a déjà vu in the film *The Matrix*. One such revealing glitch was triggered by the Dutch photographer Maartin Dors. One day, one of his photos of Romanian street kids

was deleted by the hosting platform Flickr. Why? Because it violated a previously unknown, unpublished rule against depicting children smoking! What is the rationale of this rule? As a spokesperson explained, Flickr and its owner, Yahoo!, "must craft and enforce guidelines that go beyond legal requirements to protect their brands and foster safe, enjoyable communities."[23] Every large Internet company has, and indeed must have, such gatekeepers that decide, on their own, if a contribution conflicts with the law, corporate policies and interests, and then proceed to remove or block it.[24] In other words, the ever-increasing usability of the social web and ever-decreasing user rights go hand in hand. But the specific balance is constantly changing, depending on laws and policies and on how much users push back to demand certain rights and features. There are many success stories. Maartin Dors managed to get his photo back online. But the odds are stacked against user vigilance. As Shirky points out well, the dynamics of stardom (disproportionate attention is concentrated on a few people or cases) operate also in the most distributed communication environments.[25] Thus, for every famous case of "censorship" that the public rallies against, there must be a vast number of cases that affect unskilled users or content too unfashionable to ever make it to the limelight. This is a structural problem which cannot be solved by individual empowerment, since the very fact that attention focuses on one case implies that many others are ignored. Thus, there is a tension at the core of the social web created by the uneasy (mis)match of the commercial interests that rule the back-end and community interests advanced through the front-end. The communities are embedded within privately owned environments so that users, usually unaware of the problem, are faced with a take-it-or-leave-it decision. There is a structural imbalance between the service providers on the one side, who have strong incentives to carefully craft the infrastructures to serve their goals, and the users on the other side, who will barely notice what is going on, given the opacity of the back-end. To believe that competitive pressures will lead providers to offer more freedoms is like expecting the commercialization of news to improve the quality of reporting. If we are interested in realizing the empowering potential of new modes of collaboration, we need to focus on the relationship between back-end and front-end dynamics in order to understand if and where they are conflicting and to develop institutional frameworks that can balance the interest of ad hoc communities against those of the formally organized actors that support them.

The Surveillance Economy

If the dynamics on the front-end are a complex mix between community and commercial orientations, the dynamics of the back-end are purely business, reflecting the enormous costs of data centers. With a few exceptions, user access to this new infrastructure is free of direct costs. This leads to claims that in the new information economy everything is free (again, as in beer). Of course, there are costs to be offset and money to be made, so Chris Anderson points out four models of how this is possible: cross-subsidies (as in free phones to sell data and voice services), advertising (like TV and radio), "freemium" (basic version is free, advanced version is not), and user generation (like Wikipedia).[26] Right now, the dominant model is advertising. Google, for example, generates 98 percent of its revenue in this way.[27] In order to attract advertising customers, the platform providers need to know as much as possible about the users. In mass media, the weakness of a back-channel (the Nielsen box) limited the amount of data the provider could gather about the audience. Thus, only very large groups could be targeted (e.g., the twenty-five- to forty-four-year-old demographic in New York City). Online, this is entirely different. Even individuals can be tracked in great detail, and groups of any size and characteristics can be dynamically aggregated. Every activity online generates a trace that can be gathered and compiled, and companies go to great length making sure that traces are generated in a manner that they can gather. Google is probably the most aggressive in this area, providing a host of services on its own servers, as well as integrating its offers (mainly AdSense and Google Analytics) into independent sites on its users' servers, thus being able to gather user data in both locations.[28] Social platforms enable the gathering of highly detailed data about individual and group interests in real time, particularly when combined with other data sources (which is standard, since most Web 2.0 platforms are owned by or cooperate with large media conglomerates, e.g., via APIs, application programming interfaces). The extent, the precision, and the speed of this data gathering is unprecedented. In this framework, user profiles are the real economic asset, and an asset which Google exploits with great success (Google does not sell the profiles directly but, rather, sells the ability to customize advertisements based off these profiles). Because of the business model chosen, the back-end doubles as a surveillance infrastructure with the expressive aim of social sorting, that is, of differentiating the treatment of people according to criteria opaque to them.[29] Improvement of services and advertisement are the overt goals, but the knowledge which is

thus created is not limited to such uses. In November 2008, Google launched a new application called Google Flu Trends. It is based on "a close relationship between how many people search for flu-related topics and how many people actually have flu symptoms. Some search queries tend to be popular exactly when flu season is happening, and are therefore good indicators of flu activity."[30] This allows Google to track the outbreak of the flu with only one-day lag time, roughly two weeks ahead of the US Centers for Disease Control and Prevention (CDC).[31] The laudable aim is to be able to detect early, and to be able to intervene in, the outbreak of epidemics. Yet there is no reason to assume that similar modeling techniques need be limited to public health issues. The range of emergent social phenomena that can be detected and intervened in early is wide, and the pressures to make use of this knowledge are significant. Yet the private and opaque character of the back-end makes this information accessible (and actionable) to only a very small number of very large institutions.

For commercial platforms, advertisement seems the only business model for now. Amassing very large amounts of data to improve services and advertiser relationships is the logical consequence of this. This data is the basis on which social work done by the users on the front-end—that is, the creation and maintenance of their social networks—is turned into financial value at the back-end.[32] Yet, beyond economics, there can be no doubt that real-time knowledge of group formation, of changing patterns of collective interests and desires, constitutes a new form of general power. Should this power only be privately owned and accountable to no more than fast-changing terms of service and a given corporation's need to maintain a positive public image? Current privacy legislation seems ill equipped to deal with these questions, focusing still on the data protection of individuals. If we do not find ways to address these issues, there is a real danger that the social web, and the enormous amounts of personal and community data generated, will empower the actors with access to the back-end considerably more than those at the front-end, thus tipping the balance not in favor of the lightly organized groups but, rather, the densely organized groups.

Cooperation and Conflicts

While voluntary cooperation appears to be a friendly form of organization, the actual experience may differ quite a bit. First, every community produces exclusion in the process of creating its identity. Second, the values of the different groups, created through authentic practice, can easily come in conflict with

one another once they leave the fractured space of the digital and enter the unified space of law and politics. Because of the underlying assumption that communication leads to cooperation (and the lofty hopes attached to this process), current discourse is virtually silent on such issues. Shirky mentions only one problematic case of cooperation, namely, that of a group of young women using a social forum to celebrate anorexia and to offer each other mutual support to continue it. Here, it is easy to agree, the cause of the problem is less the community itself than the personal, psychological problems of individual contributors. Yet the case is atypical, because most conflicts emerging from cooperation cannot be remedied by psychological intervention.

On the contrary. The world of FOSS is often described as a meritocracy where the most able programmers rise to the top. While this is, indeed, the case, the definition of "capable" is not just a technical one but is also mediated through the codes of the community and its constitutive sociability. FOSS projects define "capable" in ways that manifestly exclude women. Whereas 15 percent of all PhDs in computer science are awarded to women,[33] the number of female contributors to FOSS projects is around 2 percent.[34] The reasons are complex, ranging from the gendering of leisure time to the lack of role models, but it is clear that more formal rules protect minorities (in this case women) while the informality of ad hoc communities allows for social biases to run unchecked. Thus, what appears as open, friendly cooperation to some may be experienced as a closed and hostile club by others.

It is not just that the modes of cooperation contain elements of hostility: the results of cooperation can fuel conflicts. In one way or the other, the back-end is the preferred place to address those systemically. Copyright law and criminal activity provide two illuminating examples of how these potential conflicts have been resolved on the back-end. In practice, the ease of cooperation and sharing often violates the exclusive rights of the owners of creations as defined by copyright law. The most radical example is peer-to-peer file sharing (strangely enough, the entire subject is ignored by most Web 2.0 discourse). Also, virtually every other activity that constitutes the social web at some point runs up against the problem of copyright regulations. The practice of Creative Commons licensing can mitigate some aspects but not all, since it covers only a fraction of the available material. Some of the resulting conflicts play out on the level of the front-end (where tens of thousands of users are being sued for everyday practices), but the real key lies in the architecture of the back-end. Software code, as Lessig pointed out, can be much more effective than legal code (though legal code is being strengthened, and often in favor of the well organized).[35] The surveillance infrastructure, created for business

purposes, can easily be extended and transformed to discipline users and turn free as in free speech into free as in free beer, semiotic democracy into Spectacle 2.0. From 2007 onward, YouTube, for example, installed extensive back-end filtering to monitor content for copyright infringement. A sudden increase of content disappearing from the platform was detected in January 2009. As the Electronic Frontier Foundation (EFF) explained, "Thanks to a recent spat between YouTube and Warner Music Group, YouTube's Content ID tool is now being used to censor lots and lots of videos (previously, Warner just silently shared in the advertising revenue for the videos that included a "match" to its music)."[36] The scope of semiotic democracy was so significantly reduced that the EFF called it "YouTube's Fair Use Massacre." This conflict between social intentions of users and the commercial orientations of the owners (and their internal conflicts) was mediated through the back-end. Users could do nothing about it. The second case concerns the "hard question" to which Shirky devotes half a page. The cooperative infrastructure of the web is also used for full-rage criminal activity, including terrorism. The problem is that on the level of network analysis, these activities, people coming together and sharing information, are not different from what everyone else does. In order to detect such emergent criminal "organizations" and intervene in their activities, the same pattern-detection tools that detect flu outbreaks are being used for law-enforcement and national-security reasons. Thus, given the conflictive nature of social relationships, even if they incorporate some aspects of cooperation, and the increasing demands on law enforcement to prevent, rather than solve, crime, it is not difficult to see how the centralization of the back-end could contribute to the expansion of old-style, state-centered, big-brother surveillance capacities.

Conclusions

It would be too easy to contrast the light picture of semiotic democracy with a dark one of Spectacle 2.0: social relationships are becoming ever more distorted by hidden advertisement and other forms manipulation; the growing ranks of the creative-industry workers have to compete ever harder for work as potential clients learn to exploit free culture and drive down salaries through crowdsourcing; a gigantic surveillance machine is extending the reach of powerful institutions so that they can manipulate emerging social phenomena, either intervening before they can reach critical mass or else helping them to reach critical mass much sooner, depending on their goals and strategies.

But the world is not black or white, and neither is it an indiscriminate gray. Given the flexibility of the technology and its implementation, it is most likely to affect people in highly differentiated ways. These are decided by social actors and their conflicting agendas. Rather than placing our hope in some immanent quality of the technology, we need to ask urgent questions: how can we ensure that community spaces can develop according to their own needs and desires, even as strong external (commercial and law-enforcement) pressures are exerted on all levels? The FOSS movement, in large parts thanks to the ingenuity of the General Public License (GPL), has showed that this is possible in many respects. Wikipedia shows how much continued and organized effort this takes. How can we ensure that the power accumulated at the back-end is managed in a way so that it does not counteract the distribution of communicative power through the front-end? It seems clear that individual terms of service and market competition are not enough. A mixture of new legislation and granting public access to back-end data will be necessary.[37] If we simply ignore this, extending the ideology of the free market to communities (competing for sociability), as much of the discourse does, we are likely to see that the new infrastructure will enable only those whose interests are aligned, or at least do not conflict, with those who control the back-end. For others, it could be a future of reduced life chances and lost opportunities and connections systematically, yet undetectably, prevented from even occurring. As a result, we would not have a semiotic but a managed democracy.

NOTES

This chapter is based, in part, on my review of Clay Shirky's book *Here Comes Everybody*: Felix Stalder, "Analysis without Analysis," *Mute: Culture and Politics after the Net*, July 28, 2008, http://www.metamute.org/en/content/analysis_without_analysis.

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DIY Academy?

*Cognitive Capitalism, Humanist
Scholarship, and the Digital Transformation*

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The University of Michigan Press recently sent me (and other authors who have published with the press) an e-mail announcing the debut of a "transformative scholarly publishing model," the product of a cooperative agreement between the Press and the University of Michigan Libraries.[1] Starting in July 2009, the letter said, all future Michigan publications are to be made available "primarily in a range of digital formats," although high-quality print-on-demand versions of the e-books are also readily obtainable by bookstores, institutions, and individuals. The Press's long-term plans call for books to be "digitized and available to libraries and customers world-wide through an affordable site-license program," as most academic journals currently are. Moreover, these digital books, the communiqué informed me, will be "candidates for a wide range of audio and visual digital enhancements—including hot links, graphics, interactive tables, sound files, 3D animation, and video." This announcement by a major academic press is the harbinger of a seismic shift in the character of scholarly knowledge production and dissemination.

Over the past thirty years, the university presses have been pushed by academic administrators to act like for-profit publishing ventures rather than as facilitators of the professoriate's publishing ambitions in the erstwhile Fordist-era university.[2] As universities have cut back funding for both the presses and tenure-stream faculty appointments, turning increasingly to the precarious labor of graduate students and adjuncts to staff their core courses, the academic presses have become the de facto arbiters of tenure and promotion in the increasingly pinched world of the humanities and social sciences. The result, as a well-known letter published by Stephen Greenblatt during his tenure as president of the Modern Language Association attests, is a crisis in scholarly publishing.[3] It has become harder to publish in general and virtually impossible to publish books that do not ride the latest wave of theory.

At the same time, the remorseless creep toward informal labor has made it increasingly necessary to crank out books in order to survive in academia. The upshot is an increasingly Darwinian world of frenetic competition and commodification in which scholars illogically hand over their hard-won knowledge virtually for free to presses that then limit the circulation of that knowledge through various forms of copyright in order to maintain the precarious revenue stream that keeps them in business.

To what extent does digital publishing provide an exit from this dystopian world? As Michigan's announcement makes clear, digital publication clearly offers exciting possibilities for multimedia, interdisciplinary work. But this shift also opens broader vistas. Why should scholars not take publishing out of the hands of the academic presses and establish their own online publishing schemes? Within the sciences there is already a strong trend toward the publication of papers in open-access archives. Peer-reviewed, open-access journals are beginning to pop up in fields such as cultural studies. With support from their institutions or far-seeing not-for-profit foundations, scholars could publish and disseminate their own work freely. The potential for significantly democratizing knowledge represented by such developments cannot be gainsaid despite the enduring significant inequalities of access to digital information within the global North and South. We are, however, a long way from such developments becoming the norm. The danger is that the earthquake whose first tremors we are currently feeling will take us unawares and will make us passive victims rather than the architects of more egalitarian and socially just forms of learning and communication. There has, after all, been relatively little theorization of this tectonic shift in the modes of knowledge production and dissemination.[4] When not commandeered by progressive movements, technological innovations can all too easily be used to exacerbate existing forms of inequality.

In this essay, I situate discussion of the open-access movement within academia in the context of contemporary theories of the knowledge economy and immaterial labor. For theorists influenced by the Italian *operaismo* movement, shifts in the production process in advanced capitalist nations have produced a massification and commodification of intellectual work over the past several decades.[5] Today, the most strategically significant sector of the capitalist production process, the one that sets the terms for all other sectors, is what *operaismo* theorists term "immaterial labor"—the production of new software programs, novel social networking technologies, coding of genetic materials, and so forth.[6] This increasing commodification of knowledge has, however, generated a crippling contradiction: in almost all

cases, immaterial labor is predicated on collaboration, and yet the continued accumulation of capital hinges on the privatization of intellectual-property rights. As Michael Hardt puts it, "There is emerging a powerful contradiction, in other words, at the heart of capitalist production between the need for the common in the interest of productivity and the need for the private in the interest of capitalist accumulation."[7]

This increasingly heated struggle over the commons reverberates strongly within academia since it is a crucial site of contemporary knowledge production. Despite the relative lack of theorization concerning the digital transformation of knowledge production and dissemination, my interviews with academic publishers and scholars working on issues of digitization and access reveal a keen sense of the nascent liberatory opportunities as well as the tensions that underlie current developments. Yet the movement for open access cannot, I argue, be seen outside broader institutional dynamics within academia and the knowledge economy in general. Given the unfolding collapse of print journalism and the for-profit publishing industry, Panglossian celebrations of academia as an incipient rhizomatic social network clearly will not do. In fact, as critics such as Michael Denning and Andrew Ross have argued, academia offers a vanguard example of the forms of ill-remunerated and insecure labor that are increasingly common in the knowledge economy in general. To what extent is the digital transformation likely to extend these dystopian trends rather than to enlarge the space for emancipatory practices? Drawing on the work of theorists such as the Edu-factory group, I situate my discussion of new forms of electronic knowledge production and dissemination within the broader terrain of the neoliberal university, thereby offering a hardboiled assessment of the possibilities as well as the limits of digital publishing and, more broadly, the DIY academy.

Digital Scholarship

Business as usual is over in scholarly publishing. The multifarious trend toward academic capitalism discussed in the previous section has also transformed the channels through which scholars disseminate their research. Once upon a time there was a virtuous circle that linked scholars who needed to publish their research to well-funded university publishing houses that communicated that research to university libraries, which in turn purchased the scholarly journals and monographs in which research was published. No more. Both private and public universities have cut funding for their publishing ventures, forcing them to bear considerations of marketability increas-

ingly in mind when accepting projects for publication. Meanwhile, university libraries are being gouged by for-profit journal publishers, who have driven the cost of subscriptions to journals in the sciences and medicine through the roof. NYU's library, for example, spends 25 percent of its budget on journals from the European publisher Elsevier-North Holland and another 25 percent on journals from two or three additional for-profit publishers that realize libraries are unlikely to terminate a subscription.[8] Book acquisitions, the primary mode of publication for the humanities, are being squeezed out. The University of California system spends less than 20 percent of its budget on books, for instance, and now often recommends that only one copy of a book be purchased throughout the system rather than allowing each campus to purchase a copy.[9] Finally, the glut of precarious teachers discussed in the previous section has allowed administrators to up the ante for tenure and promotion at all colleges incessantly, whether or not their institutions host an academic press. As a result, the sheer number of scholars seeking to publish has multiplied many times over, while funding for presses and libraries has been axed.[10] It is increasingly hard for anyone except a small number of academic superstars to publish original work in book form.

The open-access (OA) movement is an emerging response to this crisis in academic publishing.[11] Inspired by conceptions of the digital commons evident among cognitarian insurgents such as the members of the FLOSS movement, scholarly proponents of OA argue that it makes little sense to give away hard-won research to publishers for free, only to have such publishers limit access to this work through exorbitant publication costs and subscription fees that exclude anyone lacking access to a university library in the developed world. Online publishing can in many instances be done nearly free of cost and very quickly, issues that are of immense concern to junior scholars.[12] OA proponents argue that academics want publicity, not fees, and that they therefore have little to lose and much to gain by disseminating their research online for free.[13] Although humanities scholars have, in comparison with those working in the "hard" sciences, been slow to embrace OA, protocols developed in the sciences that allow electronic publication of preprint copies of papers make it possible to avoid the restrictive copyright agreements imposed by both for-profit and university presses.[14] In addition to increasing publication outlets, the digitalization also offers notable resources for teaching. Rice University's Connexions project and MIT's OpenCourseWare program both make pedagogical materials available for free online, for example.[15] In the case of Connexions, faculty can remix and supplement materials available online to create their own unique course packets.

In addition to such innovations in distribution, digital media have begun to transform scholarly production in the humanities. Online publication promises to give more recondite subjects greater play, ending the tyranny of the market that prevents the publication of arcane scholarly work and that sees such work go out of print all too quickly. In addition, although the dominant trend remains to treat online publications simply as what Gary Hall calls "prosthetic" extensions of traditional print formats such as the journal article and the book chapter, the digital transformation is gradually catalyzing new forms of research.[16] Journals such as *Vectors* build articles from the ground up to include multiple different media, expanding the scholarly palette to include audio and visual as well as print media,[17] shifting the role of humanities scholars to include curatorial as well as exegetical functions, and auguring radically novel, hybrid disciplinary formations.[18] The possibilities for scholarly expression are exploding as academics experiment with not just the blog but also the video diary.[19] In addition, digital technologies also promise to extend the powerful data-analytical strategies pioneered by Franco Moretti in works such as *Graphs, Maps, and Trees*, which surveys the entire publication record in Britain during the nineteenth century to segment trends within the novel into microgeneric categories, generational patterns, and evolutionary literary tropes.[20] Emerging practices of data mining in journals such as the *Digital Humanities Quarterly* that push Moretti's structuralist approach further also promise to smash the model of the scholar as hermit or genius by encouraging truly collaborative, interdisciplinary research and publication.[21]

It is hard not to be intoxicated by the exciting possibilities proffered by the "digital revolution" in scholarly research and publication. In fact, I would argue strongly that this emerging movement constitutes a significant reclaiming of the networked commons on the part of humanities scholars. Nevertheless, I want to interrogate the institutional context within which such utopian movements gestate. This is because there is really no such thing as an academic gift economy. As is the case for other forms of user-generated culture, the extension of the networked commons is ultimately intertwined with and dependent on transformations in other sectors of the economy. After all, the Internet itself is a *public* creation (if one counts the Department of Defense as a public entity). Open-access protocols in the humanities will not forge ahead unless institutional structures are in place to support such initiatives. Certainly, digital research and publication offers exciting possibilities. But progress in this sphere as in other sectors of academic capitalism will come only through transformations on multiple levels, in struggle that is likely to be long

and hard fought. Technology alone offers no magic bullet in fields beset with the kinds of structural challenges that confront the humanities today.

One of the primary issues to confront in this regard is the fact that the predominant use of computing power in contemporary culture is *not* for forms of self-organizing, autonomous culture. Instead, as David Golumbia points out at great length, computational power is used primarily to augment dominant institutions of corporate and state power, particularly through sophisticated forms of surveillance that segment and tabulate populations using remarkably conservative racial and gender paradigms.[22] Such bio-political manifestations of computational power are of particular concern given the rise of audit culture in academia during the neoliberal era. One of the main reasons for the publishing crisis, in fact, is the desire of academic administrators for simple, quantifiable measures of scholarly productivity.[23] Put in simple terms, books—vetted by academic publishers that assume all responsibility for peer review—are easy to count. The more of them the better, at least as far as administrators, tasked with inflating their school's brand name in a cutthroat market, are concerned. There is no inherent reason that the switch to open-access publication should not play into the audit culture's hands, leading to a remorseless intensification of pressures to publish or perish. Indeed, precisely such a dynamic is already visible in universities in Britain and Australia, where benchmarking measures such as the Research Assessment Exercise (RAE) have led to a huge proliferation of journals at the service of academics thrown into a frenetic race to publish in order to retain funding. The resulting rush to publish articles reminds one of the assembly-line scene in Charlie Chaplin's *Modern Times*. Scholars often cannot publish in experimental OA online journals because they are not counted as legitimate venues by benchmarks such as the RAE.[24] In addition, administrators were not slow to realize the powerful surveillance capabilities of the digital academy in regard to teaching. During the NYU graduate-employee strike of 2005–2006, for instance, university administrators logged onto classroom Blackboard websites secretly in an attempt to figure out which teaching assistants were respecting the strike. Unless there is a strong movement among educators to counter such baleful applications of technology, administrators are likely to seize the opportunity for speed-up and surveillance afforded by digital publication and pedagogy.

Another major issue is the infrastructure involved in publication. As Ken Wissoker, editorial director at Duke University Press, recently commented, people who argue that "information wants to be free" are rather like the money managers profiled in *Liquidated*, Karen Ho's recent ethnography

of Wall Street executives: socialized into a world of high risk and outlandish rewards, elite bankers assume that job insecurity builds character and impose these values of precariousness and instability on other businesses.[25] Wissoker's point is that the publishing industry does not necessarily operate along the lines of the gift economy celebrated by some cognitarians and that the imposition of the latter on the former is likely to do damage analogous to that wrought by speculative venture-capital funds on traditional industrial enterprises. Indeed, as Wissoker observes, Duke loses over one million dollars a year on its book-publishing division, losses that are only made up for by library journal subscriptions. Duke's new monograph e-publication initiative in fact relies on a subscription system similar to that employed for some time now to distribute journals.[26]

While multiple copies of a book cost relatively little to publish, there is a significant investment involved in the production of the first copy.[27] The creation of a book is, after all, a collective enterprise, involving editors, copyeditors, peer reviewers, and so on. Books do not simply appear out of thin air, in other words. The same is true for journals, although more of the burden of journal production tends to be shouldered by scholars. Initiatives such as the University of Michigan Press one, which involves a partnership with the university library, promise to make the cost of book distribution far lower using electronic dissemination and print-on-demand.[28] But this will not eliminate the costs associated with producing the first copy of the book. Who, precisely, will pay for this collective labor if not the university presses? Do we want individual academics to have to fund their own publications, as is currently the case in the hard sciences? Or do we want publishing to be routed through university libraries, which have no experience with peer review or with the craft elements of publication? As I argued earlier, questions of immaterial labor are ineluctably tied to such practical material issues.

In addition, while a shift to publishing through university-library-hosted servers might free scholars from the vagaries of the market, it may also subject them to the political manipulation of host institutions and of fickle state legislators.[29] What would happen to publications dependent on such revenue streams, for example, in the event of a state fiscal crisis such as the one currently unfolding in California? We need to think very carefully, in other words, about how to exploit the shift online without surrendering the relative autonomy from both market pressures and political censure that we humanities scholars have hitherto enjoyed.

Gatekeeping also represents an additional quandary. At present, university presses shoulder the burden of ensuring a relatively objective system of

peer review, at least in relation to book publication. Gary Hall, in his account of the future of digital publishing, highlights the fluid nature of digital texts, which lack the static quality of a printed and bound book, and asks how we can establish review standards for texts whose networked form means that they cannot be read or written in the same way twice.[30] While I agree with his conclusion that we cannot respond to the crisis in academic publishing by simply trying to put everything on the web, since the migration online changes the nature of both text and reader, I am troubled by Hall's poststructuralist-tinged reflections on institutionality, which celebrate uncertainty and instability. The digital transformation undeniably means we need to rethink the rules of the game, but it does not necessarily mean a proliferation of *différence* in textual production and evaluation.

The phenomenon of power law distribution in the blogosphere is instructive in this regard. While anyone with regular access to the Internet can theoretically write and read anything in any blog, power law distribution ensures that the more material is placed online, the greater the gap between material that gets huge amounts of attention and that which gets merely average attention.[31] So blogs like the *Daily Kos* can get literally millions of hits each day, but only a few people look at the average blog. Newcomers tend to lose out to already-established voices and sites.

This phenomenon in the blogosphere suggests that we cannot assume that simply putting scholarly materials online will get them a decent airing. Scholarly presses currently play an important curatorial function by identifying important theoretical trends and innovative scholarly interventions, ensuring that such interventions get vetted through scholarly review, and drawing attention to the works they publish through their marketing departments and through their social capital.[32] While there is no doubt a conservative aspect to this dynamic, I do not believe that we can assume that self-publishing online in a venue such as Hall's cultural studies archive CSeARCH will automatically lead to a dynamic new online incarnation of the public sphere. As power law distribution suggests, it is far more likely that, in the absence of a framework calculated to guarantee such dynamism as well as justice for junior scholars, existing inequalities in the world of publishing will be magnified. Although the institutions we inhabit today are far from perfect, they embody a century's worth of struggles for academic freedom and social justice, as well as lamentable forms of repressive State power and academic capitalism. If we are to ensure that computationalism does not reshape these institutions in ways that augment the latter characteristics rather than the former, we need to think very carefully about how to enlarge the space for

autonomous thought and publication using current and fresh institutional means rather than expecting that more information will automatically mean more freedom.

The Revolt of the Cognitariat

During the mid-1990s, a group of Paris-based theorists, many of them exiles from the turbulent "years of lead" in Italy during the preceding decade, worked to develop a theoretical grasp of unfolding social struggles in the journal *Futur antérieur*.[33] These theorists examined the impact of information technology on production processes and social formations on a global scale. Particularly important in this context were the speculative writings of Marx in his *Grundrisse*, which prophesized precisely such a transformation of production. For Marx, the creation of wealth in the capitalist societies of the future would come to depend not on the direct expenditure of labor time but rather on "the general productive forces of the social brain."[34] For theorists such as Toni Negri, Paolo Virno, Maurizio Lazzarato, Michael Hardt, and Jean-Paul Vincent, the heightened significance of this *general intellect* was made possible by the ever more central role of automation and of communication networks in contemporary processes of production.

Yet Marx had rather optimistically predicted that increasing automation would diminish direct labor time and socialize production, leading inevitably to the liquidation of private ownership and wage labor. For the past several decades, however, just the opposite seemed to be happening. New communication technologies had fostered the fragmentation, outsourcing, and globalization of production processes. In much of the developed world, labor appeared increasingly intellectual as research and design grew more central to information capitalism, but workers in high-tech industries were subjected to accelerating conditions of precarious employment by transnational corporations whose footloose character gave organized labor a horrible drubbing. Neoliberal ideologies dedicated to dismantling the social compact between capital, government, and workers made significant inroads even in bastions of social democracy such as France.

Notwithstanding this rout of what Immanuel Wallerstein calls the old antisystemic movements, the hegemony of neoliberalism quickly provoked new anticapitalist countermovements around the globe.[35] Faced with these contending currents, the theorists associated with *Futur antérieur* argued that the crucial issue was not simply the automation of production, which would, after all, constitute a form of technological determinism, but rather

the incessantly mutating character of the people who create and operate such technology. This variable human factor they termed *mass intellect* or *immaterial labor*. Just as the conditions of production in Marx's day had created revolutionary conditions by concentrating the proletariat in factories, so immaterial labor was linked together through the networked conditions of cognitive labor. For theorists such as Franco Berardi, contemporary conditions have produced a potentially revolutionary class in formation: the cognitariat.[36] The key question in the unfolding struggles of the neoliberal era for the *Futur antérieur* theorists was the extent to which capital could absorb and control immaterial labor.[37]

If the cognitariat had fancied themselves significant stakeholders in information capitalism, the dot-com crash, Franco Berardi argued, laid bare their precarious status as flexible wage slaves subjected to remorseless strategies of speed-up, outsourcing, and downsizing.[38] Yet an important form of rebellion had begun well before this economic downturn. If immaterial labor depends on communication and collaboration, the cognitariat has consistently asserted the noncommodified, commons-based character of digital culture from its inception. There are many facets to this culture of the digital commons, from the exchange of music using peer-to-peer file-sharing technology to the collaborative creation of Wikipedia to the creation of Creative Commons licenses designed to allow creative remixing of cultural artifacts, many of which are discussed by other contributors to this volume in far more detail than possible here. The thing that ties these diverse strands together, according to David Bollier, is an emphasis on commons-based values of participation, transparency, egalitarianism, and freedom.[39] Contemporary capitalism thrives through asserting control over information using intellectual-property regimes such as those sanctified by the World Trade Organization, hence assuring the scarcity and consequent exorbitant value of such information. Against this trend, cognitarian rebels have developed a postscarcity information economy grounded in the networked commons.[40]

This new commons movement is not, however, simply based on a shift in values away from proprietary models of intellectual property. In addition, digital technologies are leveraging new forms of social communication, removing many of the technical barriers that impeded the organization of large groups of people from the grassroots up, barriers that had helped foster relatively hierarchical and authoritarian organizational forms such as the modern state and the vanguard political party.[41] As Jeffrey Juris has documented, social networking technologies have played an important role in the global justice movement, linking geographically isolated groups such as the Zapatista Army

of National Liberation (EZLN), protagonists of one of the first signal revolts against the neoliberal world order, into a global activist grid and facilitating transnational mobilizations such as the World Social Forum.[42] These new technologies have played an important role in mobilizations against authoritarian governments in nations such as Iran, with networking permitting the assembly of so-called flash mobs with little advance warning and no central planning, and the rapid global dissemination of documentation of government repression.[43] For analysts such as David Bollier, social networking technologies are thus giving birth to new forms of the Habermasian public sphere and helping to promote engaged, "history-making" models of citizenship.[44]

It seems to me that we need to approach such at-times hyperbolic claims with a skeptical eye if we are to gauge the transformative potential of digital culture and immaterial labor with any accuracy. After all, as David Golumbia has argued at great length, digitization is not necessarily emancipatory. For Golumbia, the notion that we are witnessing a complete sea change in social relations catalyzed by digital technologies with inherently progressive potential is a form of ideology, one which he dubs computationalism.[45] While recognizing and celebrating the exploits of transgressive hackers and the free/libre/open-source software (FLOSS) movement, Golumbia notes that the predominant use of computers in contemporary culture is to augment the demarcating, concentrating, and centralizing power of dominant social institutions such as the State and transnational corporations.[46] A similar point, with the statistics to back it up, is made by Mathew Hindman in *The Myth of Digital Democracy*.[47] In fact, technology permits a giddy overlap of these diverse institutions, as I learned when I attended a Joint Forces war game during which software for tracking consumer behavior was deployed to model the strategies of insurgent forces in Iraqi cities.[48] We would do well to remember, given Golumbia's trenchant critique of computationalism, that the global reach and power of contemporary capital is to a significant extent a product of precisely the networking technologies that are so often celebrated by writers such as Bollier. Moreover, repressive states such as Iran and China are adapting with alarming rapidity to their citizenry's dissident use of tactical media such as Twitter and Facebook, pushing the global corporations that own these devices into disclosing the names of dissident users. And flash mobs are not always progressive. As the *Futur antérieur* theorists might warn us, then, it is not automation but rather the general intellect that is decisive in social struggles during the era of cognitive capitalism.

In addition, there is a certain hubris to discussions of the revolutionary potential of the cognitariat among contemporary intellectuals. After all, con-

temporary intellectuals are hardly dispassionate social observers à la Kant. They, or, dear reader, should I say we, are instead inhabitants of some of the most exploited and ideologically benighted precincts of the information economy. Yet as deeply as we have imbibed the gall of post-Fordist austerity, we should not forget that we are not the only ones to suffer the destructive creativity of neoliberalism. The global economy is made up of multiple different sectors, not all of which can be deemed immaterial labor with any theoretical acuity. The expansion of this term by some of the theorists associated with *operaismo* no doubt stems from their reaction against the vanguardist tradition of the Communist Party. For activist intellectuals associated with the Italian movement *Lotta continua*, the Party's purported stranglehold over class consciousness had deeply authoritarian implications.[49] The concept of mass intellect is clearly meant to challenge such preemptive claims to the making of history. But, as important as it is to dismantle vanguardist posturing, there are very real dangers to expanding notions of cognitive labor to envelop the entire body politic. This is because, as George Caffentzis and Silvia Federici argue, capital has thrived historically by organizing production at both the lowest *as well as* the highest technological levels of the global economy, by exploiting both waged and unwaged labor, and by producing both development and underdevelopment. The logic of capitalism, Caffentzis and Federici underline, can only be grasped by "looking at the totality of its relations, and not only to the highest point of its scientific/technological achievement."[50] The history of the twentieth century, during which revolutionary movements found the most fertile terrain in underdeveloped, colonized nations rather than in the core capitalist countries, provides ample evidence for this critique.

By privileging immaterial labor and cognitive capitalism, contemporary theorists risk eliding the contribution of other forms of work—and other workers—to the accumulation process. To quote Caffentzis and Federici again, "the huge 'iceberg' of labor in capitalism was made invisible by the tendency to look at the tip of the iceberg, industrial labor, while the labor involved in the reproduction of labor-power went unseen, with the result that the feminist movement was often fought against and seen as something outside the class struggle."[51] To privilege one sector of anticapitalist struggle over the others is to invite defeat at the hands of capital, whose overlords are unfailingly canny in their use of divide-and-conquer tactics. Rather than privileging one sector, or even extending its terms to all other sectors as some analysts associated with theories of cognitive labor have sought to do, we need, Caffentzis and Federici argue, "to see the continuity of our struggle

through the difference of our places in the international division of labor, and to articulate our demands and strategies in accordance to these differences and the need to overcome them."[52] Caffentzis and Federici's strategic warning of course also finds strong grounding in the work of critics such as Ernesto Laclau and Chantal Mouffe, whose theories of agonistic pluralism challenge precisely the erasure of difference that totalizing doctrines of a prime historical mover or revolutionary class tend to further.[53]

Caffentzis and Federici's admonitions should hardly need airing today, in the context of a global justice movement whose protagonists have been overwhelmingly based on the global South among indigenous and peasant organizations such as the EZLN and La Via Campesina.[54] Nevertheless, advocates of the networked commons almost always ignore the impact of debates about intellectual property on those who are not a part of the cognitariat but whose lives are likely to be deeply affected by legal decisions and dissident technologies.[55] As Andrew Ross puts it in a recent discussion of precarious labor that charts the overlaps and disjunctures between those at the top and those at the bottom of the labor market today,

> Because they are generally indisposed to state intervention, FLOSS advocates have not explored ways of providing a sustainable infrastructure for the gift economy that they tend to uphold. Nor have they made it a priority to speak to the interests of less-skilled workers who live outside their ranks. On the face of it, there is little to distinguish this form of consciousness from the guild labor mentality of yore that sought security in the protection of craft knowledge.[56]

For Ross, (prototypically liberal) notions of freedom endemic to the cognitariat need to be supplemented and transformed by a movement for social justice that cuts across classes, catalyzing what Caffentzis and Federici would call a political "recomposition" of the workforce.

A key element in such a recomposition will surely be the elaboration of praxis that recognizes the strategic importance of the networked commons while refusing to subordinate struggles over other instances of the commons to the perspectives and tactical orientations of the cognitariat. As Michael Hardt has recently argued, the ecological and the social commons are united by significantly similar dynamics. Both, for example, "defy and are deteriorated by property relations."[57] Nevertheless, as Hardt admits, there are significant disparities between these two commons, with the ecological sphere hinging on conservation of an increasingly depleted biosphere, while social

commons discourses focus on the open and potentially unlimited character of social creation and intercourse. The point though, as Laclau and Mouffe's theoretical work suggests, should be to articulate common struggles across this differentiated but nevertheless potentially complementary terrain of struggle.

Nick Dyer-Witheford's recent model of a twenty-first-century communism as "a complex unity of terrestrial, state and networked commons" goes some way toward conceptualizing such an articulatory politics.[58] Crucial to his theorization, indeed, is a vision of the networked commons that, despite its role as "the strategic and enabling point" in this ensemble, must nevertheless be seen in its dependency on and potential contradiction with other commons sectors.[59] The successful articulation of these different commons, or their disarticulation by capital, lies, in other words, in the realm of radical democratic politics rather than in any inherent features of immaterial labor.

(Tentative) Conclusions

Academics in the humanities are woefully unprepared for digital transformations, despite the significant and multifarious opportunities it offers for scholarship. According to the landmark Modern Language Association *Report of the MLA Task Force on Evaluating Scholarship for Tenure and Promotion*, 40.8 percent of the doctorate-granting institutions that responded to the organization's survey had no experience evaluating refereed articles in electronic format, and 65.7 percent had no experience evaluating monographs in electronic format.[60] The report concludes that while scholars are willing to experiment with online publishing, what matters most in judging scholarship is peer review, and e-publishing remains tainted because peer review has not sufficiently touched it. Just as is true in the sciences, while humanities scholars may disseminate their publications online, the final, archival publication still has to appear in a traditional, paper format to be considered seriously for tenure and promotional evaluation. This means that many of the radical textual and scholarly possibilities of digital publication remain unexplored.

For this situation to change, scholars need to have a far more serious and sustained discussion about the implications of online publishing. The MLA report opens that dialogue by posing a number of important questions: Why, for example, should the monograph be the pinnacle of scholarly achievement in the humanities? Why, furthermore, should the dissertation be a protobook rather than a portfolio of essays and other forms of inquiry (data analysis,

visual displays such as Moretti's graphs, maps, and trees, etc.)? Why should we cling to the isolated, atomistic model of scholarly production, a conservative tendency that seems particularly peculiar given decades of theoretical work to dismantle liberal models of sovereign subjectivity, rather than developing models for collaborative production?[61]

In my work on the editorial collective of the journal *Social Text*, I have seen that digitalization raises a series of thorny questions as well as many exciting opportunities for scholars. Recent discussions about making the journal open access have highlighted some of the complex dynamics around publishing that I alluded to earlier. Members of the editorial collective expressed hesitation, for example, about depriving their publisher of the revenues produced by the journal and trepidations about shifting the journal too far away from its archive-worthy print incarnation.[62] At present, *Social Text* is experimenting with an online presence that will explore some of the radical possibilities for digital scholarship using blogs, video diaries, and electronic forums while retaining its official paper imprimatur. We will see how long this compromise formation holds up as the digital transformation gathers steam—although this metaphor demonstrates the extent to which new technology is always framed in terms of and shaped by prior forms, suggesting that it will not be so easy to shake off the tyranny of paper even when the journal goes completely online.

A more ambitious model for the future is available in the form of the Open Humanities Press (OHP), which is using the social capital of its stellar international editorial board to leverage support for a stable of ten online journals and a constellation of five e-book series.[63] The prominence of OHP's editors is likely to solve some of the power law distribution problems that I discussed earlier, although it does raise questions about equality. Should not junior scholars have a really significant presence in any online initiative since it is they whose careers are most likely to shape and be shaped by digital transformations? Does the OHP's glamorous editorial board offer meaningful openings for scholars at all levels, or does it simply recapitulate the star system's unequal access to print publication? In addition, how sustainable is the OHP's book series, which is slated to operate through a cooperative agreement with the University of Michigan Library's Scholarly Publishing Office? Will some of the concerns voiced by the academic publishers I interviewed concerning the poor fit between libraries and scholarly publishing be borne out?

We are at the initial stages of such initiatives and of a far broader discussion about their theoretical implications. It is important, however, that we think

clearly about the implications of current projects and about the processes and institutions that are driving the move online. At the moment, online teaching is dominated by for-profit organizations like the University of Phoenix that offer some of the worst examples of exploitation of precarious intellectual labor in academia.[64] Large foundations such as Mellon are promoting the shift online through initiatives such as Project Bamboo that were not initially framed in a particularly inclusive manner. As I have indicated, there is nothing to prevent administrators from using computationalism to intensify academic capitalism except our own self-organizing efforts. Academics need to assert our collective agency in establishing the contours of the digital future rather than allowing administrators and corporations to define that future for us. In addition, theories of the cognitariat have tended to be woefully myopic in their analysis of the multiple strata and divide-and-conquer tactics of contemporary capitalism. The move online certainly cannot solve the deep problems raised by academic and cognitive capitalism, but analysis of the digital humanities does need to take these material conditions into consideration in order to escape technological determinism and voluntarism. Against such problematic models, scholars need to work actively on both theoretical and practical planes to foster an inclusionary and egalitarian networked commons.

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