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DEMYSTIFYING LESSIG

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Lawrence Lessig shaped the nascent field of cyberlaw. In particular his argument that “code is law” has become a central tenant of the writings in the field. This Article offers a fundamental critique of Lessig’s core argument—and thus of core assumptions of cyberlaw scholarship. It first focuses on the role Lessig ascribes to the market and how he sees it functioning. By emphasizing market choices, Lessig conceptualizes societal problems through a particular lens of atomistic decisions, of outcome rather than process, thereby failing to capture the full dynamic at play in free speech, intellectual property and privacy cases on the Internet. Second, for Lessig, markets function because of assumed or regulated information symmetry (that may not exist in most market transactions) causing him to overvalue transparency. A third fundamental weakness of Lessig’s theory is the relationship between technology and society. For Lessig, markets drive technology, which in turn shapes society. This linear, directional view has been discredited by much of the research in science and technology studies over the last four decades. Using two examples of the path of a particular technology (one from Lessig and one more recent)—cookies and podcasts—I show how Lessig’s technological determinism fails to capture the complex dynamics of innovation.

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INTRODUCTION

John Maynard Keynes reinvented economics and dominated the field for years.¹ Jack Kerouac defined the rhythm of an entire generation.² To Steve Jobs we owe the personal computer as we know it.³ In the burgeoning field of cyberlaw, Lawrence Lessig embodies all three of these icons. Through his books and articles, he established and shaped this nascent field, while his words gave cyberlaw its own distinctive, instantly recognizable rhythm. With his eloquence and persuasion, he made us believe. We owe Lawrence Lessig, as economists owe John Maynard Keynes, the beat generation owes Jack Kerouac, and computer users owe Steve Jobs.

It is perhaps surprising, therefore, that few in legal academia have subjected Lessig's work to a thorough examination.⁴ After all, earnest

1. See DANIEL YERGIN & JOSEPH STANISLAW, *THE COMMANDING HEIGHTS: THE BATTLE FOR THE WORLD ECONOMY* 24 (2002); see generally ROBERT SKIDELSKY, *JOHN MAYNARD KEYNES, 1883–1946: ECONOMIST, PHILOSOPHER, STATESMAN* (2003).

2. See generally MICHAEL J. DITTMAN, *JACK KEROUAC: A BIOGRAPHY* (2004).

3. Steve Jobs cofounded Apple Inc., providing us not just with the first mass-produced personal computer, the Apple II, but also with the first personal computer to use a graphical user interface, incorporate a mouse, connect through a simple network, and print with a high-resolution laser printer. STEVEN LEVY, *INSANELY GREAT: THE LIFE AND TIMES OF MACINTOSH, THE COMPUTER THAT CHANGED EVERYTHING* 19–24, 81–82, 134–38, 211–22 (2000). These were not all invented at Apple. Most of them were developed in some form or another at Xerox PARC. *Id.* at 64–74. Yet, as even the engineers who designed the Macintosh computer concede, Jobs played the decisive role. ANDY HERTZFELD, *REVOLUTION IN THE VALLEY* 275 (2005). Microsoft's Windows could but hope to catch up. Recently, Jobs has helped reinvent portable music players and reshape the music distribution business. See Thom Duffy, *2005 Power Players*, BILLBOARD, Aug. 27, 2005, at 26 (describing Apple's "digital music dominance" under Jobs).

4. Though Lessig has been subject to relatively scant criticism, there has been no shortage of reviews of his work. For reviews of LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (1999) [hereinafter LESSIG, *CODE*], see Charles Fried, *Perfect Freedom or Perfect Control?*, 114 HARV. L. REV. 606 (2000); Reed Hundt, *The Future of the Net—Comments on Lawrence Lessig's Code and Other Laws of Cyberspace and The Future of Ideas*, 68 BROOK. L. REV. 289 (2002); Mark S. Nadel, *Computer Code vs. Legal Code: Setting the Rules in Cyberspace*, 52 FED. COMM. L.J. 821 (2000); Henry H. Perritt, Jr., *Lawrence Lessig, Code and Other Laws of Cyberspace*, 32 CONN. L. REV. 1061 (2000); David G. Post, *What Larry Doesn't Get: Code, Law, and Liberty in Cyberspace*, 52 STAN. L. REV. 1439 (2000). For reviews of the same book in non-book-review format, see Jay P. Kesan & Rajiv C. Shah, *Deconstructing Code*, 6 YALE J.L. & TECH. 277 (2004); Andrew Murray & Colin Scott, *Controlling the New Media: Hybrid Responses to New Forms of Power*, 65 MOD. L. REV. 491 (2002). For reviews of LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2001) [hereinafter LESSIG, *THE FUTURE OF IDEAS*], see Susanna Frederick Fischer, *Crusading Against the Dinosaurs: A Review of The Future of Ideas, by Lawrence Lessig*, 10 COMMLAW CONSPECTUS 251

critique is the highest form of academic flattery. To be sure, pundits have poured scorn over Lawrence Lessig's arguments, and innumerable blog comments have been filled with often superficial disparagement.⁵ Some circles may even see him as their archenemy. Yet, in the rarefied world of law review articles, Lessig's views are either referred to and cited with slightly muted appreciation—as an appropriate, but not too ostentatious nod towards the star—or used as building blocks for new instantiations of a Lessigian narrative.⁶ Lawrence Lessig deserves better. What is missing is a stream of collegial but tough critical articles reflecting systematic analysis of Lessig's arguments. This Article offers such a critique of Lessig, although it is but one piece of a puzzle, which I hope will lead to more such pieces and ultimately to the deep, full critique that Lessig and his work deserve.

In Parts I and II, I briefly restate Lessig's core idea in *Code and Other Laws of Cyberspace (Code)*—that code *is* law—along with the foundations of this view, its implications, and what Lessig suggests are its consequences. The two Parts that follow each examine a strong undercurrent implicit in Lessig's theory and thereby expose his theory's

(2002); Sonia K. Katyal, *Ending the Revolution*, 80 TEX. L. REV. 1465 (2002); Daphne Keller, *A Gaudier Future that Almost Blinds the Eye*, 52 DUKE L.J. 273 (2002); James B. Speta, *A Vision of Internet Openness by Government Fiat*, 96 NW. U. L. REV. 1553 (2002); Andrew Murray, *Technological Determinism, Markets and Networked Cultures* (unpublished book review, available at <http://www.100megsfree4.com/andrewmurray/lessigreview.pdf>). For reviews of LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* (2004) [HEREINAFTER LESSIG, *FREE CULTURE*], see Julia D. Mahoney, *Lawrence Lessig's Dystopian Vision*, 90 VA. L. REV. 2305 (2004); Russ Taylor, *An Introduction to Lessigian Thought*, 57 FED. COMM. L.J. 161 (2004).

5. See, e.g., Tim Lee, *Code, Law, and Spontaneous Order*, TECHLIBERATION.COM, Apr. 4, 2008, <http://techliberation.com/2008/04/24/code-law-and-spontaneous-order>; Thomas D. Snyder, *Tragedy and Farce* 6–7 (Progress & Freedom Found., Paper No. 15.5, 2008) (critically reviewing Lessig's books, and arguing Lessig is “channeling Jane Fonda or Walter Duranty” and summarizing that “*Code* argued that governments are better than markets, but markets better than anarchy”), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1143485; cf. *Lindens Won't Touch the Third Rail*, SECONDTHOUGHTS.COM, Aug. 27, 2008, http://secondthoughts.typepad.com/second_thoughts/2008/08/if-youre-tired.html (calling Lessig a “digital communist”); Posting of Prokofy Neva to <http://scobleizer.com/2008/02/01/larry-lessig-talks-about-copyright-concerns> (Feb. 1, 2008, 18:31) (“I am so unimpressed with Lessig, each and every time he is brought forward.”); Posting of Tom Snyder to <http://techliberation.com/2008/05/01/insulting-our-intelligence/#comment-1454091> (May, 2008) (“Lessig's 1999 and 2006 books are horrendous.”). For an even more extreme view, see Redstate.com, *Obama and Google's Mutual Adviser: Jesus Is Gay, Wears a Diaper, and Gets Run Over*, http://archive.redstate.com/stories/elections/2008/obama_and_googles_mutual_adviser_jesus_is_gay_wears_a_diaper_and_gets_run_over (last visited Oct. 4, 2008).

6. In fact, I am guilty of this myself. See Viktor Mayer-Schönberger, *Impeach the Internet!*, 46 LOY. L. REV. 569, 581–83 (2000).

severe limitations. Part III looks at Lessig's conceptions of democracy and democratic rule making, and how they are linked to his view of the market, contrasting them with potential alternative views. Part IV analyzes Lessig's sense of the interplay between technology and society, chronicles its shortcomings, and juxtaposes it with what is likely a more realistic, but also more complex, understanding.

While this Article is about Lessig's theory around the idea that code is law, and does not critique Lessig's theory of a commons of ideas,⁷ Lessig's troubling conception of markets and technology permeates all of his works, and thus exposes all of them to this fundamental critique.

I. LESSIG'S THEORY THAT CODE IS LAW

Laying out his argument in his seminal book *Code*, Lessig describes four modalities of regulating human behavior: norms, markets, laws, and architecture.⁸ We are familiar, he suggests, with the first three.⁹ Laws define permissible and prohibited behavior in a formal way.¹⁰ The judicial branch of the government is responsible for interpreting and upholding the laws, aided by the state's enforcement powers.¹¹ The constraints that norms place on behavior are less formal but nonetheless real; in our culture, we accept that we should eat with knives and forks or shake hands to introduce ourselves, but not spit in public.¹² Other cultures may have different norms, but all cultures share the idea that certain behavior is accepted while other behavior is not. Markets, too, regulate our behavior.¹³ If certain products or services are very expensive, fewer of us will buy them; thus constraining what we do.¹⁴

Lessig is less interested in norms, laws, and markets, and more in what he sees as an overlooked fourth mode of regulation: architecture.¹⁵ Following in the footsteps of a long line of theorists, he suggests that

7. See LESSIG, *FREE CULTURE*, *supra* note 4; LESSIG, *THE FUTURE OF IDEAS*, *supra* note 4.

8. See LAWRENCE LESSIG, *CODE: VERSION 2.0 120-25* (2006) [hereinafter LESSIG, *CODE 2.0*]; see also Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661 (1998).

9. LESSIG, *CODE 2.0*, *supra* note 8, at 121.

10. *Id.* at 122, 124.

11. *Id.* at 124.

12. *Id.* at 122.

13. *Id.*

14. *Id.*

15. *Id.* at 123.

the tools we use to interact constrain us.¹⁶ Professor Marshall McLuhan captured the idea when suggesting that a medium is not a “neutral container.”¹⁷ Architects and urban planners have known this for a long time, too, and so have engineers.¹⁸ Influencing human behavior through the shaping of space, however, is itself constrained by the laws of nature. We cannot build any bridge we dream of or construct cars that drive thousands of miles an hour.

Cyberspace is different. Our information and communication technologies, Lessig suggests, can be designed in almost any way we want.¹⁹ They are much more “plastic,” or open to change, than most other technologies we use.²⁰ This idea is not new either; Wilhelm Steinmüller called the phenomenon “variability,” which led him to argue for a system of continuous public assessment of the effects of information and communication technologies.²¹

Lessig’s argument becomes more potent when he combines these elements. Because cyberspace is plastic—a space that we can shape like no other place—and it constrains human behavior, designing cyberspace is a very powerful regulating activity.²² It produces what Lessig calls “West Coast Code,” software code that regulates human behavior.²³ The more we use cyberspace to interact, to communicate with one another, and to inform ourselves of what is happening in our world, the more we will be constrained by this West Coast Code.

Laws, what Lessig calls “East Coast Code,” are created through a highly formalized and complex mechanism in democracies.²⁴ For the most part, passing laws is difficult, expensive and time-consuming. Most importantly, before laws are enacted, they will be made public and can be scrutinized. We as a society can discuss them. This is, Lessig suggests, how we want it to be.²⁵ West Coast Code on the other

16. *Id.*

17. See MARSHALL MCLUHAN, *THE GUTENBERG GALAXY* 253 (1962). Rohan Samarajiva reconnected McLuhan’s statement with cyberspace in his lecture “Electronic Public Space,” presented at the University of Salzburg in June 1995. *Cf.* Rohan Samarajiva, *Surveillance by Design: Public Networks and the Control of Consumption*, in *COMMUNICATION BY DESIGN* (Robin Mansell & Roger Silverstone eds., 1996).

18. It is no coincidence therefore that the first to suggest that code is what shapes cyberspace, William Mitchell, is an architect by training. See WILLIAM J. MITCHELL, *CITY OF BITS: SPACE, PLACE, AND THE INFOBAHN* 112 (1996).

19. See LESSIG, *CODE 2.0*, *supra* note 8, at 32.

20. *Id.*

21. WILHELM STEINMÜLLER, *RISKANTE NETZE* 31 (1990).

22. See LESSIG, *CODE 2.0*, *supra* note 8, at 32.

23. *Id.* at 72.

24. See *id.*

25. See *id.* at 6–7.

hand is much cheaper and faster to create. It is built into software that we use. It does not need to be made transparent, and no legislative body representing us, the sovereign, has to cast a vote. All that is necessary is for engineers in a corporation producing software to code it.

Lessig is worried about this shift from East Coast Code to West Coast Code.²⁶ He fears that it will cause cyberspace to lose much of the quality that it initially had as a place of open, robust discussion.²⁷ He is troubled by the prospect that the values that underlie how cyberspace is designed will change.²⁸ The catalysts for this change are governments and corporations.²⁹ Lessig believes that governments will desire to rebuild cyberspace as an architecture of control—in part to reclaim the control that governments may have lost over cyberspace due to its decentralized, packet-switched nature, and in part because of the general tendency of governments to desire control over society.³⁰ As a result, governments will move from directly constraining behavior with East Coast Code to indirectly constraining behavior with laws that regulate West Coast Code.³¹ Such indirect regulation is much less transparent and thus less likely to face the stiff public opposition that has kept the government within our society's system of checks and balances. Lessig is also worried that the plasticity of software allows governments to constrain behavior more easily and to a greater extent than they could through law alone.³² Corporations will work with government to change the architecture of cyberspace because they, too, profit from a more controllable space.³³ Intellectual property rights can thus be better enforced, advertisements more precisely targeted, and some of the harsh wind of competition can be more easily avoided through a more regulable space.³⁴

Lessig's central fear is that this coalition of producers of East Coast Code and producers of West Coast Code will replace the values

26. *See id.* at 4.

27. *Id.* at 4–5 (“Left to itself, cyberspace will become a perfect tool of control.”).

28. *Id.* Lessig describes this possible shift and what might cause it under the heading “Z-Theory.” *Id.* at 74–80 (referring to Jonathan Zittrain, *The Generative Internet*, 119 HARV. L. REV. 974 (2006)).

29. *See* LESSIG, CODE 2.0, *supra* note 8, at 61–74.

30. *Id.* at 73, 80; *see also id.* at 74–76 (discussing Z-Theory). For more on Zittrain's theory see JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET (2008); Zittrain, *supra* note 28.

31. *See* LESSIG, CODE 2.0, *supra* note 8, at 64, 72–73.

32. *Id.* at 80.

33. *Id.* at 79–80 (detailing how Google teamed up with the Chinese government to regulate cyberspace).

34. *See id.* at 23.

embedded in the original Internet with ones that reflect their own—values that may not comport with the preferences of the citizens.³⁵ Lessig uses intellectual property,³⁶ privacy,³⁷ and free speech³⁸ as three examples of this potential shift in values.³⁹ There may be an antidote, Lessig suggests, in the form of “open code”: West Coast Code that is open and thus not controllable by corporate coders.⁴⁰ Such open code may be less vulnerable to indirect regulation through laws, and it is certainly less susceptible to corporate desires for control.⁴¹ Yet it is unclear whether, and to what extent, open code will succeed. Lessig’s grand argument concludes with a bleak vision; neither the courts nor our current government offers much hope for change, although democratic government (of a different kind) is our last, best hope.⁴²

This is Lessig’s narrative. In the seven years between the publication of *Code* and *Code 2.0* (the second edition of *Code*) his main argument has not changed.⁴³ If anything, he says, his views have been hardened, his fear has grown, and some of his dystopian visions have been borne out by reality.⁴⁴ To be sure, the Internet has become widely accepted. We use it more frequently, and we leave behind an ever-denser information trail. When Google works with the Chinese

35. See *id.* at 4–7.

36. See *id.* at 169–99.

37. See *id.* at 200–32.

38. See *id.* at 233–75.

39. See *id.* at 155–56.

40. See *id.* at 138–53.

41. See *id.* at 149–53.

42. Lessig advocates for transparent democratic institutions, emphasizing deliberation and understanding. See *id.* at 325–34.

43. Lessig himself says as much. *Id.* at ix (“[T]he argument advanced is the same.”). To be sure, Lessig’s additions to, and modifications of, his basic argument over the years are important, but they do not change Lessig’s central narrative that the best way to protect cyberspace values is through a combination of law and code. For example, Lessig’s fight for copyright reform, LESSIG, CODE 2.0, *supra* note 8, at 183–85; see also *Eldred v. Ashcroft*, 537 U.S. 186 (2003) (Lessig was lead counsel for Eric Eldred, an Internet publisher contesting the constitutionality of the Sonny Bono Copyright Term Extension Act), and his founding of the Creative Commons, LESSIG, CODE 2.0, *supra* note 8, at 110–11, find their way into his revised argument of code is law. Lessig also looks at Google’s filtering and the meteoric rise of peer-produced content, especially through blogs. *Id.* at 236–46. Similarly, he has adjusted his views on how to best protect privacy through code, responding to criticism of his proposal in the original *Code*. See, e.g., *id.* at 229 (“But my proposal for a property right was resoundingly rejected by critics whose views I respect.”). He now advances a contracts-based protection of privacy. *Id.* at 228–30. He also offers a proposal to control spam that is based on a mandatory labeling of spam mails. *Id.* at 264–67.

44. See LESSIG, CODE 2.0, *supra* note 8, at x.

government to filter search results,⁴⁵ or Yahoo! hands over millions of search requests to the United States government,⁴⁶ Lessig's prophecy of the coalition of East and West Coast Coders transforming cyberspace into a more regulable and controllable space seems to have come true. So has Lessig's vision of a powerful antidote. Open code has continued its success and moved from software to music to video to news.⁴⁷ Lessig takes heart in the phenomenal success of what Professor Yochai Benkler so aptly calls "commons-based peer production."⁴⁸

II. OF CHOICE AND TRANSPARENCY: IN SEARCH OF THE REAL LESSIG

Lessig's central argument is that code is the architecture of cyberspace.⁴⁹ As code writing has shifted from the first generation of Internet pioneers to large commercial players, the architecture of cyberspace has changed.⁵⁰ Cisco decides how data packets are routed on the Internet.⁵¹ Microsoft determines how the majority of us browse the Web,⁵² and Google gets to choose the results of most of our searches.⁵³ As the code that shapes cyberspace is produced by a decreasing number of corporations, cyberspace becomes more regulable and regulated.⁵⁴ These corporations may change cyberspace to maximize their profits, while governments may force these corporations to modify the code.

Through this narrative, Lessig's first concern becomes obvious. He is worried about choice. When there are numerous suppliers of browsers, routers, and search engines, we have options. If we do not

45. See Ellen Lee, *How Google Censors Its Chinese Portal*, S.F. CHRON., Feb. 2, 2006, at A1.

46. See Joseph Menn & Chris Gaither, *U.S. Obtains Internet Users' Search Records*, L.A. TIMES, Jan. 20, 2006, at A1.

47. See generally STEVEN WEBER, *THE SUCCESS OF OPEN SOURCE* (2004).

48. See YOCHAI BENKLER, *THE WEALTH OF NETWORKS* 59-90 (2006).

49. LESSIG, *CODE 2.0*, *supra* note 8, at 5.

50. *Id.* at 57-60.

51. See Ritsuko Ando, *Juniper Seen Regaining Core Router Share in 2008*, REUTERS.COM, June 13, 2007, <http://www.reuters.com/article/companyNewsAndPR/idUSN1333533920070613> (noting that Cisco's market share of core Internet routers is estimated to exceed 60 percent). This implies that the probability of a data packet on the Internet having *not* been routed through a Cisco router on its way from sender to recipient is less than 1 percent after only five hops.

52. In August 2008, Microsoft's Internet Explorer family of Web browsers commanded a market share of 72 percent of all Web browsers. Marketshare.hitslink.com, *Browser Market Share*, <http://marketshare.hitslink.com/report.aspx?qprid=0> (last visited Oct. 4, 2008).

53. Google recently accounted for 80 percent of all Web searches. Marketshare.hitslink.com, *Search Engine Market Share*, <http://marketshare.hitslink.com/report.aspx?qprid=4> (last visited Oct. 4, 2008).

54. See LESSIG, *CODE*, *supra* note 4, at 52.

like a particular browser, we can switch to another one. If we have become bored with an online community, we can leave and join a different one. Our power over an institution, Lessig argues, is the threat of exit.⁵⁵ Options give us choices. We are empowered through the ability to choose. Where many options are available, suppliers of code need to listen to users to survive in the marketplace. Choices diminish suppliers' market power, and reduce their (and the government's) ability to regulate through code.

In a world in which code is produced by a shrinking number of corporations, our options are reduced. Users lose the power to choose, while producers of code gain power. Cyberspace changes and becomes more regulable as power shifts.

Lessig wants users to choose.⁵⁶ The choice he envisions, however, is a specific one. It is the choice of consumers selecting goods in the marketplace. Lessig does not hide this preference; his argument often reflects a strong presumption for the market.⁵⁷ Choice for him is the ability to select from two or more options. As long as there are options for users, there is competition. Competitive markets ensure that users remain empowered. Choice is the first foundational value of Lessig's theory.

If users have choices and markets offer products reflecting user preferences, cyberspace would be nothing but the aggregate of all user preferences. People may use Google more often than other search engines, but if Google becomes too powerful and disrespects its customers, it will lose them. This threat of customer defection keeps corporations in check, and acts as a powerful self-correction device. Therefore, if cyberspace were to reflect the market ideal, we would have no need to worry.

This simplistic picture is inaccurate for two reasons that are connected to the qualities of cyberspace. The first one is a result of the nature of the network. Because of network economics, network industries trend towards concentration.⁵⁸ This is why antitrust laws and regulatory frameworks from telecommunications to energy are designed

55. See *id.* at 200.

56. See *id.* at 8 ("The central lesson of this book is that cyberspace requires choices.").

57. LESSIG, *CODE 2.0*, *supra* note 8, at 274 (equating lack of market choice with the Soviet Union).

58. CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORKED ECONOMY* 175-79 (1999); OZ SHY, *THE ECONOMICS OF NETWORK INDUSTRIES* 5 (2001).

to ensure and sustain a competitive marketplace and to counter concentration tendencies due to network economies.⁵⁹

The second quality is related to the shift from law to code, and Lessig dedicates a significant portion of the book explaining it; users need to know exactly what their options are before they choose.⁶⁰ This becomes increasingly difficult for goods shaped by code, which are produced by corporations that have a strong incentive to keep the code secret.⁶¹ As a result, users have to choose among products without knowing how those products' codes will regulate and constrain their future behaviors. What is lacking is the necessary transparency for customers to exercise their power of choice.

A lack of transparency in the marketplace, Lessig seems to suggest, may lead to fewer choices. It also makes cyberspace more regulable as it prevents customers from knowing when to switch to a different product.⁶² Finally, concentration and lack of transparency enable governments to regulate cyberspace by regulating those that write the (intransparent) code.⁶³ For Lessig, therefore, closed code equals regulable code.⁶⁴ The need for transparency is the second overarching value on which Lessig's theory rests.⁶⁵ He argues that without transparency there can be no meaningful choice.⁶⁶

Not surprisingly, this makes him a strong proponent of open code—software code that has been made transparent to users.⁶⁷ Lessig does not assume that average users examine code to understand the built-in behavioral constraints, but he suggests that market incentives exist to take on that task, just as intermediaries (and competitors) already evaluate products from cars to cell-phone networks. Based on the information gleaned from intermediaries (and competitors), users are able to make informed choices. Choice in turn ensures that power remains vested in the users and not concentrated in corporations producing closed code.

For Lessig, transparency and choice distinguish a dystopian from a utopian future of cyberspace. Either we ensure that cyberspace is

59. See generally Thomas A. Piraino, Jr., *A New Approach to the Antitrust Analysis of Mergers*, 83 B.U. L. REV. 785 (2003) (discussing a new approach to analyzing mergers in various fields to deal with problems of concentration).

60. See, e.g., LESSIG, CODE 2.0, *supra* note 8, at 113, 328.

61. See LESSIG, CODE, *supra* note 4, at 103–04.

62. See LESSIG, CODE, *supra* note 4, at 225.

63. Lessig finds this type of indirect regulation most troubling. See, e.g., LESSIG, CODE, *supra* note 4, at 99 (“We should worry about a regime that makes invisible regulation easier.”).

64. *Id.* at 106.

65. See *id.* at 98.

66. Lessig CODE, *supra* note 4, at 106–07.

67. See LESSIG, CODE 2.0, *supra* note 8, at 138–41, 147–48.

shaped through our preferences by exercising the power of choice as consumers, or we will find ourselves in a regulated space that is the shadow of its original self and is captive to the intransparent preferences of a few powerful corporations and government.

Fundamentally, therefore, Lessig's argument rests on the omnipresence and beneficial power of the market. This must not surprise us. In a way, Lessig's foundations may reveal a personal path-dependence. He is, after all, a creature of the University of Chicago Law School, where he spent his early years as a legal academic and a clerk of Judge Richard Posner.⁶⁸ Consequently, it is likely he is well-attuned to the law and economics movement, spearheaded by Posner.⁶⁹ His politics may have changed over the years (he started out as a Republican, only to turn into a liberal later in life),⁷⁰ but the political theory that undergirds his thinking has not.

However, Lessig's markets differ from markets in classical economic theory in three ways. First, Lessig believes that markets require a legal framework—a suitable legal context.⁷¹ He is not a free-market libertarian.⁷² Instead, he acknowledges that having market choice may require government movement to counter private action that threatens negative public consequences.⁷³

Second, Lessig contends that information asymmetries may exist between transactional partners, but for "choice" to work, those that choose need to have sufficient information about their choices.⁷⁴ This is what leads him to emphasize the importance of transparency so frequently.⁷⁵ If information symmetry is not present, Lessig suggests that it may be government's role to create it.⁷⁶ Government imposition of transparency ensures that markets work.⁷⁷

Third, Lessig believes that the initial allocation of goods matters.⁷⁸ This is a departure from the view of classical economists that,

68. Wikipedia.org, Lawrence Lessig, <http://en.wikipedia.org/wiki/Lessig> (last visited Oct. 4, 2008).

69. See Wikipedia.org, Chicago School of Economics, [http://en.wikipedia.org/wiki/Chicago_school_\(economics\)](http://en.wikipedia.org/wiki/Chicago_school_(economics)) (last visited Oct. 4, 2008); see generally RICHARD POSNER, *ECONOMIC ANALYSIS OF LAW* (2007);

70. See Steven Levy, *Lawrence Lessig's Supreme Showdown*, WIREd, Oct. 2002, at 140, 154, available at <http://www.wired.com/wired/archive/10.10/lessig.html>.

71. See LESSIG, *CODE 2.0*, *supra* note 8, at 338.

72. See *id.*

73. See *id.*

74. See LESSIG, *CODE*, *supra* note 4, at 224–25.

75. See LESSIG, *CODE 2.0*, *supra* note 8, at 255–60, 327–29.

76. See LESSIG, *CODE*, *supra* note 4, at 225.

77. See *id.*

78. See *id.* at 270–74.

regardless of initial allocation, the market will distribute goods to those who value such goods most highly.⁷⁹ This view led one of the founders of law and economics, Professor Ronald Coase, to suggest auctioning off spectrum rather than licensing broadcasters, since doing so would most efficiently distribute a scarce resource.⁸⁰ Because Lessig, unlike Coase, believes that initial allocation matters, there may be a role for the government in ensuring an equitable distribution of resources on his account.

In sum, Lessig conceives of the market as a mechanism that can and should be facilitated through government regulation to ensure competition, symmetry of information, and an equitable initial allocation of rights. For Lessig, however, the market is more than a mechanism of allocating scarce goods. For him it becomes an overarching metaphor, as much of cyberspace can be conceptualized in terms of choice and transparency. This is apparent in each of the three substantive areas laid out by Lessig: freedom of speech, privacy, and intellectual property.

A. Freedom of Speech

Lessig recently celebrated the rise of the blogosphere. He writes that when he originally conceived of his argument in the late 1990s, he could only envision what choice and transparency could do for the freedom of speech; blogs now provide him with an actual success story to tell.⁸¹ He notes the importance of a “vigorous exchange of ideas”⁸² that echoes the “marketplace of ideas” metaphor legal academics and justices use.⁸³ In accordance with an “economy of ideas,”⁸⁴ the blogosphere enables a wide spectrum of views to be presented through which an accepted construction of truth can emerge.⁸⁵ Lessig equates a

79. This is the so-called “Coase Theorem.” See R. H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960).

80. R. H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959).

81. See LESSIG, CODE 2.0, *supra* note 8, at 242.

82. *Id.*

83. The “marketplace of ideas” metaphor was first expressed by Justice Holmes, see *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes J., dissenting) (“[T]he best test of truth is the power of the thought to get itself accepted in the competition of the market.”), but it is now ubiquitous. See, e.g., Oren Bar-Gill & Gideon Parchomovsky, *A Marketplace for Ideas?*, 84 TEX. L. REV. 395 (2005); Vincent Blasi, *Holmes and the Marketplace of Ideas*, 2004 SUP. CT. REV. 1; Stanley Ingber, *The Marketplace of Ideas: A Legitimizing Myth*, 1984 DUKE L.J. 1 (1984). Lessig cites the term, too. LESSIG, CODE 2.0, *supra* note 8, at 245.

84. LESSIG, CODE 2.0, *supra* note 8, at 242.

85. See *id.* at 244.

multitude of blogs with a plentitude of facts, views, and opinion, with choices available to the readers.⁸⁶ To be sure, blogs are transparent because their arguments are completely visible and linked simultaneously to counterarguments from other blogs. For Lessig, this transparency and choice make this, he implies, a robust marketplace of ideas.⁸⁷

Google's role as a search engine provides an opposite case.⁸⁸ As more people use one search engine, available choices are reduced.⁸⁹ Worse, because we do not know Google's rules for filtering and ranking, as users we are incapable of making an informed choice about what search engine to use.⁹⁰ In the world of search engines, we are missing choice and transparency. Nowhere is this more obvious, Lessig implies, than in Google's decision to team up with the Chinese government and provide Chinese-Google users search results that match the preferences of the Chinese political leadership.⁹¹ Worse, Lessig asserts that Chinese-Google users are not even told that what they receive is filtered information.⁹² Lessig's point is clear: our unease about Google in China can be conceptualized through the lens of choice and transparency—or the lack thereof.

In short, Lessig seems to suggest that in cyberspace freedom of speech can be guaranteed by ensuring that choice and transparency lead to vibrant marketplaces of ideas.

86. *See id.* at 236.

87. *Id.* at 241–42.

88. *See id.* at 80.

89. For example, of 61 billion search queries in August 2007, 45 billion were sent to Google and Yahoo! sites, with Google alone accounting for 37 billion. Press Release, ComScore, Google Ranks as Top Global Search Property (Oct. 10, 2007), available at <http://www.comscore.com/press/release.asp?press=1802>.

90. *See generally* RONALD DEIBERT ET AL., ACCESS DENIED: THE PRACTICE AND POLICY OF GLOBAL INTERNET FILTERING (2008). Google's filtering rules are not public information. For an excellent study on what Google filters see Jonathan Zittrain & Benjamin Edelman, *Localized Google Search Result Exclusions*, CYBER.LAW.HARVARD.EDU, Oct. 26, 2002, <http://cyber.law.harvard.edu/filtering/google>. Another excellent source is Benjamin Edelman, *Empirical Analysis of Google SafeSearch*, CYBER.LAW.HARVARD.EDU, Apr. 14, 2003, http://cyber.law.harvard.edu/archived_content/people/edelman/google-safesearch.

91. LESSIG, CODE 2.0, *supra* note 8, at 80.

92. *Id.* Though Lessig claims that “[n]o system will inform searchers that the search results they are reading have been filtered,” *id.*, this is actually not true, as Google does tell its users. See Philipp Lenssen, *Google Censorship FAQ*, BLOGOSCOPE.COM, Mar. 2, 2007, <http://blogoscoped.com/archive/2007-03-02-n19.html>.

B. Privacy

Originally, Lessig advocated for “a kind of property right in privacy.”⁹³ He proposed that individuals should be granted an exclusive right over their personal information to be traded on global information markets and facilitated through a particular technical architecture.⁹⁴ Lessig’s proposal is not an original idea,⁹⁵ but it is perfectly congruent with his foundational values of choice and transparency; in fact, he describes his proposal as architecture with “a capacity to enable choice.”⁹⁶ Unfortunately, the proposal triggered a wave of criticism by some of the leading privacy scholars in the United States.⁹⁷

Later Lessig modified his original proposal, substituting property rights with a web of enforceable contracts.⁹⁸ Yet the core elements of the proposal remain the same: a marketplace for rights in personal information, a mechanism of exclusion, and a technical infrastructure to ensure information symmetry and facilitate transaction negotiations.⁹⁹ His argument suggests that privacy in cyberspace can be guaranteed

93. LESSIG, CODE, *supra* note 4, at 160.

94. *Id.* That technical architecture is called “P3P,” and it is a project sponsored by the World Wide Web Consortium. *Id.*

95. For proposals for a property right in privacy, see *Developments in the Law—The Law of Cyberspace*, 112 HARV. L. REV. 1574, 1634–49 (1999); Patricia Mell, *Seeking Shade in a Land of Perpetual Sunlight: Privacy as Property in the Electronic Wilderness*, 11 BERKELEY TECH. L.J. 1, 26–41 (1996); Richard S. Murphy, *Property Rights in Personal Information: An Economic Defense of Privacy*, 84 GEO. L.J. 2381, 2383 (1996); Kenneth C. Laudon, *Markets and Privacy*, COMM. OF THE ACM, Sept. 1996, at 92. Laudon also suggested a technical architecture to facilitate transactions over personal information. *Id.* at 93.

96. LESSIG, CODE, *supra* note 4, at 163.

97. See, e.g., Julie E. Cohen, *DRM and Privacy*, 18 BERKELEY TECH. L.J. 575, 577 (2003); Mark A. Lemley, *Private Property*, 52 STAN. L. REV. 1545, 1547 (2000); Marc Rotenberg, *Fair Information Practices and the Architecture of Privacy (What Larry Doesn’t Get)*, 2001 STAN. TECH. L. REV. 1, ¶¶ 80–90 (2001); Pamela Samuelson, *Privacy as Intellectual Property?*, 52 STAN. L. REV. 1125 (2000); Paul M. Schwartz, *Beyond Lessig’s Code for Internet Privacy: Cyberspace Filters, Privacy Control, and Fair Information Practices*, 2000 WIS. L. REV. 743, 744–45. Rotenberg for example notes approvingly that his critique “grows out of a great regard for the vision of *Code* and great disappointment in the application.” Rotenberg, *supra*, at ¶ 121.

98. The only difference between his original proposal and the revised version is the mechanism of control: property rights are substituted with contractual obligations. Compare LESSIG, CODE, *supra* note 4, at 163, with LESSIG, CODE 2.0, *supra* note 8, at 230. While property rights are enforceable against anybody, contractual rights are only enforceable vis-à-vis one’s contractual partner. LESSIG, CODE 2.0, *supra* note 8, 383 n.51. Using contract law instead of property law reduces the efficiency of the market, as Lessig acknowledges and expands in a footnote. *Id.*

99. See LESSIG, CODE 2.0, *supra* note 8, at 230.

through a competitive and efficient market based on choice and transparency.

C. Intellectual Property

Few would associate Lawrence Lessig with advocating a market-based approach for intellectual property, since he is seen as one of the most vocal proponents of the commons movement.¹⁰⁰ In making his argument that code is law, however, Lessig stresses that he is not opposed to the idea of copyright—of granting a temporary exclusion right to creators—as long as it fulfills its purpose of producing enough creative works, thereby providing greater choice within the market of such works.¹⁰¹ Moreover, intellectual property laws traditionally have had strong transparency notions built in; patents have to be made public to be protected, and most copyrighted material is transparent for those experiencing it.¹⁰²

Lessig becomes concerned, however, when we disregard the choice and transparency that were originally embedded in our notion of intellectual property. Thus, Lessig worries about the concentration of intellectual property in the hands of a small number of corporations, which limits choices for users.¹⁰³ Similarly, the basic premise of transparency is violated when software code can be protected by copyright without requiring publication in a comprehensible form. This in turn makes choices less informed, and cyberspace more regulable.

Looking at the mechanisms of exclusion used by rights holders, Lessig notices a shift towards technical infrastructures of protection such as digital rights management (DRM).¹⁰⁴ Insofar as this shift reduces users' choices and transparency over how and what to choose, we may lose our ability to make informed choices at an even more fundamental level.

As Lessig advocates for more choices to rejuvenate the commons, it is not a commons without exclusion rights, but a commons in which exclusion rights lead to more creation and thus greater choice. When he

100. Lessig describes and lauds the institution of a commons. LESSIG, CODE 2.0, *supra* note 8, at 198–99. The commons is the core element of one of his subsequent books. See LESSIG, THE FUTURE OF IDEAS, *supra* note 4, at 17–100. Lessig is also on the Board of Directors of Creative Commons, aimed at creating a digital commons. LESSIG, CODE 2.0, *supra* note 8, at 110–11. For information on Creative Commons see <http://creativecommons.org/about>.

101. LESSIG, CODE 2.0, *supra* note 8, at 183–85.

102. For information on patent disclosure see Note, *The Disclosure Function of the Patent System (or Lack Thereof)*, 118 HARV. L. REV. 2007 (2005).

103. See LESSIG, FREE CULTURE, *supra* note 4, at 161–68.

104. LESSIG, CODE 2.0, *supra* note 8, at 196.

argues for open code and against DRM, he is simply advocating for transparency.

Choice and transparency are not only present in these three substantive areas, but are Lessig's guiding stars throughout. For example, he describes the problem of spam as a problem of transparency and lack of choice.¹⁰⁵ If spammers could be forced through law to label their messages, users could easily filter them.¹⁰⁶ Users would have the choice whether to delete each message labeled spam automatically, or to look at it.¹⁰⁷ Lessig envisions a whole ecology of labels, with some spammers paying users for the privilege of getting through the spam filters, and enforcement handled by a cyberspace version of bounty hunters.¹⁰⁸ The problem, he suggests, can be solved through the application of the two foundational values of the marketplace.

Lessig worries that readers may see him as inconsistent: as advocating a solution based on technical architecture for privacy, but recommending against it for intellectual property.¹⁰⁹ As I hope my analysis makes clear, when one looks at the conceptualization of society that underlies Lessig's view, he is actually consistent. He sees individuals in their roles as users, producers, and customers. They ought to have plenty of choices and have the same information as their transactional partners when deciding what to choose.

III. INCOMPLETE DEMOCRACY, INCOMPLETE MARKET—LESSIG'S CONCEPTUAL WEAKNESSES

Such a conceptualization of the world and a belief in a (sometimes regulated) market exposes Lessig to two fundamental criticisms, linked to his reliance on choice and transparency.

A. Democracy and the Problem of Choice

For Lessig, most dynamics in our society, including democratic ones, can be explained as aggregations of informed choice.¹¹⁰ His preferred mechanism is the market, and his focus is the decision.¹¹¹ As a society, we have to ensure that people have actual choices available to

105. See LESSIG, CODE 2.0, *supra* note 8, at 264–65.

106. *Id.*

107. *Id.*

108. *Id.* at 266–67.

109. *Id.* at 230.

110. See *supra* Part II.

111. See *supra* notes 68–70 and accompanying text.

them and are informed enough about these choices when they make their decisions.¹¹²

This is not necessarily the best way to conceptualize democracy. Take informational privacy. Initially, Lessig suggested giving citizens quasi-property rights in privacy, which would lead to the development of functioning markets for personal information.¹¹³ But such a market is difficult to create. Critics have pointed out market complexities and potential market failures that such a marketplace would entail, for example, by artificially stimulating demand for personal information rather than protecting privacy.¹¹⁴ Professor Pamela Samuelson pointed out that markets are used to allocate scarce resources, but in privacy markets the resource traded, information, is not scarce—privacy is, and privacy is not traded.¹¹⁵ Professor Paul Schwartz noted severe distributional issues with privacy markets, as millions of citizens individually confront well-organized interests of processors of personal information, which political scientists would identify as a collective action problem.¹¹⁶

Focusing on the interplay between the individual and society, others have argued that a market for personal information fails to capture public values.¹¹⁷ Society may, for example, want to facilitate an informational commons of personal information—the equivalent of fair use—beyond what individuals would want to agree to contractually.¹¹⁸ Or, in some cases, society may want to protect the use of personal information beyond an individual's willingness.¹¹⁹

A third line of critique focuses on the nature of the privacy claim.¹²⁰ Rather than a property right, Samuelson has argued that

112. See *supra* notes 74–80 and accompanying text.

113. See LESSIG, CODE, *supra* note 4, at 160. After a barrage of scholarly criticism, Lessig amended his proposal; instead of advocating for a property right in privacy, he now suggests that markets of personal information be based on contractual licensing and permission. LESSIG, CODE 2.0, *supra* note 8, at 230. But this does not address criticism that has been focused on the market, the interplay between the individual and society, and the nature of the privacy claim itself. See *generally* sources cited *supra* note 97.

114. See, e.g., Rotenberg, *supra* note 97, ¶¶ 101–02.

115. See Samuelson, *supra* note 97, at 1138.

116. Schwartz, *supra* note 97, at 763–76.

117. See Rotenberg, *supra* note 97, ¶¶ 96–99.

118. See Samuelson, *supra* note 97, at 1141.

119. This is what the European Union has done in its Privacy Directive, which severely limits the capacity of citizens to consent to the processing of what the Directive terms sensitive personal information that pertains to an individual's health, religion and sexual orientation. See Council Directive 2002/58, 2002 O.J. (L201) 37 (EC) [hereinafter EU Privacy Directive].

120. See, e.g., Samuelson, *supra* note 97, at 1142–44; see *generally* Laura L. Mall, *The Right to Privacy in Great Britain: Will Renewed Anti-Media Sentiment*

privacy could also be seen as a civil right.¹²¹ A civil right could be created in the form of a negative liberty, like the “right to be let alone,”¹²² or of a positive right of the individual to participate in the democratic processes. The latter is in fact how informational privacy rights have become conceptualized in Europe over the last two decades.¹²³

This third line of critique also points towards alternative conceptualizations of privacy that are not based on markets and choice, but rather on participation and inclusion. Sometimes termed “right to informational self-determination,”¹²⁴ it denotes a positive right to determine not just whether, but how and under what circumstances, one wants one’s personal information to be used.¹²⁵ Unlike a property right in personal information, such a participatory right is retained by the individual who continues to take part in societal negotiation of the use of his or her personal information, even as others use the information.¹²⁶ A participatory right to privacy is not saddled with some of the problems that handicap Lessig’s contractual privacy regime and privacy markets; for example, it is not premised on the functioning of a market, and is capable of capturing public values.¹²⁷ It has the added advantage that it is reality rather than fiction, as much of the European Privacy Directive regulating the processing of personal information in the twenty-five member nations of the European Union is derived from this participatory principle of informational self-determination.¹²⁸

Lessig’s second proving ground for his theory of markets, choice, and transparency is intellectual property, and it is vulnerable to similar criticism. First, critics have described failures in the markets for intellectual property that lead to underutilization,¹²⁹ concentration,¹³⁰

Compel Great Britain to Create a Right to Be Let Alone?, 4 ILSA J. INT’L & COMP. L. 785 (1998).

121. Samuelson, *supra* note 97, at 1142–44.

122. See Mall, *supra* note 120.

123. See Viktor Mayer-Schönberger, *Generational Development of Data Protection in Europe*, in TECHNOLOGY AND PRIVACY: THE NEW LANDSCAPE 219, 219–20 (Philip E. Agre & Marc Rotenberg eds., 1997).

124. See Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Dec. 15, 1983, 65 Entscheidungen des Bundesverfassungsgerichts [BVerfGE] 1 (F.R.G.), translated in 5 HUM. RTS. L.J. 94, 100–01 (1984).

125. *Id.*; see also Spiros Simitis, *Reviewing Privacy in an Information Society*, 135 U. PA. L. REV. 707, 734 (1987).

126. Simitis, *supra* note 125, at 732–37.

127. Cf. *supra* notes 113–23 and accompanying text.

128. See EU Privacy Directive, *supra* note 119.

129. See, e.g., Matthew J. Sag, *Beyond Abstraction: The Law and Economics of Copyright Scope and Doctrinal Efficiency*, 81 TUL. L. REV. 187, 195–96 (2006) (“The nonrivalrous nature of information makes the welfare implications of intellectual

and inefficient rents.¹³¹ Second, scholars have pointed out the need to balance intellectual property rights with societal claims, from “commons”¹³² to “fair use.”¹³³ In fact, the Constitution conceptualizes individual claims over intellectual creations in an utterly utilitarian way, protecting them only insofar as they contribute to societal development.¹³⁴ Third, the nature of the rights creators have over their works is not settled, certainly not globally.¹³⁵ Taken together, this suggests that conceptualizing intellectual property through Lessig’s lens of markets and choice is deeply problematic. Moreover, alternative conceptualizations exist that are not saddled with some of these shortcomings. They include a communitarian commons, as well as a concept of author’s rights as expressions of participation in societal processes, as the eighteenth century philosopher Johann Gottlieb Fichte (arguably the father of continental European author’s rights) noted when he wrote about the importance of an idea in a creative work belonging to a human commons in which every human being partakes.¹³⁶

Lessig’s market lens focusing on individual choice does not fare any better for freedom of expression, the third substantive area Lessig has selected. It is true that countless court decisions have employed the

property different from those of other forms of property: the incentives attributed to allocating property rights in information must be offset against the resulting underutilization of that information.”).

130. See, e.g., RONALD V. BETTIG, *COPYRIGHTING CULTURE: THE POLITICAL ECONOMY OF INTELLECTUAL PROPERTY* 107–08 (1996) (“The existence of tendencies toward increased market power and economic concentration is continuously revealed in the final analyses of information economics.”); LESSIG, *FREE CULTURE*, *supra* note 4, at 161–68.

131. See, e.g., Glynn S. Luoney, Jr., *Fair Use and Market Failure: Sony Revisited*, 82 B.U. L. REV. 975, 1016–17 (2002).

132. See, e.g., Paul Goldstein, *Copyright’s Commons*, 29 COLUM. J.L. & ARTS 1, 9 (2005).

133. See, e.g., Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 529 (1999) (“‘Fair use’ thus balances the rights of an individual author against the rights of a user under any of the justifications for the law of copyright.”).

134. The constitutional basis for copyright is Congress’s power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” U.S. CONST. art. I, § 8, cl. 8.

135. See Viktor Mayer-Schönberger, *In Search of the Story: Narratives of Intellectual Property*, 10 VA. J.L. & TECH. 1, ¶¶ 15–19 (2005), available at http://www.vjolt.net/vol10/issue4/v10i4_a11-Mayer-Schonberger.pdf.

136. See Johann Gottlieb Fichte, *Beweis der Unrechtmäßigkeit des Büchernachdrucks*, in BERLINER MONATSSCHRIFTEN 443 (1793); see also Mayer-Schönberger, *supra* note 135, ¶ 15.

marketplace of ideas metaphor.¹³⁷ Yet, its validity is unclear for very similar reasons to why a market conceptualization failed to be convincing for privacy and intellectual property claims.

First, such markets tend to be problematic mechanisms for identifying truth as well as preferences. Market advocates tend—and Lessig is no exception—to emphasize the need for a wide spectrum of views and assume that, through a competitive give and take, the best idea emerges.¹³⁸ That is unlikely, as Professor Cass Sunstein has laid out in detail, for both truth and preferences.¹³⁹ Instead, such a cacophony of views and ideas may lead to fragmentation and to an amplification of prevalent, but not necessarily correct, opinions.¹⁴⁰ With respect to uncovering the truth, even if we eliminate biases, we approach truth through aggregation only when, on average, each participant is more likely than not to know the truth.¹⁴¹ Otherwise the polling of many will be worse than asking a few.¹⁴² As we cannot assume that, on average, an individual is more likely to know the truth for many issues that we would want to subject to public debate, involving larger and larger numbers of participants in such a debate would not get us closer to the truth.¹⁴³ (Of course, it may create a sense of belonging and inclusion, but this is not what Lessig is after.)¹⁴⁴ Marketplaces of ideas are also problematic for uncovering societal opinion, the aggregate preferences of the citizenry, as participants in

137. The metaphor is ubiquitous in Supreme Court jurisprudence. *See, e.g., Reno v. ACLU*, 521 U.S. 844, 885 (1997); *Time, Inc. v. Hill*, 385 U.S. 374, 406 (1967); *see also* C. Edwin Baker, *Scope of the First Amendment Freedom of Speech*, 25 UCLA L. REV. 964, 968–74 (1978); Ingber, *supra* note 83, at 2.

138. *See, e.g.,* Richard Posner, *Free Speech in an Economic Perspective*, 20 SUFFOLK U. L. REV. 1, 7 (1986).

139. *See* CASS SUNSTEIN, *INFOTOPIA: HOW MANY MINDS PRODUCE KNOWLEDGE* 186–89 (2006). Lessig acknowledges Sunstein’s concerns, but does not seem to take them seriously. *See* LESSIG, *CODE 2.0*, *supra* note 8, at 244.

140. *See* SUNSTEIN, *supra* note 139, at 58.

141. *Id.* at 42–43.

142. This is implied by Condorcet’s Jury Theorem. *See* Christian List & Robert E. Goodin, *Epistemic Democracy: Generalizing the Condorcet Jury Theorem*, 9 J. POL. PHIL. 277, 283–84 (2001); Eric A. Posner & Cass R. Sunstein, *The Law of Other States*, 59 STAN. L. REV. 131, 131 (2006).

143. *See* SUNSTEIN, *supra* note 139, at 42–43.

144. The situation is different if opinions put forward by individuals in the public debate are weighted on how convinced an individual is of her views. Prediction markets are an example of such a mechanism. There, people bet on a future event, factoring their unique knowledge and expertise into their decisions. They can adjust the amount they bet based on the extent of their knowledge and their conviction that they are correct. The higher one bets within the predictions market, the more weight we should assign to that person’s opinion. This utilizes what Friedrich Hayek has termed the “marvel” of the pricing mechanism to assign different weights to views based on how much each individual is willing to bet. *Id.* at 14.

the marketplace have shown to command vastly differing capabilities to make their voices heard¹⁴⁵ and cannot be assumed to behave rationally.¹⁴⁶ The media, Professor Edwin Baker writes, tend to “reinforce [the] audience’s pre-existing interests, attitudes, and behavior[s],” and “creat[e] . . . opinions”,¹⁴⁷ where they are particularly bad, he suggests, is in changing people’s (wrong) opinions, which is exactly what advocates of the marketplace metaphor hope public debate will achieve.¹⁴⁸

The very example Lessig uses, blogs,¹⁴⁹ may in the aggregate expose their readers to many different viewpoints, but that is of little value when trying to discover truth.¹⁵⁰ In fact, and contrary to what a prominent blogger (and legal academic) suggests,¹⁵¹ blogs are as susceptible to biases, fashions and fads as mainstream media is.¹⁵² In many ways blogs look exactly like mainstream media.¹⁵³

Second, conceptualizing free speech through a market lens neglects public values that may be important to society other than the value of unfettered public discourse, thus undermining justifications for restrictions on pornography,¹⁵⁴ Nazi propaganda,¹⁵⁵ or racism.¹⁵⁶

Third, and most fundamentally, the value of free speech is broader than the finding of truth or the aggregation of societal preferences.¹⁵⁷

145. See Baker, *supra* note 137, at 977–78, 981–90.

146. *Id.* at 976–77.

147. *Id.* at 979 (quoting 3 International Encyclopedia of the Social Sciences 82, 85 (1968)).

148. *Id.*

149. For Lessig’s discussion of blogs, see LESSIG, CODE 2.0, *supra* note 8, at 242–44.

150. See SUNSTEIN, *supra* note 139, at 186–89.

151. See GLENN H. REYNOLDS, AN ARMY OF DAVIDS 91–93 (2006).

152. See SUNSTEIN, *supra* note 139, at 58, 196.

153. See Matthew Hindman, “Open Source Politics” Reconsidered: Emerging Patterns in Online Political Participation, in GOVERNANCE AND INFORMATION TECHNOLOGY 183, 198–99 (Viktor Mayer-Schönberger & David Lazer eds., 2007).

154. See Ingber, *supra* note 83, at 24; Cass R. Sunstein, *Pornography and the First Amendment*, 1986 DUKE L.J. 589 (1986).

155. Restrictions on Nazi propaganda are well-known in France and Germany. See, e.g., N.C. PÈN [French Penal Code], art. R. 645-1 (2003) (Fr.) (making criminal display of symbols of any groups known to have committed genocide); Strafgesetzbuch [StGB] [German Penal Code] Nov. 13, 1998, BGBl. I at 3322, § 86(1)4 (F.R.G.) (criminalizing the dissemination of Nazi propaganda); see also Lyombe Eko, *New Medium, Old Free Speech Regimes*, 28 LOY. L.A. INT’L & COMP. L. REV. 69 (2006); John F. McGuire, Note, *When Speech is Heard Around the World: Internet Content Regulation in the United States and Germany*, 74 N.Y.U. L. REV. 750 (1999).

156. See David Kretzmer, *Freedom of Speech and Racism*, 8 CARDOZO L. REV. 445 (1987).

157. See Baker, *supra* note 137, at 990.

Communicating is an important element to self-fulfillment: it is the ability to express ourselves that, as Professor Karl Popper said, makes us human.¹⁵⁸ A further value is what Baker calls “participation in change.”¹⁵⁹ Together, these values point towards alternative conceptions of freedom of speech, from Baker’s¹⁶⁰ and Emerson’s¹⁶¹ to Habermas’s,¹⁶² that emphasize participation and process rather than Lessig’s market and choice.¹⁶³

In sum, Lessig’s conceptualization of privacy, intellectual property and freedom of speech based on market and choice exposes severe weaknesses of the market mechanism, the negotiating of individual rights and societal values on these markets, and the broader nature of these values. This points toward fundamental shortcomings in Lessig’s model. Alternative conceptualizations, such as ones based on participation and process, may not be saddled with these difficulties.

B. Transparency

As I have explained, Lessig’s emphasis on transparency as a precondition for choice is premised on the view that information imbalances between transactional partners, insofar as such imbalances exist, need to be corrected through regulatory measures.¹⁶⁴

This classical view is disputed by economists emphasizing the importance of knowledge and discovery.¹⁶⁵ Sometimes termed the “Austrian school,” this group of economists suggests that information asymmetries—differences in the access to information and knowledge—

158. See KARL POPPER, ALLES LEBEN IST PROBLEMLÖSEN 22 (1994); see also THOMAS EMERSON, THE SYSTEM OF FREEDOM OF EXPRESSION 6–7 (1970); Baker, *supra* note 137, at 990–91.

159. Baker, *supra* note 137, at 990–92 (referencing and expanding on EMERSON, *supra* note 158, at 6–7).

160. See generally Baker, *supra* note 137.

161. See generally EMERSON, *supra* note 158.

162. See generally JÜRGEN HABERMAS, THE THEORY OF COMMUNICATIVE ACTION (Thomas McCarthy trans., 1984 & 1987) (two volumes). For one approach to developing a theory for free speech from Habermas’s work, see Lawrence Byard Solum, *Freedom of Communicative Action: A Theory of the First Amendment Freedom of Speech*, 83 NW. U. L. REV. 54 (1989).

163. For another alternative to Lessig’s market approach, see Ingber, *supra* note 83.

164. See *supra* notes 74–77 and accompanying text.

165. See Peter J. Boettke, *Information and Knowledge: Austrian Economics in Search of its Uniqueness*, 15 REV. AUSTRIAN ECON. 263, 271–72 (2002) (“It is because every individual knows so little and, in particular, because we rarely know which of us knows best that we trust the independent and competitive efforts of many to induce the emergence of what we shall want when we see it.”) (quoting F. A. HAYEK, THE CONSTITUTION OF LIBERTY 29 (1960)).

are a constitutive element of an innovative economy.¹⁶⁶ As Professor Ejan Mackaay writes, they see competition not as sequences of choices, but as a process of discovery.¹⁶⁷ The very prospect of a temporary monopoly in the market drives humans to innovate.¹⁶⁸ Such behavior, the Austrian school suggests, is “no cause for intervention.”¹⁶⁹ In fact, enforced transparency would destroy the very incentive that motivates people to innovate.

To this, Nobel laureate Friedrich August von Hayek (the reason why this is called the Austrian school, perhaps together with Joseph Schumpeter)¹⁷⁰ added an important further element. He suggested that how transaction participants perceive, evaluate, and weigh information is highly subjective, contingent on their plans and values.¹⁷¹ The pricing mechanism reveals only the final result of their evaluation, not the information they had or its processing.¹⁷² This makes it impossible for others to judge whether a transactional partner had all the necessary information or not.¹⁷³ Not surprisingly, therefore, members of the Austrian school, Mackaay notes, “take a dim view” on outside second-guessing.¹⁷⁴

The emphasis on transparency makes Lessig vulnerable to the criticism that his premises simply rest not just on the market mechanism, but on a particular conception of the market mechanism based on information symmetries. As alternative conceptions have gained currency, Lessig may find himself having bet the farm on the wrong horse.

In sum, selecting choice and transparency and disregarding other values influences one’s perception of the world—one’s view of reality.

166. *Id.*

167. See Ejan Mackaay, *History of Law and Economics*, in 1 *ENCYCLOPEDIA OF LAW AND ECONOMICS* 65, 86–87 (Boudewijn Bouckaert & Gerrit De Geest eds., 1999).

168. *See id.*

169. *Id.* at 87.

170. See generally Sandye Gloria-Palermo, *Schumpeter and the Old Austrian School: Interpretations and Influences*, in *THE CONTRIBUTION OF JOSEPH SCHUMPETER TO ECONOMICS* 21 (Richard Arena & Cécile Dangel-Hagnauer eds., 2002).

171. See FRIEDRICH A. HAYEK, *The Use of Knowledge in Society*, in *INDIVIDUALISM AND ECONOMIC ORDER* 77 (1948); see also RANDY E. BARNETT, *THE STRUCTURE OF LIBERTY: JUSTICE AND THE RULE OF LAW* (1998); GERALD P. O’DRISCOLL, JR. & MARIO J. RIZZO, *THE ECONOMICS OF TIME AND IGNORANCE* (1985); Israel M. Kirzner, *Prices, the Communication of Knowledge, and the Discovery Process*, in *THE POLITICAL ECONOMY OF FREEDOM: ESSAYS IN HONOR OF F.A. HAYEK* 193 (Kurt R. Leube & Albert H. Zlabinger eds., 1985); Mackaay, *supra* note 167, at 87.

172. Mackaay, *supra* note 167, at 86–87.

173. *Id.*

174. *Id.* at 87.

Having discovered a hammer, we tend to see a lot of nails, but frequently fail to acknowledge that looking out for nails may constrain our ability (and chances) of identifying nonnails. This has led Lessig to overlook alternative theories that may possibly be better suited to explain the phenomenon of cyberspace and to offer prescriptive guidance. Moreover, it has clouded Lessig's view and blinded him to the shortcomings of his own theoretical model.

These weaknesses of Lessig's *Code* are linked to the role and functioning of the market in Lessig's conceptualization of society. There is a second type of weaknesses that plagues Lessig's theory: how he understands the interplay of technology and society.

IV. TECHNOLOGY AND SOCIETY—LESSIG'S BILLIARDS

In May 2000, the *Stanford Law Review* published a series of papers from a symposium on cyberspace and privacy.¹⁷⁵ One of them, written by cyberlaw pioneer David G. Post,¹⁷⁶ was a biting book review of Lessig's *Code*.¹⁷⁷ It criticized Lessig's view of how markets—the invisible hand of commerce—shape technology.¹⁷⁸ As Lessig sees technology's trajectory determined by commercial pressures and preferences, Post argues that a fundamental determinism permeates Lessig's book. He finds this determinism unconvincing on two accounts: the accuracy of Lessig's portrayal of markets and market dynamics, and the connection between markets and technology.¹⁷⁹ Post suggests that it is preposterous that Lessig can foresee exactly how markets, the results of millions of individual choices, will behave.¹⁸⁰ The nature of Lessig's market view is caricature, and so is the connection between markets and technology.¹⁸¹ This is a harsh assessment that Lessig has not responded to.

Post's charge of Lessig as a determinist is a specific one. He argues that Lessig is mixing up the *is* and *ought*: the world as it is with

175. Symposium, *Cyberspace and Privacy: A New Legal Paradigm?*, 52 STAN. L. REV. 987 (2000).

176. Post is best known for his groundbreaking work in cyberspace governance. See, e.g., David R. Johnson & David Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 (1996); David G. Post, *Against Against Cyberanarchy*, 17 BERKELEY TECH. L.J. 1365 (2002); David G. Post, *Governing Cyberspace*, 43 WAYNE L. REV. 155 (1996).

177. Post, *supra* note 4.

178. *Id.* at 1454.

179. See *id.* at 1451–54.

180. See *id.*

181. See *id.*

the world as it ought to be according to Lessig's dystopian view.¹⁸² This leads Lessig to misconceive the future based on his current beliefs rather than on a realistic analysis of the premises. Post's critique of Lessig is clearly one of determinism, but one of *market* determinism. Lessig's problem is that his views of the future are based on his erroneous views of the market.¹⁸³

Markets determining technology is only half of Lessig's story. Underlying Lessig's core argument, however, is another determinism charge. This one focuses on how Lessig conceptualizes the interplay between technology and society, and more precisely that technology shapes society.¹⁸⁴

Lessig makes this point numerous times.¹⁸⁵ This must not come as a surprise. It is the inescapable consequence of how Lessig spins his central narrative that code is law, that the rules embedded in technology shape societal behavior.¹⁸⁶ As more rule making shifts from East Coast Code to West Coast Code, from laws to software code, more and more of our society is being constrained not by norms generated through societal processes (what we call laws), but by technology. This kind of technological determinism—that technology shapes society—is independent of the first kind of determinism that we identified in Lessig's narrative: that technology's trajectory is determined by predictable market forces.

Technological determinism has been with us for a long time. Professor William Ogburn was one of the early modern advocates of a theory of technology impacting (and thus shaping) society, in much the same way that a billiard ball hits another, thereby pushing the other in motion.¹⁸⁷ Professor Claude Fischer pointed out that such impact theories are often founded on an underlying belief of economic rationality.¹⁸⁸ This rationality mandates that technologies be used in a

182. *See generally id.*

183. *Id.*

184. LESSIG, CODE, *supra* note 4, at 87–89.

185. *See, e.g., id.* at 89; LESSIG, CODE 2.0, *supra* note 8, at 20, 94, 124–25, 136. That code regulates behavior—technology shapes society—is a central theme of Lessig's books. This is how he titled the first chapter of both *Code* and *Code 2.0*. *See* LESSIG, CODE, *supra* note 4, at 3; LESSIG, CODE 2.0, *supra* note 8, at 1.

186. LESSIG, CODE 2.0, *supra* note 8, at 125.

187. WILLIAM FIELDING OGBURN, SOCIAL CHANGE WITH RESPECT TO CULTURE AND ORIGINAL NATURE (1922). *See generally* William F. Ogburn, *How Technology Causes Social Change*, in TECHNOLOGY AND SOCIAL CHANGE 12–26 (Francis R. Allen et al. eds., 1957). The ricocheting billiard ball metaphor is taken from CLAUDE S. FISCHER, AMERICA CALLING: A SOCIAL HISTORY OF THE TELEPHONE TO 1940 at 8 (1992). *Cf.* LYNN WHITE, JR., MEDIEVAL TECHNOLOGY AND SOCIAL CHANGE 38 (1962) (arguing that the invention of the stirrup eventually caused the rise of feudalism).

188. FISCHER, *supra* note 187, at 8.

particular, most efficient way.¹⁸⁹ Insofar as one can foresee this most efficient use, one can predict the future with great precision.

If it sounds familiar, it is no coincidence. Technological determinism has been deeply rooted in American culture.¹⁹⁰ It is no surprise that it is how Lessig conceptualizes the world. As his narrative progresses linearly from the invisible hand of commerce to technological innovation to society, we cannot escape the trajectory that is handed to us except by fundamentally altering the market, which in turn will change technology and thus society. Lessig seems to believe that the rationality of the market, the connection between the market and technology, and the mechanism (West Coast code) through which technology impacts society, taken together, yield a predetermined trajectory of the future of our society, just as an expert pool player can predict the direction a ball is headed when hit by another.

Such technological determinism—the idea that technology shapes society—has been hugely criticized in the academic literature.¹⁹¹ One group of critics contends that technological determinists get it exactly wrong.¹⁹² These critics suggest that technology is not an exogenous force striking society.¹⁹³ “[N]o single . . . innovation,” Professor George Daniels writes, “and no group of them taken together in isolation from nontechnological elements . . . ever changed the direction in which society was going”¹⁹⁴ Instead, “the direction in which society is going determines the nature of its technological innovations Habits seem to grow out of other habits far more directly than they do out of gadgets.”¹⁹⁵ Whether or not one agrees with Daniels’s sweeping view, his criticism implicates a fundamental weakness in many theories of technological determinism; they lack any notion of society’s impact on technology.¹⁹⁶

In fairness, this is not a criticism that can be marshaled against Lessig’s *Code*. He does explain at length how markets, a societal

189. *Id.*; see also JÜRGEN HABERMAS, TOWARD A RATIONAL SOCIETY: STUDENT PROTEST, SCIENCE, AND POLITICS 58–60 (1970); see generally Bruce Bimber, *Three Faces of Technological Determinism*, in DOES TECHNOLOGY DRIVE HISTORY?: THE DILEMMA OF TECHNOLOGICAL DETERMINISM 79, 81–83 (Merritt Roe Smith & Leo Marx eds., 1994).

190. Merritt Roe Smith, *Technological Determinism in American Culture*, in Smith & Marx, *supra* note 189, at 1–23.

191. *Id.* at 26–35; see also FISCHER, *supra* note 187, at 8–10.

192. See, e.g., George H. Daniels, *The Big Questions in the History of American Technology*, 11 TECH. & CULTURE 1, 3 (1970).

193. *Id.*

194. *Id.*

195. *Id.* at 3–6.

196. *Id.*

institution, shape the trajectory of technology.¹⁹⁷ And while Lessig's conceptualization of markets is problematic, as Post has explained,¹⁹⁸ it is not our focus here either; rather, it is twofold. The first is Lessig's choice of the market as the societal institution that shapes technology. The second is the view that society is shaped through a linear process of technological innovation in which society has no independent role; commercial actors innovate technology, which in turn impacts society. Society is on the receiving end of this linear process and technology is an intermediary element that itself is the product of the invisible hand of commerce. Commerce in turn is nothing but aggregate rational (and thus predictable, predetermined) individual choices.

Such a view of technological innovation has been thoroughly criticized in the science and technology literature as omitting the myriad of individual actors and mechanisms that influence the development and use of technological innovations over time.¹⁹⁹ Detailed studies from Bakelite²⁰⁰ to light bulbs,²⁰¹ to bicycles,²⁰² to dikes,²⁰³ to the electrical power system,²⁰⁴ to the telephone²⁰⁵ have shown that the interplay between technology and society is both vastly more complex and bidirectional than Lessig's model, with societal processes (much beyond the simplistic metaphor of the invisible hand of commerce) influencing technology as technology influences society. Professor Thomas Hughes, for instance, has suggested that technology's trajectory is shaped by what he calls technological systems that comprise technical and societal components which may gain a momentum irrespective of the original (commercial) innovator.²⁰⁶ Professors Michel Callon, Bruno Latour and John Law advanced the actor-network (ANT) approach, envisioning the interplay between technology and society

197. LESSIG, CODE 2.0, *supra* note 8, at 77-79.

198. Post, *supra* note 4, at 1451-54.

199. See, e.g., FISCHER, *supra* note 187, at 8-12; Trevor Pinch & Wiebe E. Bijker, *The Social Construction of Facts and Artifacts*, in *THE SOCIAL CONSTRUCTION OF TECHNOLOGICAL SYSTEMS* 17, 21-26 (Wiebe E. Bijker et al. eds., 1987).

200. See WIEBE E. BIJKER, OF BICYCLES, BAKELITES, AND BULBS: TOWARD A THEORY OF SOCIOTECHNICAL CHANGE 101-97 (MIT Press 1997) (1995).

201. See *id.* at 199-267.

202. See *id.* at 19-100; see also Pinch & Bijker, *supra* note 199, at 28-47.

203. See Wiebe E. Bijker, *Sociohistorical Technology Studies*, in *HANDBOOK OF SCIENCE AND TECHNOLOGY STUDIES* 229-56 (Sheila Jasanoff et al. eds., 1995).

204. See generally THOMAS P. HUGHES, NETWORKS OF POWER: ELECTRIFICATION IN WESTERN SOCIETY 1880-1930 (1983).

205. See generally FISCHER, *supra* note 187.

206. See generally HUGHES, *supra* note 204; see also Thomas P. Hughes, *The Evolution of Large Technological Systems*, in Bijker, *supra* note 199, at 51-82; Thomas P. Hughes, *Technological Momentum*, in Smith & Marx, *supra* note 189, at 101-13.

taking place in a heterogeneous network of human and nonhuman actors.²⁰⁷ The relations between the nodes in the network are both material and semiotic, and need to be practiced over time to remain in place.²⁰⁸ Professors Wiebe Bijker and Trevor Pinch have argued for a theory of the social construction of technology (SCOT), a multidirectional process in which certain social groups, including users of technological artifacts, play a fundamental role (among other factors) in shaping technology.²⁰⁹

Despite their differing emphases, these theories of the interplay between technology and society share a common thread that is missing from Lessig's conceptualization—they acknowledge the central importance of the mutuality of influences between technology and society, of the need to look at all elements involved (social as well as technical), and of the resulting unpredictability of future trajectories, very much unlike Lessig's determinism.

The theoretical weakness as an explanatory and predictive device is apparent when one looks at actual trajectories of technological innovations. In the following Section, I examine a case Lessig himself describes, cookies, and contrast Lessig's conceptualization of how cookies came about with the actual history, demonstrating how nondeterminist theories fare much better. Then I look at podcasts, a case that Lessig did not use, to show how his theory fails to capture much of what is actually happening.

A. *The Rise of Cookies*

For Lessig the story is simple and straightforward. In 1994, Netscape invented cookies “for commerce to happen.”²¹⁰ And happen it did. According to Lessig, “the whole of web commerce” was initially

207. BRUNO LATOUR, *THE PASTEURIZATION OF FRANCE* (1984); BRUNO LATOUR, *REASSEMBLING THE SOCIAL: AN INTRODUCTION TO ACTOR-NETWORK-THEORY* (2005); Michel Callon, *The Sociology of an Actor-Network*, in *MAPPING THE DYNAMICS OF SCIENCE AND TECHNOLOGY: SOCIOLOGY OF SCIENCE IN THE REAL WORLD* 19–34 (Michel Callon et al. eds., 1986); John Law, *Technology and Heterogeneous Engineering: The Case of Portuguese Expansion*, in Bijker, *supra* note 199, at 111–34; *see also* ACTOR NETWORK THEORY AND AFTER (John Law & John Hassard eds., 1999); Bijker, *supra* note 203, at 251.

208. LATOUR, *REASSEMBLING THE SOCIAL*, *supra* note 207, at 128–33.

209. *See* Pinch & Bijker, *supra* note 199, at 30–34; BIJKER, *supra* note 200, at 122–25. The role of users in the innovation process has also received attention in the innovation and management literature. *See* ERIC VON HIPPEL, *THE SOURCES OF INNOVATION* 35–36, 117 (1988) (arguing that the innovation process is distributed and encompasses suppliers as well as users).

210. LESSIG, *CODE 2.0*, *supra* note 8, at 48.

built on it.²¹¹ As Web browsers are by default accepting cookies, users are by default exposing themselves to tracing, which e-commerce sites may quite likely share with other sites.²¹² “They know you from your mouse droppings.”²¹³ Then Lessig’s determinism kicks in: “And as businesses and advertisers work more closely together, the span of data that can be aggregated about you becomes endless.”²¹⁴ For Lessig there is no question that economic rationality drives e-commerce providers to want to share user data, which in turn has prompted and will continue to prompt Web-server and Web-browser providers to build into their products code for cookies to enable user traceability as well as easy sharing of tracing data.²¹⁵ Dystopia beckons. Case closed.

The history of cookies is much more complex. Making it easier for e-commerce to flourish was only one of the reasons for cookies.²¹⁶ Others included making online polling easier (and harder for users to vote multiple times), as well as to personalize Web pages.²¹⁷ Neither of these features is directly linked to e-commerce shopping. The creators of the cookie standard were much more concerned about privacy issues than Lessig seems to imply.²¹⁸ They wanted to overcome a particular problem of the Web standard (called “statelessness”),²¹⁹ not build into Web browsers a version of Bentham’s panopticon.²²⁰ Consequently, the initial cookie standard envisioned that cookies would be deleted by default after a user would quit the browser.²²¹ Because Netscape

211. *Id.*

212. *Id.* at 48–49, 203.

213. *Id.* at 203.

214. *Id.*

215. *Id.*

216. See Netscape, *Persistent Client State HTTP Cookies*, Preliminary Specifications, <http://chnm.gmu.edu/digitalhistory/links/pdf/chapter5/5.29b.pdf> (last visited Oct. 11, 2008).

217. See Anna Kemp, *Persistent Client State HTTP Cookies*, ILS.UNC.EDU, Nov. 5, 1998, <http://ils.unc.edu/~kempa/cookies/icookie.html>; see also Glenn Fleischman, *Cookies: Fresh From Your Browser’s Oven*, WEB DEVELOPER, July/Aug. 1996, at 14.

218. Compare LESSIG, CODE 2.0, *supra* note 8, at 48, with Netscape, *supra* note 216.

219. I know this because in 1997 I engaged Lou Montulli, the Netscape engineer in charge of the cookie standard, in an e-mail conversation about privacy.

220. Jeremy Bentham suggested a prison to be constructed so that inmates could be constantly surveilled, but would not know whether they were watched or not, which he called the panopticon. This would constrain their behavior, he suggested, even in the absence of actual enforcement. See JEREMY BENTHAM, *Panopticon*, in THE PANOPTICON WRITINGS 29–95 (Miran Bozovic ed., 1995).

221. See Kemp, *supra* note 217.

engineers envisioned cookies to be short-lived, they saw no need to provide users with an elaborate interface to access cookies.²²²

Then e-commerce companies began to use the Internet server software that Netscape and Microsoft offered and utilized cookies quite differently from the original intentions—they found out how to expand the life expectancy of cookies so that the cookies would remain in users' computers beyond individual Web-surfing sessions.²²³ It was a case of user innovation. It caused concerns among privacy and security experts, informed users, and Netscape and Microsoft engineers, who reacted to these concerns and remained conscious of their own privacy leanings.²²⁴ This is the story Lessig does not tell us. These concerns led the engineers to promulgate a new cookie standard in 1997.²²⁵ The new standard acknowledged the paradigm shift—it no longer assumed that cookies would only be present for the duration of a browsing session, and thus took for granted that e-commerce companies were using cookies in a persistent, longer-term way.²²⁶ As a consequence, the engineers built into the new standard elements to provide users receiving cookies sufficient information about the use and origin of the cookie.²²⁷ They also added to their Web browsers easy ways for users to manage cookies, and to not, or only selectively, accept them if

222. *Id.*

223. The short life span of cookies is only a default, it can be deliberately changed. See Netscape, *supra* note 216; see also Viktor Mayer-Schönberger, *The Internet and Privacy Legislation: Cookies for a Treat?*, 14 COMPUTER LAW & SEC. REP. 166 (1998), available at <http://www.sciencedirect.com/science/journal/02673649>.

224. See Mayer-Schönberger, *supra* note 223, at 173 n.53 and accompanying text.

225. See D. Kristol & L. Montulli, HTTP State Management Mechanism 15–16 (Feb. 1997) (unpublished manuscript, available at <http://www.ietf.org/rfc/rfc2109.txt>) (expanding the “Privacy” section in this standard).

226. The new standard also detailed how privacy could be maintained in case cookies persisted beyond a short session: “When the user agent terminates execution, it should let the user discard all state information. Alternatively, the user agent may ask the user whether state information should be retained; the default should be ‘no’. If the user chooses to retain state information, it would be restored the next time the user agent runs.” *Id.* at 16.

227. See *id.*

necessary.²²⁸ This happened without a legal threat²²⁹ and against obvious economic rationality.²³⁰

What we have here is a network of actors and artifacts, people, organizations, and technology. Instead of the markets pushing firms to invent technology that shapes society (making users traceable), we have Web-software firms offering a technology (cookies) that a particular group of users (e-commerce companies) employ in a partially unintended fashion, thereby reinterpreting technology. This, in turn, causes a different group of users (consumers) to become concerned, partly because they have become sensitized by advocacy organizations.²³¹ End-user concern then leads Web-software firms to react, even though pure economic rationality may prompt them to hold back.

In short, Lessig's simplistic narrative does not square with the complexity of actual events, and his deterministic view is not borne out by reality. In contrast, nondeterministic theories of the interplay between society and technology, I have suggested, are better able to explain the dynamic history of the cookie technology.²³²

B. The Rise of Podcasts

The rise of podcasting provides another illustrative case. Podcasts are media files that are distributed over the Web using syndication feeds, which make it easy for recipients to keep up-to-date.²³³ The first audio podcasts surfaced around 2001 and were shared by a dedicated,

228. See *Browser Users to Watch Cookies*, CNET.COM, Mar. 13, 1997, <http://news.cnet.com/2100-1001-277942.html> (explaining how Netscape Navigator will include new cookie-management features suggested by the proposed new cookie standard).

229. In 1997, I wrote an article on cookies that became widely quoted. In the article I suggested that the cookie standard may violate the European Union Privacy Directive, but despite my argument, to my knowledge, the European Union did not take any action whatsoever. See Mayer-Schönberger, *supra* note 223.

230. At that time, Netscape's and Microsoft's browsers dominated the browser market. Both Netscape and Microsoft were offering their browsers to individuals for free, so users unhappy with the cookie implementation by Netscape and Microsoft had almost nowhere to go, and had no discernable impact on the companies' revenues. See Wikipedia.org, *Browser Wars*, http://en.wikipedia.org/wiki/Browser_wars (last visited Oct. 4, 2008).

231. See, e.g., *Surfer Tracking Limits Applauded*, CNET.COM, Apr. 7, 1997, <http://news.cnet.com/2100-1001-278627.html>. For more information see the Electronic Privacy Information Center's cookie page, at <http://epic.org/privacy/internet/cookies/>, or Cookie Central, at <http://www.cookiecentral.com/>.

232. See *supra* Part IV.A.

233. Wikipedia.org, *Podcast*, <http://en.wikipedia.org/wiki/Podcasts> (last visited Oct. 4, 2008).

albeit small community of enthusiasts, but did not catch on.²³⁴ Few people wanted to listen to an audio commentary on their computer. What podcasts were missing was a way to listen without sitting in front of a computer. In October 2001, Apple introduced the iPod, a portable audio player.²³⁵ It was the device that could make podcasts a success. But Apple did not have podcasts in mind.²³⁶ All that it thought users would do with the iPod was transfer music through its iTunes software from their CDs to the iPod.²³⁷

In October 2003, Kevin Marks demonstrated a script that could download audio files from the Internet and transfer them to the iPod.²³⁸ This provided the missing element created by a crafty user, not a commercial entity like Apple. By February 2004, a team designing the necessary software to make podcasts easily distributable, built around David Winer and Adam Curry, heard about the term “podcasting,” quickly adopted it, and podcasts began to proliferate.²³⁹ Networks of podcasters came into being.²⁴⁰ In June 2005, Apple added podcasting to its iTunes software and made creating podcasts easy using its GarageBand software.²⁴¹ The podcast craze continued and extended to video, fueled by video-enabled iPods, the proliferation of cheap, good-quality video cameras into computers, and the meteoric rise of the video-sharing Web site YouTube.²⁴² User-based audio and video content skyrocketed.²⁴³

This brief sketch does not conform to the simplistic (and deterministic) view of a commercial player, who driven by economic rationality creates a technological artifact that shapes society. Instead we witness a commingling of commercial and noncommercial, of societal and technological elements, that when combined result in the innovation of podcasting. The main technological artifact used to listen to podcasts, the iPod, was not designed for this use, but repurposed by

234. STEVEN LEVY, *THE PERFECT THING* 236–37 (2007).

235. *Id.* at 1–20.

236. *Id.* at 241.

237. *See id.*

238. Wikipedia.org, History of Podcasting, http://en.wikipedia.org/wiki/History_of_podcasting (last visited Oct. 4, 2008). Kevin Marks, a software engineer for Google and former principal engineer for blogsite Technorati, is the author of Web blog Epeus Epigone. Wikipedia.org, Kevin Marks, http://en.wikipedia.org/wiki/Kevin_Marks (last visited Oct. 4, 2008).

239. *See* LEVY, *supra* note 234, at 234–40.

240. *Id.* at 242–44.

241. *See id.* at 241–42.

242. *See id.* at 249.

243. *See id.* at 242 (providing estimates of volume).

its users.²⁴⁴ By the same token, without the iPod, the core technological element, podcasting could not have taken off, or at least not as fast as it did.²⁴⁵ Broader societal dynamics around the Internet assisted, providing a semantic vocabulary for what was happening. User-created content, peer-production, blogging, media and knowledge sharing, and online social networks (epitomized by the successes of Wikipedia, Instapundit and the blogosphere, Flickr, Facebook and MySpace) created the language that enabled the podcasting wave, much like the actor-network approach would suggest.²⁴⁶

My argument here is not that the podcasting case can be perfectly explained using the actor-network approach, or any of the other nondeterministic theories I outlined. I leave this to others. Rather, my argument is that Lessig's deterministic view would not have predicted the rise of podcasting before the fact, and cannot explain why it happened after the fact. Nondeterministic theories, on the other hand, seem to be better able to capture the dynamic among the various social and technological elements that let podcasting evolve.

In this Part, I have scrutinized Lessig's determinism. I pointed to David Post's critique of Lessig's market determinism, and confronted Lessig's technological determinism with the most damning criticism: that, in its linearity, it disregards the complex interplay between technology and society that goes much beyond the narrow lens of Lessig's invisible hand of commerce. I looked at cookies and podcasting, showing how they can be explained much better through a more complex, nondeterministic understanding of the interplay between societal and technological elements, and of the material and semantic connection between these elements, than through the simplistic lens that Lessig is providing us.

CONCLUSION

In many ways, Lawrence Lessig has become the voice of the cyberlaw community. His books offer a compelling narrative and remarkable insights, yet, as this Article has shown, one of Lessig's core and influential arguments, that code is law, suffers from devastating structural weaknesses. Analyzing the foundations of

244. In fact it took years for Apple, the designers and manufacturers of the iPod, to acknowledge the importance of podcasts by incorporating them into the iPod/iTunes system. See LEVY, *supra* note 234, at 241. For a timeline see *id.* at vii-viii.

245. *Id.* at 237.

246. This includes the rise of blogging, as Levy details. See *id.* at 240-42 (detailing how blogging and user-created content fueled the mass acceptance of podcasts).

Lessig's theory about code and law in cyberspace, I have laid out two of these weaknesses, which significantly undermine the theory's value.

The first weakness focuses on the role Lessig ascribes to the market and how Lessig sees it functioning. By emphasizing market choices, Lessig conceptualizes societal problems through a particular lens of choice and decisions, of outcome rather than process. This limits the capacity of his theory to adequately capture the full dynamic at play in free speech, intellectual property, and privacy on the Internet (the three fields Lessig himself selected). Lessig's conceptualization is not just one based on markets. It is based on very peculiar markets that function because of information symmetry. Where such symmetry is not present, rules have to provide it. This explains the importance he ascribes to transparency. But Lessig's assumption of information symmetries is not the only way markets can be conceived. In fact, an alternative view of markets resting on information asymmetries may capture reality better. Insofar as this is the case, Lessig's fundamental drive for transparency may not lead to improved outcomes.

The second weakness takes aim at Lessig's simplistic view of the relationship between technology and society. This weakness is a continuation of the one David Post has called Lessig's determinism. For Lessig, markets seem to drive technology, which in turn shapes society. This linear, directional view has been discredited by much of the research in science and technology studies over the last four decades. The important research in this field, whether on sociotechnological momentum, actor networks, or social construction of technology, has shown the technology-society interplay to be much more complex and multi-directional, aspects that Lessig's determinism cannot capture. Using two examples, one from Lessig and one more recent, of the path of a particular technology—cookies and podcasts—I show how these richer theories come closer to understanding the reality than technological determinism can.

Even after almost a decade, Lessig's argument that code is law is still a central tenant in the field of cyberlaw. It is time that we come to accept its fundamental shortcomings.