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# Computer Code vs. Legal Code: Setting the Rules in Cyberspace

Mark S. Nadel

*Federal Communications Commission*

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# BOOK REVIEW

## Computer Code vs. Legal Code: Setting the Rules in Cyberspace

Code and Other Laws of Cyberspace, by Lawrence Lessig, Basic Books, 1999, 230 pages.

Reviewed by Mark S. Nadel\*

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### I. INTRODUCTION

Just as Rachel Carson’s classic *Silent Spring* awakened the world to environmental pollution in 1962, Larry Lessig’s insightful *Code and Other Laws of Cyberspace*<sup>1</sup> (*Code*) seeks to warn longtime inhabitants of cyberspace of a major danger to the wild, unregulated, “1960s-like” environments to which they have grown accustomed. *Code* challenges the presumption of early Internet heroes, like John Perry Barlow, that technology has created an inherently free environment that can only remain so if governments leave it alone. *Code* observes, rather, that cyberspace is quite susceptible to alteration and that the gravest threats to online civil liberties in the United States are posed, not by laws, but by computer

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\* Attorney/Advisor, Federal Communications Commission (FCC). Mr. Nadel received his B.A. from Amherst College and his J.D. from Harvard University. The views expressed in this Book Review are those of the Author and do not necessarily represent the views of anyone else at the FCC.

1. LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999).

code—particularly those designed to commercialize the Web for e-commerce.

*Code* explains how the business community's efforts (with government support) to make it easier to confirm cyberspace buyers' identities also unintentionally facilitate regulation of other conduct. Lessig's particular concern is with those civil liberties and other values central to American society, that the framers of the Constitution left without explicit legal protection; the limits of the technology of the time already safeguarded them. Now that the Internet and other new media have eliminated many physical and economic constraints on intrusive conduct—like the tracking of every page that an Internet surfer views—*Code* pleads for citizens to defend those privacy and other values they consider fundamental, lest they be diminished—if not eliminated—by code.

In fact, the introduction of e-commerce-friendly Internet code is somewhat analogous to the genetic engineering of agricultural products. As Europeans—and increasingly Americans—have come to recognize, the manipulation of such basic codes may have widespread effects not limited to their targeted product markets or by national boundaries.<sup>2</sup> This has led many to demand public debate on the issue of what many call “Frankenfoods,” and its effects on world ecosystems and human health. While Lessig certainly does not oppose e-commerce code, he advocates collective decision making where code may have major consequences with respect to important societal liberties.

From an economist's perspective, Lessig understands that the “externalities” of e-commerce code—in terms of harm to social values—are too significant to expect private sector code writers to design a socially optimal architecture guided solely by Adam Smith's invisible hand. Rather, democratic principles require that, prior to the adoption of important varieties of what he terms “West Coast [computer] code,”<sup>3</sup> there be public discussions comparable to those associated with the adoption of “East Coast [legal] code.”<sup>4</sup> Decisions about how much control over information society wants to allow and by whom, call for democratic decision making.

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2. See, e.g., LUKE ANDERSON, *GENETIC ENGINEERING: FOOD AND OUR ENVIRONMENT* (1999); Carey Goldberg, *1500 March in Boston to Protest Biotech Food*, N.Y. TIMES, Mar. 27, 2000, at A14 (D.C. ed.); Donald McNeil, *Protest on New Genes and Seeds Grow More Passionate in Europe*, N.Y. TIMES, Mar. 14, 2000, at A1; Michael Pollan, *Feeding Frenzy*, N.Y. TIMES, Dec. 12, 1999 § 6, at 43.

3. This is the computer code most frequently written in Silicon Valley, California, and Redmond, Washington. See LESSIG, *supra* note 1, at 53.

4. This is the legal code that Congress enacts (e.g., the tax code, the *Code of Federal Regulations*). See LESSIG, *supra* note 1, at 53.

With concerns similar to those of political activist Jeremy Rifkin,<sup>5</sup> Lessig implores citizens not to maintain blind faith in the social value judgments of the commercial marketplace where externalities may be given short shrift, if not ignored altogether, until irreversible harm is done.

While *Code* focuses on issues arising from Internet technology, it also discusses the more general relationship between technology and law. *Code* observes that four principal forces regulate people's behavior: laws, norms, prices, and technology (although it calls the latter forces "market" and "architecture"). It explains how each of these limit individuals' actions, how the forces can work directly or indirectly in combinations, and how improvements in technology can dramatically alter the composite constraint on people's conduct. The middle third of *Code* is entirely devoted to identifying how technology—primarily the Internet—is significantly altering the net effect of these four forces on behaviors. In particular, as technological progress has dramatically lowered the economic costs of collecting and controlling information, liberties resulting from the "inefficiencies" of previous technologies are now vulnerable to elimination. Society must now reexamine these behaviors and decide whether it wants to prohibit, encourage, or tolerate them.

Although Lessig does not lack ideas for responding to the dangers he identifies, he is not particularly concerned with identifying the best solution. His primary and overriding goal is to raise and clarify important questions and to urge careful discussion, analysis, and decision making concerning intellectual property, privacy, free speech, and sovereignty. Thus, *Code* highlights the best insights and arguments of those individuals whom Lessig recognizes as experts on each issue.<sup>6</sup> Unfortunately, *Code* is very pessimistic about the ability of society, including the three branches of government and the public, to take appropriate action.

*Code* observes that, historically, the courts have served to protect liberties. When new technologies threaten liberties, courts can quickly preserve them by "translating" the Constitution into the present context in order to preserve the framers original meaning.<sup>7</sup> In many cases, however, Lessig finds that technological changes are revealing "latent ambiguities"

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5. See, e.g., Ted Rose, *Jeremy Rifkin: Agent Provocateur*, INDUSTRY STANDARD, Mar. 20, 2000, at 193.

6. Lessig also often includes lengthy footnotes that resemble minibibliographies of those experts' writings on the topic.

7. *Code* illustrates this with the example of the Court's decision in *Katz v. United States*, 389 U.S. 347 (1967), recognizing protection of an individual's "expectation of privacy" and overturning the originalism approach of *Olmstead v. United States*, 277 U.S. 438 (1928). LESSIG, *supra* note 1, at 116-17.

in constitutional law—questions that cannot be resolved by translation or any other bona fide approach to constitutional interpretations.

Even in these cases, when the Constitution proves unhelpful, Lessig urges the hundreds of bright and creative federal judges to participate more actively in the debate on these issues of constitutional dimensions when faced with relevant cases. He begs judges to analyze the issues and resolve them in favor of the best public policy results and to “kvetch” about their inability to apply that analysis if they find an issue of liberty to be a nonjusticiable political matter. Ideally, he would ask judges to go so far as to adopt the approach proposed by former professor, now judge, Guido Calabresi, of resolving such issues in a way most likely to induce a democratic response. Acknowledging that many ridicule this approach, Lessig nevertheless prefers to “err on the side of harmless activism than on the side of debilitating passivity.”<sup>8</sup> Yet he does not expect his advice to be heeded.

Lessig is a little more optimistic about the ability of the legislative and executive branches to resolve these important matters.

One would have thought that collective choices were problems of governance. Yet very few of us would want government to make these choices. Government seems the solution to no problem we have, and we should understand why this is.

...

... We believe, rightly or not, that [our legislative] processes have been captured by special interests more concerned with individual than collective values. Although we believe that there is a role for collective judgments, we are repulsed by the idea of placing the design of something as important as the Internet into the hands of governments.<sup>9</sup>

Despite this despair, however, Lessig is no libertarian. In fact, as its last chapter expressly announces, *Code* is clearly a clarion call to Internet libertarian activists, like Declan McCullagh,<sup>10</sup> whose reflexive opposition to (and focus on) government appears to blind them to the harms to liberty from the actions of e-commerce firms. “If we hate government, it is because we have grown tired of our own government. We have grown weary of its betrayals, its games, the interests that control it.”<sup>11</sup> But Lessig ultimately concludes that “[w]e must find a way to get over it”<sup>12</sup> for he

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8. LESSIG, *supra* note 1, at 223.

9. *Id.* at 219.

10. Declan McCullagh is a smart, young writer for WIRED NEWS who also runs a widely read listserv e-mail list. *See id.* at 231.

11. *Id.* at 220.

12. *Id.*

recognizes that the need for collectivist action necessitates a role for the government.

Lessig's attempt to spread his important message to a wide audience leads him to keep *Code* relatively concise. Unfortunately, this leads him to omit much useful historical perspective on how the government has regulated other media, including the postal service, the telephone industry, and cable television system operators. These would provide a particularly helpful context for his chapter on free speech. Fortunately, readers can already obtain such background from Ithiel de Sola Pool's marvelously readable *Technologies of Freedom*.<sup>13</sup> Similarly, Lessig's apparent desire to publish *Code* while it can still affect public policy has diminished his attention to solutions which might have encouraged him to be more optimistic. Still, he is likely to remedy this latter deficiency in due time with a regular column for the weekly magazine, *The Industry Standard*,<sup>14</sup> as well as a Web site for the book,<sup>15</sup> which permits readers to communicate with him directly and help him nurture fresh approaches to the problems *Code* describes.

Renowned sociologist Daniel Bell likens *Code* to a Stanley Kubrick film,<sup>16</sup> and this reader also sensed a bit of cinematic crafting (whether intentional or not), including frequent surprising and fascinating twists and turns. One almost hesitates to quote *Code*'s best punch lines in a review for fear of diminishing the full effect of the book on a new reader. Like a sophisticated musical composition, *Code* introduces four interesting stories in the second chapter<sup>17</sup> and uses them as recurring themes throughout the book. There is also the mysterious appearance of the characters he calls Una Smiths, extremely knowledgeable female nonstudents, who appear to have served as the critical catalyst to class discussions.<sup>18</sup> If *Code* was fiction, one would be inclined to speculate about their symbolic significance.

In addition to providing an engaging introduction to the Internet for those with little knowledge of its jargon and history, *Code* provides amusing anecdotes about MUDs, MOOs, and hackers.<sup>19</sup> For example, *Code*

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13. See ITHIEL DE SOLA POOL, *TECHNOLOGIES OF FREEDOM* (1983).

14. See *The Standard* (visited Mar. 29, 2000) <<http://www.thestandard.com>>.

15. See Lawrence Lessig, *Code and Other Laws of Cyberspace* (visited Mar. 29, 2000) <<http://www.code-is-law.org/main.html>>.

16. See *Jacket* (visited Mar. 29, 2000) <<http://www.code-is-law.org/jacket.html>>.

17. See LESSIG, *supra* note 1, at 9.

18. See *id.* at 81.

19. MUD has had a number of different meanings. Originally, it stood for Multi-User Dungeon or Multi-User Domain. MUDs are cyberspace environments somewhat like virtual worlds, where individuals interact in various ways in an artificially constructed

explains why the damaging worm released by Cornell graduate student Robert Tappin Morris was of a “sorcerer’s apprentice”-like accident—otherwise consistent with reasonable hacker etiquette—than with a criminal act.<sup>20</sup> Finally, *Code* repeatedly orients the reader by recapping material previously covered and previewing what is still to come, thereby helping readers appreciate the full landscape of the book and how the individual elements fit together.

## II. INTELLECTUAL PROPERTY

Lessig’s discussion of the Internet’s effect on intellectual property is a particularly enlightening review of cutting edge thinking in this area. He notes that when the Clinton administration evaluated the Internet’s impact on intellectual property, it saw the need to give additional protection to authors against potential infringers. Ira Magaziner’s 1995 *White Paper* promised “to strengthen law in every area it can . . . approach[ing] the question like a ship battening down for a storm—whatever happens, the threat to copyright is real, damage will be done, and the best we can do is ride it out.”<sup>21</sup> Most Internet users familiar with computers and the Internet would probably agree with the *White Paper*’s perspective and that of the recent front page headline in the *New York Times*: “Potent Software Escalates Music Industry Jitters.”<sup>22</sup> They would initially be shocked by Lessig’s view one-hundred-eighty degrees to the contrary.

*Code* asserts that technology will empower authors to prevent Internet users from retrieving any content unless they are using a “trusted system” Web browser that will control whether content can be read, printed, or electronically copied.<sup>23</sup> Those systems will give authors permanent power to charge users for every use of the content. “We are . . . entering a time when copyright is more effectively protected than at any time since Gutenberg . . . cyberspace is about to give holders of copyrighted property the biggest gift of protection they have ever known.”<sup>24</sup>

Of course, as *Code* recognizes, even technology as powerful as trusted systems cannot be fully effective without help from laws like the

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environment, although they are text based, with no pictures. MOOs are MUDs Object-Oriented. See LESSIG, *supra* note 1, at 11. Lessig also provides references to the history of MUDs. See *id.* at 242 n.4.

20. See *id.* at 195.

21. *Id.* at 126-27.

22. See Amy Harmon, *Potent Software Escalates Music Industry Jitters*, N.Y. TIMES, Mar. 7, 2000, at A1.

23. See LESSIG, *supra* note 1, at 127-30.

24. *Id.* at 127.

Digital Millennium Copyright Act,<sup>25</sup> which makes it a felony to attempt to circumvent a copyright protection mechanism.<sup>26</sup> Absent East Coast code's support, West Coast code is wide open to attack from hackers. For example, when a Dutch student posted a program capable of decrypting a digital video disk (DVD) so it could be viewed on an unlicensed player, the DVD Copy Control Association filed suit.<sup>27</sup>

In any case, *Code* reverses the traditional legal question of how law can aid in the protection of authors to ask, instead, whether such protection may soon be too great. "The problem will center not on copy-right but on copy-duty—the duty of owners of protected property to make that property accessible."<sup>28</sup> As *Code* explains, information is a unique form of property not only because it is a nonexclusive form of property—it can be shared by others without denying the creator full use—but because it is an input to other intellectual property. Consequently, granting excessive intellectual property protection can inhibit innovations that build on such "property."<sup>29</sup> And this harm is compounded by the apparent willingness of both the under-staffed U.S. Patent Office and the courts to grant and enforce patents on what should be considered "obvious" new Internet business practices.<sup>30</sup> *Code* recognizes the need for some private property, but observes that if technology shifts the balance too far toward private control, diminishing contributions to the "public commons" for use by all, then research and development, innovation, and therefore economic, scientific, cultural, and even political growth will suffer. The key is setting the proper balance between public and private property.<sup>31</sup>

Although limiting creators' rights to their intellectual property may sound a bit socialist, the economic efficiency of the result is recognized by economists of all stripes. These include University of Chicago

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25. Pub. L. No. 105-34, 112 Stat. 2877 (1998) (codified at 17 U.S.C. § 1201(a)(2), (b) (1998)).

26. See LESSIG, *supra* note 1, at 264 n.19.

27. See, e.g., Carl Kaplan, *DVD Lawsuit Questions Legality of Linking*, N.Y. TIMES ON THE WEB (visited Mar. 29, 2000) <[www.nytimes.com/library/tech/00/01/cyber/cyberlaw/07law.html](http://www.nytimes.com/library/tech/00/01/cyber/cyberlaw/07law.html)>. In both California and New York, the industry associations or their members have won preliminary injunctions against these defendants, blocking them from distributing the program. The DVDCCA and MPAA members are now pressing to make those injunctions permanent. A third action, with no preliminary injunction, is ongoing in Connecticut. See *Openlaw on Open DVD* (visited Mar. 29, 2000) <<http://eon.law.harvard.edu/openlaw/DVD/>>

28. LESSIG, *supra* note 1, at 127.

29. *Id.* at 186.

30. See, e.g., Larry Lessig, *The Problems with Patents*, INDUSTRY STANDARD, Apr. 23, 1999, at paras. 4-5, available at (visited Mar. 31, 2000) <[www.thestandard.com/article/article\\_print/0,1153,4296,00.html](http://www.thestandard.com/article/article_print/0,1153,4296,00.html)>.

31. See LESSIG, *supra* note 1, at 131.



heavyweights Richard Posner and William Landes,<sup>32</sup> as well as Justice Stephen Breyer, whose seminal 1970 Harvard Law Review article questioned the case for any copyrights at all.<sup>33</sup> Lessig goes so far as to interpret the Constitution's special provision on intellectual property as actually limiting the authority of Congress to grant any greater copyright protection than that necessary to ensure that intellectual property is created and spread through the land.<sup>34</sup> Thus, he is part of a group challenging the constitutionality of the recent Sonny Bono Act, which extends the standard term of copyright protection by twenty years to ninety-five years.<sup>35</sup> "[W]e protect intellectual property only to ensure that we create a sufficient incentive to produce it."<sup>36</sup>

### III. FREE SPEECH

*Code* discusses three interesting First Amendment issues. First, it observes that, because the architecture of the system now gives anyone the power to publish, quickly, and ubiquitously,<sup>37</sup> the current nature of cyberspace eliminates the need for legal protection against prior restraint.<sup>38</sup> This provides an excellent example of how the architecture of cyberspace can serve to strengthen civil liberties in an important way.

Second, *Code* considers which is the least dangerous architecture for regulating "speech harmful to minors."<sup>39</sup> Lessig begins by criticizing the 1996 Communications Decency Act as "[a] law of extraordinary stupidity,"<sup>40</sup> and condemns the 1998 Child Online Protection Act (COPA)<sup>41</sup>

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32. *See id.* at 265-66 n.38.

33. *See id.* at 263 n.5.

34. *See id.* at 133.

35. *See Eldred v. Reno*, 74 F. Supp.2d 1 (D.D.C. 1999) (challenging the constitutionality of the Sonny Bono Copyright Term Extension Act of 1998, Pub. L. No. 105-298, 112 Stat. 2827). For more information on the Sonny Bono Act, which would amend 17 U.S.C. § 304 and extend the standard copyright term to 95 years, see *Openlaw: Eldred v. Reno*, *supra* note 1, at 170 (visited Mar. 29, 2000) <<http://eon.law.harvard.edu/openlaw/eldredvreno.html>>.

36. LESSIG, *supra* note 1, at 133.

37. Although Lessig says "anonymously" instead of "ubiquitously," it appears that it is the former, not the latter, that is crucial to defeating government efforts to stifle instantaneous publication. For a discussion between Mr. Nadel and Mr. Lessig on this issue, see *Code and Other Laws of Cyberspace: Chap 12 Free Speech: Prior Restraint* (visited Mar. 31, 2000) <<http://bcis.law.harvard.edu:8081/~Code/guests>>.

38. *See* LESSIG, *supra* note 1, at 170 (citing Floyd Abrams, *First Amendment Postcards From the Edge of Cyberspace*, 4 ST. JOHNS LEGAL COMM. 693, 699 (1996)).

39. *Id.* at 263 n.5.

40. *Id.* at 174.

41. 47 U.S.C. § 231 (Supp. III 1997).

as a similarly constitutionally troubled form of a “zoning” approach.<sup>42</sup> Surprisingly, though, rather than championing the nongovernmental, individual-based mechanism of filters, Lessig favors a type of zoning regime as less intrusive.<sup>43</sup> *Code* concludes that the least offensive option is a law requiring that Web sites offering speech deemed harmful to minors must reject requests from users whose browsers identify them as minors.<sup>44</sup> Still, *Code*’s rejection of filters as too dangerous is unfairly critical.

Lessig explains that the architecture supporting filtering permits governments to use filters to censor;<sup>45</sup> there is certainly a genuine risk of such conduct by some foreign governments.<sup>46</sup> Yet, in the United States, the First Amendment appears adequate to prohibit government censorship, as *Code* would likely have recognized had it examined the issue of Internet filtering by public libraries.<sup>47</sup> The same constraints on government discretion over content decisions would seem to clearly apply to any governmental use of filters.

*Code*’s suggestion that filters are more surreptitious than zoning is also a bit misleading.<sup>48</sup> It observes that because a filtering regime permits blocking to occur without the access seeker’s knowledge, it does not allow the same chance to challenge the block as a zoning regime would provide.<sup>49</sup> But one typing in the URL of a particular page will immediately discover any blockage and have the same opportunity to appeal under either a zoning or filtering regime.

Lessig’s strongest opposition to filtering is based on his fear that filters will be used for much more than simply excluding content harmful to minors. He expects that the proliferation of filters will enable and encourage much of the public to adopt the same socially harmful perfect filtering as “[t]he very rich [who] can cut themselves off from what they do not want to see.”<sup>50</sup> Lessig fears that embracing filtering may increase fragmentation in society, and he quotes a related point by Ithiel de Sola

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42. LESSIG, *supra* note 1, at 177.

43. For a detailed discussion of this position, see Lawrence Lessig & Paul Resnick, *Zoning Speech on the Internet: A Legal and Technical Model*, 98 MICH. L. REV. 395 (1999).

44. See LESSIG, *supra* note 1, at 181.

45. See *id.* at 178.

46. E-mail could, however, at least partially defeat this.

47. See, e.g., Mark Nadel, *The First Amendment’s Limitations on the Use of Internet Filtering in Public and School Libraries: What Content Can Librarians Exclude?*, 78 TEX L.REV. 1121 (forthcoming Apr. 2000).

48. See LESSIG, *supra* note 1, at 179.

49. See *id.*

50. *Id.* at 180.

Pool at length.<sup>51</sup> He clearly fears that perfect filters will lead individuals to completely screen out disagreeable viewpoints, leaving those individuals to see nothing except their own, specially edited subsets of reality. Such fragmentation, according to Cass Sunstein, will increase polarization,<sup>52</sup> thereby endangering society's ability to maintain the unified United States envisioned by the Founding Fathers.

Yet, there are many reasons why the issue of perfect filtering appears to be a red herring. Lessig observes that in real space "[a]ll sorts of issues I'd rather not think about force themselves on me," and that the technological inefficiency of real space is important because "it would be terrible if citizens could simply tune out problems that were not theirs."<sup>53</sup> Although this is correct, Lessig's implicit premises appear to be (1) that Internet filters would permit perfect filtering, and (2) that if individuals could afford it, most would choose narrowly filtered information. Both seem to be inconsistent with the available evidence.

First, it must be noted that even the rich and powerful cannot achieve anything approaching perfect filtering in real space, and all individuals using the Internet must also function in real space. While hermits may approach perfect filtering, anyone who wants to sample the latest culture (interesting new films, books, etc.) is likely to stumble upon some upsetting views. Even those able to avoid direct content with disturbing views are likely to be exposed to them indirectly when mixing with others at clubs, parties, houses of worship, etc. In addition, most parents will face questions when their children mention issues discussed in schools, with friends, or seen on television. Furthermore, when those children mature and their biological code creates a psychological need to assert independence, they are likely to challenge their parents with some opposing views. Even absolute dictators like Saddam Hussein seem incapable of achieving perfect filtering. As *New York Times* columnist Thomas Friedman has recognized, once a nation—even a dictatorship—participates in the world economy, it is likely to face, and be hard pressed to resist, political and economic criticisms and pressures from the global capital markets.<sup>54</sup>

Second, there is the question of whether individuals have any real desire for perfect filtering. When Pool expressed his concern about fragmentation, he was concerned about the expansion of cable channels.

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51. *See id.*

52. *See* Cass Sunstein, *The Law of Group Polarization*, University of Chicago Law School, John M. Olin Law & Economics Working Paper No. 91, Dec. 1999, available at (visited Mar. 29, 2000) <[http://papers.ssrn.com/paper.taf?abstract\\_id=199668](http://papers.ssrn.com/paper.taf?abstract_id=199668)>.

53. LESSIG, *supra* note 1, at 180.

54. *See* THOMAS FRIEDMAN, *THE LEXUS AND THE OLIVE TREE* 93-119 (1999).

Yet, despite the more than two hundred different cable television networks<sup>55</sup> and the approximately ten thousand different specialized magazines published in the United States, the resulting fragmentation has not yielded anything approaching perfect filtering. In fact, it seems that most people feel some obligation to gain at least limited exposure to some discomfiting, if not disagreeable, social issues, for example, from their spiritual/religious leaders (in sermons). They also seem to prefer publications that help them understand an issue by presenting different sides of it—at least in the letters to the editor, if not op-ed pages—and most also seem to sample content from multiple specialized sources. Few seem to want to limit themselves to a single narrow perspective on the news of the day while remaining ignorant of all others.

In any case, the best way to address any harm caused by the inevitable increase in filtering is probably for society to make substantial efforts to unite communities through integrating activities that mix otherwise segregated segments<sup>56</sup> and foster *bona fide* dialogues.<sup>57</sup> In real space, this would include school systems that encourage multicultural efforts and religious leaders who seek to foster understanding of other faiths. In addition, community groups, like the League of Women Voters, or local media can seek to sponsor debates and “town hall”-like meetings in conjunction with local, state, and/or national elections, as well as sponsoring community Web sites for discussions.

Certainly filtering is a powerful tool, which, although subject to possible abuse, has long been embraced (in the form of media editors) because it also yields major benefits. For example, filters can empower parents to transform their television sets into “edutainment” centers for their children, by filtering out everything except that designated “high quality” by expert editors. Parents could choose such editors in the same manner that they currently choose a magazine or babysitter.<sup>58</sup> While there is a danger that use of such filters could pass on parental prejudices,<sup>59</sup> well-

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55. See Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, *Sixth Annual Report*, 15 F.C.C.R. 978, 983 (2000).

56. This is one way to interpret the Sunstein position of fostering diversity, which Lessig supports. See CASS SUNSTEIN, *DEMOCRACY AND THE PROBLEMS OF FREE SPEECH* 21 (1993).

57. According to Daniel Yankelovich, a *bona fide* dialogue requires equality and the absence of coercive influences, listening with empathy, and bringing assumptions into the open. See DANIEL YANKELOVICH, *THE MAGIC OF DIALOGUE* 41-46 (1999).

58. See Mark Nadel, *Empower Parents to Choose Quality Children's Television*, 19 J. POL'Y ANALYSIS & MGMT. 145 (2000). Another advantage of using such a marketplace solution is that the FCC would not have to judge which content met its three hours per week of “educational programming” standard.

59. This concern is passionately expressed in the song *You've Got to Be Carefully*

designed filters<sup>60</sup> could also stimulate the TV production market to produce more high quality programming.

Finally, *Code* addresses the constitutionality of media licensing. "Two hundred years after the framers ratified the Constitution, the Net has taught us what the First Amendment means. If we take this meaning seriously, then the First Amendment will require a fairly radical restructuring of the architectures of speech off the Net as well."<sup>61</sup> *Code* observes that the "anyone can publish"-architecture of the Internet resembles the period when publishing a newspaper was also relatively low cost.<sup>62</sup> He then considers the significance of a spread spectrum broadcast technology that would permit multiple broadcasters to use the same frequency band at the same time in the same place without interference.<sup>63</sup> He concludes that the First Amendment would prohibit an exclusive licensing regime in that context for, prohibiting the unnecessary licensing of publishers is the most basic element of "freedom of the press."<sup>64</sup>

Although *Code's* conclusion is logically accurate and relies on longer articles by Yochai Benkler and Eli Noam for support,<sup>65</sup> *Code* does not respond to Thomas Hazlett's significant challenges to a key technical aspect of the idea concerning congestion.<sup>66</sup> While Lessig and Benkler point to transportation highways and the Internet as metaphors for how broadcasting should operate, both of those media tolerate delays when there is heavy congestion. While this might be the best result for transportation networks, many have argued that policymakers will need to find a better property rights structure (pricing mechanism and/or code/architecture) for avoiding delays on the Internet.

Additional historical context would also be particularly helpful on another free speech/access issue that *Code* does not discuss, but on which

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*Taught* from the Broadway musical *South Pacific*.

60. For a model of a better class of filters, see J.M. Balkin et al., *Filtering the Internet: A Best Practices Model*, in PROTECTING OUR CHILDREN ON THE INTERNET: TOWARDS A NEW CULTURE OF RESPONSIBILITY (Jens Walterman & Marcel Machill, eds.) (forthcoming 2000), available at (visited Mar. 29, 2000) <[http://www.law.yale.edu/infosociety/filtering\\_report.html](http://www.law.yale.edu/infosociety/filtering_report.html)>.

61. LESSIG, *supra* note 1, at 167.

62. *Id.* at 183.

63. *See id.* at 184.

64. *See, e.g.*, WILLIAM VAN ALSTYNE, INTERPRETATIONS OF THE FIRST AMENDMENT 69 (1984).

65. *See* Yochai Benkler, *Overcoming Agoraphobia: Building the Commons of the Digitally Networked Environment*, 11 HARV. J. L. & TECH. 287 (1998); Eli Noam, *Spectrum Auctions Yesterday's Heresy, Today's Orthodoxy, Tomorrow's Anachronism: Taking the Next Step to Open Spectrum Access*, 41 J.L. & ECON. 765 (1998).

66. *See, e.g.*, Thomas Hazlett, *Spectrum Flash Dance: Eli Noam's Proposal for "Open Access" to Radio Waves*, 41 J.L. & ECON. 805, 815 (1998).

Lessig became very vocal in late 1999: the issue of “open access” by Internet Service Providers (ISPs) to cable television system cable modem links. Despite the clear and compelling legal and economic analysis in favor of “end-to-end” access that Lessig and Mark Lemley filed with the Federal Communications Commission,<sup>67</sup> both *Code* and that analysis omit any discussion of a comparable cable TV access issue from the 1970s. Six serious 1970 studies of how to structure cable television systems—by liberals and conservatives—all concluded that cable operators should be required to lease most, if not all, of their channels to unaffiliated program suppliers on a nondiscriminatory basis.<sup>68</sup> Nor does either note that newspaper and cable companies eagerly joined together to require that local telephone companies provide all of their electronic publishing facilities to others (like newspaper publishers) for seven years to protect open access to local telephone networks.<sup>69</sup>

#### IV. SOVEREIGNTY, ET AL.

Lessig uses Vietnam to illustrate that regulation cannot function without a technology of control. Although Vietnam is a communist country—and thus highly regulated—

the architecture of life in Vietnam clearly makes any real regulation by the state [for ordinary people] impossible. There is no infrastructure of control . . . .

. . . [T]he power to regulate is a function of architecture as much as of ideology; architectures enable regulation . . . .

. . . To understand a state’s power to regulate we must ask: How well does its infrastructure support a structure of regulation.”<sup>70</sup>

To inhibit state control, one can try to disable the infrastructure it relies on, but overturning the state does not guarantee individual freedom, as Lessig repeatedly illustrates with references to the aftermath of communism in Eastern Europe. Cyberspace environments that function effectively subject only to social norms may be ideal, but Lessig’s stories

67. See *In the Matter of AT&T/MediaOne Merger* (visited Mar. 29, 2000) <<http://cyber.law.harvard.edu/works/lessig/MB.html>>

68. See Mark Nadel, *Cablespeech for Whom?*, 4 CARDOZO ARTS & ENT. L.J. 51, 70 n.104 (1985).

69. See *United States v. Western Electric*, 552 F. Supp. 131, 180-86 (D.D.C. 1982), *aff’d sub. nom. Maryland v. United States*, 460 U.S. 1001 (1983). It is ironic, but not surprising, that monopoly local newspapers and local monopoly cable system operators took this position while vigorously claiming their own First Amendment rights against government efforts to force them to share any part of their distribution facilities with others. See, e.g., *Miami Herald Publ’g Co. v. Tornillo*, 418 U.S. 241 (1974) (newspapers); GEORGE SHAPIRO, PHILIP KURLAND & JAMES MERCURIO, *CABLESPEECH: THE CASE FOR FIRST AMENDMENT PROTECTION* (1983) (cable television systems).

70. LESSIG, *supra* note 1, at 189.

of such "garden of Eden" environments both end with attacks by snakes.<sup>71</sup> And *Code* predicts that the absence of East Coast code "will cause a shift in effective regulatory power—from law to code, from sovereigns to software."<sup>72</sup>

*Code* reminds libertarians that liberty does not follow from the absence of government, but rather, "government is necessary to help establish the conditions necessary for liberty to exist. . . . The freedom to contract, to own property, to travel, to vote—all of these rights require massive governmental support."<sup>73</sup> The architectures designed for cyberspace "are political in the most ordinary way: they are structures that order real life, and they ought therefore to be structures that we have in some sense chosen."<sup>74</sup> "There is a proper space for collective life and an important space for private life. A good constitution helps us navigate that balance."<sup>75</sup>

*Code* is clear that the basis for action should be accountability and that this is probably best served by requiring transparent laws and open code. The latter makes it much more difficult for regulation to occur surreptitiously and much easier for resistance to arise against inappropriate controls. Although Lessig recognizes the occasional advantage of closed code, he believes that "the best code (from the perspective of constitutional values) is both modular and open,"<sup>76</sup> even if the current structure of copyright protection for software discourages modular structures and prefers opaque to transparent code.

## V. SOLUTIONS

This reader's greatest disappointment with *Code* is its failure to devote more attention and creativity to potential solutions to the problems of governance in an Internet age.<sup>77</sup> This omission may be excusable given Lessig's apparent desire to proclaim his warning before difficult-to-reverse decisions are made. Yet it is still unfortunate that *Code* does not include

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71. These include Mr. Bungle's attack on LamdaMOO and IBEX's attack on Lessig's Yale Law School class community. *See id.* at 75-75, 80-82.

72. *Id.* at 206.

73. *Id.* at 209.

74. *Id.* at 199.

75. *Id.* at 208.

76. *Id.* at 225.

77. Although it is not an Internet issue, *Code* repeatedly denigrates the potential for legislative solutions due to the corruption created by current practices of campaign financing, but fails to reference any of the innovative proposals to address that problem. *See, e.g.,* Ian Ayres & Jeremy Bulow, *The Donation Booth: Mandating Donor Anonymity to Disrupt the Market for Political Influence*, 50 STAN. L. REV. 837 (1998); Jack Hitt, *Real Campaign-Finance Reform*, N.Y. TIMES, July 1999 §6, at 36-37.

more material on ideas and mechanisms that might harness the tools of cyberspace to rescue government from the crises it is aggravating if not creating. In particular, there is the latent ambiguity that Lessig identifies, which seems to go to the heart of democracy. "Our framers were keen to design structures that would mediate the views of the people. Democracy . . . was to be deliberative, reflective, and balanced by limitations imposed by a constitution."<sup>78</sup> The cost of polling technology ensured that it would occur infrequently so there was no need to guard against the effects of instant and continuous polling of "[p]eople [who] often have ill-informed or partially informed views that they simply repeat as judgments"<sup>79</sup> The Internet may further increase the inclination of those without full information to make uninformed votes.

*Code* gives some attention to University of Texas Professor James Fishkin's response to this condition—deliberative polling<sup>80</sup>—and Fishkin has commenced a joint project with Lessig's Berkman Center for Internet and Society.<sup>81</sup> It will be very interesting to see what architectures and processes arise out of that experiment. Others that are exploring or implementing new ways to use the Internet to improve the democratic process include the Benton Foundation's *Debate America*,<sup>82</sup> Tracy Westen's *Democracy Network* (now part of [www.grassroots.com](http://www.grassroots.com)),<sup>83</sup> George Washington University's Democracy Online Project,<sup>84</sup> and Intellectualcapitals's VoxCap.com,<sup>85</sup> among others. Hopefully, Lessig will remedy this omission by posting such information on *Code's* Web site.

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78. LESSIG, *supra* note 1, at 228.

79. *Id.*; see also YANKOLOVICH, *supra* note 57, at 24 (stating:

[T]he American political tradition has long maintained that an informed public is indispensable to the successful functioning of democracy. Thomas Jefferson held this conviction. The contemporary press holds it as an article of faith. But is it really valid? After decades of wrestling with this question, I have come to the conclusion that such faith is unjustified. The premise that the health of our democracy depends on a well-informed public is one of those unexamined pieties that professionals mouth without ever observing close-up how people really make the judgments on which our society does depend. The United States is a prime example of a successfully functioning democracy. But it is not a prime example of a well-informed citizenry.)

80. See LESSIG, *supra* note 1, at 227.

81. See *Deliberative Polling in Cyberspace* (visited Mar. 29, 2000) <<http://cyber.law.harvard.edu/9-10mtg/ldp.html>>.

82. See Benton Foundation, *Debate America* (visited Mar. 29, 2000) <<http://www.debateamerica.com>>.

83. See, e.g., Elizabeth Wasserman, *Where the Grassroots Are Greener*, INDUSTRY STANDARD, Mar. 13, 2000, at 112.

84. See *Democracy Online Privacy* (visited Mar. 29, 2000) <<http://www.democracyonline.org>>

85. See *VoxCap.com* (visited Mar. 29, 2000) <<http://www.voxcap.com>>.



While it may be difficult to teach older citizens how to best use the Internet to become better voters, there is good reason to believe that current students will learn quickly and easily to take advantage of both the information and the potential for bona fide dialogues.

Another opportunity that cyberspace offers for improving governance by encouraging dialogue on public issues may arise out of efforts by universities to improve their ties to their alumni. Schools interested in fostering relationships between classmates, instructors, and the school could establish Web site forums for discussions that might be moderated by instructors or their research assistants. To the extent that alumni missed the vibrant seminar discussions from their school days, a professor-sponsored online discussion might be quite attractive. Not only might current students benefit from reading and participating in such discussions, but alumni serving in policymaking or legislative positions might discover useful insights, and brighter students could be permitted to use the forum to audition for summer or permanent jobs.

*Code's* dark perspective should not lead readers to believe that cyberspace, by transferring substantial control from East to West Coast code, represents the sunset of civil liberties. Rather, hopefully *Code* will lead policymakers to reflect on its insights and focus attention on securely protecting each and every one of the civil liberties that deserve protection. In addition, one can hope—should expect—that Lessig's future writings will illuminate new ways for code to be used to enhance a vibrant democracy in America.