

DECODING FIRST AMENDMENT COVERAGE OF COMPUTER SOURCE CODE IN THE AGE OF YOUTUBE, FACEBOOK, AND THE ARAB SPRING

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ABSTRACT

Computer source code is the lifeblood of the Internet. It is also the brick and mortar of cyberspace. As such, it has been argued that the degree of control that a government can wield over code can be a powerful tool for controlling new technologies. With the advent and proliferation in the Internet of social networking media and platforms for the publication and sharing of user-generated content, the ability of individuals across the world to communicate with each other has reached truly revolutionary dimensions.

The influence of Facebook in the popular revolutions of the Arab Spring has been well documented. The use of YouTube in the 2008 U.S. presidential campaign has also left its indelible mark on the political landscape. New platforms have allowed millions of individuals to unleash their artistic and creative potentials. Tools like Google Earth have expanded the ability of entire populations to learn about their surroundings, the world at large, and their places

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in it. The combination of smartphones and Twitter has created new tactics for protests and redefined the way in which individuals assemble to petition their government for a redress of grievances.

The time has come to reconsider the issue of whether computer source code is “speech” for First Amendment purposes and how the government can regulate it in a manner consistent with First Amendment values. This article proposes a three-step framework for analyzing questions of First Amendment coverage consistent with Supreme Court doctrine. In applying this framework to computer source code, this article also explores the relation between the different values that have been ascribed to the First Amendment, discusses some insights regarding the speech-conduct distinction, and considers the extent of First Amendment coverage in general.

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INTRODUCTION

Over a decade ago, Dean Robert Post argued that “First Amendment coverage is triggered by those forms of social interaction that realize First Amendment values.”¹ Yet in the context of computer source code, he observed that “[d]igital First Amendment media, like the Internet, are so new and have such labile patterns of social interaction, that it seems to me enormously difficult to acquire reliable normative or descriptive traction on the relevant questions,” and that “it will be necessary to pursue this line of inquiry.”² In the years since, commentators have indeed made mention of theories of First Amendment values when considering the question of whether computer source code should be considered speech.³ However, a formal and extensive inquiry has been lacking, particularly since the advent and explosion of Web 2.0.⁴

1. Robert Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713, 716 (2000) [hereinafter Post, *Encryption*] (citing Robert Post, *Recuperating First Amendment Doctrine*, 47 STAN. L. REV. 1249, 1254–55 (1995) [hereinafter Post, *Recuperating*]).

2. *Id.* at 723.

3. See, e.g., David McGowan, *From Social Friction to Social Meaning: What Expressive Uses of Code Tell Us About Free Speech*, 64 OHIO ST. L.J. 1515, 1515 (2003). Additionally, some scholars have debated the Internet’s influence on, inter alia, First Amendment values, democracy, republicanism, and politics, albeit in much more general terms. See, e.g., MATTHEW HINDMAN, THE MYTH OF DIGITAL DEMOCRACY 4 (2009); CASS R. SUNSTEIN, REPUBLIC.COM 2.0 5 (2007).

4. There is “a huge amount of disagreement about just what Web 2.0 means, with some people decrying it as a meaningless marketing buzzword, and others accepting it as the new conventional wisdom.” Tim O’Reilly, *What is Web 2.0*, O’REILLY (Sept. 30, 2005), <http://oreilly.com/web2/archive/what-is-web-20.html>. An oft-cited attempt at defining the concept, however, proposes a set of principal features of Web 2.0: (1) the use of the web as a platform; (2) the recognition of the power of harnessing collective intelligence; (3) competent database management; (4) the end of the software release cycle by delivering software as a service, not as a product; (5) the support of lightweight programming models; (6) writing software above the level of a single device; and (7) providing rich user experiences. *Id.* O’Reilly has also summarized what he believes to be “the core competencies of Web 2.0 companies” as follows: (1) services, not packaged software, with cost-effective scalability; (2) control over unique, hard-to-recreate data sources that get richer as more people use them; (3) trusting users as co-developers and harnessing collective intelligence; (4) leveraging the long tail through customer self-service;

The question of First Amendment coverage of computer source code was a hot topic in both academic debate and litigation around the turn of the millennium.⁵ However, the hubbub about source code as speech seems to have died down considerably after, roughly, 2004. The principal cases dealing with the issue of whether source code is covered by the First Amendment arose from challenges to regulations concerning the export and publication of encryption software.⁶ However, the most explosive controversies surrounding the topic were defused by the federal government's amendment of these regulations.⁷ By amending the regulations, the federal government largely mooted the relevant causes of action.⁸

(5) software above the level of a single device; and (6) lightweight user interfaces, development models, and business models. *Id.*

5. See *infra* notes 8–12.

6. See *Junger v. Daley (Junger I)*, 8 F. Supp. 2d 708, 711 (N.D. Ohio 1998), *rev'd*, 209 F.3d 481 (6th Cir. 2000); *Bernstein v. U.S. Dep't of State (Bernstein I)*, 922 F. Supp. 1426, 1428 (N.D. Cal. 1996), *aff'd*, *Bernstein v. U.S. Dep't of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh'g granted*, 192 F.3d 1308 (9th Cir. 1999); *Karn v. U.S. Dep't of State*, 925 F. Supp. 1, 3 (D.D.C. 1996).

7. See Ryan Christopher Fox, Comment, *Old Law and New Technology: The Problem of Computer Source Code and the First Amendment*, 49 UCLA L. REV. 871, 887–88 (2002).

On January 14, 2000, however, the state of the law changed. The Encryption Administration Regulations were revised to allow U.S. companies to “have new opportunities to sell their products in the global marketplace.” Among other changes, the revisions decontrol encryption software up to and including sixty-four bits, and allow unrestricted encryption source code to be released without review, provided that the code is not “subject to an express agreement for payment of a licensing fee or royalty.” The regulations were presumably modified this way in order to support the “open source” approach to software development. The revised regulations also provided for a number of other allowances that eased review of exports in other situations.

Id. (quoting Revisions to Encryption Items, 65 Fed. Reg. 2492, 2492, 2497, 2499 (Jan. 14, 2000) (codified at 15 C.F.R. pts. 734, 740, 742, 770, 772, 774)).

8. See, e.g., *Bernstein v. U.S. Dep't of Commerce (Bernstein IV)*, No. C 95-0582 MHP, 2004 WL 838163, at *2 n.2 (N.D. Cal. Apr. 19, 2004) (“In January 2000, defendants added 14 C.F.R. section 740.13(e) to the Federal Register, which allows the DOC to exempt ‘publicly available’ encryption source code from license requirements. Plaintiff amended his complaint in January 2002, alleging that the changed regulations still amounted to a prior restraint under the First Amendment. The defendants brought a motion for summary judgment on the amended complaint on the grounds that he lacked the requisite standing, which this court granted on July 28, 2003.”); *Karn v. U.S. Dep't of State*, No. 95-CV-01812, Docket No. 79 (D.D.C. Mar. 3, 2000) (order dismissing the complaint as moot). Similarly, most of the academic literature on the subject was concerned with that same set of litigation. See, e.g., Dan L. Burk, *Patenting Speech*, 79 TEX. L. REV. 99, 101 (2000); Fox, *supra* note 7, at 888; Steven E. Halpern, *Harmonizing the Convergence of Medium, Expression, and Functionality: A Study of the Speech Interest in Computer Software*, 14

In the years since, however, the issues at the heart of this debate have hardly abated. For one thing, the several federal courts that broached the subject were not of one mind in their conclusions—or even in their methods of analysis.⁹ In fact, there was and still remains great disagreement in the academic community regarding the appropriate approach and answer to the question of First Amendment coverage of computer source code.¹⁰

HARV. J.L. & TECH. 139, 140 n.3, 175–177 (2000); Orin S. KERT, *Are We Overprotecting Code? Thoughts on First-Generation Internet Law*, 57 WASH. & LEE L. REV. 1287, 1289 (2000); Post, *Encryption*, *supra* note 1, at 713; Lee Tien, *Publishing Software as a Speech Act*, 15 BERKELEY TECH. L.J. 629, 631–32 (2000); John P. Collins, Jr., Note, *Speaking in Code*, 106 YALE L.J. 2691, 2691 (1997); Norman A. Crain, Comment, Bernstein, Karn, and Junger: *Constitutional Challenges to Cryptographic Regulations*, 50 ALA. L. REV. 869, 870 (1999); Seth Hanson, Note, *Bernstein v. United States Dep't of Justice: A Cryptic Interpretation of Speech*, 2000 B.Y.U. L. REV. 663, 664 (2000); Katherine A. Moerke, Note, *Free Speech to a Machine? Encryption Software Source Code Is Not Constitutionally Protected "Speech" Under the First Amendment*, 84 MINN. L. REV. 1007, 1007–08 (2000); Yvonne C. Ocrant, Comment, *A Constitutional Challenge to Encryption Export Regulations: Software Is Speechless*, 48 DEPAUL L. REV. 503, 504 (1998). Hence, with the cases went the articles.

9. Compare *Junger v. Daley (Junger II)*, 209 F.3d 481, 485 (6th Cir. 2000) (holding source code to be an expressive means of exchange and therefore protected by the First Amendment), *Bernstein v. U.S. Dep't of Justice (Bernstein II)*, 176 F.3d 1132, 1147 (9th Cir.), *withdrawn & reh'g granted*, 192 F.3d 1308 (9th Cir. 1999) (holding that the encryption export controls violated the First Amendment as applied), *Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 294, 327 (S.D.N.Y. 2000) (“As computer code—whether source or object—is a means of expressing ideas, the First Amendment must be considered before its dissemination may be prohibited or regulated.”), *aff'd sub nom.*, *Universal City Studios, Inc. v. Corley*, 273 F.3d 429, 449 (2d Cir. 2001) (holding that “computer code, and computer programs constructed from code can merit First Amendment protection”), and *DVD Copy Control Ass'n, Inc. v. Bunner*, 75 P.3d 1, 10 (Cal. 2003) (holding that computer code and computer programs constructed from code are covered by the First Amendment), *with Universal City Studios v. Reimerdes*, 82 F. Supp. 2d 211, 222 (S.D.N.Y. 2000) (stating that source code at issue is not covered by the First Amendment because its “expressive aspect appears to be minimal when compared to its functional component”), and *Karn*, 925 F. Supp. at 8–13 (holding that the regulations in question did not violate freedom of speech).

10. Compare Brian F. Fitzgerald, *Software as Discourse: The Power of Intellectual Property in Digital Architecture*, 18 CARDOZO ARTS & ENT. L.J. 337, 383–85 (2000), *Fox*, *supra* note 7, at 907–08 (citing Post, *Encryption*, *supra* note 1) (noting that some argue for “an increased protection status” for computer source code), Halpern, *supra* note 8, Liam Séamus O'Melinn, *The New Software Jurisprudence and the Faltering First Amendment*, 6 VAND. J. ENT. L. & PRAC. 310, 310 (2004) (claiming that courts are failing to shield source code from regulation as the First Amendment should require), Post, *Encryption*, *supra* note 1, at 717, Tien, *supra* note 8 *passim* (arguing for increased protection by considering works of software as “speech acts”), and Crain, *supra* note 8, at 870 (arguing that encryption regulation should be found unconstitutional under the First Amendment), *with Burk*, *supra* note 8,

Additionally, and possibly more critically, along with the relevant developments in new technologies and related social practices, the questions framed concerning the First Amendment coverage of source code have multiplied.¹¹ Today we live in an age of video sharing, viral Internet memes, YouTube presidential debates, social networking, tweeting, blogging, smartphone-enabled protests, and Facebook-fueled popular overthrows of decades-long regimes. The development over the past decade of new code, corresponding Internet architectures, and resulting social practices makes it essential that we reengage in the discussion that showed promise roughly ten years ago. This article aims to do so.

Of course, the government's concern and appetite for regulation of these new technologies and social practices is as robust as ever. Some have even observed a "focus on prohibiting or restricting code itself as a dangerous tool rather than relying on laws against the undesirable activity that the code facilitates."¹² One issue currently before Congress illustrates the urgency, novelty and complexity of these questions:

at 101–02 (seeing the long-term implications of treating software as speech to be "troublesome"), Kerr, *supra* note 8, at 1291 (suggesting that the Sixth Circuit Court's holding in *Junger II*, 209 F.3d at 485, might be overprotective of code in the First Amendment context), Collins, *supra* note 8, at 2696 (finding "no First Amendment right to speak in cryptographic computer source code"), Hanson, *supra* note 8, at 693 (arguing an expressive/functional test effectively balances the preservation of social order and individual liberty interest in free speech), Moerke, *supra* note 8, at 1048 (arguing that while "source code itself is not speech under the First Amendment," the encryption software may be entitled to First Amendment protection as an activity that provides for speech), and Ocrant, *supra* note 8, at 538–47 (arguing that cryptographic software alternatively is not speech, not protected speech, or at the most, speech afforded limited protection).

11. See, e.g., Tim Wu, Op-Ed, *Free Speech for Computers?*, N.Y. TIMES (June 19, 2012), <http://www.nytimes.com/2012/06/20/opinion/free-speech-for-computers.html> (describing the questions of whether computers speak and whether their speech should be covered by the First Amendment as ones that have "become [] real issue[s] with important consequences").

12. Fox, *supra* note 7, at 874. In his comment, Fox further remarked that, "while judges are beginning to understand the creative and social uses of computer source code, they are all the while hesitant to give the idea too much latitude." *Id.* at 894. In this sense, we should bear in mind that the Ninth Circuit Court's three-judge panel opinion in *Bernstein II*, 176 F.3d 1132, which represents one of the most robust arguments for First Amendment coverage of source code, was withdrawn, pending a rehearing en banc that never materialized, and is no longer good law. *Bernstein II*, 176 F.3d at 1132, *withdrawn & reh'g granted*, 192 F.3d 1308 (9th Cir. 1999). The rehearing en banc never occurred due to the amendment of the encryption regulations at issue in the case, which deprived the plaintiff of standing. See *supra* note 8; *Bernstein IV*, 2004 WL 838163, at *2 n.2.

The FBI believes that the historic shift in communication from telephones to the Internet has made it far more difficult for agents to wiretap Americans suspected of illegal activities, which it refers to as the “Going Dark” problem. Its solution: a proposed law that would require Internet companies including Apple, Microsoft, Facebook, Yahoo, and Google, to build in back doors for government surveillance.¹³

In an effort to enhance its surveillance and law enforcement capabilities, the FBI is currently lobbying Congress for a new Internet wiretapping statute.¹⁴ Wiretapping is not a new concept, of course, and neither is the idea of law enforcement agencies seeking new ways of expanding their surveillance capabilities. But what makes this situation particularly interesting, and dangerous, is the fact that the FBI is seeking to force private entities and individuals to build into their code architecture the ability for the FBI to eavesdrop on users’ communications.¹⁵ The consequent lack of transparency and accountability must give us pause.

Many questions of constitutional significance are apparent from this scenario.¹⁶ But one area of particular concern is the extent to which such a policy would infringe upon the First Amendment. On one hand, such surveillance could cause citizenry’s speech to be unconstitutionally chilled. On the other hand, forcing entities to write an FBI backdoor into their source code amounts to compelled speech, a possible violation of their free speech rights.

However, before we can even begin to discuss these issues, we must determine whether the regulation of computer source code implicates First Amendment guarantees at all. This article seeks an answer to this threshold question.

This article will argue that a three-step approach to First Amendment coverage best embodies the thrust of First Amendment doctrine. First, a court must consider whether a particular activity is communicative enough to be considered “speech” for First

13. Declan McCullagh, *FBI ‘Looking at’ Law Making Web Sites Wiretap-Ready, Director Says*, CNET NEWS (May 18, 2012, 1:17 PM PDT) [hereinafter McCullagh, *FBI ‘Look at’*], http://news.cnet.com/8301-1009_3-57437391-83/fbi-looking-at-law-making-web-sites-wiretap-ready-director-says/. See also Declan McCullagh, *FBI: We Need Wiretap-Ready Web Sites - Now*, CNET NEWS (May 4, 2012, 9:24 AM PDT), http://news.cnet.com/8301-1009_3-57428067-83/fbi-we-need-wiretap-ready-web-sites-now/.

14. See McCullagh, *FBI ‘Look at’*, *supra* note 13.

15. *Id.*

16. For example: How should the Fourth Amendment’s prohibition on unreasonable searches limit the FBI’s ability to do what it proposes? What type of Due Process problems, both procedural and substantive, does such a regulation raise?

Amendment purposes. At this level of analysis, “pure speech” and so-called “expressive conduct” are distinguished from conduct that is not sufficiently communicative to trigger the First Amendment.

At the second stage, activities that did not pass the first stage are reconsidered. Activities and devices that facilitate the development of a medium for the expression of ideas, though not themselves “expressive,” trigger First Amendment coverage as readily as traditional speech.

Passing one of these two steps, however, does not guarantee First Amendment coverage. If a particular activity is found to be either (1) communicative or (2) central to the development of a medium for the expression of ideas, then the court must engage in a comprehensive analysis of First Amendment values in order to determine the extent of coverage that such activity will merit. It is at this stage that specific kinds of speech—such as obscenity, fighting words, or commercial speech—are defined as deserving only limited First Amendment coverage. Specifically, the analysis will consider four central values of free speech: truth, democracy, autonomy, and community. These values serve both to justify and limit coverage of certain types of speech.

In summation, only activities that (1) pass *either* of the first two stages in the three-part analysis, *and also* (2) further First Amendment values under the third stage of the analysis are speech covered by the First Amendment.

Source code, as a general category of activities, passes all three parts of this test. Under the first stage, not only is source code “expressive conduct,” but it should actually be considered “pure speech.” Yet even if source code were not to be deemed communicative, its regulation would nonetheless trigger First Amendment coverage under the second stage: source code both promotes communication and is crucial to the development of another recognized medium for the expression of ideas, the Internet. Finally, under the third stage, source code not only promotes the three core First Amendment values of truth, democracy, and autonomy, it does so without threatening to destroy—and while in fact promoting—the community that the First Amendment serves. In an age when source code is essential to the spread of political speech and thought on a global scale, the recognition that code is covered by the First Amendment is necessary to further First Amendment values themselves.

I.
FIRST AMENDMENT PRINCIPLES AND THE
PROBLEM OF SOURCE CODE

A. *Decoding “Speech”*

The First Amendment guarantees our freedom of speech.¹⁷ It therefore follows that First Amendment protection can only be applied to “speech” as the term of art has been defined by the courts.¹⁸ But in order to ascertain whether an action constitutes speech, one must first understand the nature of the action itself. This section begins this process by clarifying what we mean when we talk about source code.

Computer source code is the text of a computer program written in a high-level programming language that can be read and understood by humans, but which can also be easily translated into computer-executable object code through the use of a program called a compiler.¹⁹ Thus source code has the distinguishing characteristic of being both comprehensible to humans and readily translatable into a form that can be fed into a computer. When source code is compiled and run on a computer, the machine will perform the tasks that have been encoded into the algorithms embodied in the source code. This gives source code a distinctly functional nature. In fact, some people characterize source code as a machine itself because “any function that can be implemented in software can be implemented equally well in hardware.”²⁰ This means that a particular set of functions described and implemented by a piece of source code could also be hardwired into the hardware of a computer to produce the same effect.²¹

In spite of its functional characteristics, the fact remains that source code is a “language” that can be written, read, and understood by humans. Many people write and read in computer languages such as C, C++, Fortran, COBOL, Python, Perl, and Java. This means that these individuals can communicate ideas to each

17. See U.S. CONST., amend. I.

18. See Post, *Encryption*, *supra* note 1, at 715. *But see* R.A.V. v. City of St. Paul, 505 U.S. 377, 383–84 (1992) (explaining that even specific categories of expression traditionally thought to reside outside the auspices of the First Amendment are not “entirely invisible to the Constitution”).

19. See *Bernstein v. U.S. Dep’t of Justice (Bernstein II)*, 176 F.3d 1132, 1140 (9th Cir.), *withdrawn*, 192 F.3d 1308 (9th Cir. 1999).

20. Burk, *supra* note 8, at 119 (citing Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2319 (1994)).

21. *Id.* (citing Samuelson, *supra* note 20, at 2320 n.34.).

other through the use of a programming language. In the everyday sense, a person who knows a particular high-level computer language can express herself in source code.

Still, not everything that might be included in the dictionary definition of the word “speech” receives full First Amendment coverage and protection. Just to name a few examples, the government routinely regulates contracts made through the use of language,²² prohibits the publication of obscene materials,²³ and punishes the solicitation of crimes.²⁴ Thus source code, like any other language or form of speech, may receive full, partial, or no First Amendment coverage. The next section will begin to explore these differing levels of coverage and what it means to be *protected* by the First Amendment.

B. Coverage vs. Protection

For purposes of First Amendment analysis, the courts have tried to distinguish between fully covered speech, speech that receives limited coverage, and non-speech. Unfortunately, the courts have not allocated different types of activities across these categories in a completely sound or consistent manner. The development of coherent doctrine will thus require an analysis of the values underlying the First Amendment itself. However, before sorting different types of activities into these categories, it is important to understand how these categories function within First Amendment doctrine.

First off, it is crucial to distinguish “coverage” from “protection”: the fact that the First Amendment might *cover* certain activity does not necessarily mean that such activity is *protected* by the First Amendment. If the First Amendment “covers” certain conduct that the government seeks to regulate, “the constitutionality of the conduct’s regulation must be determined by reference to First Amendment doctrine and analysis.”²⁵ If, on the other hand, a particular activity is not covered by the First Amendment, courts need not consult First Amendment doctrine to determine the constitutionality of its regulation. Thus the secondary question of First Amendment protection only arises if the initial question of coverage has been answered affirmatively. To say that an activity is “protected” by the First Amendment from government regulation means *first* that

22. See *R.A.V.*, 505 U.S. at 420 (citing Frederick Schauer, *Categories and the First Amendment: A Play in Three Acts*, 34 VAND. L. REV. 265, 270 (1981)).

23. See *Miller v. California*, 413 U.S. 15, 23 (1973).

24. See *United States v. Williams*, 553 U.S. 285, 297–98 (2008).

25. Post, *Encryption*, *supra* note 1, at 714.

the activity is covered by the First Amendment and *second* that the regulation attempted by the government is unconstitutional under First Amendment doctrine.²⁶

First Amendment coverage can also be a matter of degree: it need not cover all activities to the same extent. For example, pure political speech in a public forum—as traditionally embodied by the proverbial soapbox orator—receives full coverage and triggers strict scrutiny.²⁷ On the other hand, other types of communicative conduct—such as commercial speech,²⁸ speech of a sexual nature,²⁹ speech on non-public forums,³⁰ or what the Court has termed “expressive conduct”³¹—may receive limited (and differing) levels of First Amendment coverage and trigger only intermediate or even lesser levels of scrutiny.³²

26. *Id.*

27. *See, e.g.* Citizens United v. Fed. Election Comm’n, 130 S. Ct. 876, 898 (2010) (“Laws that burden political speech are ‘subject to strict scrutiny’” (quoting Fed. Election Comm’n v. Wis. Right To Life, Inc., 551 U.S. 449, 464 (2007))); Burson v. Freeman, 504 U.S. 191, 197 n.3 (1992) (“[C]ontent-based regulation of political speech in a public forum is valid only if it can survive strict scrutiny.”); F.T.C. v. Superior Court Trial Lawyers Ass’n, 493 U.S. 411, 448 (1990) (“Like soapbox oratory in the streets and parks, political boycotts are a traditional means of ‘communicating thoughts between citizens’ and ‘discussing public questions.’ Any restrictions on such boycotts must be scrutinized with special care in light of their historic importance as a mode of expression.”) (citations omitted); Boos v. Barry, 485 U.S. 312, 321 (1988) (“Our cases indicate that as a *content-based* restriction on *political speech* in a *public forum*, [the Act in question] must be subjected to the most exacting scrutiny.”).

28. *See* Central Hudson Gas & Elec. Corp. v. Public Serv. Comm’n of N.Y., 447 U.S. 557, 562–63 (1980) (“The Constitution therefore accords a lesser protection to commercial speech than to other constitutionally guaranteed expression.”).

29. *See, e.g.*, Young v. Am. Mini Theatres, Inc., 427 U.S. 50, 70 (1976) (plurality opinion) (“[E]ven though we recognize that the First Amendment will not tolerate the total suppression of erotic materials that have some arguably artistic value, it is manifest that society’s interest in protecting this type of expression is of a wholly different, and lesser, magnitude than the interest in untrammelled political debate”); New York v. Ferber, 458 U.S. 747, 764 (1982) (child pornography); Miller, 413 U.S. at 23 (obscenity).

30. *See* Davenport v. Wash. Educ. Ass’n, 551 U.S. 177, 178–79 (2007) (“Thus, the government can make content-based distinctions when subsidizing speech, and can exclude speakers based on reasonable, viewpoint-neutral subject-matter grounds when permitting speech on government property that is a nonpublic forum.”) (citations omitted).

31. *See* Texas v. Johnson, 491 U.S. 397, 406 (1989) (“The government generally has a freer hand in restricting expressive conduct than it has in restricting the written or spoken word.”).

32. *See* Sorrell v. IMS Health Inc., 131 S. Ct. 2653, 2673–74 (2011) (“Thus, the First Amendment imposes tight constraints upon government efforts to restrict, *e.g.*, ‘core’ political speech, while imposing looser constraints when the govern-

As such, the level of constitutional scrutiny to be applied to a particular regulation is determined by the level of the targeted conduct's First Amendment coverage. If the regulated activity is not covered by the First Amendment at all, the courts should default to traditional rational basis analysis.³³ If the activity is covered as speech, the courts might still face a question of whether that activity, in the specific context, should receive full coverage—subjecting the challenged regulation to traditional strict scrutiny—or whether it should receive some level of limited coverage—subjecting the challenged regulation to some form of intermediate scrutiny.³⁴

Once coverage—and therefore the appropriate level of constitutional scrutiny—has been established, the question of First Amendment protection can be posed and answered. This inquiry involves the actual application of that scrutiny to the challenged regulation. At this stage, courts should consider the government interest being pursued through regulation and the fit between such ends and the means employed to achieve it.³⁵

To say that the First Amendment covers source code, then, does not mean that the government will not be able to regulate the behavior of computer programmers and users. It only means that

ment seeks to restrict, *e.g.*, commercial speech, the speech of its own employees, or the regulation-related speech of a firm subject to a traditional regulatory program.”); *Bd. of Educ. v. Grumet*, 512 U.S. 687, 718 (1994) (O'Connor, J., concurring in part and concurring in the judgment):

But the same constitutional principle may operate very differently in different contexts. We have, for instance, no one Free Speech Clause test. We have different tests for content-based speech restrictions, for content-neutral speech restrictions, for restrictions imposed by the government acting as employer, for restrictions in nonpublic fora, and so on. This simply reflects the necessary recognition that the interests relevant to the Free Speech Clause inquiry—personal liberty, an informed citizenry, government efficiency, public order, and so on—are present in different degrees in each context.

33. *See, e.g.*, *Madsen v. Women's Health Ctr., Inc.*, 512 U.S. 753, 791 (1994) (Scalia, J., concurring in the judgment in part and dissenting in part) (“[T]he ‘rational basis’ standard . . . is applied—under the Equal Protection Clause—to government regulation of nonspeech activities. . .”).

34. *See, e.g.*, *Central Hudson Gas & Elec. Corp. v. Public Serv. Comm'n of N.Y.*, 447 U.S. 557, 562-63 (1980) (applying an intermediate level of scrutiny to commercial speech).

35. *See, e.g.*, *Boos v. Barry*, 485 U.S. 312, 321 (1988) (applying strict scrutiny and requiring “the State to show that the ‘regulation is necessary to serve a compelling state interest and that it is narrowly drawn to achieve that end’” (quoting *Perry Educ. Ass'n v. Perry Local Educators' Ass'n*, 460 U.S. 37, 45 (1983))); *Central Hudson*, 447 U.S. at 564 (applying an intermediate level of scrutiny and requiring that the State “assert a substantial interest to be achieved by restrictions on commercial speech” and that “the regulatory technique . . . be in proportion to that interest”).

the First Amendment will limit the way in which such conduct can be regulated according to the values it embodies.³⁶

II. A PROPOSED THREE-PART TEST FOR FIRST AMENDMENT COVERAGE

A. *Step 1: Is the Activity Communicative Enough?*

1. The *Spence-Hurley* Test and the Per Se Rule for “Pure Speech”

The Supreme Court has addressed the issue of what constitutes speech for First Amendment purposes in a series of cases dealing with what has been termed “symbolic speech,”³⁷ “expressive conduct,”³⁸ or “the expression of an idea through activity.”³⁹ Perhaps the four most important cases in this series are *United States v. O’Brien*,⁴⁰ *Spence v. State of Washington*,⁴¹ *Texas v. Johnson*,⁴² and *Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston*.⁴³ In all of these cases someone was engaged in an activity that did not include the oral or written word, but nonetheless claimed to be expressing an idea. These cases drew a doctrinal distinction between this kind of “expressive conduct” and what the Supreme Court considers to be “pure speech.”⁴⁴

According to the traditional interpretation of this Supreme Court doctrine, the oral or written word is “pure speech” and is automatically entitled to First Amendment coverage.⁴⁵ Under this interpretation, as Judge Patel stated in her *Bernstein I* decision, *John-*

36. It is important to bear in mind that this article will limit its analysis to the question of First Amendment coverage. A much more extensive analysis would be required to go into the issues of First Amendment protection and the constitutionality of specific regulations such as the encryption regulations at issue in the *Bernstein*, *Junger*, and *Kam* litigations. These questions are left open for further research.

37. *United States v. O’Brien*, 391 U.S. 367, 376 (1968).

38. *Texas v. Johnson*, 491 U.S. 397, 406 (1989).

39. *Spence v. Washington*, 418 U.S. 405, 411 (1974).

40. 391 U.S. 367.

41. 418 U.S. 405.

42. 491 U.S. 397.

43. 515 U.S. 557 (1995).

44. *Cf.* Harry Kalven, Jr., *The Concept of the Public Forum: Cox v. Louisiana*, 1965 SUP. CT. REV. 1, 22–23 (referring to these two kinds of activities as “speech plus” and “speech pure,” respectively.). *See also* Post, *Recuperating*, *supra* note 1, at 1257 (citing Kalven, *supra*, at 22–23).

45. *See* *Tinker v. Des Moines Indep. Cmty. Sch. Dist.*, 393 U.S. 503, 505–06 (1969) (“‘[P]ure speech’ . . . , we have repeatedly held, is entitled to comprehensive protection under the First Amendment.” (citation omitted)).

son and *Spence* “strongly imply that a court need only assess the expressiveness of conduct in the absence of ‘the spoken or written word.’”⁴⁶

But the Court’s statements and implications, as traditionally interpreted to mean that the condition of being written or oral gives words automatic and full coverage, cannot be right. There are many instances in which the government regulates the oral and written word without triggering the full force of the First Amendment. Some of these instances deal with the regulation of particular kinds of speech that have been defined as receiving very limited First Amendment coverage,⁴⁷ such as obscenities⁴⁸ and fighting words.⁴⁹ But oral and written communications are continuously regulated in contexts that do not seem to fit such handy and constrained categories. For example, language used during the commission of a crime like solicitation⁵⁰ and language used in commercial transactions that falls short of commercial speech⁵¹ are both routinely regulated. The Supreme Court has recently reaffirmed that “it has never been deemed an abridgment of freedom of speech or press to make a course of conduct illegal merely because the conduct was in part initiated, evidenced, or carried out by means of language, either spoken, written, or printed.”⁵² That words are spoken, it seems, is no guarantee of coverage.

In any case, even if these forms of “not fully covered” oral and written speech could be subject to specific definitions, there should be some sort of underlying doctrinal framework that explains why these particular types of speech, and not others, are to be granted only the most limited form of First Amendment coverage. An underlying framework of this sort could *also* help us in determining which types of “expressive conduct” are worthy of First Amendment coverage. At bottom, all oral and written words are a kind of “expressive conduct” or “symbolic speech.” The oral word is nothing more than the exercise of certain muscles in our throat that vibrate

46. *Bernstein v. U.S. Dep’t of State (Bernstein I)*, 922 F. Supp. 1426, 1434 (N.D. Cal. 1996) (quoting *Texas v. Johnson*, 491 U.S. 397, 404 (1989)), *aff’d*, *Bernstein v. U.S. Dep’t of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

47. *See, e.g., R.A.V. v. City of St. Paul*, 505 U.S. 377, 420 (1992).

48. *Miller v. California*, 413 U.S. 15, 23 (1973).

49. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571–72 (1942).

50. *United States v. Williams*, 553 U.S. 285, 297–98 (2008).

51. *R.A.V.*, 505 U.S. at 420 (citing *Schauer*, *supra* note 22, at 270).

52. *Rumsfeld v. Forum for Academic & Institutional Rights, Inc.*, 547 U.S. 47, 62 (2006) (quoting *Giboney v. Empire Storage & Ice Co.*, 336 U.S. 490, 502 (1949)) (internal quotation marks omitted).

to make certain sounds which others can hear.⁵³ This is not, in principle, that different from a person waving his hand, a group walking down the streets of Boston,⁵⁴ or someone performing any other kind of physical activity. The written word is nothing more than a series of symbols inscribed in some tangible medium, not unlike the adherence of a peace symbol on a flag.⁵⁵ By the same token, as the Court acknowledges in its “expressive conduct” decisions, activities that are not the oral or written word can be just as expressive as speaking or writing. Hence, in *Johnson*, the Court extended the full coverage of the First Amendment to the activity of flag burning because it recognized that such an act could be as expressive as soapbox oration.⁵⁶

What makes the oral and written word intuitively different from other activities is the existence of a specific set of social conventions that make the sounds and symbols that we use in speaking and writing especially expressive.⁵⁷ As the Court explains in *Spence*: “[T]he context may give meaning to the symbol.”⁵⁸ When we speak or write in English, or in any other language for that matter, we bring to the table a whole set of historical and social axioms and contexts which enable us to communicate effectively and efficiently with others who speak the same language and recognize and use the same set of conventions to decode our messages.

The formalistic distinction that the Court draws between pure and symbolic speech is, therefore, an illusory one. At the very least, it is not an objective or clear-cut distinction, conveniently lingering in the state of nature for us to grasp and apply with ease. The Court’s line of reasoning, however, is the correct one. Part of the analysis necessary to determine whether an activity is speech for First Amendment purposes consists of deciding whether the activity has any communicative value. That is, we must assess whether there are enough social conventions in place such that others can understand the specific activity as conveying some kind of message. The Court developed in *Spence* the following test to determine whether some form of symbolic speech merits First Amendment scrutiny: it

53. See *Bernstein v. U.S. Dep’t of State (Bernstein I)*, 922 F. Supp. 1426, 1435 (N.D. Cal. 1996), *aff’d*, *Bernstein v. U.S. Dep’t of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

54. See *Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos.*, 515 U.S. 557 (1995).

55. See *Spence v. Washington*, 418 U.S. 405, 410 (1974).

56. *Texas v. Johnson*, 491 U.S. 397, 406 (1989).

57. See Post, *Recuperating*, *supra* note 1, at 1257.

58. 418 U.S. at 410 (citing *Tinker v. Des Moines Indep. Cmty. Sch. Dist.*, 393 U.S. 503 (1969)).

must have “an intent to convey a particularized message” and “in the surrounding circumstances the likelihood [must be] great that the message would be understood by those who viewed it.”⁵⁹

The *Spence* test, however, was modified in *Hurley*.⁶⁰ In *Hurley*, the Court made clear that a particularized message is not required: “[A] narrow, succinctly articulable message is not a condition of constitutional protection, which if confined to expressions conveying a ‘particularized message’ would never reach the unquestionably shielded painting of Jackson Pollock, music of Arnold Schoenberg, or Jabberwocky verse of Lewis Carroll.”⁶¹ This would, of course, seem to suggest that more than just communicative values are ascribed to the First Amendment and that some of those values might in some cases outweigh the communicative ones.

Thus *Spence* and its progeny establish that an activity is communicative enough to be considered speech under the First Amendment when, in a particular social context, sufficient conventions exist such that the communication of ideas between people is possible, even if not overwhelmingly probable or specifically intended. Such an activity’s communicative nature makes it equivalent to pure speech, potentially activating First Amendment scrutiny of some kind. Meanwhile, with respect to pure speech, the Court has made a *per se* determination that the oral and written word will always pass the *Spence-Hurley* test: for all oral or written communication, the requisite social contexts exist in the form of an established language.

However, the Court has said that “[t]he government generally has a freer hand in restricting expressive conduct than it has in restricting the written or spoken word.”⁶² This would suggest that the distinction between symbolic speech and pure speech is more than just the establishment of a *per se* rule for the written and oral word. The Court seems to suggest that the coverage extended to symbolic speech is going to be less than that extended to pure speech—that there is some substantive difference between the treatments accorded to pure speech versus symbolic speech. How-

59. *Id.* at 410–11.

60. *Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos.*, 515 U.S. 557, 569 (1995).

61. *Id.* (citation omitted) (citing *Spence*, 418 U.S. at 411).

62. *Texas v. Johnson*, 491 U.S. 397, 406 (1989).

ever, the Court's actual analysis of First Amendment issues shows this not to be the case.⁶³

First, the Court gives the same treatment to the communicative part of symbolic speech and to the communicative part of pure speech. Content-based regulations will be subject to strict scrutiny regardless of whether they target the oral or written word, or whether they target the communicative aspects of some other form of symbolic speech.⁶⁴ For example, in *Johnson*, after stating that the government has a freer hand in regulating expressive conduct, the Court clarifies that “[a] law directed at the communicative nature of conduct must, *like a law directed at speech itself*, be justified by the substantial showing of need that the First Amendment requires.”⁶⁵ The Court then elaborates that “[i]t is, in short, not simply the verbal or nonverbal nature of the expression, but the governmental interest at stake, that helps to determine whether a restriction on that expression is valid.”⁶⁶ When the government tries to regulate the communicative aspects of symbolic speech, strict scrutiny applies just as if it were pure speech.

Second, there is also no difference between the treatment of the non-communicative elements of symbolic speech and the treatment of the conduct-like elements of pure speech.⁶⁷ The Court has consistently held that intermediate scrutiny applies whenever the government regulates in a content-neutral fashion the non-communicative aspects of any activity.⁶⁸ In *O'Brien*, the Court established that a more lenient standard applies when the government regulates the non-communicative part of symbolic speech and “the governmental interest is unrelated to the suppression of free

63. See James M. McGoldrick, Jr., *Symbolic Speech: A Message from Mind to Mind*, 61 OKLA. L. REV. 1, 6 (2008) (“[R]efut[ing] the common claim that the government has ‘a freer hand’ in regulating symbolic speech than pure speech.”).

64. *Id.* at 25 (“If something is speech, then the level of protection will depend on whether the law is content-based or content-neutral, not the speech itself and not whether it is pure speech or symbolic speech.”).

65. *Johnson*, 491 U.S. at 406 (emphasis added) (quoting *Cnty. for Creative Non-Violence v. Watt*, 703 F.2d 586, 622–23 (1983) (Scalia, J., dissenting), *rev'd sub nom.* *Clark v. Cnty. for Creative Non-Violence*, 468 U.S. 288, 293 (1984)) (internal quotation marks omitted).

66. *Id.* at 406–07.

67. McGoldrick, Jr., *supra* note 63, at 25 (“Even with regard to content-neutral regulations of symbolic speech, the *Johnson* claim that courts have a ‘freer hand’ in regulating symbolic speech was in error.”).

68. *Id.* at 31 (“The intermediate test—whether the *O'Brien* test or the essentially interchangeable time, place, and manner test—allows for the careful balancing of the competing interests at stake.”).

expression.”⁶⁹ Similarly, pure speech has its more lenient counterpart in the “time, place, or manner restrictions.” Under *Clark v. Community for Creative Non-Violence*:

*Expression, whether oral or written or symbolized by conduct, is subject to reasonable time, place, or manner restrictions. We have often noted that restrictions of this kind are valid provided that they are justified without reference to the content of the regulated speech, that they are narrowly tailored to serve a significant governmental interest, and that they leave open ample alternative channels for communication of the information.*⁷⁰

The Court has also held that “*O’Brien’s* test . . . ‘is little, if any, different from the standard applied to time, place, or manner restrictions.’”⁷¹ After all, what are time, place, or manner restrictions if not limitations on the non-communicative aspects of pure speech?

By equating the two tests, the Court is implicitly recognizing that both pure and symbolic speech have speech and non-speech characteristics,⁷² and that, therefore, both components of pure and symbolic speech should be assessed under similar frameworks. Thus the distinction between symbolic and pure speech is illusory and, for the purposes of applying First Amendment scrutiny, unnecessary.

In fact, the Supreme Court has recently all but admitted as much. In *Rumsfeld v. Forum for Academic and Institutional Rights, Inc.* (“*FAIR*”), the Court adamantly reminded us that “‘words can in some circumstances violate laws directed not against speech but against conduct.’”⁷³ The Court is quite aware that a distinction between the speech-like and conduct-like aspects of an activity needs to be made in some situations involving the oral or written word itself. Nevertheless the Supreme Court insisted in *FAIR* on maintaining the formal distinction between “speech” and “the expressive nature of the conduct”: “Having rejected the view that the [regulation] impermissibly regulates *speech*, we must still consider whether

69. *United States v. O’Brien*, 391 U.S. 367, 377 (1968).

70. *Clark v. Cmty. for Creative Non-Violence*, 468 U.S. 288, 293 (1984) (emphasis added).

71. *Johnson*, 491 U.S. at 407 (citing *Clark*, 468 U.S. at 298). See also McGoldrick, Jr., *supra* note 63, at 30 (“[T]here is no real difference between the *O’Brien* and *Clark* tests.”).

72. As Professor Kalven stated: “I would suggest that all speech is necessarily ‘speech plus.’ If it is oral, it is noise and may interrupt someone else; if it is written, it may be litter.” Kalven, *supra* note 44, at 23.

73. 547 U.S. 47, 62 (2006) (quoting *R.A.V. v. City of St. Paul*, 505 U.S. 377, 389 (1992)).

the expressive nature of the *conduct* regulated by the statute brings that conduct within the First Amendment's protection."⁷⁴ But on the other hand, in *City of Erie v. Pap's A.M.* a plurality of the Justices interchangeably cited to both *O'Brien* and *Clark* when applying intermediate scrutiny to what it deemed to be a content-neutral regulation of expressive conduct, namely nude erotic dancing.⁷⁵ Once again, regardless of what the Court might say about a formalistic distinction between "pure speech" and "expressive conduct," the tests it applies to the communicative and the non-communicative aspects of both, respectively, are the same.

The Court has simply given us a test—the *Spence-Hurley* test—for deciding when a particular activity is communicative enough to be considered speech for purposes of First Amendment coverage: when, in a particular social context, sufficient conventions exist such that the communication of ideas between people is *possible*, even if not overwhelmingly probable, or even specifically intended. Furthermore, the Court has created a *per se* rule that exempts the oral and written word from this test. However, the level of coverage to which an activity is entitled once it has been deemed communicative enough under the *Spence-Hurley* test does not actually, and should not, depend on a formal distinction between "pure speech" and "expressive conduct."

Dean Post has suggested that what the Court does is extend First Amendment coverage to activities that constitute recognized media for the communication of ideas: "The very concept of a medium presupposes that constitutionally protected expression does not inhere in abstract and disembodied acts of communication of the kind envisioned by *Spence*, but is instead always conveyed through social and material forms of interaction."⁷⁶ The *Spence-Hurley* test, then, provides the tools to determine whether a particular activity is communicative enough to constitute such a recognized medium of expression for First Amendment purposes.⁷⁷

74. *Id.* at 65 (emphasis in original).

75. See 529 U.S. 277, 279 (2000) (plurality opinion).

76. Post, *Recuperating*, *supra* note 1, at 1257.

77. It should be noted, however, that for an activity to receive full coverage under the First Amendment, merely passing the *Spence-Hurley* test does not suffice. The activity must also further First Amendment values without destroying the community that the First Amendment intends to protect. This part of the Court's doctrine excludes other types of activities that, although communicative enough to pass the *Spence-Hurley* test, are not fully covered by the First Amendment. Moreover, passing the *Spence-Hurley* test is not a *sine qua non* requirement for First Amendment coverage, either. Something can be so central to the development of a recognized medium for the communication of ideas that it triggers First Amend-

2. Applying the *Spence-Hurley* Test to Source Code

“[A] programming language is simply a formal language.”⁷⁸ Source code, like any language, uses a predetermined set of conventions to convey messages comprehensible to others who know and understand the rules of the language. Source code text is simply a set of symbols written down on a tangible medium that, within a specified context, can be understood by others. In this sense, source code is very much like the written word that automatically passes the *Spence-Hurley* test.

In fact, as source code is a generic term for a series of established formal languages, it should be considered “pure speech” and deemed to be per se communicative and treated as speech by the First Amendment. In *Bernstein I*, the court agreed and did not even apply the *Spence-Hurley* test to source code because it considered it to be “speech” and “language.”⁷⁹ Similarly, in his article entitled *Publishing Software as a Speech Act*, Lee Tien has argued that “programming languages are languages for First Amendment purposes and source code is, as a doctrinal matter, pure speech.”⁸⁰

Tien, however, advocates for a narrow reading of the *Spence-Hurley* test.⁸¹ In applying speech act theory to the question of First Amendment coverage, Tien explains: “[T]he critical question for coverage purposes is whether the act at issue is *an act of communication*.”⁸² Pursuant to this understanding, “[b]oth the *intent* and social context aspects are necessary to transform an utterance into a speech act.”⁸³

Yet the purpose of the communication, be it in source code or English, is immaterial to First Amendment analysis. Though the Court in *Spence* spoke of “intent to convey a particularized message,”⁸⁴ the actual reception of the message by others does not enter into this first-step analysis. This is the main teaching of *Hurley*: *Hurley* betrays an unwillingness by the Court to delve into the specific subjective intentions of a Jackson Pollock, an Arnold Schoen-

ment scrutiny, even if the activity being regulated is not communicative enough to pass the *Spence-Hurley* test itself.

78. Sebastian Zimmeck, *Patent Eligibility of Programming Languages and Tools*, 13 TUL. J. TECH. & INTELL. PROP. 133, 143 (2010).

79. *Bernstein v. U.S. Dep’t of State (Bernstein I)*, 922 F. Supp. 1426, 1435 (N.D. Cal. 1996), *aff’d*, *Bernstein v. U.S. Dep’t of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

80. Tien, *supra* note 8, at 681.

81. *Id.* at 637.

82. *Id.* (emphasis added).

83. *Id.* (emphasis added).

84. *Spence v. Washington*, 418 U.S. 405, 410–11 (1974).

berg, or a Lewis Carroll when they choose to produce works of art that, at least on the surface, appear to be crafted so as to confuse or hide their meaning from their audience.⁸⁵ The hermetic artist, like the explicit orator, finds shelter under the First Amendment.

Tien's error lies in his overestimation of the importance of communicative values. By positing intentional communication as the sine qua non factor of First Amendment coverage analysis,⁸⁶ Tien's approach becomes both over and under-inclusive: a secret diary meant not to be read would not be covered, while highly communicative, and constitutionally unprotected,⁸⁷ "fighting words" would be covered.⁸⁸ Furthermore, such an approach would not accommodate different levels of First Amendment coverage for different types of communicative acts, which would also be inconsistent with current doctrine.⁸⁹

What makes an activity communicative is its *potential* for communication; this is why even the often perplexing music of Schoenberg passes the *Spence-Hurley* test.⁹⁰ So the fact that source code is mainly written to convey messages to computers instead of people is irrelevant at this stage of the analysis. The pertinent question is whether the activity can communicate a message, not what *type* of message it communicates or *to whom* the message is communicated. Thus communication directed solely to an inanimate diary, which the author intends never to be read by another human being, is still deserving of First Amendment coverage under *Spence-Hurley*. Similarly, an unsuccessful parade should pass the *Spence-Hurley* test just as easily as a successful one. The *Spence-Hurley* test only concerns itself with setting *a threshold probability* that a message will be listened to and understood, and not with the existence of an actual audience. Any concerns over the type of message communicated or its

85. *Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos.*, 515 U.S. 557, 569 (1995).

86. Tien, *supra* note 8, at 637.

87. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571–72 (1942).

88. As mentioned above, implicit in *Hurley* is the Court's acknowledgment that other First Amendment values must be considered when determining whether an activity is covered by the First Amendment. These other values are the subject of the second and third steps in the proposed analysis set out in this article and explain these examples of over and under-inclusiveness: the diarist is engaging in an autonomous act of self-expression and maybe even a personal search for truth, so his conduct would be covered, while the utterance of fighting words (and the ensuing acts of aggression) would be subject to severely limited coverage because it threatens to destroy the community served by the First Amendment without substantially furthering any other First Amendment values.

89. *See supra* notes 33–36.

90. *Hurley*, 515 U.S. at 569.

audience, and whether any such communications further First Amendment values enough to merit coverage, are to be resolved in the third step of the analysis proposed in this article.

Under this framework, there is no doubt that source code passes the *Spence-Hurley* test. Many people can write and understand source code. As such, source code can be drafted with “an intent to convey a particularized message” and “the likelihood [is] great that the message would be understood.”⁹¹ The fact that the language used to convey such messages is not English, or that others might not understand it, is irrelevant.⁹² This is why the court held in *Bernstein I* that there is “no meaningful difference between computer language, particularly high-level languages as defined above, and German or French. All participate in a complex system of understood meanings within specific communities.”⁹³

Furthermore, the fact that a computer can understand source code does not figure into the *Spence-Hurley* inquiry. It is irrational to suggest that because a computer can be designed and constructed to understand and execute commands in English, the whole English language ceases to be covered by the First Amendment.⁹⁴ This observation applies equally to high-level computer languages.

91. *Spence v. Washington*, 418 U.S. 405, 410–11 (1974).

92. *Yniguez v. Arizonans for Official English*, 69 F.3d 920, 933–34 (9th Cir. 1995) (en banc), *vacated as moot sub nom.*, *Arizonans for Official English v. Arizona*, 520 U.S. 43 (1997).

93. *Bernstein v. U.S. Dep’t of State (Bernstein I)*, 922 F. Supp. 1426, 1435 (N.D. Cal. 1996), *aff’d*, *Bernstein v. U.S. Dep’t of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

94. This hypothetical, of course, is no longer just in the realm of science fiction. Apple’s inclusion of Siri in the iPhone 4S has brought to the mainstream the practice of ordering a computer to do things in natural language. See *Apple - iPhone 4S - Ask Siri to help you get things done*, APPLE, <http://www.apple.com/ios/siri/> (last visited Nov. 11, 2012). Siri understands commands in English, French, German, and Japanese. *Apple - Siri - Frequently Asked Questions*, APPLE, <http://www.apple.com/ios/siri/siri-faq/> (last visited Nov. 11, 2012). Of course, Siri is not alone. The world of computers responsive to natural language commands is one of the many areas of technological endeavor that are currently experiencing considerable growth. See Natasha Singer, *The Human Voice, as Game Changer*, N.Y. TIMES (Mar. 31, 2012), <http://www.nytimes.com/2012/04/01/technology/nuance-communications-wants-a-world-of-voice-recognition.html> (discussing a series of recent developments and ongoing projects in voice operated machines). Furthermore, the existence of Siri and other computers responsive to natural language commands cannot condemn the English language (or any other language for that matter) to the netherworlds of First Amendment invisibility. The court in *Bernstein II* was already wise to this logic years before the advent of Siri: “The fact that computers will soon be able to respond directly to spoken commands, for example, should not confer on the government the unfettered power to impose prior restraints on speech in an effort to control its ‘functional’ aspects.” *Bernstein v. U.S. Dep’t of*

Lastly, it is important to note that source code might be a better medium for expressing ideas about computer science than traditional language.⁹⁵ “[P]rogramming languages avoid the difficulties that English has in describing algorithms and may stand as the only practical means of expressing certain algorithms that require precise articulation. Programming languages provide the best means for communicating highly technical ideas—such as mathematical concepts—within the community of computer scientists and programmers.”⁹⁶ This is why “[t]he First Amendment mandates that we presume that speakers, not the government, know best both what they want to say and how to say it.”⁹⁷ Programmers should, therefore, be able to choose to speak in code instead of English, as part of the exercise of their First Amendment rights.

B. Step 2: Is the Activity Central to the Development of a Medium for the Communication of Ideas?

1. Of Movie Projectors, Printing Presses, and Newspaper Racks

Even if source code is not deemed communicative enough under the *Spence-Hurley* test, its regulation still triggers First Amendment scrutiny. This is because “First Amendment coverage is not limited to speech acts. It extends to forms of interaction that realize First Amendment values.”⁹⁸ These forms of interaction are often designated as media for the communication of ideas.⁹⁹ In *Joseph Burstyn, Inc. v. Wilson*, for example, the Supreme Court held that “motion pictures are a significant medium for the communication of ideas.”¹⁰⁰

Most importantly for our present discussion, though, is the fact that the First Amendment extends its coverage over attempts to regulate activity, and even material things, that are central to the development of these media.¹⁰¹ Dean Post explains:

The genre of the cinema . . . encompasses far more than speech acts. It includes materials, like celluloid; functional ma-

Justice (*Bernstein II*), 176 F.3d 1132, 1142 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

95. See *Bernstein II*, 176 F.3d at 1141.

96. Tien, *supra* note 8, at 662–63 (footnote omitted) (citing DONALD KNUTH, *THE ART OF COMPUTER PROGRAMMING: FUNDAMENTAL ALGORITHMS* 5 (1st ed. 1968)).

97. *Riley v. Nat’l Fed’n of Blind of N.C., Inc.*, 487 U.S. 781, 790–91 (1988).

98. Post, *Encryption*, *supra* note 1, at 716.

99. *Id.*

100. 343 U.S. 495, 501 (1952); see also Post, *Encryption*, *supra* note 1, at 716 (quoting 343 U.S. at 501).

101. Post, *Encryption*, *supra* note 1, at 717.

chines, like projectors; buildings, like movie houses; social organizations, like studios; and so forth. If the state were to prohibit the use of projectors without a license, First Amendment coverage would undoubtedly be triggered. This is not because projectors constitute speech acts, but because they are integral to the forms of interaction that comprise the genre of the cinema.¹⁰²

First Amendment scrutiny might be triggered by these kinds of regulation even if they do not involve viewpoint discrimination:

An obvious instance might be a law that prohibits newsprint in order to save trees. Newsprint is a material necessary for the publication of most newspapers. Although a law proscribing newsprint would be viewpoint (and content) neutral, it would carry the potential for so significantly affecting the First Amendment medium of newspapers that we would certainly review it under First Amendment principles. We would want to assure ourselves that it would not compromise the constitutional value we attribute to newspapers.¹⁰³

Along these lines, the Sixth Circuit has held that “something as mundane as a newspaper rack might fall into the category of speech-facilitating devices,” and might trigger First Amendment scrutiny.¹⁰⁴ And the Supreme Court has held that the First Amendment prohibition on prior restraints extends to “expression or *conduct commonly associated with expression*.”¹⁰⁵

The Internet should present a perfectly analogous situation. As early as 1997, the Supreme Court held the Internet to be a medium for the communication of ideas, and that case law “provide[s] no basis for qualifying the level of First Amendment scrutiny that should be applied to [the Internet].”¹⁰⁶ Therefore, just as the newspaper’s protection extends to newsstands, any activity, mechanism, or object essential to the free use or development of the Internet as a medium for the communication of ideas will trigger First Amendment scrutiny. The following section will explore this analogy and

102. *Id.*

103. *Id.* at 721–22.

104. Burk, *supra* note 8, at 115 (citing Plain Dealer Publ’g Co. v. City of Lakewood, 794 F.2d 1139, 1143 (6th Cir. 1986) (“The right to distribute newspapers by means of newsracks is protected by the First Amendment . . .”), *aff’d sub nom.*, City of Lakewood v. Plain Dealer Publ’g Co., 486 U.S. 750 (1988)).

105. City of Lakewood v. Plain Dealer Publishing Co., 486 U.S. 750, 760 (1988) (emphasis added).

106. Reno v. ACLU, 521 U.S. 844, 870 (1997).

demonstrate how source code is the newspaper rack of the Internet era.

2. Source Code Is Central to the Development of the Internet

The code of the Internet is central to what cyberspace is. “The code of cyberspace—whether the Internet, or a net within the Internet—defines that space. It constitutes that space. And as with any constitution, it builds within itself a set of values and possibilities that governs life there.”¹⁰⁷ In this way, Professors Joel R. Reidenberg and Lawrence Lessig have convincingly argued that code is effectively a “*lex informatica*”:¹⁰⁸ a set of rules or laws that “defines what behavior is possible in cyberspace and what values cyberspace will uphold.”¹⁰⁹ In other words, the law of cyberspace *is* its source code.

Given this insight, it is now generally accepted that effective regulation of the Internet will happen through regulation of the code that constitutes it.¹¹⁰ “Laws would have their effect, if only indirectly, by inducing changes in the *lex [informatica]*.”¹¹¹ “Smart governments will instead regulate by regulating the *code* that regulates the behavior of people in cyberspace.”¹¹² They will regulate the code in such a way as “to assure that cyberspace is architected in a way to protect government’s interests.”¹¹³

If government can regulate the code, then government can require codewriters to build the standards that the government

107. Lawrence Lessig, The Charles Green Lecture, *Open Code and Open Societies: Values of Internet Governance*, 74 CHI.-KENT L. REV. 1405, 1408 (1999) [hereinafter Lessig, *Open Code*].

108. Joel R. Reidenberg, *Lex Informatica: The Formulation of Information Policy Rules Through Technology*, 76 TEX. L. REV. 553 (1998) [hereinafter Reidenberg, *Lex Informatica*]. See also Joel R. Reidenberg, *Governing Networks and Rule-Making in Cyberspace*, 45 EMORY L.J. 911, 929 (1996).

109. Lawrence Lessig, *The Limits in Open Code: Regulatory Standards and the Future of the Net*, 14 BERKELEY TECH. L.J. 759, 761 (1999) [hereinafter Lessig, *Limits*] (citing Reidenberg, *Lex Informatica*, *supra* note 109, at 568–73).

110. *Id.* at 762. But cf. Viktor Mayer-Schönberger, *Demystifying Lessig*, 2008 WIS. L. REV. 713, 713 (2008) (offering “a fundamental critique of Lessig’s core argument [that ‘code is law’]—and thus of core assumptions of cyberlaw scholarship”). Professor Mayer-Schönberger claims that the weaknesses he points out in Lessig’s argument “limit [] the capacity of his theory to adequately capture the full dynamic at play in free speech.” *Id.* at 746. In fact, his claim further supports this article’s conclusion that all the First Amendment values discussed should be taken into account in order to arrive at a coherent theory of First Amendment coverage. See *id.* Truth is not enough.

111. Lessig, *Limits*, *supra* note 109, at 762.

112. *Id.* at 763 (emphasis added).

113. *Id.*

needs into the code. The future of regulatory standards under this view, then, would simply be a future where the government tells codewriters how to architect their code so as to incorporate governmental regulatory standards.¹¹⁴

By regulating the code, the government can effectively reshape the medium for the communication of ideas that is constituted by that code. “Different code, different regulation, different worlds,”¹¹⁵ different medium for the communication of ideas.

Taking up this argument, Ryan Christopher Fox provides us with two concrete examples of how the regulation of source code has indirectly regulated conduct: DeCSS and encryption.

DeCSS . . . allows users to bypass security controls on DVDs. Because it allows for the copying of what is supposed to be uncopyable media, the DeCSS code has been attacked in the courts. Unlike the Napster litigation, though, in which legal claims were based on traditional copyright law and the code was only implicated by the facts of the case, *DeCSS was attacked under laws regulating the distribution of a specific class of computer code*. Another example of code that some might feel is dangerous is that used in software designed to encrypt data to prevent its being read by undesired individuals. Like DeCSS, *distribution of certain pieces of encryption software have been regulated by law that focuses specifically on computer code*, rather than on any illegal activities that might be performed using the code.¹¹⁶

Government attempts to regulate DeCSS and encryption “demonstrate a relatively new focus on prohibiting or restricting code itself as a dangerous tool rather than relying on laws against the undesirable activity that the code facilitates.”¹¹⁷

Professor Lessig argues that the Internet’s amenability to regulation will, in the first place, depend on how “open” the source code is.¹¹⁸ Open source code is code that is available for all to see, read, modify, and improve. “Open code is software in plain view. It is software that comes bundled with its source code as well as its object code.”¹¹⁹ As we have already discussed, programmers and computer scientists can read source code and quickly recognize any

114. *Id.* at 764.

115. *Id.* at 762.

116. Fox, *supra* note 7, at 874 (emphasis added) (footnotes omitted).

117. *Id.*

118. Lessig, *Limits*, *supra* note 110, at 764.

119. *Id.*

“controls” the code may hide.¹²⁰ Hence the more a code is open to review, the less amenable the code is to regulation.¹²¹ “[T]o the extent that code remains open, it is harder for government to regulate; to the extent it is closed, it is easier.”¹²²

Once source code is viewed as central to the development of a medium for the communication of ideas, its regulation necessarily implicates the First Amendment. Professor Lessig points out two important problems that arise from the government’s regulation of the Internet through code—problems with First Amendment implications and solutions.¹²³ First, regulation of code raises issues of over-inclusiveness.¹²⁴ This becomes apparent once we realize that the regulation of code tends to divorce the regulatory technique from the underlying purpose of the regulation. In doing so, regulating the code can allow the government to extend its grasp more than the protection of the values that it seeks to further through such regulation would otherwise require.¹²⁵ In other words, by separating the means from the ultimate end, additional activity is indirectly regulated through control of the code without regard for the balance of interests that direct regulation of such activity might otherwise consider.¹²⁶ Professor Lessig ably illustrates this phenomenon through two examples: (1) the criminalization of fair use through the anti-circumvention provisions of the Digital Millennium Copyright Act (which over-regulates conduct that would not otherwise be illegal under the underlying copyright law); and (2) a possible requirement of digital IDs as a way of zoning of speech in cyberspace.¹²⁷ Regulation of code as a means to regulate an underlying problem will therefore tend to be over-inclusive.¹²⁸ This will lead to the over-regulation of the use of the Internet, a medium for the communication of ideas, and thus an over-regulation of expression. By extending First Amendment coverage to source code, this result can be avoided. Strict scrutiny of such regulation would ensure that legislation is narrowly tailored.

120. *Id.* (“It is this code that allows a programmer to open an open source software project and see what makes it tick. By being able to see what makes it tick, open source software makes transparent any control that the code might carry.”).

121. *Id.*

122. *Id.* at 767.

123. Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 536 (1999) [hereinafter Lessig, *Law of the Horse*].

124. *Id.* at 536–37.

125. *Id.*

126. *Id.* at 537.

127. *Id.* at 537–39.

128. *Id.*

The second big problem with Internet regulation through code is that such regulation might not be transparent.¹²⁹ In general, we like government regulation to be as transparent as possible; we like to know how the government is controlling us and why. That way, if we do not like what the government is doing, we can vote it out of office. Since regulation of code can have effects on cyberspace that are indirect and hidden, it can threaten our democratic values. The regulation of code allows the government to “[e]nslave the code while telling the world that [it is] leaving the space free.”¹³⁰ Again, extending First Amendment coverage to source code can solve this problem. The application of strict scrutiny to the regulation of the underlying code would “‘smoke out’ illegitimate”¹³¹ governmental interests being furthered by such regulation. In applying strict scrutiny, courts would demand that the government justify the regulation of the code on the basis of the true underlying interests pursued and the relationship between the means employed and those interests.

At this juncture, an example of how the regulation of code can compromise First Amendment values might be helpful. The litigations in *Bernstein*, *Karn*, and *Junger* all involved the regulation of encryption source code.¹³² Though government regulation of encryption source code may not appear, at first glance, to directly limit covered speech, such a regulation would chill a great deal of First Amendment protected speech transmitted across the Internet. “Tien offers the valuable suggestion that encryption software might be conceived as providing the equivalent of envelopes which protect the privacy of underlying digital messages.”¹³³ A law that strips Internet speech of its privacy “would certainly merit First Amendment coverage.”¹³⁴

This is because the chill on participating in a First Amendment medium that comes from exposure is a well-recognized First Amendment interest. Laws prohibiting anonymous political leaflets have thus been struck down because of their potential impact on speakers.

129. *Id.* at 539.

130. Lessig, *Limits*, *supra* note 109, at 763.

131. *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 493 (1989).

132. *See* cases cited *supra* note 9.

133. Post, *Encryption*, *supra* note 1, at 723 (citing Tien, *supra* note 8, at 672).

134. *Id.*

Encryption software is a way of preventing an analogous chill within digital media.¹³⁵

For this reason, the court in *Bernstein II* recognized in dicta that “the government’s efforts to retard progress in cryptography may implicate the Fourth Amendment, as well as the right to speak anonymously, the right against compelled speech, and the right to informational privacy.”¹³⁶

So even if source code is not considered communicative enough to constitute “speech” under the *Spence-Hurley* test, its regulation should still trigger First Amendment scrutiny. Code is at the very heart of the development of the Internet, a recognized medium for the communication of ideas. The regulation of source code, therefore, is nothing but an indirect way of regulating the Internet itself, a recognized medium for the communication of ideas. As such, its regulation can compromise the freedom of the communicative medium that it serves to create and shape. Consequently, even if source code is deemed not communicative itself under the *Spence-Hurley* test, it must still be treated to the same First Amendment coverage because source code is inextricably intertwined with a recognized medium for the communication of ideas.

However, our analysis cannot end here.

C. Step 3: Does the Activity Promote First Amendment Values?

1. Theories of First Amendment Values

The Supreme Court has delineated types of activities that, while passing steps one or two of this analysis, do not merit the full force of First Amendment coverage. For example, we know that certain uses of the written or oral word can trigger only a very limited level of First Amendment coverage when they are deemed to be “fighting words,”¹³⁷ obscene,¹³⁸ or criminal solicitations.¹³⁹ The question therefore becomes: how do we know which activities merit full First Amendment coverage?

135. *Id.* (citing *McIntyre v. Ohio Elections Comm’n*, 514 U.S. 334 (1995); *Talley v. California*, 362 U.S. 60, 60 (1960); *NAACP v. Alabama ex rel. Patterson*, 357 U.S. 449, 460–64 (1958)).

136. *Bernstein v. U.S. Dep’t of Justice (Bernstein II)*, 176 F.3d 1132, 1146 (9th Cir.) (citations omitted), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

137. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571–72 (1942).

138. *Miller v. California*, 413 U.S. 15, 23 (1973).

139. *United States v. Williams*, 553 U.S. 285, 297–98 (2008).

Tien proposes that solving this coverage problem does not require an overarching analysis of First Amendment values.¹⁴⁰ He believes that, “[w]hile many consider the Court’s coverage doctrine to be incoherent, it can be harmonized without appealing to a grand theoretical framework of First Amendment values.”¹⁴¹ Instead, Tien suggests that “coverage issues primarily raise practical problems about whether someone is speaking.”¹⁴² Still, Tien’s approach does not bypass the value question; rather, it provides a one-word answer: communication. Tien seems to argue that the Court’s coverage doctrine can be understood by reference to a single, albeit sophisticated, understanding of the communicative value of “speech acts.” “Under this theory, the critical question for coverage purposes is whether the act at issue is an act of communication.”¹⁴³

However, the Court’s opinions do not support this approach. Tien is correct that a central part of the coverage analysis involves determining an activity’s communicative value; that is what the *Spence-Hurley* test is designed to measure. However, this test fails to account for First Amendment coverage of simple objects related to media, such as movie projectors or printing presses, or the limited coverage given to highly communicative “fighting words” or commercial speech.

Furthermore, Tien’s approach fails to take into account First Amendment coverage of certain important subgenres of human activity. The main reason for this under-inclusiveness is his insistence upon the importance of “illocutionary intent”: under Tien’s approach, it is “the speaker’s intent to perform a speech act,” coupled with her intent that her act be understood by her audience, that “transforms an utterance act—like making noise—into a speech act.”¹⁴⁴ As Tien himself admits, “This approach would exclude, for example, the concept of found meaning, which bears no relation to the speaker’s intended utterance.”¹⁴⁵ But the First Amendment cannot be completely deaf to the concept of found meaning. The First

140. See Tien, *supra* note 8, at 636 (noting that the Supreme Court “hasn’t seemed to need such a theory to decide coverage issues”).

141. *Id.*

142. *Id.* at 637. It should be noted that Tien himself acknowledges that concentrating the coverage question upon a definition of “speaking” is a normative choice itself. *Id.* at 637 n.27. About this criticism, Tien explains: “[M]y constraints are based on ‘speech acts’ as normative social phenomena, not on a full-blown theory about First Amendment values. Put another way, I begin with communication and then freedom of speech, not the other way around.” *Id.*

143. *Id.* at 637.

144. *Id.* at 640.

145. *Id.* at 651.

Amendment does not only protect the speaker, but speech itself.¹⁴⁶ This is particularly relevant when we consider the values of truth and democracy, which may benefit from speech even when the speaker might not have intended it for anybody's ears. Think of the great benefit that has accrued to humankind from the publishing of Franz Kafka's final works and of Virgil's *Aeneid*, both of which were published against their authors' last wills and testaments.¹⁴⁷ For these reasons, the Court has given important notice to "the 'inherent worth of the speech' and 'its capacity for informing the public.'"¹⁴⁸ Similarly, the Court has completely disregarded the intent of those who may have substantially contributed economically to the production of certain speech.¹⁴⁹ Finally, Tien's position that "the relevant intent is the speaker's intent that the hearer understand the act as a speech act"¹⁵⁰ is also inconsistent with the Court's pronouncement in *Hurley* that the First Amendment reaches "the unquestionably shielded painting of Jackson Pollock, music of Arnold Schoenberg, or Jabberwocky verse of Lewis Carroll."¹⁵¹ Even though many people might not fully understand their underlying messages, and regardless of whether the cited artists had the intent to illuminate or obscure those messages, the Court has unequivocally found these works to be protected.

If we are to coherently explain the Court's coverage doctrine, more than communicative value must be found in the activities covered by the First Amendment. For the purposes of this discussion, three traditional theories of First Amendment values will be refer-

146. As Justice Scalia has so poignantly remarked: "But to return to, and summarize, my principal point, which is the conformity of today's opinion with the original meaning of the First Amendment. The Amendment is written in terms of 'speech,' not speakers." *Citizens United v. Fed. Election Comm'n*, 130 S. Ct. 876, 929 (2010) (Scalia, J., concurring). However, the First Amendment is not *only* concerned with speech. Instead, First Amendment doctrine must take into account the particularities of *both* the speaker *and* her speech.

147. Lior Jacob Strahilevitz, *The Right to Destroy*, 114 *YALE L.J.* 781, 830–31 (2005). See also M.A. Orthofer, *Weighing Words Over Last Wishes*, *POETS & WRITERS* (Nov. 1, 2003), http://www.pw.org/content/weighing_words_over_last_wishes. But see Strahilevitz, *supra*, at 831, 831 n.202 (noting that accounts of Virgil's final intentions for the *Aeneid* differ).

148. *Citizens United*, 130 S. Ct. at 929 (Scalia, J., concurring) (quoting *First Nat'l Bank of Bos. v. Bellotti*, 435 U.S. 765, 777 (1978)).

149. See *id.* at 905 ("The First Amendment protects the resulting speech, even if it was enabled by economic transactions with persons or entities who disagree with the speaker's ideas.") (majority opinion).

150. Tien, *supra* note 8, at 651.

151. *Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos.*, 515 U.S. 557, 569 (1995).

enced: truth, democracy, and autonomy.¹⁵² The courts also frequently consider a fourth, sometimes competing, value: community. The exercise of free expression must, in some extreme and well-delineated cases, be checked by the need to protect our community from self-destruction, violence, and the annihilation of the channels of communication themselves.

The Court's seemingly inconsistent First Amendment coverage doctrine can only be explained by deciphering which values the Court promotes by extending coverage to some types of activities and not others.¹⁵³ Drawing heavily on the work of others but also adding some nuance, this article proposes that the Court has read into the First Amendment a very specific set of values that it believes are central to the First Amendment's intent and *raison d'être*: (1) truth; (2) democracy; (3) autonomy; and (4) community.¹⁵⁴

a. Truth

Justice Holmes introduced us, in his celebrated dissent in *Abrams v. United States*,¹⁵⁵ to one of the most important theories be-

152. This selection, of course, is not random. In fact, it has been profoundly influenced by both the Supreme Court's language in myriad cases and by Dean Post's previous work on this subject: "There are presently three major candidates for such values: (1) the creation of new knowledge; (2) individual autonomy; and (3) democratic self-government." Robert Post, *Participatory Democracy and Free Speech*, 97 VA. L. REV. 477, 478 (2011) [hereinafter Post, *Participatory Democracy*].

153. Dean Post has argued that "[i]t makes sense to conclude that the scope of the First Amendment extends only to those forms of speech (or regulation) that implicate constitutional values." *Id.*

154. The brutally normative question of exactly which values should make such a privileged list, of course, is fraught with peril and controversy. In fact, some commentators have suggested that no unifying theory of First Amendment values can easily be formed:

There have been many attempts to justify First Amendment coverage in terms of a free speech principle. Our "standard list of candidates" derives from the various theories of free speech: the pursuit of truth, self-governance, the "checking value" of free speech, and so on. But there seems to be no discernible general principle here, for these various theories don't cohere particularly well.

Tien, *supra* note 8, at 636 (citing Schauer, *supra* note 22, at 267-68; Post, *Recuperating*, *supra* note 1, at 1270). However, that a perfectly consistent unified theory of the values behind the First Amendment might be hard or even impossible to construct is not a good enough reason to stop trying to make an accurate approximation of what such a theoretical framework should look like. Judges will continue to make decisions that reflect their own subjective judgments about what the First Amendment is meant to protect. Denying this is at best naïve, and at worst disingenuous.

155. 250 U.S. 616, 624 (1919) (Holmes, J., dissenting).

hind First Amendment doctrine: the marketplace of ideas.¹⁵⁶ As Justice Holmes eloquently put it:

[W]hen men have realized that time has upset many fighting faiths, they may come to believe even more than they believe the very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas—that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out. That at any rate is the theory of our Constitution. It is an experiment, as all life is an experiment.¹⁵⁷

Truth can best be obtained through an open and unencumbered dialogue in which all parties are free to express their opinions. “Factions should be checked by permitting them all to speak, and by entrusting the people to judge what is true and what is false.”¹⁵⁸ If something is true, rational people will be convinced, and that belief will be recognized and incorporated by society. “[The] theory of [the] market-place of ideas ‘is essentially the method of science,’ which seeks ‘progress through free and rational inquiry.’”¹⁵⁹ The Supreme Court has recently reaffirmed the idea that there is in our society an “‘open marketplace’ of ideas protected by the First Amendment,” and that “ideas ‘may compete’ in this marketplace ‘without government interference.’”¹⁶⁰

This theory, however, is only concerned with attaining truth, and is premised on a capitalist notion of information flow and of rational human behavior. It is, in many ways, the application of the scientific method to public discourse at large. It is central to the current social understanding of what the United States of America wants to be. Nonetheless, this theory serves truth as its principal master, or at least the search for truth in dialectical form. If we are to value other things, or if we are interested in a more cooperative, less competitive, search for truth—or if we are skeptical of the existence of any such singular Truth—¹⁶¹ we must consider other theo-

156. See also Post, *Participatory Democracy*, *supra* note 152, at 478.

157. *Abrams*, 250 U.S. at 630 (Holmes, J., dissenting).

158. *Citizens United v. Fed. Election Comm’n*, 130 S. Ct. 876, 907 (2010) (citation omitted).

159. Tien, *supra* note 8, at 664 n.145 (quoting Thomas Emerson, *Colonial Intentions and Current Realities of the First Amendment*, 125 U. PA. L. REV. 737, 741 (1977)).

160. *Citizens United*, 130 S. Ct. at 906 (quoting *New York State Bd. of Elections v. López Torres*, 552 U.S. 196, 208 (2008)).

161. See Post, *Participatory Democracy*, *supra* note 152, at 479 (emphasizing that truth cannot be the only value favored by the First Amendment, as “[t]he First

ries and values as well: values that are just as central to the spirit of the United States Constitution, and just as necessary for its long term survival and prosperity.

b. Democracy

Many commentators have emphasized the importance of democratic self-governance as an instructive value in First Amendment doctrine.¹⁶² However, democracy is itself served by the First Amendment through two models of self-governance: (1) the participatory model and (2) the Meiklejohnian model.¹⁶³

“The participatory model emphasizes the importance of preserving uncensored access to public discourse so that citizens can maintain the warranted sense that their government is responsive to them.”¹⁶⁴ As Dean Post has recently pointed out:

The value of democratic legitimation occurs, as Habermas and many others have theorized, specifically through processes of communication in the public sphere. It requires that citizens have access to the public sphere so that they can participate in the formation of public opinion, and it requires that governmental decision making be somehow rendered accountable to public opinion.¹⁶⁵

Hence, under this theory, the First Amendment should cover “those speech acts and media of communication that are socially regarded as necessary and proper means of participating in the formation of public opinion.”¹⁶⁶ If you let people engage in public discourse and get involved in the political life of their state, then they will feel as if they are a part of the body politic and will respect

Amendment recognizes no such thing as a ‘false’ idea” (quoting *Hustler Magazine v. Falwell*, 485 U.S. 46, 51 (1988)).

162. See, e.g., *id.* at 482; Vincent Blasi, *The Checking Value in First Amendment Theory*, 1977 AM. B. FOUND. RES. J. 521, 555; Robert Bork, *Neutral Principles and Some First Amendment Problems*, 47 IND. L.J. 1, 28 (1971).

163. See Post, *Participatory Democracy*, *supra* note 152, at 482; Robert Post, *The Constitutional Status of Commercial Speech*, 48 UCLA L. REV. 1, 5 (2000) [hereinafter Post, *Commercial Speech*].

164. Post, *Commercial Speech*, *supra* note 163, at 12.

165. Post, *Participatory Democracy*, *supra* note 152, at 482 (footnote omitted) (citing JÜRGEN HABERMAS, *BETWEEN FACTS AND NORMS: CONTRIBUTIONS TO A DISCOURSE THEORY OF LAW AND DEMOCRACY* app. I, at 472–77, 486–90 (William Rehg trans., Polity Press 1996) (1992)).

166. *Id.* at 483.

and feel comfortable with its actions.¹⁶⁷ This is a necessary condition for a healthy democracy.¹⁶⁸

On the other hand, Professor Alexander Meiklejohn has “famously argued that ‘the final aim’ of First Amendment freedom is to ensure the circulation of opinion and information necessary for ‘the voting of wise decisions.’”¹⁶⁹ Under this model, “What is essential is not that everyone shall speak, but that everything worth saying shall be said.”¹⁷⁰ People need as much information as possible so that when they vote they can make the best-informed, most intelligent, democratic decisions.¹⁷¹ Thus the First Amendment should primarily serve to guarantee access to information. “The right of citizens to inquire, to hear, to speak, and to use information to reach consensus is a precondition to enlightened self-government and a necessary means to protect it.”¹⁷² In this way, the First Amendment serves, as it does in the participatory model, to further the democratic values that the First Amendment was designed to protect.

However, an interest in promoting democratic values does not explain all of the Court’s First Amendment opinions. Even those who believe most ardently that democratic self-governance is the principal value furthered by the First Amendment recognize the need for additional considerations.¹⁷³ For example, the values of truth and democracy, taken together, still fail to account for cases such as *Stanley v. Georgia*, where the Supreme Court held that criminal prosecution for mere private possession of obscene materials was prohibited by the Constitution.¹⁷⁴ In this sense, it is important to remember that materials will only qualify as obscene if they lack

167. See *Citizens United v. Fed. Election Comm’n*, 130 S. Ct. 876, 898 (2010) (“Speech is an essential mechanism of democracy, for it is the means to hold officials accountable to the people.”).

168. Cf. *Buckley v. Valeo*, 424 U.S. 1, 14 (1976) (“Discussion of public issues and debate on the qualifications of candidates are integral to the operation of the system of government established by our Constitution.”).

169. Post, *Commercial Speech*, *supra* note 163, at 13 (quoting ALEXANDER MEIKLEJOHN, *POLITICAL FREEDOM: THE CONSTITUTIONAL POWERS OF THE PEOPLE* 26 (1960)).

170. MEIKLEJOHN, *supra* note 169, at 26.

171. Post, *Commercial Speech*, *supra* note 163, at 13.

172. *Citizens United*, 130 S. Ct. at 898.

173. See, e.g., Post, *Participatory Democracy*, *supra* note 152, at 488 (“I do not contend that the value of democratic self-governance can explain all First Amendment decisions.”).

174. 394 U.S. 557, 559 (1969). See also Post, *Participatory Democracy*, *supra* note 149, at 488 (“There are no doubt some decisions, like *Stanley v. Georgia*, that can be explained only by reference to the value of autonomy.”).

“serious literary, artistic, political, or scientific value.”¹⁷⁵ Hence any First Amendment coverage of obscene materials must be justified by values other than truth or democracy.

c. Autonomy

The First Amendment is also concerned with individual autonomy. The Supreme Court, as well as commentators, has made this point abundantly clear: “One fundamental concern of the First Amendment is to ‘protec[t] the individual’s interest in self-expression.’ Freedom of speech helps ‘make men free to develop their faculties,’ it respects their ‘dignity and choice,’ and it facilitates the value of ‘individual self-realization.’”¹⁷⁶ People must be allowed to express their own individuality. Human beings grow and learn about themselves and others through the exercise of their creativity. They must be free to try to reach their highest potential through their individual self-realization.¹⁷⁷ “This is often formulated as the constitutional value of autonomy, which is sometimes referred to as ‘self-fulfillment’ or ‘self-expression.’”¹⁷⁸ “There is no doubt that this form of liberal autonomy has deep roots in American constitutionalism, and it is clear that its influence can be detected in First Amendment doctrine.”¹⁷⁹

The First Amendment is at the forefront of the protections that allow us the freedom to create new worlds through the use of our creative expressions. Our society is premised on the idea that we are free to think whatever we want. “If the First Amendment means anything, it means that a State has no business telling a man, sitting alone in his own house, what books he may read or what films he may watch.”¹⁸⁰ Our thoughts cannot be controlled, because we are the only legitimate monarchs of our own minds. “Our whole constitutional heritage rebels at the thought of giving government the power to control men’s minds.”¹⁸¹ Expression is sufficiently close to

175. *Miller v. California*, 413 U.S. 15, 24 (1973).

176. *Citizens United*, 130 S. Ct. at 972 (Stevens, J., concurring) (citations omitted) (citing *Consol. Edison Co. of N.Y. v. Pub. Serv. Comm’n of N. Y.*, 447 U.S. 530, 534 n.2 (1980); *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 777 n.12 (1978); *Whitney v. California*, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring); *Cohen v. California*, 403 U.S. 15, 24 (1971); Martin H. Redish, *The Value of Free Speech*, 130 U. PA. L. REV. 591, 594 (1982)).

177. See Tien, *supra* note 8, at 636 (stating that individual self-realization is the most general candidate for a free speech principle).

178. Post, *Participatory Democracy*, *supra* note 152, at 479.

179. *Id.*

180. *Stanley v. Georgia*, 394 U.S. 557, 565 (1969).

181. *Id.*

thought as to require the strictest protection of its free exercise if our autonomy is to be preserved. If we allow government to regulate what we can and cannot say, it would necessarily relinquish our control over what we can and cannot think. This type of mind control is unacceptable under the First Amendment.

But again, the value of autonomy, by itself, appears insufficient to explain First Amendment doctrine. A common attack on autonomy as a basis for First Amendment coverage is that all kinds of human activity, not just speech, can be seen as furthering self-realization.¹⁸² “[T]he value of autonomy extends not merely to the speech of persons but also to the actions of persons. This suggests that the value of autonomy is not unique to speech but instead extends to the full libertarian protection of personal action.”¹⁸³ As Professor Bork points out, “[One] cannot, on neutral grounds, choose to protect speech on this basis more than [one] protects any other claimed freedom.”¹⁸⁴ This argument, however, makes light of the fact that a court need not itself choose to protect speech over other human activities. The First Amendment already makes this choice. Self-realization through speech was specifically set apart by the Constitution for special protection. Thus the close relationship identified by the Supreme Court between speech, language, and thought must be seen as an important factor in this choice.

Another valid criticism to the autonomy rationale is that “there are many situations in which the autonomy of a speaker conflicts with the autonomy of an audience.”¹⁸⁵ Hence the value of autonomy does not help differentiate between certain types of speech that might receive limited coverage under the First Amendment, such as fighting words, defamation, or obscenity.¹⁸⁶ Any explanation of this limited coverage must rely on other First Amendment values, such as the final value proposed of community.

d. Community

The preceding theories of First Amendment values must be tempered by a reality often underestimated in the First Amendment context: the need to preserve and foster a sense of community. By allowing activities that further the aforementioned values of

182. See, e.g., Bork, *supra* note 162, at 25 (arguing that the autonomy rationale—the “development of individual faculties” rationale—fails to “distinguish speech from any other human activity”).

183. Post, *Participatory Democracy*, *supra* note 152, at 479.

184. Bork, *supra* note 162, at 25.

185. Post, *Participatory Democracy*, *supra* note 152, at 480.

186. *Id.*

truth, democracy, and autonomy, we often make it acceptable for people to express ideas that are in stark contrast with what the greater part of the community believes. This inevitably creates tension between different parts of a community. This tension must be kept within a certain limit so that the community itself is not completely destroyed.

More importantly, increased intra-community tensions might destroy the channels of free communication themselves. For example, Dean Post has remarked that, typically, “[f]reedom of thought is transmuted into new knowledge only when it is integrated into those forms of social practices” that “depend upon positive intellectual virtues like respect, reason, fairness, accuracy, integrity, honesty, logic, and civility.”¹⁸⁷ Conversely, though congruously, other commentators have argued that the First Amendment is integral to the development of a tolerant society.¹⁸⁸ As we analyze different types of activities and try to decide whether they should receive coverage under the First Amendment, we must keep in mind that the values of truth, democracy, and autonomy must be moderated by a keen awareness of the possible destructive effects that these activities might have on the community we are trying to protect and nurture.

e. Prioritizing Values

One final question must be asked regarding First Amendment values: Is one value more important than the others? This, of course, is a question that has generated quite a bit of controversy. Some commentators have argued that the value of democratic self-governance should be the only value taken into account.¹⁸⁹ Justice Oliver Wendell Holmes, of course, famously proclaimed the “marketplace of ideas” rationale.¹⁹⁰ Meanwhile, Justice Thurgood Marshall was known to emphasize the value of autonomy: “The First Amendment serves not only the needs of the polity but also those of the human spirit—a spirit that demands self-expression.”¹⁹¹ And Justice Louis Brandeis was quite dexterous at eloquently advocating

187. *Id.* at 478.

188. *See, e.g.*, LEE C. BOLLINGER, *THE TOLERANT SOCIETY: FREEDOM OF SPEECH AND EXTREMIST SPEECH IN AMERICA* 10 (1986); David A. Strauss, *Why Be Tolerant?*, 53 U. CHI. L. REV. 1485, 1485–86 (1986).

189. *See, e.g.*, Bork, *supra* note 162, at 27–28.

190. *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting).

191. *Procunier v. Martínez*, 416 U.S. 396, 427 (1974) (Marshall, J., concurring).

for all three of these values at once.¹⁹² Finally, Dean Post has proposed arranging the several competing theories of the First Amendment according to a “lexical priority”:¹⁹³

The rules of the participatory theory will be imposed when required by that theory; the rules of the Meiklejohnian perspective will be imposed when required by that perspective and not incompatible with the participatory theory; the rules of autonomy theory will be imposed when required by that theory and not incompatible with the participatory and Meiklejohnian approaches; and so forth.¹⁹⁴

Quite recently, however, the Supreme Court warned of the dangers of addressing this question lightly.¹⁹⁵ In *U.S. v. Stevens*, the Court rejected the Government’s argument that Congress’s “categorical balancing of the value of the speech against its societal costs” should determine “[w]hether a given category of speech enjoys First Amendment protection.”¹⁹⁶ In writing for the Court, Justice Scalia characterized such “a free-floating test for First Amendment coverage” as “startling and dangerous.”¹⁹⁷ He further explained:

The First Amendment’s guarantee of free speech does not extend only to categories of speech that survive an ad hoc balancing of relative social costs and benefits. The First Amendment itself reflects a judgment by the American people that the benefits of its restrictions on the Government outweigh the costs. Our Constitution forecloses any attempt to revise that judgment simply on the basis that some speech is not worth it.¹⁹⁸

The Court, it should be noted, was reacting to the Government’s attempt to place such power to balance the costs and benefits of particular types of speech in the ever-changing hands of the political branches, Congress and the Executive. Doing so would amount to allowing the contours of the First Amendment to be rewritten through the legislative process as the whims of the electorate might blow. This, of course, would be antithetical to the power

192. See *Whitney v. California*, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring).

193. Post, *Participatory Democracy*, *supra* note 152, at 489 (quoting Robert Post, *Reconciling Theory and Doctrine in First Amendment Jurisprudence*, 88 CAL. L. REV. 2353, 2373 (2000)).

194. *Id.*

195. *United States v. Stevens*, 130 S. Ct. 1577, 1585–86 (2010).

196. *Id.* at 1585.

197. *Id.*

198. *Id.*

of judicial review itself, as announced in *Marbury v. Madison*, and to the role of the Supreme Court as final arbiter and interpreter of the Constitution. “The Constitution is not a document ‘prescribing limits, and declaring that those limits may be passed at pleasure.’”¹⁹⁹ This article in no way argues for such an approach. Instead, this article points to what the Court itself recognized in *Stevens*: that *the Court* has to consider First Amendment values as it attempts to decipher and describe the limits imposed by *the Constitution*.²⁰⁰

In the end, nonetheless, it is important to heed the Supreme Court’s warning in *Stevens* that defining whole categories of speech out of First Amendment coverage must not be done “on the basis of a simple cost-benefit analysis.”²⁰¹ The dynamic nature of the underlying First Amendment values and their inherent interrelatedness suggest a need for open and unconstrained debate on the topic. The Constitution serves a multiplicity of masters: order, equality, autonomy, justice, and democracy, amongst others. There is no reason why the freedom of speech guaranteed by the First Amendment—a central tenet of our system—should be bound by rigid hierarchies as to the values it serves. In fact, we must be especially aware of the fact that the Court has recently been reluctant to create new categories of disfavored speech.²⁰² Consequently, as we analyze how source code furthers First Amendment values, we must err on the side of caution, fully conscious of the Court’s interpretation of the First Amendment as favoring more, rather than less, coverage of general classes of speech.

199. *Id.* (quoting *Marbury v. Madison*, 1 Cranch 137, 178, 2 L. Ed. 60 (1803)).

200. *United States v. Stevens*, 130 S. Ct. 1577, 1585–86 (2010) (“To be fair to the Government, its view did not emerge from a vacuum. As the Government correctly notes, this Court has often described historically unprotected categories of speech as being ‘of such slight social value as a step to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality.’ In *New York v. Ferber*, we noted that within these categories of unprotected speech, ‘the evil to be restricted so overwhelmingly outweighs the expressive interests, if any, at stake, that no process of case-by-case adjudication is required,’ because ‘the balance of competing interests is clearly struck’”) (citations omitted).

201. *Id.* at 1586.

202. *See, e.g., id.* (refusing to create a category of disfavored speech for depictions of animals being intentionally tortured and killed); *Brown v. Entm’t Merchants Ass’n*, 131 S. Ct. 2729 (2011) (refusing to create a category of disfavored speech for violent video games).

2. First Amendment Values in Source Code

a. Truth

Computer science is a science like any other: it is a search for mathematical truth through the use of the scientific method. Professor Lessig has made this point explicit by analogizing the story of Andrew Wiles's proof of Fermat's Last Theorem to the development of the Linux operating system.²⁰³ Through the use of the Internet and the open sharing of ideas and methods, both Andrew Wiles and Linus Torvalds were able to get help from countless people who improved, tested, and added to their ideas.

This is what the scientific method is all about. One person comes up with an idea on how to solve a problem. She implements and tests her idea. If her theory works out, she publishes her work and others replicate it. Yet scientists can only improve and extend the ideas of others if they are able to see and replicate them. This is why the free expression of ideas within the scientific world is so important.

“Academic freedom is ‘a special concern of the First Amendment.’”²⁰⁴ “Teachers and students must always remain free to inquire, to study and to evaluate, to gain new maturity and understanding”²⁰⁵ “[T]he First Amendment protects scientific expression and debate just as it protects political and artistic expression.”²⁰⁶ This is why “scientific seminars, discussions, and publications are covered by the First Amendment.”²⁰⁷ “Authors routinely write books and articles in which they communicate procedures to each other. . . . [S]uch writings are unambiguously covered by the First Amendment.”²⁰⁸

There is no reason to think that this would not also apply to computer science and source code. Computer source code, like mathematical equations or chemical formulas, is the description of

203. Lessig, *Open Code*, *supra* note 107, at 1417.

204. Tien, *supra* note 8, at 633 n.15 (quoting *Keyishian v. Bd. of Regents*, 385 U.S. 589, 603 (1967)).

205. *Sweezy v. New Hampshire*, 354 U.S. 234, 250 (1957).

206. *Bd. of Trs. of Leland Stanford Junior Univ. v. Sullivan*, 773 F. Supp. 472, 474 (D.D.C. 1991) (citing *Miller v. California*, 413 U.S. 15, 34 (1973)); *Roth v. United States*, 354 U.S. 476, 484 (1957); *United States v. U.S. Dist. Court for Cent. Dist. of Cal.*, 858 F.2d 534, 542 (9th Cir. 1988)).

207. Roy G. Spece, Jr. & Jennifer Weinzierl, *First Amendment Protection of Experimentation: A Critical Review and Tentative Synthesis/Reconstruction of the Literature*, 8 S. CAL. INTERDISC. L.J. 185, 187 n.4 (1998).

208. Post, *Encryption*, *supra* note 1, at 718.

ideas formulated by experts of a science.²⁰⁹ Consider the following description of the interchange of ideas that characterizes the computer science world:

In using and stating source code, programmers not only assert a particular procedure or set of procedures—they also participate in a scientific discourse about the asserted procedures. . . . Publishing an algorithm can create a discourse about those classes of algorithms and problems. . . . [T]he publication of computer programs—algorithms in source code form—contributes to the development of mathematics itself. Conversely, mathematical problems have stimulated various areas of computer science

*This discourse is central to the marketplace of ideas in computer science.*²¹⁰

Source code is both a participant and a good in the marketplace of ideas. The First Amendment should therefore cover the publication and exchange of source code in the academic context, as it furthers the First Amendment value of truth.²¹¹

Furthermore, the importance of computer code in the academic setting has recently garnered recognition across a wide array of fields. According to the *New York Times*, “Many professors of computer science say college graduates in every major should understand software fundamentals.”²¹² Similarly, Professor Jeannette M. Wing, head of the Computer Science Department at Carnegie Mellon University, argues that “[c]omputational thinking is a fundamental skill for everyone, not just for computer scientists.”²¹³ Professor Wing further claims that “[j]ust as the printing press facilitated the spread of the three Rs, what is appropriately incestuous about this vision is that *computing and computers facilitate the spread of computational thinking*.”²¹⁴ The spread of knowledge regarding com-

209. See *Bernstein v. U.S. Dep’t of Justice* (citations omitted), 176 F.3d 1132, 1141 (9th Cir.) (making the same comparison), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

210. Tien, *supra* note 8, at 664 (emphasis added).

211. *But see* Kerr, *supra* note 8, at 1291 (arguing that all sorts of things, including physical objects, express ideas about themselves, and that this is an insufficient reason to extend First Amendment coverage to such things, including source code).

212. Randall Stross, *Computer Science for the Rest of Us*, N.Y. TIMES (Mar. 31, 2012), <http://www.nytimes.com/2012/04/01/business/computer-science-for-non-majors-takes-many-forms.html>.

213. Jeannette M. Wing, *Computational Thinking*, COMM. ACM, Mar. 2006, at 33, 33.

214. *Id.* (emphasis added).

puter code will not only help in developing new knowledge about programming, but will also contribute to the development of general human knowledge.

It is particularly telling that the approach taken by some professors when teaching basic computer literacy to individuals concentrating in other fields has been strikingly multidisciplinary.²¹⁵ Consider one example:

At Wheaton College . . . a professor of computer science teaches “Computing for Poets.” The only prerequisite, according to the course syllabus, is “a love of the written (and digital) word.”

Professor LeBlanc has his students learn the basics of Python, another modern language used in the software industry. But this course is tied to two courses offered by the English department on J.R.R. Tolkien and Anglo-Saxon literature.²¹⁶

Similarly, Professor Wing argues that computational thinking will aid the development of knowledge in other fields because it teaches problem-solving techniques.²¹⁷ She also states that studying computer code can teach us all sorts of other things: “thinking recursively”; “parallel processing”; “recognizing both the virtues and the dangers of aliasing, or giving someone or something more than one name”; “judging a program not just for correctness and efficiency but for aesthetics, and a system’s design for simplicity and elegance”; “thinking in terms of prevention, protection, and recovery from worst-case scenarios through redundancy, damage containment, and error correction”; “planning, learning, and scheduling in the presence of uncertainty”; and “strategy for winning a game.”²¹⁸ Professor Wing also gives specific examples of how the interdisciplinary study of computer code has brought about exciting new developments in other fields of study such as statistics, biology, economics, chemistry, and physics.²¹⁹

The mistake too often made, Professor Wing argues, is “equat[ing] computer science with computer programming.”²²⁰ Computer science, at the end of the day, is “[a] way that humans, not computers, think.”²²¹ “Computational thinking is a way humans solve problems; it is not trying to get humans to think like com-

215. See Stross, *supra* note 212.

216. *Id.*

217. Wing, *supra* note 213, at 33.

218. *Id.* at 33–34.

219. See *id.*

220. *Id.* at 35.

221. *Id.* (emphasis removed).

puters.”²²² Similarly, computer code is the language in which *humans speak to other humans* about computer science. It is the language in which ideas about computational thinking are expressed. It is not just a way to get a machine to do something. Rather, it is a way of thinking about our reality and interacting with it in creative ways. Thus the ability to freely create and share source code is essential to the instruction, furtherance, and development of computational thinking.

It should be noted that the government conceded in the *Bernstein* litigation that the First Amendment covers source code printed in academic works.²²³ The government, however, argued in *Bernstein I* and *II*, as well as in other cases, that source code in electronic form is different because it can be directly fed into a computer.²²⁴ This distinction is immaterial to our discussion here. “For purposes of the First Amendment, the language in which books and articles are written is without importance.”²²⁵ It follows that the medium in which one publishes one’s ideas should also be immaterial to the question of First Amendment coverage. The values furthered by a particular activity are the same whether one publishes the ideas on paper or through the Internet in electronic form.²²⁶ “The decisive question for coverage is whether or not the publication of the source code forms part of a First Amendment medium, and this question can be affirmatively answered even if the publication of the source code is in electronic form.”²²⁷

Furthermore, the arguments advanced here do not only apply to professors and PhDs. The open source movement has shown that a large number of people are interested in engaging in computer programming as a hobby. By keeping their source code open and sharing it with others, open source programmers have been able to

222. *Id.*

223. *Bernstein v. U.S. Dep’t of State (Bernstein I)*, 922 F. Supp. 1426, 1434 (N.D. Cal. 1996), *aff’d*, *Bernstein v. U.S. Dep’t of Justice*, 176 F.3d 1132 (9th Cir.), *withdrawn & reh’g granted*, 192 F.3d 1308 (9th Cir. 1999).

224. *See, e.g., Bernstein v. U.S. Dep’t of Justice (Bernstein II)*, 176 F.3d 1132, 1141–42 (9th Cir.) (“[T]he government maintains that source code is different from other forms of expression . . . because it can be used to control directly the operation of a computer without conveying information to the user.”), *withdrawn*, 192 F.3d 1308 (9th Cir. 1999).

225. Post, *Encryption*, *supra* note 1, at 718.

226. *See id.* at 719 (“So long as the publication of . . . source code forms part of this public discourse and debate, it will be covered by the First Amendment, whether it is set forth in a printed article or in an online discussion.”).

227. *Id.*

develop better programs that continue to evolve and improve.²²⁸ This means that all sorts of people are contributing to the discourse of computer science by engaging in the free, open sharing of their source code with others.²²⁹

The open source model, furthermore, looks very much like a free marketplace of ideas where people give and take as they construct better ways of dealing with the problems they are tackling. Eric S. Raymond famously used the metaphor of the bazaar (a free marketplace) to describe the open source movement in his seminal piece entitled *The Cathedral and the Bazaar*.²³⁰ Raymond explained that the open source model incorporated the free exchange of ideas, much in the same way that goods are freely exchanged in a bazaar, as a more efficient and effective way of building code.²³¹ He drew a sharp contrast between this cooperative model and the isolationist, centralized, command and control model of cathedral construction.²³²

Similarly, Richard Stallman refers to the open source movement as the Free Software Movement: “[F]ree in the sense of ‘free speech,’ not in the sense of ‘free beer.’”²³³ Stallman goes on to emphasize the role of a free exchange of ideas in the development of open source code over any purely monetary or economic connotation of the word “free.”²³⁴

In this sense, Professor Lessig argues that when code is left open—when all of its modular components are subject to public tinkering— “[n]o rules say which way is right. Instead, the evolution of a market does that. The evolution of thousands of people trying their hand at improving a code, and thousands of people choosing

228. See generally Eric Steven Raymond, *The Cathedral and the Bazaar*, ERIC S. RAYMOND'S HOME PAGE (Aug. 2, 2002, 9:02 AM), <http://www.catb.org/~esr/writings/homesteading/cathedral-bazaar/cathedral-bazaar.ps>.

229. In fact, the uptrend in individuals' interest in learning programming languages has recently been noted in the national press. See, e.g., Jenna Wortham, *A Surge in Learning the Language of the Internet*, N.Y. TIMES (Mar. 27, 2012) <http://www.nytimes.com/2012/03/28/technology/for-an-edge-on-the-internet-computer-code-gains-a-following.html> (“The blooming interest in programming is part of a national trend of more people moving toward technical fields. According to the Computing Research Association, the number of students who enrolled in computer science degree programs rose 10 percent in 2010, the latest year for which figures are available.”).

230. See generally Raymond, *supra* note 228, at 3.

231. See *id.*

232. See *id.*

233. Lessig, *Open Code*, *supra* note 107, at 1406.

234. *Id.*

which improvement makes sense.”²³⁵ Source code, then, and open source code in particular, are prime examples of the “marketplace of ideas” theory of the First Amendment at work. When code is open, everyone can participate in its development. Through “running code, that by its power produces rough consensus,”²³⁶ an open marketplace is created, where everybody’s ideas can be pounded out and morphed into a better concept of the truth.²³⁷

But let us also consider how source code promotes truth through the development of new media for the communication of ideas. From this perspective, allowing government control and regulation of source code, without regard to First Amendment doctrine, could do a disservice to the acquisition of knowledge. This issue has become more dramatic in the past few years, as “publication of user-generated content (UGC) (also known as consumer-generated media) has exploded.”²³⁸

Perhaps one of the most significant examples of this issue is YouTube. YouTube catapulted itself to household name status after it “was purchased by Google for \$1.65 billion in stock in October 2006, a little more than a year after it started.”²³⁹ By mid-2008, ac-

235. *Id.* at 1415.

236. *Id.* at 1418.

237. But code need not be open or academic to further the value of truth and be worthy of coverage under the First Amendment. Source code is also having a dramatic effect on the marketplace of goods and services itself. A large number of people are interested in engaging in computer programming as a business. Every day our economy is becoming more and more intertwined with the development of computer code. This phenomenon is only natural, as technological growth is the engine of real economic growth. It was only recently that Apple overtook Exxon Mobil as the most valuable company in the world, in terms of market capitalization. James B. Stewart, *Confronting a Law of Limits*, N.Y. TIMES (Feb. 24, 2012), <http://www.nytimes.com/2012/02/25/business/apple-confronts-the-law-of-large-numbers-common-sense.html>. As of November 6, 2012, four of the top ten companies with the largest market capitalization in the world were computer-related enterprises (Apple, Microsoft, Google, and IBM). YCharts, *Market Cap Stock Rankings*, YCHARTS, http://ycharts.com/rankings/market_cap (last visited Nov. 7, 2012). According to one news article, “The thinking is that with so much business gravitating toward the Internet, it’s critical that today’s entrepreneurs learn the language of the computer—or at least enough that they won’t be left behind.” Colleen Debaise, *Do You Really Need to Code?*, ENTREPRENEUR.COM (Mar. 28, 2012), <http://www.entrepreneur.com/blog/223238>. Computer code, then, may also be reshaping the economic landscape itself, and becoming part of the vocabulary of entrepreneurs, financiers, venture capitalists, and the like. Government regulation of this code could compromise the development of new ideas through the investment in and development of new technologies.

238. Robert P. Latham et al., *Legal Implications of User-Generated Content: YouTube, MySpace, Facebook*, 20 INTELL. PROP. & TECH. L.J. 1 (2008).

239. *Id.*

ording to one estimate, “more than 65,000 videos [were being] uploaded to YouTube every day, and 100 million videos [were being] viewed daily.”²⁴⁰ But four years are a lifetime in Internet time and, by early 2012, YouTube’s popularity had mushroomed:

- Over 800 million unique users visit YouTube each month
- Over 4 billion hours of video are watched each month on YouTube
- 72 hours of video are uploaded to YouTube every minute
- 70% of YouTube traffic comes from outside the US
- YouTube is localized in 43 countries and across 60 languages
- In 2011, YouTube had more than 1 trillion views, or around 140 views for every person on Earth.²⁴¹

Furthermore, YouTube’s popularity is only compounded by its interrelation with social networking sites such as Facebook and Twitter: “500 years of YouTube video are watched every day on Facebook, and over 700 YouTube videos are shared on Twitter each minute.”²⁴² The resulting statistics are simply mind-blowing.²⁴³

240. *Id.*

241. *Statistics*, YOUTUBE, http://www.youtube.com/t/press_statistics (last visited Nov. 7, 2012).

242. *Id.*

243. *See id.* At this point, it is helpful to include a description of what YouTube does, how it works, and how its ease of use makes it uniquely convenient.

The mechanisms employed by YouTube are similar to those employed by its competitors: users can send digital video files from their computers or web-capable devices to the central YouTube system, where the video files are then converted into Adobe’s Flash Video format and stored on the YouTube servers. YouTube users may then visit the website and view the videos through their web browsers. This system allows users to create and share videos with friends and others without having to worry about issues such as the cost of, or limitations on, bandwidth.

One potential reason for YouTube’s immense popularity despite its numerous competitors is its ease of use. Once a user uploads his video to YouTube through the system described above, he is asked to give a brief description of the video and to apply certain keywords, or “tags.” From this point forward, the process is almost entirely automated. Barring any issues, the video will be available for viewing on YouTube in mere minutes.

It is just as easy to view the videos as it is to upload them. Users can visit the website and browse the YouTube library for whatever it is they seek. The video is then delivered quickly and efficiently to the viewer’s web browser. In addition, YouTube recommends featured or related videos for further viewing. Furthermore, videos may be “embedded” into other websites so that they may be shared outside of the YouTube website. The relative ease of use makes YouTube an attractive medium for sharing and viewing content.

Kevin C. Hormann, Comment, *The Death of the DMCA? How Viacom v. YouTube May Define the Future of Digital Content*, 46 HOUS. L. REV. 1345, 1353–54 (2009) (footnotes omitted). Consequently, it has recently been argued that “YouTube also

The ease and speed with which users can post, share, find, and view videos on YouTube is, of course, highly dependent on the computer code that runs the whole system. If you regulate the code underlying YouTube, you can therefore control the extensive user-generated content that is being constantly uploaded, viewed, and shared on it throughout the world. The sheer volume of content being shared is a testament to the capacity of government to hush an enormous amount of speech if it were to regulate the code that allows such expression. This alone should trigger our sensibilities concerning the need for First Amendment coverage of such code.

Let us consider some specific tangible examples of how government regulation could disserve the value of truth in this context. Users have posted a plethora of how-to videos on YouTube, teaching viewers how to perform all sorts of tasks. More formally, though, YouTube has created services called YouTube EDU and YouTube for Schools that allow users to use the site to engage in teaching activities by watching, posting, or sharing educational videos.²⁴⁴

It is not hard to imagine that a government might be inclined to limit the availability of some types of educational or how-to content to its citizens. For example, the federal government might seek to prohibit the posting of any tax advice on how to legally avoid certain tax liabilities so that it can maximize its tax revenues. Such a result could be implemented by requiring YouTube to include in the relevant code some algorithm that automatically limits access to any videos identified with certain keywords such as “IRS” or “tax advice.” The same could be done with regard to educational videos seeking to teach the theory of evolution to users. A state might determine that such educational goals go against its public policy and, again, seek to limit their availability to their citizens by regulating the underlying code. In such a scenario, the state might even benefit from regulating the code to limit such content when the user is located within the state’s territorial jurisdiction. Regulation of such speech would most likely be deemed content-based and subject to strict scrutiny under the First Amendment, yet these hypothetical

helps ‘promot[e] the Progress of Science’—the constitutional goal of copyright—by providing an exciting environment in which users mix their content with preexisting works—copyrighted or otherwise.” Peter K. Yu, *Digital Copyright and Confuzzling Rhetoric*, 13 VAND. J. ENT. & TECH. L. 881, 894 (2011) (footnote omitted) (quoting U.S. CONST. art. I, § 8, cl. 8).

244. See *YouTube EDU*, YOUTUBE, <http://www.youtube.com/education> (last visited Nov. 7, 2012); *YouTube for Schools*, YOUTUBE, <http://www.youtube.com/schools> (last visited Jan. 19, 2012).

regulations could evade such review if source code is deemed not to be covered by the First Amendment.²⁴⁵

Likewise, a government may seek to control indecent expression by regulating source code. The government, again, could force YouTube to include in the relevant code a mechanism for scanning videos to reject any images that might contain nudity. Such a process, however, would result in an overbroad limitation of expression under well-established First Amendment doctrine.²⁴⁶ Novel ideas could be censored, and the marketplace would be less rich as a result. That this result is accomplished by a change in computer code instead of a government censor looking at each video is merely a practical convenience that should not change the First Amendment scrutiny. Efficient censors are just as bad, and actually worse, than inefficient ones.

Another prime example of a cybermarket for ideas is the blogosphere. Professor Lessig argues that blogs offer a success story of what choice and transparency can do for freedom of speech.²⁴⁷ He sees them as facilitating the “vigorous exchange of ideas” that characterizes the “marketplace of ideas.”²⁴⁸ According to this perspective, “the blogosphere enables a wide spectrum of views to be presented through which an accepted construction of truth can emerge.”²⁴⁹ “Lessig equates a multitude of blogs with a plentitude of facts, views, and opinion, with choices available to the readers . . . transparent because their arguments are completely visible and linked simultaneously to counterarguments from other blogs.”²⁵⁰ To be sure, blogs have proliferated. As of 2007, “there

245. See *Consol. Edison Co. of N.Y. v. Pub. Serv. Comm’n of N.Y.*, 447 U.S. 530, 536 (1980) (strict scrutiny applied where speech is regulated based on content).

246. See *Reno v. ACLU*, 521 U.S. 844, 878–79 (1997) (finding statute restricting child pornography overbroad for its purpose and therefore unconstitutional).

247. See LAWRENCE LESSIG, *CODE: VERSION 2.0* 242 (2006) [hereinafter LESSIG, *CODE*].

248. *Id.*

249. Mayer-Schönberger, *supra* note 110, at 724 (citing LESSIG, *CODE*, *supra* note 236, at 244). *But cf. id.* at 731–34 (arguing that “Lessig’s conceptualization of . . . freedom of speech based on market and choice exposes severe weaknesses of the market mechanism”); SUNSTEIN, *supra* note 3, at 141–43 (arguing that the analogy between the blogosphere and the marketplace of ideas is imperfect).

250. Mayer-Schönberger, *supra* note 110, at 724–25 (citing LESSIG, *CODE*, *supra* note 236, at 236). *But cf. id.* at 733 (“[B]logs, may in the aggregate expose their readers to many different viewpoints, but that is of little value when trying to discover truth. . . . [B]logs are as susceptible to biases, fashions and fads as mainstream media is.” (footnote omitted)); SUNSTEIN, *supra* note 3, at 51 (claiming that bloggers routinely provide links to other sites only to “show how dangerous, or

[were] 55 million blogs, and over 40,000 new ones [were being] created each day, with a new one every 2.2 seconds.”²⁵¹ And “[y]ou can easily find blogs on countless subjects.”²⁵²

The enormous amount of speech generated and shared in the blogosphere should alert us to the high level of First Amendment value therein concentrated. So it should be troubling to conceive of a government regulatory scheme whereby all posts expressing certain viewpoints would be eradicated from the blogosphere through an ingenious filtering mechanism inserted in the code that runs the individual blogs. If the government were to prohibit outright the expression of certain opinions, it would certainly run into a First Amendment wall. Why should forcing hosting services to install code that accomplishes the same end be any different?

Of course, not all of the information shared by individuals on the Internet will be truthful. The awesome ability of social networking websites and blogs to spread falsity, half-truth, or over-simplified truth with lightning speed to millions of people across the world should not be underestimated.²⁵³ Then again, the whole point of the marketplace of ideas theory of First Amendment value is that the free exchange of information will serve to weed out the true from the false. As Justice Louis Brandeis famously said: “If there be time to expose through discussion the falsehood and fallacies, to avert the evil by the processes of education, *the remedy to be applied is more speech*, not enforced silence.”²⁵⁴

Source code furthers the First Amendment value of truth in a host of ways. The past few years have reinforced this point with exponential force. The social interactions that have recently arisen in the Internet could be subjected to severe government censorship if we fail to recognize that the First Amendment must cover source code.

how contemptible, competing views really are”); *id.* at 149 (“[A] plurality of cross-citations simply cast contempt on the views that are being cited! Only a quarter of cross-ideological posts involve genuine substantive discussion.”).

251. SUNSTEIN, *supra* note 3, at 138.

252. *Id.*

253. See, e.g., Noam Cohen, *A Video Campaign and the Power of Simplicity*, N.Y. TIMES, (Mar. 11, 2012), <http://www.nytimes.com/2012/03/12/business/media/kony-2012-video-illustrates-the-power-of-simplicity.html>; Jeremy W. Peters, *A Lie Races on Twitter Before Truth Can Boot Up*, N.Y. TIMES (Apr. 9, 2012), <http://www.nytimes.com/2012/04/10/us/politics/false-nikki-haley-twitter-report-spreads-fast.html>.

254. *Whitney v. California*, 274 U.S. 357, 377 (1927) (Brandeis, J., concurring) (emphasis added).

b. Democracy

Source code is the language of cyberspace: it defines and constitutes that space.²⁵⁵ Thus source code is also a *lex informatica*, a law that “defines what behavior is possible in cyberspace and what values cyberspace will uphold.”²⁵⁶ The Internet’s code architecture will be central in determining how the Internet community regulates itself and how the government will be able to regulate it.²⁵⁷

The First Amendment is, in part, designed to protect the ideals of democracy by providing for an open and free public discourse. Free participation in the source code discourse allows people to engage in the decision making process that constitutes the Internet community and shapes the constitution of cyberspace itself. Allowing people to freely read, write, publish, and distribute their own source code furthers the participatory model of democratic self-governance. The people’s ideas will be out there to be read, considered, and maybe incorporated into the architecture of the space. This is more than participation in an economic market; it is participation in a legislative process. If code is law, then writing code is legislating.

The Meiklejohnian theory of First Amendment values is similarly furthered by a free code. Since code is the law of the Internet, we need to have as much information as possible about the code. By letting people freely engage in the public discourse of code in

255. Lessig, *Open Code*, *supra* note 107, at 1408. This statement is reminiscent of Martin Heidegger’s and Ludwig Wittgenstein’s descriptions of our own “real” world as a reality constituted by language. See MARTIN HEIDEGGER, *POETRY, LANGUAGE, THOUGHT* 146 (Albert Hofstadter trans., Harper & Row 1975) (1971) (“Man acts as though *he* were the shaper and master of language, while in fact *language* remains the master of man.”); LUDWIG WITTGENSTEIN, *TRACTATUS LOGICO-PHILOSOPHICUS* §5.6 (C. K. Ogden trans., Routledge 1922) (1921) (“*The limits of my language* mean the limits of my world.”). This is in part why we understand freedom of speech to be so important. In contemporary society we have a basic understanding of how speech constitutes our reality. “Like everything metaphysical the harmony between thought and reality is to be found in the grammar of the language.” LUDWIG WITTGENSTEIN, *ZETTEL* § 55 (G.E.M. Anscombe & G.H. von Wright eds., G.E.M. Anscombe trans., Univ. of Cal. Press 1970) (1967). The close link between speech, language, and thought has not gone unnoticed by the Supreme Court. This is why, in the context of protecting freedom of speech, the Court has emphasized that “[o]ur whole constitutional heritage rebels at the thought of giving government the power to control men’s minds.” *Stanley v. Georgia*, 394 U.S. 557, 565 (1969).

256. Lessig, *Limits*, *supra* note 109, at 761.

257. Lawrence Lessig, *Keynote Address: Commons and Code*, 9 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 405, 410 (1999). See generally Lessig, *Open Code*, *supra* note 107; Lessig, *Limits*, *supra* note 109; Lessig, *Law of the Horse*, *supra* note 123.

the Internet, we are making available to everyone information on how others think the problems of cyberspace might better be solved. Furthermore, we are providing people with the tools to create their own corners of cyberspace in whichever way they want. The code itself, unencumbered by regulation, must form part of the public discourse.

Source code furthers the values of both models of democratic self-determination because the code is central to the development and regulation of cyberspace, a space in which we will be living a considerable part of our lives for years to come. We must therefore have as much information as possible about the code that determines how cyberspace is governed. Moreover, we need to translate the democratic values to which we adhere in our “real” space to cyberspace by allowing people to participate in the public discourse of that space in the language of that space: source code.

An important example of source code promoting democratic self-determination can be found in the proliferation of *open* code.²⁵⁸ Open code creates a discourse of code in which the participatory model of democratic self-determination is furthered through everyone’s participation in the development of the code. Yet at the same time, the Meiklejohnian model is also furthered by the virtual guarantee that, with everybody giving their input into the process, the necessary information for wise decision-making will be available to all. Implicitly, therefore, any restriction on open code will inhibit this free exchange and any resulting democratic value.

Similarly, Professor Jack M. Balkin has been seen as arguing that “the creative reuse and modification of preexisting materials help promote the development of a vibrant democratic culture, which in turn affects a country’s political future.”²⁵⁹ Regarding the ability to openly copy, sample, rip, change, and mix up ideas, and its effect on democratic self-governance, he states:

258. Professor Lessig argues that “we should look to the structure of our constitutional tradition, and extract from it the values that are constituted by it, and carry these values into the world of the Internet’s governance—whether the governance is through code, or the governance is through people.” Lessig, *Open Code*, *supra* note 107, at 1409. The balance to be struck between the open and the closed, the level of regulation that we want in cyberspace, should, therefore, be determined through an open and free public discourse, just like it is in real space. Hence, allowing the code to be as free as possible furthers the value of democratic self-governance.

259. Yu, *supra* note 243, at 896 (discussing Jack M. Balkin, *Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society*, 79 N.Y.U. L. REV. 1, 45 (2004)).

A democratic culture is the culture of widespread “rip[ping], mix[ing], and burn[ing],” of nonexclusive appropriation, innovation, and combination. It is the culture of routing around and glomming on, the culture of annotation, innovation, and bricolage. Democratic culture . . . makes use of the instrumentalities of mass culture, but transforms them, individualizes them, and sends what it produces back into the cultural stream. In democratic culture, individuals are not mere consumers and recipients of mass culture but active appropriators.²⁶⁰

By ensuring that the discourse in source code is as free as possible, these positive effects can be extended *to the Internet as a whole*. This is not to say that all persons must participate in a culture of open code. Rather, extending First Amendment coverage to source code will create more incentives for people to freely participate in the discourse of code. This will make code more open and free, which should in turn further First Amendment values.

Moreover, source code can also have a direct effect on our ability to engage in public discourse regarding our conventional “real world” government. Any doubt as to the sheer power of new Internet and social networking technologies should have been dispelled by the recent Kony 2012 phenomenon.²⁶¹

With more than 100 million online views, “Kony 2012” became *the most viral video in history*. It drew global attention to the reviled leader of the Lord’s Resistance Army and his use of child soldiers to terrorize people in at least four countries over the years. *It also prompted Congressional resolutions* urging President Obama to bolster efforts in the region, where 100 U.S. military advisers were assigned last fall to help countries combat the Lord’s Resistance Army.²⁶²

Of course, the Kony 2012 campaign has not been free of criticism and detractors.²⁶³ Nevertheless, its demonstration of the

260. Balkin, *supra* note 259, at 45 (footnote omitted) (quoting LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* 9 (2001)).

261. See generally *Kony 2012*, INVISIBLE CHILDREN, <http://www.invisiblechildren.com/kony/> (last visited Nov. 7, 2012).

262. Jennifer Preston, *Sequel to ‘Kony 2012’ Video Addresses Critics and Outlines Call for Action*, N.Y. TIMES (Apr. 5, 2012, 7:59 PM), <http://thelede.blogs.nytimes.com/2012/04/05/sequel-to-kony-2012-video-addresses-critics-and-outlines-call-for-action/> (emphasis added).

263. *Id.*

power of new Internet media and networking tools to mobilize political will can hardly be denied.²⁶⁴

Similarly, what better example of the Internet changing the game of politics is there than the so-called “YouTube Election,” as the U.S. Presidential election of 2008 has come to be known?²⁶⁵ In fact, even before the official beginning of the 2008 election cycle, the influence that YouTube would have on politics became brutally evident to then Republican Senator George Allen. Mr. Allen was at the time seen as a major contender for the Republican Presidential nomination; however, his potential future presidential campaign unraveled before it even began when, still in the midst of his run for the Senate in the 2006 midterm elections, Mr. Allen “was caught on tape at a campaign event twice calling a college student of Indian descent a ‘macaca,’ an obscure racial slur.”²⁶⁶ The video was posted on YouTube and it quickly went viral.²⁶⁷ From there, “[i]t then bounced from the Web to the front page of The Washington Post to cable and network television news shows.”²⁶⁸ The whole fiasco was generally seen as costing Mr. Allen his presidential aspirations.²⁶⁹ He also eventually lost his Senate seat in the 2006 election

264. *Id.* Another recent example of a viral video directly influencing discussions of public policy, and allegedly causing riots in multiple locations around the world, is the trailer to the movie entitled *Innocence of Muslims*. Sam Bacile, *Muhammad Movie Trailer*, YOUTUBE (Jul. 2, 2012), <http://www.youtube.com/watch?v=qmo dVun16Q4>. See generally *The ‘Innocence of Muslims’ Riots* (Nakoula Basseley Nakoula), N.Y. TIMES, http://topics.nytimes.com/top/reference/timestopics/subjects/i/innocence_of_muslims_riots/ (last updated Nov. 26, 2012).

265. See, e.g., Beth Kowitz, *The YouTube Election*, CNNMONEY (Jul. 18, 2008), http://money.cnn.com/2008/07/18/magazines/fortune/kowitz_obamavideo.fortune/index.htm; Jessica Ramirez, *The Big Picture*, DAILY BEAST (Nov. 9, 2008), <http://www.thedailybeast.com/newsweek/2008/11/09/the-big-picture.html>; Rajini Vaidyanathan, *Top Hits of the YouTube Election*, BBC NEWS, http://news.bbc.co.uk/2/hi/americas/us_elections_2008/7699509.stm (last updated Oct. 30, 2008, 11:27 GMT); James Wolcott, *The YouTube Election*, VANITY FAIR, June 2007, at 96, 96, available at <http://www.vanityfair.com/ontheweb/features/2007/06/wolcott200706>. Curiously, the New York Times seemed to be ahead of the curve when it began using the term two years earlier, in 2006. Ryan Lizza, *The YouTube Election*, N.Y. TIMES (Aug. 20, 2006), <http://www.nytimes.com/2006/08/20/weekinreview/20lizza.html>.

266. Lizza, *supra* note 259.

267. *Id.*

268. *Id.*

269. See *id.*

to Democrat Jim Webb. As of November 8, 2012, the video had 672,027 total views on YouTube.²⁷⁰

But YouTube's influence on the presidential campaign was just beginning to rear its head. The campaigns themselves would soon get into the game. Consider this contemporaneous description of what had happened, on the campaigns' end, when all was said and done:

TubeMogul, a measurement service, estimates that just the videos that ran on Obama's YouTube channel alone were watched the equivalent of 14.5 million hours, with McCain's channel racking up about 488,152 hours. Had the Obama camp purchased the same amount of airtime on TV it would have cost them roughly \$46 million and the McCain camp \$1.5 million, according to an analysis on the TechPresident blog. On YouTube it was free. It was also priceless. A Pew Research Center report titled "Internet and Campaign 2008" found that 39 percent of voters watched campaign-related video online during the election cycle. That's higher than the percentage of voters who said they checked out candidate Web sites, political blogs or social-networking sites.²⁷¹

YouTube, then, can be "widely used as a political or fund-raising tool, as evident in the 2008 U.S. presidential election and other electoral campaigns. In April 2011, President Obama launched its re-election campaign bid in part through a YouTube video, 'It Begins with Us.'²⁷²

But perhaps the most dramatic effect that YouTube had during the election was the fact that it gave every individual with the time and interest the ability to participate in the political debate and to get his message out to millions of people across the nation and around the world. The 2008 U.S. presidential campaign gave us such viral phenomena as the Obama Girl (25,557,384 views as of November 8, 2012),²⁷³ the 1984 Apple commercial-inspired "Vote

270. Shekar Ramanuja Sidarth, *George Allen Introduces Macaca*, YOUTUBE (Aug. 15, 2006), <http://www.youtube.com/watch?v=r90z0PMnKwI> (last visited Nov. 8, 2012).

271. Ramirez, *supra* note 265 (citation omitted).

272. Yu, *supra* note 243, at 898 (footnote omitted) (citing MICHAEL STRANGELOVE, *WATCHING YOUTUBE: EXTRAORDINARY VIDEOS BY ORDINARY PEOPLE* 137-57 (2010); BarackObamadotcom, *Barack Obama 2012 Campaign Launch Video - "It Begins with Us,"* YOUTUBE (Apr. 3, 2011), <http://www.youtube.com/watch?v=fVZLvVFIFQ>).

273. barelypolitical, *Best of Obama Girl: Crush On Obama*, YOUTUBE (Jun. 13, 2007), <http://www.youtube.com/watch?v=wKsoXHYICqU> (last visited Nov. 8, 2012).

Different” video (6,351,034 views as of November 8, 2012),²⁷⁴ and will.i.am’s celebrity-laden “Yes We Can - Barack Obama Music Video” (24,353,527 views as of November 8, 2012).²⁷⁵ “When the election ended, all YouTube videos mentioning Senator Obama had received a total of 1.9 billion views compared with Sen. John McCain’s, which got 1.1 billion views.”²⁷⁶ Power to the people.

YouTube even managed to create a joint venture between its corporate interests, those of a more traditional media outlet, and those of the general public. The CNN-YouTube Presidential Debates allowed individuals to send questions in video format to be posed to the candidates directly. The experiment proved quite successful in terms of viewership.²⁷⁷

Allowing government regulation of the underlying code that runs YouTube could serve to undermine this newly found potential for robust public discourse. An unscrupulous government could use such regulation to undermine grass-roots movements for change and favor incumbents in their reelection campaigns.

On the other hand, it would be naïve to ignore the fact that these new tools serve more than the previously powerless; powerful factions and entities can also utilize the efficiencies of the Internet. “[T]he power of the Internet is two-way. In addition to all those who wished to speak and had no voice until now, there are those millions whom every lobbyist and advocate wished to reach but could not and now can.”²⁷⁸ This power could be harnessed by the government or special interests groups to give special treatment to those with the resources to engage in high-powered lobbying.

Such a result would be troubling indeed, particularly after the Supreme Court’s holding in *Citizens United*, which has given a free hand to corporate interests participating in political campaigns.²⁷⁹

274. Philip de Vellis, *Vote Different*, YOUTUBE (Mar. 5, 2007), <http://www.youtube.com/watch?v=6h3G-IMZxjo> (last visited Nov. 8, 2012).

275. WeCan08, *Yes We Can - Barack Obama Music Video*, YOUTUBE (Feb. 2, 2008), <http://www.youtube.com/watch?v=jjXyqcx-mYY> (last visited Nov. 8, 2012).

276. Ramirez, *supra* note 265.

277. Paul J. Gough, *CNN’s YouTube Debate Draws Impressive Numbers*, REUTERS NEWS (Jul. 25, 2007), <http://www.reuters.com/article/technologyNews/idUSN2425835220070725> (“Monday’s CNN-YouTube debate brought in pretty good numbers, delivering the highest viewership for a debate among adults 18-34 in cable news history.”).

278. N.J. Slabbert, *Orwell’s Ghost: How Teletechnology Is Reshaping Civil Society*, Keynote Address at The 2008 “You Tube” Election?: The Role and Influence of 21st-Century Media Symposium (Mar. 13, 2008), in 16 *COMMLAW CONSPPECTUS* 349, 355 (2008).

279. *Citizens United v. Fed. Election Comm’n*, 130 S. Ct. 876, 913 (2010).

“The inequality that comes from divergences in wealth is not, on the Court’s view, a proper subject for democratic control. According to the Court, campaign-finance restrictions cannot be justified by reference to equality at all.”²⁸⁰ Nonetheless, particularly in the post-*Citizens United* world, it would seem that the availability of low-cost alternatives to campaigning, such as YouTube, could serve as a fundamental equalizing tool which could help individuals and candidates with less resources level the playing field.

But YouTube is not the only new technology that has fundamentally altered the way in which individuals can participate in the democratic process. As previously mentioned, the blogosphere is an arena where individuals are finding a new vibrant space for the discussion of ideas. Professor Cass R. Sunstein has pointed out:

In recent years, the most highly rated political blogs—including Atrios, Instapundit, and the Daily Kos—have received over tens of thousands of visitors *each day*.

. . . Political blogs are a small percentage of the total [amount of blogs], but they are plentiful, and they seem to be having a real influence on people’s beliefs and judgments.²⁸¹

And even though some commentators, including Professor Sunstein, have pointed out some negative implications of the propagation of blogs and public discourse on the Internet,²⁸² it would be close to impossible to argue against the proposition that, *on balance*, the value of democratic self-governance is much better off with the blogosphere and the Internet than without them. After all, as Professor Sunstein admits, “No one doubts that the blogosphere enables interested readers to find an astounding range of opinions and facts.”²⁸³ Allowing the government to regulate code in a way that would create content-based restrictions in the blogosphere would certainly compromise the First Amendment value of democracy. It would do so in the same way that, as discussed previously, allowing content-based regulations of source code would compromise the value of truth.

Facebook and Twitter also provide good examples of how new developments in computer code have drastically altered the way in

280. SUNSTEIN, *supra* note 3, at 168.

281. *Id.* at 138.

282. *See id.* at 144–46 (arguing that blogs only provide a flawed contribution to deliberative democracy); *id.* at 44, 86–91 (explaining how cybercascades can be counterproductive to a well-functioning deliberative democracy); *id.* at 60–76 (expounding on how the Internet can lead to group polarization and fragmentation detrimental to the public discourse).

283. *Id.* at 139.

which individuals can interact with their government. The influence of these social networking media in the popular revolts in Egypt and Tunisia appears to be undeniable.²⁸⁴ Although the details of just how Facebook and Twitter were used by the participants in these uprisings have not been systematically compiled, it seems that the social networks were useful in at least two ways. As reported by the national press: “First, Facebook and elsewhere online is *where people saw and shared* horrifying videos and photographs of state brutality that inspired them to rebel. Second, these sites are where people found out the basic logistics of the protests—*where to go and when to show up.*”²⁸⁵

Facebook and other online tools, then, have played a central role in raising awareness both within and without the borders of individual countries regarding their problematic government regimes. This drive towards change is continuing even in countries, such as Saudi Arabia, where the people’s dissatisfaction need not boil over into full-fledged revolution, but rather pressures the government in the direction of peaceful reform.²⁸⁶ The positive influence in public discourse of these media from a Meiklejohnian perspective should be clear. These media allow the posting and sharing of an immense amount of information, *including first-hand visual and audio accounts* of government activities around the world. “[A]s shown in relation to the recent Japanese earthquake and political protests in the Middle East and North Africa, home videos shot by citizen journalists provide real-time audio and visual reports without the filtering of the mainstream press.”²⁸⁷ This level of ac-

284. See generally John Pollock, *Streetbook: How Egyptian and Tunisian youth hacked the Arab Spring*, MIT TECH. REV. (September/October 2011), <http://www.technologyreview.com/web/38379/>; Rebecca J. Rosen, *So, Was Facebook Responsible for the Arab Spring After All?*, ATLANTIC (Sep. 3 2011), <http://www.theatlantic.com/technology/archive/2011/09/so-was-facebook-responsible-for-the-arab-spring-after-all/244314>. But see Thomas L. Friedman, *Facebook Meets Brick-and-Mortar Politics*, N.Y. TIMES (June 9, 2012), <http://www.nytimes.com/2012/06/10/opinion/sunday/friedman-facebook-meets-brick-and-mortar-politics.html> (describing how the groups that were successful in utilizing Facebook and social networking media to stimulate and drive the Arab Spring movements have been stifled by traditional politics in their attempts to shape the ensuing regimes).

285. Rosen, *supra* note 284 (emphasis added).

286. See Robert F. Worth, *Twitter Gives Saudi Arabia a Revolution of Its Own*, N.Y. TIMES (Oct. 20, 2012), <http://www.nytimes.com/2012/10/21/world/middleeast/twitter-gives-saudi-arabia-a-revolution-of-its-own.html>.

287. Yu, *supra* note 243, at 897 (citing Jennifer Preston, *Volunteer Site with Harvard Roots Spreads Citizen Journalism’s Voice*, BOSTON GLOBE, Mar. 14, 2011, at 9 (describing the work of Global Voices, which “turned to Facebook, YouTube, and Twitter, where other bloggers and hundreds of ordinary people stepped into the

cess, all around the world, to primary sources, to personal accounts of historical events as they happen, is unprecedented and paradigm-shifting.²⁸⁸

Furthermore, Internet technologies greatly increase information-consumers' access to all types of data from around the world, or from their own corner of the world. Consider, for example, this account of how the availability of Google Earth might have influenced the revolt in Bahrain:

While Facebook has gotten all the face time in Egypt, Tunisia and Bahrain, don't forget Google Earth, which began roiling Bahraini politics in 2006. A big issue in Bahrain, particularly among Shiite men who want to get married and build homes, is the unequal distribution of land. On Nov. 27, 2006, on the eve of parliamentary elections in Bahrain, The Washington Post ran this report from there: "Mahmood, who lives in a house with his parents, four siblings and their children, said he became even more frustrated when he looked up Bahrain on Google Earth and saw vast tracts of empty land, while tens of thousands of mainly poor Shiites were squashed together in small, dense areas. 'We are 17 people crowded in one small house, like many people in the southern district,' he said. 'And you see on Google how many palaces there are and how the al-Khalifas [the Sunni ruling family] have the rest of the country to themselves.' Bahraini activists have encouraged people to take a look at the country on Google Earth, and they have set up a special user group whose members have access to more than 40 images of royal palaces."²⁸⁹

Internet tools like Google Earth can even help individuals learn more about their own surroundings and about their own lives in the context of a huge world just beyond their reach.

role of citizen journalist and shared their experiences, cellphone photos, and videos online"); Steve Sternberg, *The World to the Rescue*, USA TODAY, Apr. 12, 2011, at 1A ("Japan's disaster has spotlighted the critical role that social media websites such as Twitter, Facebook, Google, YouTube and Skype increasingly are playing in responses to crises around the world. They may have been designed largely for online socializing and fun, but such sites and others have empowered people caught up in crises and others wanting to help to share vivid, unfiltered images, audio and text reports before governments or more traditional media can do so.")).

288. See generally THOMAS KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (3d ed. 1996).

289. Thomas L. Friedman, *This Is Just the Start*, N.Y. TIMES (March 2, 2011), <http://www.nytimes.com/2011/03/02/opinion/02friedman.html>.

Of course, it would be simple for a government to require that a system such as Google Earth alter its source code to prohibit the public from accessing views of particular geographic locations. For all the reasons previously discussed, the First Amendment should cover such measures, even if they only regulate the underlying source code and not individual usage.²⁹⁰

Additionally, free usage of Internet media furthers the value of democratic self-governance as articulated in the participatory model. These media allow all types of individuals—including those who, in the past, did not have a voice in public discourse—to post and share their experiences and opinions regarding all manner of public policy issues. Individuals from all walks of life, as long as they can get their hands on a device connected to the Internet—a friend’s smartphone will suffice—can participate in a meaningful public dialogue and feel like they have an opportunity to make a difference. For example, “The ability to publicly disseminate . . . videos [shot by citizen journalists] has also empowered citizens against oppressive governments.”²⁹¹ This is a huge step forward for democracy.

Facebook and Twitter have also fundamentally altered the manner in which individuals participate in public discourse by combining their power with the mobility of smartphones and the precision of Global Positioning Satellite Systems (GPS). To understand this point, one need only consider the effectiveness of groups of protestors armed with nothing but an Internet- and GPS-enabled smartphone. In an article published in *Wired*, Bill Wasik explains that a way in which governments have traditionally dealt with gath-

290. It is worth remembering at this point that First Amendment coverage does not always translate into First Amendment protection. So, for example, if the U.S. Department of Defense were concerned with individuals accessing pictures of sensitive sites, such as nuclear missile silos or military bases, it could still make an argument that regulation of Google Earth would be justified in such cases by a compelling government interest in national security. The same would be true regarding Google Earth publication of pictures of active theaters of war around the world or right here at home.

291. Yu, *supra* note 243, at 897 (citing Jennifer Preston & Brian Stelter, *Cellphone Cameras Become World’s Eyes and Ears on Protests Across the Middle East*, N.Y. TIMES, Feb. 19, 2011, at A11 (“For some of the protesters facing Bahrain’s heavily armed security forces in and around Pearl Square in Manama, the most powerful weapon against shotguns and tear gas has been the tiny camera inside their cellphones. By uploading images of . . . violence in Manama, the capital, to Web sites like YouTube and yFrog, and then sharing them on Facebook and Twitter, the protesters upstaged government accounts and drew worldwide attention to their demands.”)).

ering crowds of protesters is by separating them.²⁹² In many cases, “in the pre-cell-phone era . . . overall numbers didn’t matter one bit if you could not keep physically connected.”²⁹³ Proximity in space sold at a premium. “Step out of the phalanx . . . and you might never find your fellows again; in the meantime, the opposing mob might find you alone.”²⁹⁴ So all the government had to do to defuse a protest was use the old, tried and true approach: divide and conquer. Facebook, Twitter, smartphones, and GPS have changed the game.

By allowing members of a protest to maintain close informational proximity, these new technologies eliminate the need for constant physical proximity. Protestors can always regroup and can do so almost immediately. All they need to do is set new GPS (and time) coordinates and share them through their smartphones, in real-time, and at a distance.²⁹⁵ “Today, . . . a crowd’s power is amplified by the fact that its members can never really get separated. A crowd that’s always connected can never really be dispersed. It’s always still out there.”²⁹⁶ The consequent empowerment of previously powerless groups is awesome. Previously unsophisticated constituencies can become organized in a hurry. According to Wasik, “What’s really revolutionary about all these gatherings—what remains both dangerous and magnificent about them—is the way they represent a disconnected group getting connected, a mega-underground casting off its invisibility to embody itself, formidably, in physical space.”²⁹⁷

292. See Bill Wasik, *Crowd Control*, WIREd, January 2012, at 76, 112.

293. *Id.*

294. *Id.*

295. To the government forces trying to contain them, these protestors must seem almost as perturbing and disconcerting as quantum nonlocality, quantum entanglement, and the phenomenon informally known as “spooky action at a distance” did to physicists when they were first theorized and observed.

296. Wasik, *supra* note 292, at 112.

297. *Id.* As this quote suggests, of course, the emergence of what has been termed “flash mobs,” *id.* at 80, can lead to problematic situations, such as highly efficient and hard to control rioting. When a peaceful protest turns into a violent riot, social media can become a rioter’s best weapon. Much in the same way that a telephone can be used to “put out a hit” on someone, these new technologies can be used in criminal enterprises. This problem, however, is one of First Amendment *protection* and the control of the particular use that some ill-intentioned individuals or groups might find for their smartphones. No one is arguing that telephone conversations be totally excluded from First Amendment *coverage*. Instead we should be vigilant that governments do not use such bad conduct to stifle the legitimate use of these technologies in ways that greatly further First Amendment values.

The possibility of government regulation of these new media is not mere mirage. For example, China's tug of war with Google over their censorship of search results has been widely covered by the national press.²⁹⁸ "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" has also been widely criticized.²⁹⁹ These government censorship programs restricting citizens' access to Internet sources, of course, would be deemed unconstitutional prior restraints under First Amendment doctrine if they were attempted here by the federal or state governments. However, if source code were deemed not covered by the First Amendment, such censorship might avoid constitutional scrutiny if it was embedded in direct regulation of the underlying code.

Quite recently, "China started a sweeping crackdown of its vibrant social networking media . . . , detaining six people, closing 16 Web sites and shutting off the comment function for two gigantic microblog services."³⁰⁰ This crackdown resulted from "the political instability that has gripped China since one of its most charismatic politicians, Bo Xilai, lost his post in March."³⁰¹ That, in turn, "spurred rumors of a coup, which the government-run Xinhua news agency cited as the reason for the measures."³⁰² Similarly, in Egypt, "Virtually all internet access . . . [was] cut off . . . as the government battle[d] to contain the street protests that [eventually] topple[d] President Hosni Mubarak[']s" totalitarian regime.³⁰³

298. See, e.g., Miguel Helft & David Barboza, *Google Shuts China Site in Dispute Over Censorship*, N.Y. TIMES, (Mar. 22, 2010), <http://www.nytimes.com/2010/03/23/technology/23google.html> ("Just over two months after threatening to leave China because of censorship and intrusions from hackers, Google on Monday closed its Internet search service there and began directing users in that country to its uncensored search engine in Hong Kong."); Aaron Smith, *China Renews Google License, Ending Standoff*, CNNMONEY (July 9, 2010), http://money.cnn.com/2010/07/09/technology/google_china/index.htm ("Google said Friday that it has renewed its license with the Chinese government to continue operating in that country, ending a standoff over censorship.")

299. Mayer-Schönberger, *supra* note 110, at 725 (citing LESSIG, *CODE*, *supra* note 236, at 80).

300. Ian Johnson, *China Limits Online Discussion Over Rumors*, N.Y. TIMES (Mar. 31, 2012), <http://www.nytimes.com/2012/04/01/world/asia/china-shuts-down-web-sites-after-coup-rumors.html>.

301. *Id.*

302. *Id.*

303. Christopher Williams, *How Egypt Shut Down the Internet*, TELEGRAPH (Jan. 28, 2011), <http://www.telegraph.co.uk/news/worldnews/africaandindianocean/egypt/8288163/How-Egypt-shut-down-the-internet.html>.

Again, the possibility of the government here in the United States requiring that some form of “kill switch” be embedded in the source code of particular websites, or in the code architecture of the Internet at large, should certainly give us pause. Such a formidable source of government power must be subject to scrutiny under First Amendment doctrine.

It should be noted that it is not only repressive regimes in lands that sound far away from our “western sensibilities” that have taken or considered these types of government actions. Here in the United States a robust public debate about First Amendment concerns, among other things, recently brought to a screeching halt the advance of the Stop Online Piracy Act (SOPA),³⁰⁴ a bill introduced by U.S. Representative Lamar S. Smith,³⁰⁵ and its equivalent in the Senate, the PROTECT IP Act (PIPA).³⁰⁶ These bills sought to grant expanded powers to federal law enforcement agencies to combat online trafficking in copyrighted intellectual property and counterfeit goods.³⁰⁷ The bills’ opponents argued that some of their provisions threatened First Amendment liberties.³⁰⁸ These provisions allowed law enforcement to block entire Internet domains because of a single instance of infringement, eliminated the “safe harbor” provisions in the Digital Millennium Copyright Act granting immunity from liability to Internet sites, and required search engines to delete domain names from their search results.³⁰⁹ A more sophisticated attempt by Congress to achieve the same objectives of SOPA and PIPA, but couched in regulation of the computer code itself, would avoid constitutional scrutiny if it were determined that source code is not covered by the First Amendment.

Another warning sign of potentially troubling government action took place in the United Kingdom after the 2011 riots that

304. See Jonathan Weisman, *After an Online Firestorm, Congress Shelves Antipiracy Bills*, N.Y. TIMES (Jan. 20, 2012), <http://www.nytimes.com/2012/01/21/technology/senate-postpones-piracy-vote.html>; Julianne Pepitone, *SOPA and PIPA Postponed Indefinitely After Protests*, CNNMONEY (Jan. 20, 2012), http://money.cnn.com/2012/01/20/technology/SOPA_PIPA_postponed/index.htm.

305. H.R. 3261, 112th Cong. (2011).

306. S. 968, 112th Cong. (as introduced in Senate, May 12, 2011).

307. See generally H.R. 3261; S. 968.

308. See, e.g., Brendan Sasso, *Legal Expert Says Online Piracy Bill Is Unconstitutional*, HILL (Dec. 11, 2011, 07:05 AM ET), <http://thehill.com/blogs/hillicon-valley/technology/198575-legal-expert-online-piracy-bill-is-unconstitutional> (summarizing Professor Laurence Tribe’s memorandum to Congress arguing that the Stop Online Piracy Act (SOPA) would violate the First Amendment).

309. See, e.g., *id.*

spread through some of its main cities. As Bill Wasik reported, “In the aftermath of the UK riots, the proposals floating around Parliament sounded . . . intrusive.”³¹⁰ “Representatives of Facebook and Twitter were called in to discuss emergency plans to throttle their services. Research in Motion, the maker of BlackBerry, has promised (or so it has been reported) that it would halt BBM if riots happened again.”³¹¹ To quell the social unrest, Parliament was asking these *private* media providers to block the people’s speech in the government’s stead.

While such measures may very well be justified in some circumstances, we should be very concerned about the possibility of our government regulating source code to create broad, undifferentiated, and centralized control mechanisms to shut the population out of these new media. Such regulation would be a serious threat to our First Amendment freedoms.³¹² Hence any such attempt at regulating computer source code must be subject to First Amendment scrutiny.

As explained above, new technologies and new media in the Web 2.0 have created new, cheap, and highly effective ways for individual citizens to organize themselves collectively in ways that promote democratic self-governance. These new media have given new, more sensitive eyes and ears to those who were blind and deaf to the abuses of the rich and powerful. They have also given the powerless a way to have their voices heard, in many cases for the first time. But all of these tools for positive change are at the mercy of those who would control the underlying code that defines their availability, their shape, and their very existence. We must be vigilant and ensure that regulation of the source code that gives the Internet life is subjected to the purifying light of First Amendment scrutiny.

c. Autonomy

The First Amendment is also profoundly concerned with an individual’s autonomy, self-fulfillment, or self-realization.³¹³ In many ways, the open source movement embodies this First Amendment value. Programmers involved in the open source movement

310. Wasik, *supra* note 292, at 113.

311. *Id.*

312. It should also be pointed out that First Amendment concerns are not the only ones to be taken into account in this context. “Vital emergency personnel routinely rely on BBM and other smartphone services, so an outright shutdown might easily sacrifice more lives than it saves.” *Id.*

313. *See supra* note 200.

take their source code very personally. Many of them see writing code as their own kind of art form. Eric S. Raymond, one of the leading proponents of the open source movement, discusses how this applies to open source Linux programmers: “The ‘utility function’ Linux hackers are maximizing is not classically economic, but is the intangible of their own ego satisfaction and reputation among other hackers.”³¹⁴ These programmers are out to solve their own problems and to help others solve theirs because they *like* writing source code. They express themselves and their own individuality through their way of writing code. Why else would they spend countless hours of their lives writing programs and then give them away for free? They are not pure cyberspace altruists. They derive great satisfaction out of expressing themselves through their source code. This is why they attach their personal reputations to the code. *The code is their art.*

Furthermore, open source programmers express, in English, their intentions of making a political statement through their source code. By keeping their source code open they are saying something about what they think the new frontier of cyberspace should look like. An excerpt from the Free Software Foundation’s web site makes this clear:

The term “free software” is sometimes misunderstood—it has nothing to do with price. It is about freedom. Here, therefore, is the definition of free software.

- A program is free software, for you, a particular user, if:
- You have the freedom to run the program as you wish, for any purpose.
 - You have the freedom to modify the program to suit your needs. (To make this freedom effective in practice, you must have access to the source code, since making changes in a program without having the source code is exceedingly difficult.)
 - You have the freedom to redistribute copies, either gratis or for a fee.
 - You have the freedom to distribute modified versions of the program, so that the community can benefit from your improvements.³¹⁵

Open source programming is not just a business model, but an expression of autonomy. Programmers are making statements

314. Raymond, *supra* note 228, at 22.

315. Richard Stallman, *The GNU Project*, GNU OPERATING SYSTEM, <http://www.gnu.org/gnu/thegnuproject.html> (last updated Sep. 13, 2012).

through their source code about how they think their world should be.

The programmers' self-expression is embodied not only in their licensing polices, but also in the code itself. Imagine that Congress passed a law that required that all software include in its code certain technical protection measures to prevent people from copying it. Forcing open source programmers to write into their code these protections would undermine the statements about free software that they are trying to make. Such a regulation of the code itself would impinge on the programmers' autonomy: it would change the way in which programmers express their individuality, establish a reputation, and distinguish themselves from others. Source code is the way programmers expound their ideas about what the world should look like, and it thereby furthers the values of autonomy and self-realization that the First Amendment embodies.

On the other hand, the value of source code is not limited to furthering programmers' autonomy. This has become ever more evident with the advent of websites that allow for the posting and sharing of user-generated content, such as YouTube, Facebook, and Twitter.³¹⁶ Just as the amount of political speech posted on these media has ballooned, the quantity of *artistic and personal expression* shared by individuals on the Internet has also exploded.³¹⁷

In his discussion about the influence of new Internet technologies on the production of copyrighted works, Professor Peter K. Yu points out that “[t]he arrival of new digital technologies and social

316. See Debora Halbert, *Mass Culture and the Culture of the Masses: A Manifesto for User-Generated Rights*, 11 VAND. J. ENT. & TECH. L. 921, 923 (2009) (explaining the history and effect of user-generated content).

317. See Olufunmilayo B. Arewa, *YouTube, UGC, and Digital Music: Competing Business and Cultural Models in the Internet Age*, 104 NW. U. L. REV. 431, 432–33 (“On the creation side, estimates suggest that the number of UGC content creators will rise from 83 million in 2008 to 115 million by 2013. On the viewer side, UGC websites are increasingly becoming dominant locales for the consumption of content. YouTube, for example, had over 112 million U.S. viewers with 6.6 billion videos viewed in January 2010. Facebook also experienced explosive growth in the 2000s, with the number of active Facebook users growing to more than 400 million worldwide by 2010 User statistics and valuation figures for Facebook and other UGC websites attest to the potential future growth of UGC more generally.” (footnotes omitted)); Daniel Gervais, *The Tangled Web of UGC: Making Copyright Sense of User-Generated Content*, 11 VAND. J. ENT. & TECH. L. 841, 845–46 (2009) (“Hundreds of millions of Internet users are downloading, altering, mixing, uploading, and/or making available audio, video, and text content on personal web pages, social sites, or using peer-to-peer technology to allow others to access content on their computer.”).

networking platforms has opened the door for the public to actively participate in cultural production.”³¹⁸ Yu quotes Professor Balkin’s argument that democratic cultural participation is important for two reasons:

First, culture is a source of the self. Human beings are made out of culture. A democratic culture is valuable because it gives ordinary people a fair opportunity to participate in the creation and evolution of the processes of meaning-making that shape them and become part of them; a democratic culture is valuable because it gives ordinary people a say in the progress and development of the cultural forces that in turn produce them.

Second, participation in culture has a constitutive or performative value: When people are creative, when they make new things out of old things, when they become producers of their culture, they exercise and perform their freedom and become the sort of people who are free. That freedom is something more than just choosing which cultural products to purchase and consume; the freedom to create is an active engagement with the world.³¹⁹

Furthermore, the “viral” nature of the spread of popular user-generated content is redefining the boundaries of both celebrity and artistic expression.³²⁰ No longer does an aspiring musician need the good auspices of a big-name, corporate record company to make his work known. He need only record himself playing his music and post the video on YouTube. If people like it, they will distribute it to others. This phenomenon has already catapulted myriad unknown artists to international success or celebrity.³²¹

318. Yu, *supra* note 243, at 895.

319. *Id.* at 896 n.67 (quoting Balkin, *supra* note 259, at 35).

320. For an interesting discussion on some of the multiple arguments made by content owners, content creators, and users regarding the influence of new Internet technologies on the production of copyrighted works, see Yu, *supra* note 243.

321. See Whitney Baker, *Five Celebrities Who Got Their Start on YouTube*, PASTE MAG. (June 5, 2010, 7:00 AM), <http://www.pastemagazine.com/blogs/lists/2010/06/-celebrities-who-started-on-youtube.html>; Claudine Beaumont, *YouTube: Top 10 Celebrities*, TELEGRAPH (Nov. 26, 2008), <http://www.telegraph.co.uk/technology/3527671/YouTube-top-10-celebrities.html>; Amanda Greene, *10 YouTube Success Stories*, WOMAN’S DAY, <http://www.womansday.com/life/10-youtube-success-stories-108958> (last visited Nov. 12, 2012); *List of YouTube Personalities*, WIKIPEDIA, FREE ENCYCLOPEDIA, http://en.wikipedia.org/wiki/List_of_YouTube_personalities (last modified Nov. 9, 2012); Cheryl L. Slay, *MySpace or Whose Space?*, MD. B.J., Jan.–Feb. 2008, at 16 (“For example, former receptionist Brooke Brodack was signed to a deal with NBC’s Carson Daly show after her appearance on [YouTube], and sev-

Justin Bieber was discovered on YouTube!³²²

One type of user-generated content that has become quite prevalent in sites such as YouTube is the parody.

[M]any YouTube videos are themselves parodies or are posted in order to permit users to append satirical, informative, or critical commentary about the videos or their stars. Readers doubting this fact are invited to type into YouTube's search box the name of a famous politician or cultural icon in their community or nation.³²³

Parodies, of course, receive quite robust First Amendment protection.³²⁴ But parodies often make fun of other works; oftentimes *copyrighted* works. So it is only natural that copyright holders (and the big business intermediaries who publish and distribute such copyrighted works) would grow concerned about the unauthorized use of their works in user-generated content. Nevertheless, a great number of such parodic uses would be covered by the First Amendment or by the Copyright Act's own fair use defense.³²⁵

Nevertheless, the government could choose, under the constant pressure and lobbying from the movie and music industries, to attempt to regulate YouTube's underlying code and require that any user-generated content that made use of copyrighted works be automatically blocked from being shared on the site. The government could also choose to force the artists themselves to include certain code in their copyrighted digital works that would help sites like YouTube automatically recognize copyrighted material. Absent First Amendment coverage of source code, both of these types of regulation would escape constitutional scrutiny. This would result, on the one hand, in the trampling of parodists' First Amendment and fair use rights and, on the other hand, in a limitation to some artists' autonomy and potential choice to keep their works "open

eral YouTube celebrities have received record deals."); Bob Tedeschi, *New Hot Properties: YouTube Celebrities*, N.Y. TIMES (Feb. 26, 2007), <http://www.nytimes.com/2007/02/26/technology/26ecom.html>; William Wei, *Meet the YouTube Stars Making \$100,000 Plus per Year*, BUS. INSIDER (Aug. 19, 2010), <http://www.businessinsider.com/meet-the-richest-independent-youtube-stars-2010-8?op=1>.

322. Desiree Adib, *Pop Star Justin Bieber Is on the Brink of Superstardom*, ABC NEWS (Nov. 14, 2009), <http://abcnews.go.com/GMA/Weekend/teen-pop-star-justin-bieber-discovered-youtube/story?id=9068403>.

323. Hannibal Travis, *Opting Out of the Internet in the United States and the European Union: Copyright, Safe Harbors, and International Law*, 84 NOTRE DAME L. REV. 331, 399–400 (2008).

324. *Hustler Magazine, Inc. v. Falwell*, 485 U.S. 46, 57 (1988).

325. *See, e.g., id.*; *Campbell v. Acuff-Rose Music*, 510 U.S. 569, 579 (1994) (holding commercial parody protected under fair use doctrine).

sourced” and available for copying by others (much in the same way that government regulation could limit open source programmers’ autonomy).

A similar situation could occur with respect to user-generated content that includes a portion of a copyrighted work as part of a personal fair use of such work.³²⁶ A prime example of this arose in litigation concerning an individual who “uploaded to YouTube a film of her young children dancing in the kitchen to the song ‘Let’s Go Crazy’ by Prince.”³²⁷ The record company then sent a takedown notice to YouTube, allegedly at Prince’s behest, under the pertinent provisions of the Digital Millennium Copyright Act.³²⁸ The record company claimed that the posting of the video violated copyright law.³²⁹ “After YouTube removed the video, the plaintiff filed suit against [the record company] for issuing the takedown notice in bad faith because it did not consider whether the video would fall under the fair use doctrine.”³³⁰ Eventually, the district court in *Lenz* “held that before issuing a DMCA takedown notice, a content owner must consider whether the content falls into the fair use doctrine.”³³¹ “[I]n order for a copyright owner to proceed under the DMCA with ‘a good faith belief that use of the material in the manner complained of is not authorized by the copyright owner, its agent, or the law,’ the owner must evaluate whether the material makes fair use of the copyright.”³³² “The court held that a takedown notice is not sent in good faith unless the content owner first considers the fair use doctrine.”³³³

Social networking media have also given rise to the Internet meme. An Internet meme has been defined as “a humorous image, video, piece of text, etc. that is copied (often with slight variations) and spread rapidly by Internet users,”³³⁴ or “a concept that spreads

326. In fact, it is not hard to imagine similar situations arising in other fair use contexts, such as in an academic setting.

327. Hormann, *supra* note 243, at 1356 (citing *Lenz v. Universal Music Corp.*, 572 F. Supp. 2d 1150, 1151–52 (N.D. Cal. 2008)).

328. *Lenz*, 572 F. Supp. 2d at 1152–53.

329. *Id.* at 1152.

330. Hormann, *supra* note 243, at 1356 (citing *Lenz*, 572 F. Supp. 2d at 1153).

331. *Id.* (citing *Lenz*, 572 F. Supp. 2d at 1154).

332. *Lenz*, 572 F. Supp. 2d at 1154 (quoting 17 U.S.C. §512(c)(3)(A)(v) (2006)). *See generally* 17 U.S.C. §107 (2006) (describing the parameters of the fair use doctrine).

333. Hormann, *supra* note 243, at 1356 (citing *Lenz*, 572 F. Supp. 2d at 1154).

334. *meme*, OXFORD DICTIONARIES, <http://oxforddictionaries.com/definition/english/meme> (last visited Nov. 12, 2012).

via the Internet.”³³⁵ But how are Internet memes created? Someone must think them up in the first place, of course. And then that initial creator will set the Internet meme loose in cyberspace, where myriad users will make it their own, twisting and turning it, adding to and subtracting from it, until it becomes a part of our culture.

Creative reuse and modification of preexisting materials . . . are highly valuable to society. They ensure that “everyone—not just political, economic, or cultural elites—has a fair chance to participate in the production of culture, and in the development of the ideas and meanings that constitute them and the communities and subcommunities to which they belong.”³³⁶

The creation of an Internet meme enables an expression of autonomy for both the creator of the meme and the Internet user who spreads it through Internet culture. They surely must, at least in some cases, grow quite proud of their contribution to human culture.

But one need not receive international recognition to exercise one’s right to self-realization. The Internet also provides new tools for social interactions that may not be as grandiose as those described above, but that nevertheless provide spaces for individuals to express their autonomy. The blogosphere again appears to be tailored for such individual self-expression:

The power of the blogosphere has yet to be fully demonstrated and grasped. To say it is immense is a gross understatement. The blogosphere is *a universe including all the people in the world who want to be published*, who prior to the Internet would not have been able to get published easily if at all, and *who now can be published to their hearts’ content* as long as they can gain access to a computer. It may be unduly colorful to say that this is an informational counterpart of the unlocking of nuclear power, but it is not inaccurate.³³⁷

335. *Internet Meme*, WIKIPEDIA, FREE ENCYCLOPEDIA, http://en.wikipedia.org/wiki/Internet_meme (last modified Nov. 12, 2012). For a list of Internet memes, see *List of Internet Phenomena*, WIKIPEDIA, FREE ENCYCLOPEDIA, http://en.wikipedia.org/wiki/List_of_Internet_memes (last modified Nov. 7, 2012). The concept derives from the term “meme,” which was coined some decades ago by British scientist Richard Dawkins. See *Internet Meme*, *supra*. A meme is “an element of a culture or system of behavior that may be considered to be passed from one individual to another by nongenetic means, especially imitation.” *meme*, *supra* note 334.

336. Yu, *supra* note 243, at 896 (quoting Balkin, *supra* note 259, at 4).

337. Slabbert, *supra* note 278, at 355 (emphasis added).

But as a perfect platform for people of all walks of life to share their ideas and talents, blogs are hardly alone. Facebook is also a paradise of self-expression.

Facebook has become one of the most popular websites in the world. In 2009, Facebook became the second most-visited website on the Internet. Social networking sites like Facebook enable users to *create profiles about themselves that other users are able to view*. Users can communicate with one another by sending private messages or by posting public messages on the profiles of other users. Additionally, users can create or join groups that focus on particular or common interests, or create invitations for events, parties, and informal gatherings.

Facebook also permits users to *upload photographs of themselves* and others onto the site, and allows users to “tag,” or identify, people in the posted photos, which can then be accessed from the profile of a “tagged” user. Many Facebook users have hundreds of photos of themselves posted on the site. In addition, *users can post their current “status” to communicate plans, thoughts, or quips*. The statuses, along with all other recent activity undertaken by the user on Facebook, appear both in the user’s profile and in a “news feed” that all friends of that user see when they log into the site.³³⁸

The Facebook profile, status, and news feed have become a central tool for autonomous self-expression in our contemporary society, and they are all utterly dependent on code. Government regulation of that code could serve to frustrate individuals’ exercise of their autonomy.

d. Community

Finally, let us consider how source code can either build or destroy the community that the First Amendment seeks to protect. When considering its destructive potential, source code will be compared with other categories of speech to which the Supreme Court has extended only the most limited of First Amendment coverage and protections. But first, let us briefly consider how source code is central to the development of new technologies and media that actually strengthen the glue that ties our communities together.

338. Bryan Starrett, *Tinker’s Facebook Profile: A New Test For Protecting Student Cyber Speech*, 14 VA. J.L. & TECH 212, 215 (2009) (emphasis added) (footnotes omitted).

One social networking site not yet mentioned in this article is LinkedIn. “As of February 9, 2012, LinkedIn operates the world’s largest professional network on the Internet with more than 150 million members in over 200 countries and territories.”³³⁹ LinkedIn provides its users with the opportunity to establish professional connections with all manner of individuals around the world, helping them to establish a community of potential business partners, clients, employers, and employees. By allowing people to exponentially grow their professional networks, LinkedIn fosters economic efficiencies and interdependencies that bring the community together, making the interchange of both ideas and goods more likely. A tighter knit economic and professional community promotes a more stable, peaceful, profitable, and amicable social order.

Something similar can also be said of Facebook and Twitter, of course. It is widely recognized that “[s]ocial networking sites provide benefits for users of all ages and backgrounds.”³⁴⁰ For one thing, these sites “allow users the ability to reconnect with old friends and make new friends,” thereby engendering a wider sense of community.³⁴¹ “In addition, most social networking sites are ‘global,’ which provides for diverse relationships,” and can lead to the creation of a more tolerant society and a more global sense of community.³⁴²

Furthermore, other Internet media such as YouTube can inject “an important social element often missing from passive media, such as movies, television, music, and books.”³⁴³ After all, “[s]ocialization is one of the reasons why YouTube, Facebook, Twitter, and Tumblr have become wildly popular today.”³⁴⁴ It is only natural that “[g]iven the choice between watching an unfamiliar program put together professionally by an entertainment firm and

339. *About*, LINKEDIN, <http://press.linkedin.com/about> (last visited Nov. 12, 2012).

340. Shannon N. Sterritt, Comment, *Applying the Common-Law Cause of Action Negligent Enablement of Imposter Fraud to Social Networking Sites*, 41 SETON HALL L. REV. 1695, 1696 (2011).

341. *Id.* (citing Karen Goldberg Goff, *Social Networking Benefits Validated*, WASH. TIMES (Jan. 28, 2009), <http://www.washingtontimes.com/news/2009/jan/28/social-networking-benefits-validated>).

342. *Id.* (citing WHAT IS SOCIAL NETWORKING, <http://www.whatissocialnetworking.com/> (last updated July 18, 2012)).

343. Yu, *supra* note 243, at 898.

344. *Id.* (citing JEAN BURGESS & JOSHUA GREEN, *YOUTUBE: ONLINE VIDEO AND PARTICIPATORY CULTURE* 58–74 (2009) (discussing YouTube as a social network); STRANGELOVE, *supra* note 272, at 103–36 (discussing the YouTube community)).

a few short videos involving the user's friends goofing around, some users undoubtedly will select the latter."³⁴⁵ "Even if the homemade videos are of lower quality, the users' familiarity with the subject and their interest in what happens to their friends will make up for the difference."³⁴⁶ "Frankly, you would have to be dead inside not to find something emotionally or intellectually compelling on YouTube. After all, it is you, it is me, it is our neighbours, our families, our friends (and, all too often, our darn kids) who can be seen on YouTube."³⁴⁷

Professor Sunstein has argued that "some of the experiences made possible by modern technologies are *solidarity goods*, in the sense that their value goes up when and because many other people are enjoying or consuming them."³⁴⁸ He further explains that such experiences are desirable and important for three principal reasons: (1) they give individuals "simple enjoyment"; (2) they "provide a form of social glue" and create "common memories and experiences, and a sense of a common enterprise"; and (3) they allow "people who would otherwise see one another as quite unfamiliar" to "come instead to regard one another as fellow citizens with shared hopes, goals, and concerns."³⁴⁹ Professor Sunstein describes the stock of the ensuing "relationships of trust and reciprocity, in which people see their fellow citizens as potential allies, willing to help and deserving of help when help is needed," as a form of "social capital."³⁵⁰ Consider, in this context, this recent description of the creation of a collective identity in the electronic dance music scene:

In the past decade or so, though, despite all the ways that the Internet encourages music to nichify, the rise of social media has actually pushed electronic dance music in the opposite direction. Witnessing its sheer numbers, sensing its collective power, the dance scene has reunified, becoming more of a mass phenomenon—an undifferentiated subculture of millions. *It turns out that the thrill of collective identity, a moblike feeling of shared enormity, is far more exciting to fans than were their endless dives down rabbit holes of sonic purism.*³⁵¹

345. *Id.*

346. *Id.*

347. STRANGELOVE, *supra* note 272, at 3.

348. SUNSTEIN, *supra* note 3, at 102.

349. *Id.* at 103–04.

350. *Id.* at 104 (quoting ROBERT D. PUTNAM, *BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY* 18–24 (2000)) (internal quotation marks omitted).

351. Wasik, *supra* note 292, at 83 (emphasis added).

It is precisely the sense of community that these new Internet technologies engender that has made them so popular. Thus social networking opportunities provided by the development of source code and the Internet also further the First Amendment value of community.

To determine whether source code can perform a negative function and destroy the community that the First Amendment seeks to protect one must answer the following question: how does source code compare with other types of activities that are communicative enough to pass the *Spence-Hurley* test but are, *because of their tendency to destroy the community*, nevertheless granted only very limited First Amendment coverage? The short answer is that source code is quite different.

First of all, we must understand more precisely why the Court has decided that some particular classes of speech only deserve the most limited First Amendment coverage.³⁵²

There are certain well-defined and narrowly limited classes of speech, the prevention and punishment of which have never been thought to raise any Constitutional problem. These include the lewd and obscene, the profane, the libelous, and the insulting or “fighting” words . . . [S]uch utterances are no essential part of any exposition of ideas, and are of such slight social value as a step to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality.³⁵³

The value of community is important in defining some of these special types of disfavored speech. Let us now discuss these categories of disfavored speech and compare them to source code.

Obscenity was most recently defined by the Supreme Court in *Miller v. California*.³⁵⁴ Obscenity is “limited to works which, taken as a whole, appeal to the prurient interest in sex, which portray sexual conduct in a patently offensive way, and which, taken as a whole, do not have serious literary, artistic, political, or scientific value.”³⁵⁵

352. It should be noted that a potential for destruction of the community is not the only reason why some particular communicative activity will receive limited First Amendment coverage. For each type of activity, a comprehensive analysis of all the First Amendment values discussed in this article is required.

353. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571–72 (1942). *But see R.A.V. v. City of St. Paul*, 505 U.S. 377, 383–84 (1992) (footnote omitted) (explaining that even specific categories of expression traditionally thought to reside outside the auspices of the First Amendment are not “entirely invisible to the Constitution”).

354. 413 U.S. 15 (1973).

355. *Id.* at 24.

This is a very narrow definition. It has two especially salient features. The work must be “patently offensive,” and it must lack “serious literary, artistic, political, or scientific value.” We see that the Court is concerned with protecting the integrity of the community by allowing the prohibition of speech that might harm the sensibilities of its members. However, these values will only give way in the case where the speech is devoid of serious value. There is no reason to think that source code, *as a whole category of speech*, is either offensive in a way that would threaten to destroy our community, or devoid of any serious value. For one thing, almost all source code is scientifically valuable to computer scientists. Any rationale analogous to that which gives rise to the exclusion of obscenity is, therefore, inapplicable to source code as a whole.

“Fighting words” are disfavored under the First Amendment for basically the same reasons obscenity is. Fighting words are words that, as explained in *Chaplinsky*, are not an essential part of any exposition of ideas.³⁵⁶ Furthermore, they are words that threaten to destroy the basic community norms of respect towards the person.³⁵⁷ These words are not a part of the public discourse, *and they threaten to destroy this discourse itself*. The Court has defined fighting words as utterances that will imminently lead to violent confrontation, thereby *destroying the very channels of communication that the First Amendment seeks to protect*.³⁵⁸ There is no reason to include source code in this kind of category. Source code, as we discussed previously, furthers all the values embodied in the First Amendment and does not threaten to destroy the community in any specific or systematic way. If some source code can be used for malicious and destructive purposes, then that specific kind of source code might be excluded, just like some uses of the English language might be excluded. There is no good reason, however, to exclude source code as a whole category of disfavored speech.

Libel and defamation are disfavored for similar reasons. These are kinds of speech that harm innocent people without furthering any of the values previously discussed. It should be noted that under libel and defamation, only false statements of fact are relegated to limited coverage. And even then, specific intent requirements are necessary to exclude this speech from First Amendment coverage.³⁵⁹ Similar intent requirements are necessary to exclude speech that might constitute a crime from First Amendment cover-

356. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571–72 (1942).

357. *Id.* at 572.

358. *Id.*

359. *See New York Times v. Sullivan*, 376 U.S. 254, 262 (1964).

age.³⁶⁰ Such speech will be excluded only when “it is the very vehicle of the crime itself.”³⁶¹ “[W]hat these sorts of factual statements contribute to the general understanding of listeners is minimal, and the justifications for free speech that apply to speakers do not reach communications that are simply means to get a crime successfully committed.”³⁶² Some specific malicious uses of source code might amount to this kind of activity that would not be covered by the First Amendment, just like some uses of the English language will constitute the vehicle for a crime and will not be covered by the First Amendment. Source code as a whole, however, cannot be deemed defamatory or criminal in all cases.

Some of the categories of speech just discussed could further the value of autonomy. People might want to express themselves in obscene ways. And it is possible that some might claim that insults amounting to fighting words are an expression of their individuality. The Court, however, has determined that these values are outweighed by the possible harm to the community. In the extreme cases of obscenity and epithets, the normal preference for the protection of a free public discourse is suspended for the sake of the community. Some specific instances of source code might be determined to be as pernicious as the types of speech discussed in this section. *The same is true, however, of any other language.* This is why the courts have defined these narrow exceptions. There is no reason, however, to say that *all of source code* falls into any such category or to relegate it to the very limited First Amendment coverage the Supreme Court has so sparingly allotted.

Source code furthers all of the First Amendment values that have traditionally been identified by the Supreme Court as central to the constitutional protection of our freedom of speech.³⁶³ Furthermore, source code does not tend to destroy the community or

360. *Rice v. Paladin Enters., Inc.*, 128 F.3d 233, 248 (4th Cir. 1997).

361. *United States v. Varani*, 435 F.2d 758, 762 (6th Cir. 1970).

362. *Rice*, 128 F.3d at 244 (quoting KENT GREENAWALT, *SPEECH, CRIME, AND THE USES OF LANGUAGE* 85 (1989)).

363. *Accord* Balkin, *supra* note 259, at 45 (arguing that technological advances in communication can help democratize speech); Alex Colangelo & Alana Maurushat, *Exploring the Limits of Computer Code as a Protected Form of Expression: A Suggested Approach to Encryption, Computer Viruses, and Technological Protection Measures*, 51 *MCGILL L.J.* 47, 60 (2006) (“[T]he creation and dissemination of software code satisfy the principles of seeking truth, attaining individual self-fulfillment, and allowing for human-flourishing, all of which govern the freedom of expression guarantees in the [Canadian] *Charter* [of Rights and Freedoms].”); Fitzgerald, *supra* note 10, at 337 (citing the work of philosophers such as Foucault, Derrida, Baudrillard, and Heidegger to show how code can help influence public discourse and construct powerful communication tools).

channels of communication that the First Amendment seeks to protect in any systematic or all-encompassing way. For these reasons, source code is fundamentally different from the specific types of disfavored speech that the Supreme Court has excluded from full First Amendment coverage.

CONCLUSION

Computer source code is the lifeblood of the Internet. It is also the brick and mortar of cyberspace itself. As such, any control that a government can wield over code is a powerful tool for controlling the development of new technologies and idiosyncratic voices. With the advent and dramatic proliferation in the Internet of social networking media and platforms for the publication and sharing of user-generated content, the ability of individuals across the world to communicate and share ideas with each other has reached truly revolutionary dimensions.

As this article has argued, there are many reasons why First Amendment coverage should be extended to computer source code. Source code is sufficiently communicative under the *Spence-Hurley* test as either a kind of written word or as an activity that carries with it sufficient social conventions to convey messages understandable by others. Yet even if source code were considered non-speech for First Amendment purposes, its regulation would trigger First Amendment scrutiny because it is at the heart of the constitution of the Internet, a recognized medium for the communication of ideas.

Perhaps most importantly, source code furthers all the values embodied in the First Amendment without posing, as a category of speech, a threat to the community of First Amendment agents. None of the narrowly defined classes of speech that are excluded from First Amendment coverage are similar enough to source code to justify carving out a similar exception for computer code.

The awesome potential that computer source code has to empower individuals and groups all across the globe in their struggle for truth-seeking, democratic self-governance, self-realization, and community-building makes it deserving of full First Amendment coverage. Let the people speak in code.

