Epilogue

In 2007, *New York Times* software reviewer David Pogue gave a speech to five hundred American college students. To demonstrate the importance of copyright, he asked who in the audience thought downloading a movie without paying for it was wrong. Only two hands went up in agreement, prompting him to declare an alarming "generational divide in copyright morality." In 1924, in another divide, listener petitions lined up behind "squatter" stations that violated radio transmitter patents against the patent owner, AT&T. Such stories render moot the idea, advanced by recent studies, that a sense of fairness is a universal phenomenon. Evolutionary biologists find that capuchin monkeys refuse unequal pay and economists report that students give up their own money to punish cheaters in classroom experiments. Yet a universal "moral instinct" cannot explain why British housewives see nothing "morally wrong" with downloading the latest episode of *Lost* from BitTorrent while the International Intellectual Property Alliance (IIPA), representing U.S. movie, music, software, and publisher lobbies, cries foul at Egypt for letting peddlers sell photocopied textbooks near university campuses.[1] A historical investigation that pays attention to the passions of the moment may be more useful for understanding today's economic moral sense than controlled experiments that presume that humans naturally behave as ethical beings. Insofar as radio's past helps us to understand American traditions of reciprocity, it illuminates the moral economy of digital culture today.

On the one side of the divide, corporate industries invoke morality to extend the reach of intellectual property. The Internet and digital media have made distribution and copying of creative works easier but have also led to more restrictive copyright legislation and "digital rights management" encryption technologies. In 1998, the Copyright Term Extension Act increased copyright terms to the life of the author plus 70 years and for corporate works to 120 years after creation or 95 years after publication, whichever is greater.

The same year, the Digital Millennium Copyright Act outlawed software that breaks encryption protections, and allowed owners to demand that copyrighted content posted without permission be taken offline without testing for "fair use" cases—for education or criticism, for example. Biotech and pharmaceutical industries have adopted this rhetoric as well. "Are you willing to sacrifice your morality for thirty dollars a bushel?" one radio commentator admonished soybean farmers in 2003 for storing hybrid seeds for next year's crop. These farmers, he argued, were thieves, just like peer-to-peer users, because they refused to pay annual royalties to the patent owner.[2]

On the other side, the "free and open source software" and "free culture" movements transform laws and institutions to collaborate and share information. Without CEOs or profit margins, free software projects such as Linux (an operating system) and Apache (a web server) bring together programmers who share expertise, resources, and code. The "geeks" participating in these projects follow the "hacker ethic"—an evolving and contradictory set of principles that include, but are not limited to, information sharing, decentralized collaborative governance, distrust of authority, and an understanding of programming as an art. This moral code draws on liberal doctrines of free speech and of copyright as a means to encourage innovation—written into the U.S. Constitution and the Bill of Rights—and thus seems to stand apart from the copyright-infringing music fans and soybean farmers in the United States and abroad.[3] Yet, much like the ethical sensibilities underlying innovation in early radio, the digital moral economies stretch across the line separating the "rule of law" from criminality, insurgency, and the so-called "developing world."

As history makes clear, media piracy has long thrived inside as well as outside of "developed" Western countries. In the 1920s, Americans tuned in pirate "wave jumping" radio stations. Today, users everywhere turn to BitTorrent and LimeWire, programs that allow users to share files over the web without storing them on one central server. The Electronic Frontier Foundation, a digital rights advocacy nonprofit based in the United States, estimated in 2003 that over sixty million Americans had used filesharing programs. By then, the Recording Industry Association of America and the Motion Picture Association of America had sued over 20,000 U.S. music and video downloaders. According to IIPA, as of early 2010, Canada was hosting four of the top ten filesharing sites in the world; Switzerland allowed downloading from international peer-to-peer sites; Russia had licensed several infringing pay-per-download music services; China had the most illicit music and video

downloaders in the world; and street markets of pirated music, films, TV shows, software, and games flourished in Mexico, Argentina, and Chile. Citing data on financial losses that the U.S. government's own Accountability Office finds dubious, the Office of the U.S. Trade Representative has authorized sanctions against these and other infringing countries on its "watch list," thereby manufacturing global consumer audiences for U.S. pharmaceutical, biotech, and entertainment industries.[4]

Yet one executive's piracy is another user's justice. In 1922 the earliest radio fans saw nothing wrong in making and buying bootleg replacement tubes to keep their receivers going. Today, TV fans synchronize their bootleg viewing with American broadcasts. In 2005 Envisional, an Internet monitoring company, calculated that TV piracy had increased 150 percent from the previous year, Great Britain leading with 18 percent of the world's downloads. British viewers felt entitled to see episodes of *24* and *Battlestar Galactica* as soon as possible after they aired in the United States, seeing these shows as "legitimate material" for copying as long as they kept up their cable subscription. After surveying reports from public BitTorrent trackers, filesharing news blog TorrentFreak reported that in 2009, at the time the highest point of TV piracy, most downloaders resided in countries where American shows aired months later and thought it unfair to have to wait several months for an installment of *Heroes* or *Lost*. TorrentFreak suggested that the industry might want to experiment with TV-on-demand in response to viewers' desire for a new, globally live, television. Filesharing networks thus do for television what bootleg receivers and "squatter" stations did for radio in the 1920s—create an infrastructure and an international live audience for a reinvented entertainment medium.[5]

Peer-to-peer users assume that current intellectual property relations are unjust; fan fiction projects take this moral economy as a license for creative practice. *Star Trek* or *Buffy the Vampire Slayer* audiences communicate with producers directly in chat rooms, rewrite media stories in fanzines, and create communities around programs. As a result, much like the radio soap opera writers of the 1930s, some TV and film producers today opt for direct collaboration with fans instead of consulting ratings or survey data. Creators of the TV show *Battlestar Galactica* and *The Lord of the Rings* film trilogy consulted with fans while they were working on the new versions of these cult works. This reciprocal production process made both versions popular and profitable. Such authors still choose practical knowledge over scientific management of audiences.[6]

ˋ   When producers prohibit fans from making art based on copyrighted shows, fans test the limits of corporate ownership. Their works inspire legal theories that extend doctrines of fair use in copyright to include derivative works, as well as new copyright licenses, like the Creative Commons license, that allow authors to share and remix creative material. Some creators side with audiences rather than the corporate owners on what is fair. In April 2010 Constantin Film tried to use Google's "Content ID" system to remove the innumerable YouTube parodies based on phony subtitles to a famous Hitler bunker scene from its film *Downfall.* "You couldn't get a better compliment as a director," the film's author Oliver Hirschbiegel had remarked about the videos just a few months earlier. Some parodists claimed fair use exceptions, allowing Google to restore the videos. As of this writing, many of the paro-dies are still online, including a version where Hitler fumes about Constantin Film's takedown of the videos. Precisely because these audiences do not have complete autonomy when they reinvent media stories, they propose a differ-ent, just relationship between media corporations and audiences. ̄

The audience's sense of entitlement seems even more justified when it comes to access to knowledge. In 2008, the *New York Times* reported, Ameri-can students grew "angrier than ever before about the price of textbooks," hardly affordable at more than $200 a copy. This outrage inspired a range of nonproprietary solutions, from pirate sites such as the now defunct Text-book Torrents, to open-access journal publishing ventures, such as Public Library of Science, that make the latest academic research freely available for unrestricted use, to open source projects like Connexions, a collaborative site that lets members create free teaching "modules" that can be combined into textbooks. The scholarly entitlement extends across regional borders: the open-access movement expands the scholarly community to include unaffili-ated researchers and scholars in non-Western universities who do not have access to commercial article databases. It also stretches across the digital di-vide. According to the IIRA, Egyptian government agencies "look the other way" while stalls selling photocopied textbooks and course packs operate near campuses, lecturers "encourage" copying, and universities "give pirate enterprises cover" and rent space to copy shops.ˣ

Legal U.S. scholarly websites and illegal Egyptian copy shops may seem worlds apart; they are not. Although invented in the United States, open access transforms the ways scientists everywhere can claim authorship. At the turn of the nineteenth century, a self-taught English mathematician and engineer, Oliver Heaviside, came up with methods to overcome signal

distortion in telegraphy, but because he was not affiliated with a corpora-
tion or a university and did not patent his invention, AT&T appropriated and
profited from his theories. In 2002-2003, a reclusive and unemployed Russian
mathematician, Grigory Perelman, posted his own solution to the Poincaré
Conjecture on arXiv, an open-access repository of scientific preprints, and
received recognition for the discovery against the claims of published and
affiliated Chinese scholars. He also received offers of several million dollars
in prestigious prizes, which he refused.[9] The accepted practice of preprint
publishing served to ensure Perelman's credit, as did the concomitant moral
sensibility, the same sensibility that leads one to suspect that in going after
makeshift stalls on Egyptian campuses IIRA may have overreacted.

In the United States, lay moral economies sometimes influence legal
thinking. The "copyleft" movement, which includes the Free Software Foun-
dation and Creative Commons, among others, drew upon collaborative
practices in free software and fan communities to develop several licenses
that allow authors to waive some or all of their rights to users. FSF founder
Richard Stallman developed GPL (General Public License) informally, while
making software; Lawrence Lessig, a Constitutional legal scholar, consulted
open source developers when he first conceptualized Creative Commons. Al-
though Stallman and Lessig disagree on the value of each other's approaches
to copyright, these and other "copyleft" projects draw upon the "pragmatist"
view of the Anglo-American common law tradition, articulated by Oliver
Wendell Holmes, Jr., who famously opined that "the life of law has not been
logic; it has been experience." This emphasis on practice, anthropologist
Chris Kelty argues, makes the free software and free culture movements a
"recursive public," which constantly reinvents its own technological, legal,
and moral conditions of existence.[10]

U.S. government actions and court decisions, too, occasionally share or
take into account popular practices and moral views. In 1932, the Justice De-
partment followed popular outrage when it broke up the radio trust. In 1986,
the U.S. Supreme Court agreed with VCR owners that recording television
programs on their machines was fair. In the 1970s, early video enthusiasts
had begun to "timeshift"—tape TV shows on their recorders to watch later.
When Universal sued Sony over its new Betamax copying technology in
1976, many videorecorder owners saw the lawsuit as an attack on their civil
liberties. By 1982, VCRs had supplanted Betamax machines and videorecord-
ing had become a common practice. The Supreme Court ruled in favor of
Sony, extending the fair use provisions of the 1976 Copyright Act to include

timeshifting, and arguing that Sony was not liable for potential infringement, given that many lawful uses of the technology were also possible. The Court's decision was not unanimous and, some say, was actually contradictory, yet it seemed to concur with Judge Holmes in that it relied not on logic alone but also on the practical knowledge of VCR users' experience.[11]

The moral economies embedded in free software, open-access, fan fiction, and filesharing practices may yet influence legal decisions on digital property. In 2005 in *MGM v Grokster*, the Supreme Court ruled that Grokster, a peer-to-peer filesharing service, was liable for its users' music piracy even though lawful uses of its services were also possible. This ruling contradicted the Betamax decision, and led to the development of takedown software systems like Google's Content ID, which made it easy for Constantin Films to remove the Hitler parodies from YouTube. Between 1999 and 2003, the MPAA and Adobe used DMCA to initiate high-profile arrests and lawsuits targeting a Norwegian, Jon Johansen, and a Russian, Dmitry Sklyarov, for authoring software that could break the content scrambling protection on DVD discs and Adobe e-books. These cases, later dismissed, inspired hacker protests that established a notion that software code qualifies for legal protection as free speech. This notion then informed legal arguments by Lessig, Yochai Benkler, and other digital rights advocates, in what anthropologist Gabriela Coleman, following legal theorist Robert Cover, calls "jurisgenesis"—a process whereby lay communities invent new legal meanings and institutions. In July 2010, the Copyright Office and the Librarian of Congress, charged by the 1976 copyright law to clarify fair use, declared that it is legal to jailbreak iPhones and to circumvent CSS encryption on DVDs to create remix videos. Both rulings chip away at DMCA restrictions and attendant legal reasoning.[12]

In the global context, however, digital moral economies often come into irreconcilable conflict with legal codes governing the relationships between the United States and the rest of the world. The IIPA, for example, condemns foreign nations for practices that would be legal in the United States: Israel, for "overly broad" fair use provisions; and Indonesia, Brazil, and India for using open source software to run government agencies. The anarchist antiglobalization movements, active since the anti-World Trade Organization protests in Seattle in 1999, have adopted the open-access model of decentralized collaborative governance. Meanwhile, human rights and environmentalist groups have been living in fear that their computers would be taken by local police for pirating Microsoft software. In September 2010 the Baikal Environmental Wave group in Russia had its computers confiscated in the midst of protesting

the reopening of a paper factory that had polluted the world's largest freshwater preserve, Lake Baikal. "Microsoft did not want to help us, which would have been the right thing to do," activists reported. In several such cases, Microsoft, whose formidable bootleg software tracking force of former FBI and Secret Service agents recalls RCA's anti-tube-bootlegging squads of the 1920s, claimed that they were required to assist the police under Russian law. Only after the *New York Times* published an exposé of its policies did Microsoft withdraw its support of Russian police raids and announce a free software licensing program for activists in Russia and several former Soviet republics, as well as China, Malaysia, and Vietnam, thereby admitting that it was not free market but free software that best served justice in those countries.[13]

The story of Wikileaks demonstrates on a global Internet-era scale the point that this book makes about early American radio: that reciprocity required by a new medium can inform a critique of larger power relations. Much like early radio and free software, the digital whistleblower organization took shape by trial and error. In July 2007, a small stateless group of hackers had first invited anonymous submissions of secret government and corporate documents, publishing files from a Kenyan political corruption study to email correspondence showing that British scientists fudged data to advocate for global warming. Wikileaks activists began by posting on their website documents as received; only a few journalists and bloggers paid attention. Then in 2010 Wikileaks published a vast collection detailing U.S. imperialism in diplomacy and war: in April of that year, a video showing a U.S. army helicopter killing several Iraqis and two Reuters journalists, and wounding two Iraqi children; in July, 76,607 military dispatches from Afghanistan; in September, 390,136 Iraq war dispatches; and starting in November, gradually, 251,287 U.S. State Department cables. They widely announced the release of the U.S. helicopter video and included their own edits along with the raw footage; major media outlets replayed it but criticized the group for partisan editorializing. Since then, Wikileaks has released documents simultaneously with analyses of them in established media sources, collaborating on the Afghan war logs with the *New York Times*, the British newspaper *Guardian*, and the German magazine *Der Spiegel*; then adding Al Jazeera and French *Le Monde*, for the Iraq logs, and Spanish *El Pais*, for the diplomatic cable release. After human rights organizations censured the group for revealing names of Afghan civilians, Wikileaks took care to redact every name in the Iraq logs and the diplomatic cables, in collaboration with journalists. "Wikileaks Evolves," one observer concluded in December 2010, noting the increasingly

mature ways whereby the organization protected individual lives while fo-
cusing public attention on the civilian deaths, bribes, lies, torture, and other
calamities witnessed and incited by U.S. agents.[14]

Wikileaks makes vernacular political economy—the subject of this book—
possible on a global scale because it "crowdsources" interpretation. It allows
its readers to form and express their own opinions based on the documents
that usually get to the public second-hand, digested by journalists, politicians,
and corporate publicists. Besides the Wikileaks websites, several interfaces
have sprung up that make such popular political theory possible: online com-
ment sections of Wikileaks partner news outlets, the *Guardian*'s "You Ask, We
Search" feature for readers, the user analysis interface by the French nonprofit
digital journalism organization OWNI, and the diplomatic cable search by the
European Center for Computer Assisted Reporting, to name just a few. This di-
rect public access to massive sets of classified materials "embodies all that is sa-
cred to the hacker mentality," according to the veteran hacker newsletter *2600*;
it has also been declared dangerous. The Pentagon likened document leaks to
illegal file sharing; the State Department, to espionage; Amazon refused to host
Wikileaks; MasterCard, Visa, and Paypal, to process donations; EveryDNS, to
process the wikileaks.org domain name; even some Wikileaks members de-
fected to form their own organization, Openleaks, that resolved "not to publish
any document directly." Because, not despite, of this government and corporate
onslaught, Wikileaks has maintained popular legitimacy, evident in over three
hundred volunteer mirror sites hosting its files and several copycat organiza-
tions, such as Tradeleaks, Brusselsleaks, and Indoleaks.[15]

Although their politics belonged to a different age, that of the New Deal
and World War II, early radio's moral economies have much in common with
today's tenets of cooperation, reciprocity, and trial-and-error production in
technology, ethics, and law. Aspects of hacker values and practices—values
that now seem inseparable from contemporary computer communication
networks—also applied in earlier eras in American history, especially at times
when new technologies and cultural forms were emerging. Studying this his-
tory helps us make moral and political judgments in the present. The point of
Wikileaks, one defender argued, is "to encourage in individuals the sense of
justice which would embolden them to challenge the institutions that control
our fate."[16] Nanny Roy, the radio listener whose own account of her sense of
justice opened this book, would surely agree.

Victor S. Navasky, *Naming Names* (New York: Hill and Wang, 2003); Green, *Selling the Race*, 87.

42. BMI Program Clinics ad, *Billboard*, April 26, 1952; Glenn Dolberg, speech at the BMI Clinic, Gainsville, Fl., March 26, 1951, tape 311, LAB-BMI.

43. Hugh Smith, speech at the BMI Clinic, Salt Lake City, Utah, February 11, 1951, tape 409, LAB-BMI; Fred Robbins to *Billboard*, December 4, 1948, 20; Robert Pruter, *Chicago Soul* (Champaign-Urbana: University of Illinois Press, 1992), 24 (Vivian Carter).

44. "Roy Milton Hollers Loud On Tune Piracy," *New York Amsterdam News*, February 21, 1948; Dolberg, BMI Clinic speech.

45. Dick Redmond, speech at the BMI Clinic, Harrisburg, Pa., August 20, 1951, tape 355, LAB-BMI; "Storm Rages in Cincy over DJ 'Exclusives,'" *Billboard*, March 7, 1953; "Broadcasters, DJs Plagued by New Law," *Billboard*, January 31, 1953.

46. On Top 40, see Eric W. Rothenbuhler and Tom McCourt, "Radio Redefines Itself, 1947–1962," in *Radio Reader: Essays in the Cultural History of Radio*, ed. Michele Hilmes and Jason Loviglio (New York: Routledge, 2002), 367–87; and McCourt and Rothenbuhler, "Burnishing the Brand."

Epilogue

1. David Pogue, "The Generational Divide in Copyright Morality," *NYT*, December 20, 2007, http://www.nytimes.com/2007/12/20/ technology/personaltech/20pogue-email.html; "Protest Suit of WEAF," *New Jersey Evening Journal*, March 1924. See, for example, Sarah F. Brosnana and Frans B. M. de Waal, "Monkeys Reject Unequal Pay," *Nature*, September 18, 2003; Ernst Fehr and Simon Gachter, "Fairness and Retaliation: The Economics of Reciprocity," *Journal of Economic Perspectives* 14, no. 3 (Summer 2000): 159–81; Marc Hauser, *Moral Minds: How Nature Designed Our Universal Sense of Right and Wrong* (New York: Ecco, 2006); International Intellectual Property Alliance, *2010 Special 301 Report*, http://www.iipa.com/2010_SPEC301_TOC.htm; Patrick Barkham, "Britons Set Another Technological Lead—in Pirating TV Shows," *Guardian* (London), February 19, 2005, http://www.guardian.co.uk/technology/2005/feb/19/media.broadcasting; International Intellectual Property Alliance, *2010 Special 301 Report*, February 18, 2010, 174, http://www.iipa.com/2010_SPEC301_TOC.htm.

2. Siva Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How it Threatens Creativity* (New York: New York University Press, 2003); Siva Vaidhyanathan, *The Anarchist In The Library: How the Clash Between Freedom and Control Is Hacking the Real World and Crashing the System* (New York: Basic Books, 2005); Tarleton Gillespie, *Wired Shut: Copyright and the Shape of Digital Culture* (Cambridge, Mass.: MIT Press, 2007); Lawrence Lessig, *Code: Version 2.0*, 2nd ed. (New York: Basic Books, 2006); Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (New York: Penguin Press, 2004); Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (New York: Random House, 2001); Bill Glahn, "The New Mo-

˙rality of Capitalism," *Counterpunch*, October 22, 2003, http://www.counterpunch.org/glahn10222003.html (radio commentator).

3. Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, Conn.: Yale University Press, 2006); Christopher Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham, N.C.: Duke University Press, 2008); Steven Levy, *Hackers: Heroes of the Computer Revolution* (New York: O'Reilly Media, 2010); Gabriella Coleman and Alex Golub, "Hacker Practice: Moral Genres and the Cultural Articulation of Liberalism," *Anthropological Theory* 8, no. 3 (September 2008): 255–77; Gabriella Coleman and Mao Hill, "The Social Production of Ethics in Debian and Free Software Communities," in *Free and Open Source Software Development*, ed. Stephan Koch (Hershey, Pa., and London: Idea Group, 2004); For two in-depth overviews of digital culture as an interdisciplinary field of study, see Gabriella Coleman, "Ethnographic Approaches to Digital Media," *Annual Review of Anthropology* 39 (2010): 1–19; and Siva Vaidhyanathan, "Afterword: Critical Information Studies," *Cultural Studies* 20, no. 2 (May 2006): 292–315.

4. Jason Schultz, "File Sharing Must Be Made Legal," *Salon*, September 2003, http://www.salon.com/technology/feature/2003/09/12/file_sharing_two (EFF statement); "File Sharing," *EFF*, http://www.eff.org/issues/file-sharing (campaign launched in 2003); IIPA, *2010 Special 301 Report* (see n. 1); for analyses of this and an earlier IIPA report, see Michael Geist, "US Copyright Lobby Out-of-Touch," *BBC*, February 20, 2007, http://news.bbc.co.uk/2/hi/technology/6379309.stm; *Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* (Washington, D.C.: U.S. Government Accountability Office, April 2010); on the pharmaceutical industry, see Jacqui Cheng, "Human Rights Groups Slam Special 301 Report," *Ars Technica*, July 20, 2010, http://arstechnica.com/tech-policy/news/2010/07/groups-say-special-301-report-denies-countries-life-saving-drugs.ars; for a useful general history of piracy and intellectual property, see Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: University of Chicago Press, 2009).

5. Barkham, "Britons Set Another Technological Lead"; Michael Pollitt, "Science and Technology: Small-Screen Bounty," *Independent* (London), February 19, 2005, 11; Ciar Byrne, "New Twist in Internet Piracy as Britons Rush to Download TV," *Independent* (London), February 19, 2005; Ernesto, "Top 10 Most Pirated TV-Shows of 2009," *TorrentFreak*, December 31, 2009, http://torrentfreak.com/top-10-most-pirated-tv-shows-of-2009-091231.

6. Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (New York: New York University Press, 2006); Henry Jenkins, *Textual Poachers: Television Fans and Participatory Culture* (New York: Routledge, 1992); John Tullock and Henry Jenkins, *Science Fiction Audiences: Watching Doctor Who and Star Trek* (London and New York: Routledge, 1995); Elana Shefrin, "Lord of the Rings, Star Wars, and Participatory Fandom: Mapping New Congruencies between the Internet and Media Entertainment Culture," *Critical Studies in Media Communication* 21, no. 3 (September 2004): 261–81.

7. "Creative Commons," http://creativecommons.org/; "The Rise, Rise and Rise of

the Downfall Hitler Parody," *BBC*, April 13, 2010, http://news.bbc.co.uk/2/hi/8617454. stm; "Constantin Films Pulls Hitler," http://www.youtube.com/watch?v=DvJqZ3SDwNc; Lucas Hilderbrand, "Youtube: Where Cultural Memory and Copyright Converge," *Film Quarterly* 61, no. 1 (September 2007): 48–57.

8. Randall Stross, "First It Was Song Downloads. Now It's Organic Chemistry," *NYT*, July 27, 2008, http://www.nytimes.com/2008/07/27/technology/27digi.html (student anger and Textbook Torrents); Public Library of Science, http://www.plos.org/; Connexions, http://cnx.org/; Kelty, *Two Bits*; IIPA, *2010 Special 301 Report*, 174.

9. James A. Evans and Jacob Reimer, "Open Access and Global Participation in Science," *Science* 323, no. 5917 (February 20, 2009): 1025; Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: University of Chicago Press, 2009), 427–28 (Heaviside); Sylvia Nasar and David Gruber, "Manifold Destiny," *New Yorker*, August 28, 2006, http://www.newyorker.com/archive/2006/08/28/060828fa_fact2.

10. "FSF Free Software Licensing and Compliance Lab," *Free Software Foundation*, n.d., http://www.fsf.org/licensing; "Creative Commons," http://creativecommons.org/; On Richard Stallman and recursive publics, see Kelty, *Two Bits*; Gabriella Coleman, "Code Is Speech: Legal Tinkering, Expertise, and Protest Among Free and Open Source Software Developers," *Cultural Anthropology* 24, no. 3 (2009): 432–33 (Lessig consulted free software programmers); Lessig, *The Future of Ideas*; Lessig, *Code 2.0*; Lessig, *Free Culture*; Oliver Wendell Holmes, Jr., *The Common Law* (London: Macmillan, 1881), 1 (quote); Oliver Wendell Holmes, Jr., "The Path of the Law," *Harvard Law Review* 110, no. 5 (March 1997): 991–1009.

11. "The Betamax Case," *Electronic Frontier Foundation*, http://w2.eff.org/legal/cases/betamax/. On *Universal v. Sony*, see James Lardner, *Fast Forward: Hollywood, the Japanese, and the Onslaught of the VCR* (New York: Norton, 1987) and Lucas Hilderbrand, *Inherent Vice: Bootleg Histories of Videotape and Copyright* (Durham, N.C.: Duke University Press, 2009). On early video stores, see Joshua M Greenberg, *From BetaMax to Blockbuster: Video Stores and the Invention of Movies on Video* (Cambridge, Mass: MIT Press, 2007).

12. "MGM Studios v Grokster," *U.S. Copyright Office*, http://www.copyright.gov/docs/mgm/; Hilderbrand, *Inherent Vice*; Coleman, "Code Is Speech;" "EFF Wins New Legal Protections for Video Artists, Cell Phone Jailbreakers, and Unlockers," *Electronic Frontier Foundation*, July 26, 2010, https://www.eff.org/press/archives/2010/07/26.

13. IIPA, *2010 Special 301 Report*; "When Using Open Source Makes You an Enemy of the State," *Guardian* (London), February 23, 2010, http://www.guardian.co.uk/technology/blog/2010/feb/23/opensource-intellectual-property; Jeffrey S. Juris, *Networking Futures: The Movements against Corporate Globalization* (Durham, N.C.: Duke University Press, 2008); Clifford J. Levy, "Russia Uses Microsoft to Suppress Dissent," *NYT*, September 11, 2010; Levy, "Microsoft Changes Policy Over Russian Crackdown," *NYT*, September 13, 2010; Levy, "Microsoft Expands Effort to Protect Nonprofit Groups," *NYT*, October 16, 2010; Ashlee Vance, "Microsoft vs. Software Piracy: Inside the War Room," *NYT*, November 6, 2010.

14. Raffi Khatchadourian, "WikiLeaks and Julian Paul Assange," *New Yorker*, June 7,

＇ 2010, http://www.newyorker.com/reporting/2010/06/07/100607fa_fact_khatchadourian (excellent early account of Wikileaks); "Wikileaks' Afghanistan Log: Wikileaks' 10 Greatest Scoops," *Telegraph*, July 26, 2010, http://www.telegraph.co.uk/news/worldnews/asia/afghanistan/7911036/Wikileaks-Afghanistan-log-Wikileaks-10-greatest-scoops.html (Kenya and global warming). My account of Wikileaks 2010 disclosures is based on coverage of the Wikileaks controversy from April to December 2010 in the following sources: *New York Times*, http://nytimes.com; *Guardian* (London), http://www.guardian.co.uk/; Glenn Greenwald's blog, *Salon*, http://www.salon.com/news/opinion/glenn_greenwald/index.html; and Greg Mitchell's "Media Fix" blog, *Nation*, http://www.thenation.com/blogs/media-fix. (In December each source provided nearly daily coverage.)

15. As of this writing, Wikileaks is at http://213.251.145.96; Afghan War Logs app, *OWNI*, http://app.owni.fr/warlogs/; Iraq War Logs app, *OWNI*, http://warlogs.owni.fr/; State Logs app, *OWNI*, http://statelogs.owni.fr/; Cable Search Beta, *European Center of Computer Assisted Reporting*, http://cablessearch.org; Charles Arthur, "Openleaks? Brusselsleaks? Tradeleaks? The Market's Getting Crowded," *Guardian* (London), December 16, 2010, http://www.guardian.co.uk/media/pda/2010/dec/16/openleaks-brusselsleaks tradeleaks-whistleblowing.

16. W. W., "After Secrets: Missing the Point of Wikileaks," *Economist*, December 1, 2010, http://www.economist.com/blogs/democracyinamerica/2010/12/after_secrets.