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ARTICLE

ALGORITHMS AND SPEECH

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One of the central questions in free speech jurisprudence is what activities the First Amendment encompasses. This Article considers that question in the context of an area of increasing importance—algorithm-based decisions. I begin by looking to broadly accepted legal sources, which for the First Amendment means primarily Supreme Court jurisprudence. That jurisprudence provides for very broad First Amendment coverage, and the Court has reinforced that breadth in recent cases. Under the Court’s jurisprudence the First Amendment (and the heightened scrutiny it entails) would apply to many algorithm-based decisions, specifically those entailing substantive communications. We could of course adopt a limiting conception of the First Amendment, but any nonarbitrary exclusion of algorithm-based decisions would

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require major changes in the Court's jurisprudence. I believe that First Amendment coverage of algorithm-based decisions is too small a step to justify such changes. But insofar as we are concerned about the expansiveness of First Amendment coverage, we may want to limit it in two areas of genuine uncertainty: editorial decisions that are neither obvious nor communicated to the reader, and laws that single out speakers but do not regulate their speech. Even with those limitations, however, an enormous and growing amount of activity will be subject to heightened scrutiny absent a fundamental reorientation of First Amendment jurisprudence.

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INTRODUCTION

More and more of our activity involves not merely the transmission of bits, but the transmission of bits according to algorithms and protocols created by humans and implemented by machines.¹ Messages travel over the Internet because of transmission protocols, coding decisions determine the look and feel of websites, and algorithms determine which links, messages, or stories rise to the top of search engine results and web aggregators' webpages. Most webpages have automated components, as do most online articles and all video games.² Are these algorithm-based outputs "speech" for purposes of

¹ I am using "bit" as a convenient shorthand for information transmitted via electronic signals. In computing and telecommunications, data is encoded in binary digits (a.k.a. bits), but nothing in this Article turns on the binary nature of bits per se. The point is simply to emphasize the nature of the communication as electronic, as opposed to old-fashioned pen or printing press on paper.

² The list goes on and on. See, e.g., CHRISTOPHER STEINER, AUTOMATE THIS: HOW ALGORITHMS CAME TO RULE OUR WORLD 7 (2012) ("Algorithms have already written

the First Amendment?³ That is, does the Free Speech Clause of the First Amendment apply to government regulation of these or other algorithm-based changes to bits?⁴

In this Article I address that question. I conclude that if we accept Supreme Court jurisprudence, the First Amendment encompasses a great swath of algorithm-based decisions—specifically, algorithm-based outputs that entail a substantive communication. We could decide to reject Supreme Court jurisprudence, or read it narrowly in order to limit its application. But for the purposes of this Article, I will not apply that lens to the existing case law. Instead, I will look to broadly accepted sources and forms of legal reasoning—which in the First Amendment context means primarily Supreme Court jurisprudence—and consider whether those sources lead to the conclusion that algorithm-based outputs are speech for First Amendment purposes. I find that the answer is yes for most algorithm-based editing.

For some, this answer will be unwelcome. A wide range of commentators have expressed concerns about potentially expansive interpretations of the scope of the Free Speech Clause, such that much, if not most, government regulation is subject to heightened judicial scrutiny.⁵ Such a concern may

symphonies as moving as those composed by Beethoven, picked through legalese with the deftness of a senior law partner, diagnosed patients with more accuracy than a doctor, written new articles with the smooth hand of a seasoned reporter, and driven vehicles on urban highways with far better control than a human.”)

³ The First Amendment encompasses more than the Free Speech Clause, of course. For the purposes of this Article, when I refer to the First Amendment I am referring to its Free Speech Clause component.

⁴ There is no single accepted definition of “algorithm.” See *Algorithm Characterization*, WIKIPEDIA, http://en.wikipedia.org/wiki/Algorithm_characterizations (last updated Feb. 11, 2013) (stating that an “[a]lgorithm does not have a generally accepted formal definition” and discussing more than twenty different prominent characterizations). Broadly speaking, an algorithm is a set of instructions designed to produce an output. My use of the term in this Article focuses on its most common usage—as instructions or rules implemented by a computer. That is, I want to focus on nonhuman processes, and I use the term “algorithm” to refer to them. For ease, I will refer to decisions made by protocols, algorithms, and other computations as algorithm-based decisions. I could call them “code-based processes” or some other less-familiar and more ungainly term, but I choose “algorithm” simply because it has become more familiar shorthand.

⁵ See generally Vincent Blasi, *The Pathological Perspective and the First Amendment*, 85 COLUM. L. REV. 449, 449-66 (1985); Thomas H. Jackson & John Calvin Jeffries, Jr., *Commercial Speech: Economic Due Process and the First Amendment*, 65 VA. L. REV. 1, 14-25 (1979); Jedediah Purdy, *The Roberts Court v. America*, DEMOCRACY, Winter 2012, at 46, 49-53. The work of Frederick Schauer has been especially important in this regard. See generally Frederick Schauer, *The Boundaries of the First Amendment: A Preliminary Exploration of Constitutional Salience*, 117 HARV. L. REV. 1765, 1794-95 (2004) [hereinafter Schauer, *Boundaries*]; Frederick Schauer, *Codifying the First Amendment: New York v. Ferber*, 1982 SUP. CT. REV. 285; Frederick Schauer, *Commercial Speech and the Architecture of the First Amendment*, 56 U. CIN. L. REV. 1181 (1988); Frederick Schauer, *First Amendment Opportunism*, in ETERNALLY VIGILANT 174 (Lee C. Bollinger & Geoffrey R. Stone eds., 2002).

motivate, at least in part, the contrasting answer that Tim Wu reaches in his piece.⁶ One possible response to these concerns is to articulate a theory of the Free Speech Clause that excludes algorithm-based decisions, or, perhaps more modestly, search engine results (which have been the focus of some commentators).⁷ Any such exclusion, however, will entail a radical revamping of our Free Speech Clause jurisprudence. And, as it turns out, there are interpretations that are consistent with existing jurisprudence (and, in my view, desirable on their own terms) that would limit the scope of the Free Speech Clause. Of course, one could find those interpretations insufficient, but I conclude that the inclusion of algorithm-based decisions in the First Amendment's protections does not substantially advance the argument for a radical revamping.

In a previous article I asked how difficult it would be to find that mere transmission of bits constituted speech.⁸ One way of framing that question is to ask how hard it would be to expand the definition of speech to include something (mere transmission) that ordinarily would fall outside it. In this Article I address the converse question: How hard would it be to narrow the definition of speech to exclude something that Supreme Court jurisprudence would encompass? What would such an exclusion mean for First Amendment jurisprudence?

I. WHAT IS AT STAKE

A huge range of bit manipulations involves the use of algorithms. Computer code is a set of instructions and algorithms.⁹ Every webpage relies on many different algorithms for its structure, not to mention its transmission over the Internet. Indeed, every networked device depends on an electronic network built in part on algorithms.

Around the turn of this century, there was considerable focus on whether computer code itself was speech for First Amendment purposes, such that

⁶ See Tim Wu, *Machine Speech*, 161 U. PA. L. REV. 1498 (2013) ("Too much protection would threaten to constitutionalize many areas of commerce and private concern without promoting the values of the First Amendment.").

⁷ See, e.g., Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1193-1201 & n.239 (2008) (contending that the First Amendment, properly understood, does not cover search engine rankings).

⁸ Stuart Minor Benjamin, *Transmitting, Editing, and Communicating: Determining What "The Freedom of Speech" Encompasses*, 60 DUKE L.J. 1673, 1695 (2011) (concluding that "argument that transmission qua transmission triggers the First Amendment is . . . weak").

⁹ See generally *Algorithm*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Algorithm> (last updated Mar. 29, 2013); *What Is a Computer Algorithm?*, HOWSTUFFWORKS, <http://computer.howstuffworks.com/question717.htm> (last visited Apr. 10, 2013).

regulations on the distribution of code implicated the First Amendment.¹⁰ The government had concerns about the proliferation of some computer programs (notably, those perceived as jeopardizing security), and it sought to regulate the circulation of the code itself—the instructions to a computer that would enable the feared activity.¹¹ For what it is worth, the few courts that considered the issue found by and large that regulations of computer code were regulations of speech.¹²

My focus here is not on the distribution of code, and thus not on whether code itself is speech. Rather, I consider whether the outputs of that code—the decisions created by algorithms—are speech for First Amendment purposes. The question whether the First Amendment applies to regulation of search engine results is different from the question whether the algorithms used by those search engines are speech. Even if the algorithms are not speech, their products may be.

What sorts of regulations of algorithm-based decisions might be at issue? The most prominent possibility, and the one that has inspired the most commentary, is the regulation of search engine results, and in particular (given its large market share) Google. A company frustrated by its low PageRank (which hurt its ability to find clients) brought an action against

¹⁰ See, e.g., Steven E. Halpern, *Harmonizing the Convergence of Medium, Expression, and Functionality: A Study of the Speech Interest in Computer Software*, 14 HARV. J.L. & TECH. 139, 181 (2000) (discussing the application of the First Amendment to computer software); Robert Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713, 716 (2000) (discussing whether encryption source code is covered by the First Amendment); Schauer, *Boundaries*, *supra* note 5, at 1794 (“The anti-Microsoft and anti-Hollywood claims of the open-source movement focus on the way in which computer source codes can be conceived of as a language and therefore as speech . . .”); 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, 1027 (2000) (“[B]ecause source code is the implementation of an idea, not the expression of it, it is not entitled to First Amendment protection as a type of speech.”).

¹¹ The government has acted on these concerns on a number of occasions by restricting the distribution or export of computer software that it viewed as dangerous on a number of occasions, producing several lawsuits. See, e.g., *Junger v. Daley*, 209 F.3d 481 (6th Cir. 2000) (export of decryption software programs); *Bernstein v. Dep’t of Justice*, 176 F.3d 1132 (9th Cir. 1999) (distribution of encryption software pursuant to the International Traffic in Arms Regulations); *Karn v. Dep’t of State*, 925 F. Supp. 1 (D.D.C. 1996) (designation of a computer diskette as a “defense article” pursuant to the Arms Export Control Act and the International Traffic in Arms Regulations).

¹² See *Universal City Studios, Inc. v. Corley*, 273 F.3d 429, 447 (2d Cir. 2001) (holding that the First Amendment covers computer programs, and stating that “[a] recipe is no less ‘speech’ because it calls for the use of an oven, and a musical score is no less ‘speech’ because it specifies performance on an electric guitar”); *Bernstein*, 176 F.3d at 1141 (concluding that “encryption software, in its source code form and as employed by those in the field of cryptography, must be viewed as expressive for First Amendment purposes”), *reh’g en banc granted and opinion withdrawn*, 192 F.3d 1308 (9th Cir. 1999).

Google for tortious interference with contractual relations, and Google successfully argued that the First Amendment applied to its search results.¹³ Another company frustrated by its rankings on Google unsuccessfully argued that Google's search engine is an "essential facility" that must be opened to access,¹⁴ and Frank Pasquale argued that Google should be understood as a new kind of bottleneck deserving of regulatory attention—an "essential cultural and political facility."¹⁵ Pasquale and Oren Bracha have also argued that the government should be able to regulate search engines' ability to structure their results, and that the First Amendment does not encompass search engine results.¹⁶ Eugene Volokh and Donald Falk, by contrast, have contended that all aspects of search engines' results are fully protected by the First Amendment.¹⁷

¹³ Search King, Inc. v. Google Tech., Inc., No. 02-1457, 2003 WL 21464568, at *3-4 (W.D. Okla. May 27, 2003) (order granting Google's motion to dismiss). "PageRank" is an algorithm that "measure[s] . . . the quantity and quality of links from one website to another." Victor T. Nilsson, Note, *You're Not from Around Here, Are You? Fighting Deceptive Marketing in the Twenty-First Century*, 54 ARIZ. L. REV. 801, 807 (2012); see also PageRank, WIKIPEDIA, <http://en.wikipedia.org/wiki/PageRank> (last updated Apr. 6, 2013).

¹⁴ Kinderstart.com, LLC v. Google, Inc., No. 06-2057, 2007 WL 831806, at *4 (N.D. Cal. Mar. 16, 2007) (granting motion to dismiss) ("KinderStart asserts that the Google search engine is 'an essential facility for the marketing and financial viability of effective competition in creating, offering and delivering services for search over the Internet.'" (citation omitted)).

¹⁵ Frank Pasquale, *Dominant Search Engines: An Essential Cultural & Political Facility*, in THE NEXT DIGITAL DECADE 401, 402 (Berin Szoka & Adam Marcus eds., 2010), available at http://nextdigitaldecade.com/ndd_book.pdf.

¹⁶ See Bracha & Pasquale, *supra* note 7; see also Jennifer A. Chandler, *A Right to Reach an Audience: An Approach to Intermediary Bias on the Internet*, 35 HOFSTRA L. REV. 1095, 1117 (2007) (stating that in light of websites' free speech "right to reach an audience, and the listener's right to choose among speakers according to the listener's own criteria, free of extraneous discriminatory influences[,] . . . search engines should not manipulate individual search results except to address instances of suspected abuse of the system").

¹⁷ See EUGENE VOLOKH & DONALD M. FALK, FIRST AMENDMENT PROTECTION FOR SEARCH ENGINE SEARCH RESULTS (2012), available at <http://www.volokh.com/wp-content/uploads/2012/05/SearchEngineFirstAmendment.pdf>. Volokh and Falk state that

Google, Microsoft's Bing, Yahoo! Search, and other search engines are speakers. First, they sometimes convey information that the search engine company has itself prepared or compiled (such as information about places appearing in Google Places). Second, they direct users to material created by others, by referencing the titles of Web pages that the search engines judge to be most responsive to the query, coupled with short excerpts from each page. . . . Third, and most valuably, search engines select and sort the results in a way that is aimed at giving users what the search engine companies see as the most helpful and useful information.

Id. at 3. James Grimmelmann has taken a more nuanced position, focusing on search engines as advisors to their users. See James Grimmelmann, *Search Engines as Advisors* (2013) (unpublished manuscript) (on file with author).

But, at least for some commentators, the concern is not limited to Google. For instance, Tim Wu has suggested that the important issue is computer-generated outcomes more generally. Wu has contended that “nonhuman or automated choices” should not be treated as speech for First Amendment purposes.¹⁸ This framing is useful. Under the prevailing jurisprudence, the existence of anticompetitive concerns with respect to Google (or any other particular entity) might affect the application of First Amendment scrutiny but not whether the underlying activity is encompassed by the First Amendment in the first place.

The apparent motivation behind excluding algorithm-based decisions from First Amendment coverage is understandable. More and more of our activity involves bits, and those bits are frequently guided and shaped by algorithms. The more fully algorithm-based decisions are treated as speech, the more broadly First Amendment jurisprudence will apply. And this has real consequences. Content-based government regulations of speech are subject to strict scrutiny, which is very difficult to satisfy.¹⁹ Content-neutral regulations are subject to intermediate scrutiny, which is an easier test to pass but still much more rigorous than the rational basis review applicable to ordinary regulation.²⁰

Heightened scrutiny raises the costs of regulation, both in requiring more justification *ex ante* and in increasing the likelihood that the regulation will be rejected on constitutional grounds (since the chances of rejection on constitutional grounds for ordinary legislation are near zero). It could be that we, as a society, like this outcome because we decide that we want less government regulation of algorithm-related industries, but my point here is

¹⁸ Tim Wu, *Free Speech for Computers?*, N.Y. TIMES, June 20, 2012, at A29 (“[A]s a general rule, nonhuman or automated choices should not be granted the full protection of the First Amendment, and often should not be considered ‘speech’ at all.”). I understand Wu to be making a different argument in his contribution to this Symposium, and I discuss it briefly in note 84, *infra*.

¹⁹ See, e.g., *Sable Commc'ns of Cal., Inc. v. FCC*, 492 U.S. 115, 126 (1989) (“The Government may . . . regulate the content of constitutionally protected speech in order to promote a compelling interest if it chooses the least restrictive means to further the articulated interest.”). Only one speech regulation has survived strict scrutiny in the Supreme Court. See *Holder v. Humanitarian Law Project*, 130 S. Ct. 2705, 2712 (2010) (upholding a federal statute making it a crime to “knowingly provid[e] material support or resources to a foreign terrorist organization” in light of the particular deference due to the Executive regarding the combating of terrorism (quoting 18 U.S.C. § 2339B(a)(1) (2006))).

²⁰ See, e.g., *Turner Broad. Sys., Inc. v. FCC (Turner I)*, 512 U.S. 622, 662 (1994) (“[A] content-neutral regulation will be sustained if ‘it furthers an important or substantial governmental interest; if the governmental interest is unrelated to the suppression of free expression; and if the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest.’” (quoting *United States v. O'Brien*, 391 U.S. 367, 377 (1968))).

simply that we disincentivize regulation when heightened scrutiny applies. Subjecting every regulation that affects algorithm-based transmissions to intermediate scrutiny would have dramatic consequences.

Consider the Court's recent opinion in *Sorrell v. IMS Health Inc.*,²¹ which involved a Vermont law restricting the sale, disclosure, and use of pharmacy records that reveal the prescribing practices of individual doctors, as a way of thwarting data miners' perceived invasion of privacy.²² Such a law would be unproblematically constitutional absent First Amendment coverage. That is, if it were understood not to trigger First Amendment scrutiny, it would easily pass constitutional muster. But, the Supreme Court flatly stated in *Sorrell* that "[s]peech in aid of pharmaceutical marketing . . . is a form of expression protected by the Free Speech Clause of the First Amendment. As a consequence, Vermont's statute must be subjected to heightened judicial scrutiny. The law cannot satisfy that standard."²³ Similarly, the FCC's limits on the horizontal concentration and vertical integration of cable companies would be subject to fairly lenient review if applied to distributors of gas or electricity. But because the D.C. Circuit found that these regulations implicated the First Amendment and thus triggered intermediate scrutiny, the court invalidated the regulations and remanded them.²⁴ Even after that remand, and a much more detailed analysis by the FCC, the D.C. Circuit found that the FCC had failed to justify the numbers it had chosen and thus rejected them again.²⁵ Those limits—which are statutorily mandated, by the way—lie dormant. The FCC has not figured out how to write regulations that will survive heightened First Amendment scrutiny.

II. THE CENTRALITY AND EXPANSION OF SUPREME COURT JURISPRUDENCE

A. *A Note on Broadly Accepted Sources and Forms of Reasoning*

In this Article I want to apply broadly accepted sources and forms of legal reasoning. In the First Amendment context, that means primarily Supreme Court jurisprudence. This is fairly well-trodden ground, and my focus here is not to defend that proposition. I will simply note that, as a

²¹ 131 S. Ct. 2653 (2011).

²² VT. STAT. ANN. tit. 18, § 4631(d) (2010).

²³ *Sorrell*, 131 S. Ct. at 2659.

²⁴ *Time Warner Entm't Co. v. FCC*, 240 F.3d 1126, 1137, 1143-44 (D.C. Cir. 2001).

²⁵ *Comcast Corp. v. FCC*, 579 F.3d 1, 10 (D.C. Cir. 2009).

textual matter, “speech” and “the freedom of speech” could be interpreted in any number of ways. Everyone might agree on some core elements, but the textual boundaries of these terms are not apparent.²⁶ And as Leonard Levy noted more than half a century ago, “The meaning of no other clause of the Bill of Rights at the time of its framing and ratification has been [as] obscure to us” as that of the Free Speech Clause.²⁷ Many commentators rely on underlying theories of the First Amendment—visions about what the freedom of speech really means, usually grounded in conceptions of the First Amendment’s purpose. The main conceptions that have been offered

²⁶ Akhil Amar has argued that intratextualism—identifying terms appearing in different parts of the Constitution and interpreting them to have similar meanings—illuminates the meaning of “speech” under the Free Speech Clause. Akhil Reed Amar, *Intratextualism*, 112 HARV. L. REV. 747 (1999). In particular, he contends that the term “speech” in the Speech or Debate Clause, which provides that Senators and Representatives “shall not be questioned in any other Place” for “any Speech or Debate in either House,” U.S. CONST. art. I, § 6, cl. 1, applies only to political speech, and therefore that we should interpret the Free Speech Clause to cover only, or at least primarily, political speech. Amar, *supra*, at 815. This line of argumentation has not been met with widespread agreement, however, and for purposes of this section I am addressing only broadly accepted interpretations. See generally Adrian Vermeule & Ernest A. Young, Commentary, *Hercules, Herbert, and Amar: The Trouble with Intratextualism*, 113 HARV. L. REV. 730 (2000) (criticizing Amar’s theory of intratextualism).

²⁷ LEONARD W. LEVY, FREEDOM OF SPEECH AND PRESS IN EARLY AMERICAN HISTORY: LEGACY OF SUPPRESSION 4 (1960) [hereinafter LEVY, LEGACY]; see also Stanley C. Brubaker, *Original Intent and Freedom of Speech and Press* (“The debates in Congress concerning the speech and press clauses shed scant light on the question of meaning. . . . Nor do we find enlightening comments in the state legislatures that considered the amendments or the local newspapers or pamphlets of the time.”), in THE BILL OF RIGHTS: ORIGINAL MEANING AND CURRENT UNDERSTANDING 82, 85 (Eugene W. Hickok, Jr. ed., 1991).

That said, Framing-era materials suggest that the Framing generation held a narrower conception of the freedom of speech than do modern courts, and many in the Framing generation adhered to Blackstone’s position that the freedom of speech was best understood as a freedom from prior restraints. See, e.g., LEONARD W. LEVY, JEFFERSON AND CIVIL LIBERTIES: THE DARKER SIDE 46 (1963) (“Jefferson . . . never protested against the substantive law of seditious libel He accepted without question the dominant view of his generation that government could be criminally assaulted merely by the expression of critical opinions that allegedly tended to subvert it by lowering it in the public’s esteem.”); LEVY, LEGACY, *supra*, at xxi (“The evidence drawn particularly from the period 1776 to 1791 indicates that the generation that framed . . . the First Amendment was hardly as libertarian as we have traditionally assumed.”); Robert H. Bork, *Neutral Principles and Some First Amendment Problems*, 47 IND. L.J. 1, 22 (1971) (“In colonial times and during and after the Revolution [early political leaders] displayed a determination to punish speech thought dangerous to government, much of it expression that we would think harmless and well within the bounds of legitimate discourse.”); G. Edward White, *Historicizing Judicial Scrutiny*, 57 S.C. L. REV. 1, 60 (2005) (“Since the First Amendment only applied against Congress, this approach assumed that the federal government could punish seditious, libelous, blasphemous, obscene, or indecent speech with impunity so long as it did not censor the speech in advance.”); see also 4 WILLIAM BLACKSTONE, COMMENTARIES *151 (“The liberty of the press is indeed essential to the nature of a free state: but this consists in laying no *previous* restraints upon publications, and not in freedom from censure for criminal matter when published.”).

over the years are the marketplace of ideas and the search for truth, self-government, democratic deliberation, personal autonomy, individual self-expression, and the government-checking function.²⁸ For better or worse, no underlying conception of the First Amendment has been widely accepted as explaining or driving First Amendment doctrine and thus none can fairly be described as a broadly accepted source or form of reasoning.²⁹

²⁸ On the marketplace of ideas, see *infra* notes 30-32 and accompanying text. On the search for truth, see generally William P. Marshall, *In Defense of the Search for Truth as a First Amendment Justification*, 30 GA. L. REV. 1 (1995). On self-government and democratic deliberation, see generally ALEXANDER MEIKLEJOHN, *FREE SPEECH AND ITS RELATION TO SELF-GOVERNMENT* (1948); ROBERT C. POST, *CONSTITUTIONAL DOMAINS: DEMOCRACY, COMMUNITY, MANAGEMENT* 119-78 (1995); CASS R. SUNSTEIN, *DEMOCRACY AND THE PROBLEM OF FREE SPEECH* (1995); and Harry Kalven, Jr., *The New York Times Case: A Note on "The Central Meaning of the First Amendment"*, 1964 SUP. CT. REV. 191. On autonomy, see generally C. EDWIN BAKER, *HUMAN LIBERTY AND FREEDOM OF SPEECH* 194-224 (1989); Richard H. Fallon, Jr., *Two Senses of Autonomy*, 46 STAN. L. REV. 875 (1994); and Harry H. Wellington, *On Freedom of Expression*, 88 YALE L.J. 1105 (1979). On the checking function, see generally Vincent Blasi, *The Checking Value in First Amendment Theory*, 1977 AM. B. FOUND. RES. J. 521. On self-expression, see generally MARTIN H. REDISH, *FREEDOM OF EXPRESSION: A CRITICAL ANALYSIS* (1984); and David A.J. Richards, *Free Speech and Obscenity Law: Toward a Moral Theory of the First Amendment*, 123 U. PA. L. REV. 45 (1974).

²⁹ See, e.g., THOMAS I. EMERSON, *TOWARD A GENERAL THEORY OF THE FIRST AMENDMENT* at vii (1966) ("Despite the mounting number of decisions and an even greater volume of comment, no really adequate or comprehensive theory of the First Amendment has been enunciated, much less agreed upon."); DANIEL A. FARBER, *THE FIRST AMENDMENT* 6 (2d ed. 2003) ("For a while there was a trend toward single-value theories of First Amendment law, in which a scholar would posit a single underlying constitutional value and then attempt to deduce all First Amendment doctrine from that value. Such efforts, whatever their merits, never seemed to persuade many other scholars and were almost entirely ignored by the courts."); Robert Post, *Reconciling Theory and Doctrine in First Amendment Jurisprudence*, 88 CALIF. L. REV. 2353, 2372 (2000) (noting that the Supreme Court has not consistently followed any one theory of the First Amendment). The absence of a consensus in support of a particular theory of the First Amendment is not surprising: each possible conception of the First Amendment can be subjected to legitimate criticism, and reaching agreement at that level of specificity is difficult for any group, Justices or otherwise. The Supreme Court's First Amendment jurisprudence is thus one of the many areas characterized by incompletely theorized agreements. Cass Sunstein characterizes this phenomenon as follows:

Many judges are minimalists; they want to say and do no more than necessary to resolve cases. . . . [Minimalists] attempt to reach *incompletely theorized agreements*, in which the most fundamental questions are left undecided. They prefer outcomes and opinions that can attract support from people with a wide range of theoretical positions, or with uncertainty about which theoretical positions are best. In these ways, minimalist judges avoid the largest questions about the meaning of the free speech guarantee, or the extent of the Constitution's protection of "liberty," or the precise scope of the President's authority as Commander in Chief of the Armed Forces.

Cass R. Sunstein, *Minimalism at War*, 2004 SUP. CT. REV. 47, 48 (footnote omitted).

The best-known conception, and that most commonly invoked by the Supreme Court, is the marketplace of ideas.³⁰ For instance, the Supreme Court stated in *Red Lion Broadcasting Co. v. FCC* (in language quoted many times since) that “[i]t is the purpose of the First Amendment to preserve an uninhibited marketplace of ideas in which truth will ultimately prevail.”³¹ But the marketplace-of-ideas conception has many detractors, and the Supreme Court has emphasized different conceptions in some cases and in still other cases refrained from choosing any particular theory.³²

Some theorists would argue (in mild rebuke to the Supreme Court) that one cannot usefully interpret the bare words of the Free Speech Clause without an underlying theory, and the Supreme Court (in mild rebuke to those theorists) interprets the Free Speech Clause without an agreed-upon theory.³³ One way of understanding the first part of this Article is that it

³⁰ Justice Holmes’s dissent in *Abrams v. United States*, 250 U.S. 616 (1919), contains the first, and probably the most famous, articulation of the marketplace metaphor, one that “revolutionized not just First Amendment doctrine, but popular and academic understandings of free speech.” Joseph Blocher, *Institutions in the Marketplace of Ideas*, 57 DUKE L.J. 821, 823-24 (2008). Holmes wrote,

[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.

Abrams, 250 U.S. at 630 (Holmes, J., dissenting). See also Blocher, *supra*, at 824-25 (“Never before or since has a Justice conceived a metaphor that has done so much to change the way that courts, lawyers, and the public understand an entire area of constitutional law. Its influence has been both descriptive and normative, dominating the explanation of and the justification for free speech in the United States.”).

³¹ *Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 390 (1969).

³² See *supra* note 29 and accompanying text; see also *Hurley v. Irish-Am. Gay, Lesbian & Bisexual Grp. of Bos., Inc.*, 515 U.S. 557, 573-75 (1995) (emphasizing the centrality of autonomy to the First Amendment); *Turner I*, 512 U.S. 622, 641 (1994) (“At the heart of the First Amendment lies the principle that each person should decide for himself or herself the ideas and beliefs deserving of expression, consideration, and adherence.”); *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 777 n.11 (1978) (“Freedom of expression has particular significance with respect to government because ‘[i]t is here that the state has a special incentive to repress opposition and often wields a more effective power of suppression.’” (quoting EMERSON, *supra* note 29, at 9)); *Mills v. Alabama*, 384 U.S. 214, 218 (1966) (“[A] major purpose of [the First] Amendment was to protect the free discussion of governmental affairs.”).

³³ See, e.g., Post, *supra* note 10, at 716 (“Lee Tien is fundamentally misguided to believe that he can explain First Amendment coverage ‘without appealing to a grand theoretical framework of First Amendment values.’ If First Amendment coverage does not extend to all speech acts, then such a framework is at a minimum necessary in order to provide the criteria by which to select the subset of speech acts that merit constitutional attention.” (quoting Lee Tien, *Publishing Software as a Speech Act*, 15 BERKELEY TECH. L.J. 629, 636 (2000))).

considers how far broadly accepted forms and sources of reasoning can take us without relying on a theory of the Free Speech Clause.

The central broadly accepted form of legal authority with respect to the Free Speech Clause is Supreme Court jurisprudence. Free Speech Clause cases have been a significant part of the Supreme Court's docket for almost a century. The number of cases, combined with the broadly accepted common law approach to interpreting the Court's cases, makes for a fairly rich jurisprudence. Indeed, what is striking for my purposes is how broadly the Court has interpreted the scope of the Free Speech Clause, particularly in recent years, with the result that one can fairly answer most of the questions about algorithms without relying on any particular theories of the First Amendment. The ordinary lawyerly tools of case interpretation take us a fair distance.

B. *Expansion and Exceptions*

The history of the Supreme Court's First Amendment jurisprudence has been one of expansion. Libel and defamation were thought to be outside of the First Amendment's coverage until *New York Times Co. v. Sullivan*.³⁴ Commercial advertising was considered to be beyond the scope of the First Amendment until *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*³⁵ And that expansion of the scope of the Free Speech Clause has continued. In the *IMS Health* litigation, many (including the government and the First Circuit) contended that data miners' sale, transfer, and use of prescriber-identifying information was conduct, not speech.³⁶

³⁴ See 376 U.S. 254, 268-69 (1964) (stating that although "[r]espondent relies heavily . . . on statements of this Court to the effect that the Constitution does not protect libelous publications . . . libel can claim no talismanic immunity from constitutional limitations. It must be measured by standards that satisfy the First Amendment").

³⁵ See 425 U.S. 748, 758, 770 (1976) (acknowledging that "in past decisions the Court has given some indication that commercial speech is unprotected," but holding that "commercial speech, like other varieties, is protected").

³⁶ The First Circuit, for example, stated:

We say that the challenged elements of the Prescription Information Law principally regulate conduct because those provisions serve only to restrict the ability of data miners to aggregate, compile, and transfer information destined for narrowly defined commercial ends. In our view, this is a restriction on the conduct, not the speech, of the data miners. In other words, this is a situation in which information itself has become a commodity. The plaintiffs, who are in the business of harvesting, refining, and selling this commodity, ask us in essence to rule that because their product is information instead of, say, beef jerky, any regulation constitutes a restriction of speech. We think that such an interpretation stretches the fabric of the First Amendment beyond any rational measure.

But the Supreme Court rejected this argument, emphasizing that “the creation and dissemination of information are speech within the meaning of the First Amendment.”³⁷

Not only has the Court expansively construed the coverage of the First Amendment (or, if you prefer, narrowed and eliminated assumed exceptions to First Amendment coverage), but it has also revealed an unwillingness to create new exceptions or construe existing categories of exceptions at a broader level of generality. This has been particularly clear in recent years. In *United States v. Stevens*,³⁸ *Brown v. Entertainment Merchants Association*,³⁹ and *United States v. Alvarez*,⁴⁰ the Supreme Court emphatically rejected arguments in favor of broadening the categories that are outside First Amendment coverage. Indeed, the *Alvarez* plurality rejected understanding existing exceptions that focus on falsity (like fraud and defamation) as part of a more general exclusion of false statements of fact from First Amendment coverage. The flavor of the Court’s approach toward exceptions is encapsulated in the following paragraph from *Alvarez*, quoting *Stevens* in the first two quotations and *Brown* in the last:

Although the First Amendment stands against any “freewheeling authority to declare new categories of speech outside the scope of the First Amendment,” the Court has acknowledged that perhaps there exist “some categories of speech that have been historically unprotected . . . but have not yet been specifically identified or discussed . . . in our case law.” Before exempting a category of speech from the normal prohibition on content-based restrictions, however, the Court must be presented with “persuasive

IMS Health Inc. v. Ayotte, 550 F.3d 42, 52-53 (1st Cir. 2008), *abrogated by* Sorrell v. IMS Health, Inc. 131 S.Ct. 2653 (2011).

³⁷ *Sorrell*, 131 S. Ct. at 2667. The Court’s discussion in *Sorrell* is illuminating:

[T]he United States Court of Appeals for the First Circuit has characterized prescriber-identifying information as a mere “commodity” with no greater entitlement to First Amendment protection than “beef jerky.” In contrast the courts below concluded that a prohibition on the sale of prescriber-identifying information is a content-based rule akin to a ban on the sale of cookbooks, laboratory results, or train schedules.

This Court has held that the creation and dissemination of information are speech within the meaning of the First Amendment. Facts, after all, are the beginning point for much of the speech that is most essential to advance human knowledge and to conduct human affairs. There is thus a strong argument that prescriber-identifying information is speech for First Amendment purposes.

Id. at 2666-67 (internal citations omitted).

³⁸ 130 S. Ct. 1577 (2010).

³⁹ 131 S. Ct. 2729 (2011).

⁴⁰ 132 S. Ct. 2537 (2012) (plurality opinion).

evidence that a novel restriction on content is part of a long (if heretofore unrecognized) tradition of proscription.” The Government has not demonstrated that false statements generally should constitute a new category of unprotected speech on this basis.⁴¹

I emphasize this backdrop because it highlights the Justices’ apparent belief that their jurisprudence has laid out the relevant benchmarks for First Amendment coverage, subject only to “persuasive evidence that a novel restriction on content is part of a long (if heretofore unrecognized) tradition of proscription.”⁴²

III. SUPREME COURT JURISPRUDENCE AND ALGORITHM-BASED DECISIONS

I turn now to the Supreme Court cases most directly relevant to the coverage of algorithm-based outputs. That jurisprudence provides meaningful guidance. *Brown* is a good starting point. The *Brown* Court began its analysis of the legal issues in the case by stating flatly, “California correctly acknowledges that video games qualify for First Amendment protection.”⁴³ After noting that “it is difficult to distinguish politics from entertainment, and dangerous to try” and quoting from *Winters v. New York*,⁴⁴ the Court concluded its discussion by stating categorically that “[v]ideo games communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player’s interaction with the virtual

⁴¹ *Id.* at 2547 (citations omitted) (quoting, respectively, *Stevens*, 130 S. Ct. at 1586, and *Brown*, 131 S. Ct. at 2734). The *Alvarez* plurality had earlier noted:

[C]ontent-based restrictions on speech have been permitted, as a general matter, only when confined to the few historic and traditional categories [of expression] long familiar to the bar Among these categories are advocacy intended, and likely, to incite imminent lawless action; obscenity; defamation; speech integral to criminal conduct; so-called “fighting words”; child pornography; fraud; true threats; and speech presenting some grave and imminent threat the government has the power to prevent, although a restriction under the last category is most difficult to sustain. These categories have a historical foundation in the Court’s free speech tradition. The vast realm of free speech and thought always protected in our tradition can still thrive, and even be furthered, by adherence to those categories and rules.

Id. at 2544 (citations and internal quotation marks omitted).

⁴² *Brown*, 131 S. Ct. at 2734.

⁴³ *Id.* at 2733.

⁴⁴ 333 U.S. 507, 510 (1948).

world). That suffices to confer First Amendment protection.”⁴⁵ In one short paragraph the Court concluded that video games are speech, period.

And there is a significant dog that didn’t bark: the Court stated broadly that “video games” are covered by the First Amendment—not particular types of video games that entail certain kinds of interactions, but all video games.⁴⁶ The only possible limit implied by the Court’s reasoning is that video games communicate ideas, but the Court’s discussion makes it clear that it has a very low threshold for what constitutes such communication. Indeed, Justice Alito’s concurrence argued at some length that video games were quite different from recognized forms of speech like books,⁴⁷ prompting the majority to respond that “[e]ven if we can see in them ‘nothing of any possible value to society . . . , they are as much entitled to the protection of free speech as the best of literature.’”⁴⁸ It is certainly possible that a future Supreme Court could draw distinctions among video games, but nothing in *Brown* provides any support for such distinctions.

In *Turner Broadcasting System, Inc. v. FCC (Turner I)*,⁴⁹ confronting a First Amendment challenge to a statute that required cable operators to air local broadcast television stations,⁵⁰ the Court flatly rejected the suggestion that this was ordinary economic regulation, and more specifically that cable operators were not engaged in speech for First Amendment purposes:

There can be no disagreement on an initial premise: Cable programmers and cable operators engage in and transmit speech, and they are entitled to

⁴⁵ *Brown*, 131 S. Ct. at 2733. The entirety of the Court’s discussion is as follows:

California correctly acknowledges that video games qualify for First Amendment protection. The Free Speech Clause exists principally to protect discourse on public matters, but we have long recognized that it is difficult to distinguish politics from entertainment, and dangerous to try. “Everyone is familiar with instances of propaganda through fiction. What is one man’s amusement, teaches another’s doctrine.” *Winters v. New York*, 333 U.S. 507, 510 (1948). Like the protected books, plays, and movies that preceded them, video games communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player’s interaction with the virtual world). That suffices to confer First Amendment protection.

Id.

⁴⁶ *Id.*

⁴⁷ See *id.* at 2742 (Alito, J., concurring in the judgment) (“There are reasons to suspect that the experience of playing violent video games just might be very different from reading a book, listening to the radio, or watching a movie or a television show.”).

⁴⁸ *Id.* at 2737 n.4 (quoting *Winters*, 333 U.S. at 510).

⁴⁹ 512 U.S. 622 (1994).

⁵⁰ Cable Television Consumer Protection and Competition Act of 1992, Pub. L. 102-385, 106 Stat. 1460 (codified as amended in scattered sections of 47 U.S.C.).

the protection of the speech and press provisions of the First Amendment. Through “original programming or by exercising editorial discretion over which stations or programs to include in its repertoire,” cable programmers and operators “see[k] to communicate messages on a wide variety of topics and in a wide variety of formats.”⁵¹

This language suggests two—and only two—elements for First Amendment coverage: first, that cable programmers and operators either create programming or choose what to air; and, second, that in doing so they seek to communicate messages on a variety of topics.

Turner I's focus on seeking to communicate messages is consistent with Supreme Court jurisprudence that has always treated substantive communication or self-expression as a necessary condition for the application of the First Amendment.⁵² In every case in which the Court has applied the First

⁵¹ 512 U.S. at 636 (alteration in original) (citation omitted) (quoting *City of Los Angeles v. Preferred Commc'ns, Inc.*, 476 U.S. 488, 494 (1986)). As the internal quotation indicates, the Court put forward the same test in *Preferred Communications*.

⁵² See, e.g., *Roth v. United States*, 354 U.S. 476, 484 (1957) (stating that the First Amendment “was fashioned to assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people”); FREDERICK SCHAUER, *FREE SPEECH: A PHILOSOPHICAL ENQUIRY* 94 (1982) (“Communication dominates all the arguments that would with any plausibility generate a Free Speech Principle.”); Steven G. Gey, *Why Should the First Amendment Protect Government Speech When the Government Has Nothing to Say?*, 95 IOWA L. REV. 1259, 1274 (2010) (“The Supreme Court has been very clear about the First Amendment requirement that speakers must engage in definitive communication before receiving constitutional protection for speech.”); Frederick Schauer, *Speech and “Speech”—Obscenity and “Obscenity”: An Exercise in the Interpretation of Constitutional Language*, 67 GEO. L.J. 899, 920-21 (1979) (“The Court is saying that the communication of ideas is at once the essential first amendment purpose and the essential first amendment property. Without this purpose or property, activity is not protected by the first amendment.”).

One might reasonably ask what work “self-expression” is doing in the formulation in the text, on the assumption that self-expression is a substantive communication. Adding “self-expression” clarifies the inclusion of forms of expression that have been recognized as implicating the freedom of speech even though they arguably do not entail a clear substantive communication—in particular, recognized forms of art and symbolism. As the Supreme Court stated in *Hurley v. Irish-American Gay, Lesbian & Bisexual Group of Boston, Inc.*:

The protected expression that inheres in a parade is not limited to its banners and songs . . . for the Constitution looks beyond written or spoken words as mediums of expression. Noting that “[s]ymbolism is a primitive but effective way of communicating ideas,” our cases have recognized that the First Amendment shields such acts as saluting a flag (and refusing to do so), wearing an armband to protest a war, displaying a red flag, and even “[m]arching, walking or parading” in uniforms displaying the swastika. As some of these examples show, 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.

Amendment, abridgement of substantive communication has been the issue.⁵³ Some of those abridgements are content-neutral, but the key is that they interfere with a person's or entity's ability to communicate content. The touchstone of the Court's First Amendment cases has always been that the underlying activity entails an expression of ideas, even if it is not "a narrow, succinctly articulable message."⁵⁴ Communication thus seems to require, at a minimum, a speaker who seeks to transmit some substantive message or messages⁵⁵ to a listener who can recognize that message.⁵⁶ Thus, in order to communicate, one must have a message that is sendable and receivable and that one actually chooses to send.⁵⁷

Choosing to send a sendable and receivable substantive message may be necessary for First Amendment coverage, but that does not mean they are sufficient for such coverage. Aren't those criteria incomplete?

515 U.S. 557, 569 (1995) (citations omitted) (quoting, respectively, *W. Va. State Bd. of Educ. v. Barnette*, 319 U.S. 624, 632 (1943); *Nat'l Socialist Party of Am. v. Village of Skokie*, 432 U.S. 43, 43 (1977) (per curiam); *Spence v. Washington*, 418 U.S. 405, 411 (1974) (per curiam)).

⁵³ See, e.g., *Rumsfeld v. Forum for Academic & Institutional Rights, Inc.*, 547 U.S. 47, 66 (2006) (noting that the Supreme Court has "extended First Amendment protection only to conduct that is inherently expressive"); *Spence*, 418 U.S. at 409-10 (finding that the display of an American flag with peace symbols was an activity "sufficiently imbued with elements of communication to fall within the scope of the First and Fourteenth Amendments").

⁵⁴ *Hurley*, 515 U.S. at 569.

⁵⁵ In the remainder of this Article, I will use the term "message" to refer to one or more messages for the sake of convenience and brevity.

⁵⁶ See, e.g., KENT GREENAWALT, *SPEECH, CRIME, AND THE USES OF LANGUAGE* 54 (1989) ("When the message is an aspect of what the actor is trying to do and is understood by the audience as such, we can say comfortably that the act communicates the message and that the free speech principle is relevant."); Melville B. Nimmer, *The Meaning of Symbolic Speech Under the First Amendment*, 21 UCLA L. REV. 29, 36 (1973) ("Whatever else may or may not be true of speech, as an irreducible minimum it must constitute a communication. That, in turn, implies both a communicator and a communicatee—a speaker and an audience."); Thomas Scanlon, *A Theory of Freedom of Expression*, 1 PHIL. & PUB. AFF. 204, 206 (1972) ("[By] 'acts of expression' . . . I mean to include any act that is intended by its agent to communicate to one or more persons some proposition or attitude.").

⁵⁷ Tim Wu says that while this standard "accurately describes what the Court *says*, it doesn't come close to describing what courts *do*." Wu, *supra* note 6, at 1529. Some lower courts have issued opinions that may be in tension with this standard, but the Supreme Court has not done so, and my focus is on the Court's jurisprudence. See *infra* notes 58-62 and accompanying text. Wu's alternative formulation, by contrast, is not consistent with the prevailing Supreme Court jurisprudence. See *infra* note 84.

This should not obscure one of the important points on which Wu and I agree: the First Amendment standard I glean from the Court's jurisprudence includes a great deal within its purview. Indeed, this Article underscores that breadth, which raises the question whether the Court has gone too far. That question will become more salient insofar as algorithms increase the number of activities encompassed by the First Amendment standard. In this Article I argue that there is no nonarbitrary way to excise algorithm-based outputs from First Amendment coverage without significantly altering First Amendment jurisprudence more generally.

The answer may well be yes if we are considering the best definition of “speech” as a matter of first principles, but that is not my goal here. Such a foundational inquiry has felled many trees and is beyond the scope (and word limit) of this Article.

Instead, in keeping with my focus on Supreme Court jurisprudence as the source of widely accepted guideposts, I will ask two questions that focus on possible incompleteness through the lens of the Supreme Court’s jurisprudence: First, is relying solely on the minima identified above (choosing to send a sendable and receivable message) and the exceptions the Court has articulated inconsistent with the Court’s First Amendment jurisprudence? Second, can we adopt one of the competing theories of the First Amendment in a way that keeps algorithm-based decisions out of First Amendment coverage but isn’t significantly inconsistent with the Court’s First Amendment jurisprudence? I will address the second question in the next Part, but let me consider the first question here.

In posing this question, I am not asking whether the criteria I identify are complete for purposes of explicating the Supreme Court’s approach to First Amendment coverage. They are not. The Court has articulated exceptions and qualifications applicable to, for example, expressive conduct,⁵⁸ specific kinds of communications (such as speech integral to criminal conduct),⁵⁹ and specific contexts (such as public fora).⁶⁰ Rather, I am asking whether applying the criteria identified above plus the exceptions the Court has articulated would be inconsistent with some elements of the Court’s jurisprudence. Are the criteria plus exceptions so incomplete that they do not adhere to some of the Court’s rulings? This question may seem nonsensical insofar as it can be boiled down to “Is the Supreme Court’s jurisprudence inconsistent with itself?” But the question makes sense in the context of a multimember Court often reaching incompletely theorized agreements resolving specific disputes arising out of others’ actions.⁶¹

The narrow answer is that the criteria and existing exceptions would not upend any existing Supreme Court jurisprudence. No Supreme Court

⁵⁸ See, e.g., *Rumsfeld*, 547 U.S. at 65-66 (discussing what sorts of conduct are expressive and covered by the First Amendment).

⁵⁹ See, e.g., *Giboney v. Empire Storage & Ice Co.*, 336 U.S. 490, 498 (1949). For a recent list of First Amendment exceptions, see *United States v. Alvarez*, 132 S. Ct. 2537, 2544 (2012) (including speech integral to criminal conduct, obscenity, and incitement, to name a few) (plurality opinion).

⁶⁰ See, e.g., *Int’l Soc’y for Krishna Consciousness, Inc. v. Lee*, 505 U.S. 672, 678-85 (1992) (discussing the public forum doctrine).

⁶¹ See Sunstein, *supra* note 29, at 48 (identifying incompletely theorized agreements as those “in which the most fundamental questions are left undecided”).

holdings would be disturbed, no Supreme Court doctrines would have to be recast.⁶² The Court has never found a substantive communication that was sendable, receivable, and actually sent to be outside First Amendment coverage unless it fell into one of the Court's articulated exceptions. The broader answer is that the breadth of First Amendment coverage suggested by these criteria might motivate us to find ways to narrow the application of First Amendment scrutiny, a topic I discuss later in this Article.

To return to the criteria identified above: The Court's reasoning indicates that the First Amendment encompasses many algorithm-based manipulations. Consider a person who creates a billboard or webpage entitled "Our National Debt" that presents a running (and thus increasing) tally of the U.S. national debt.⁶³ The central feature of this billboard or webpage is simply a dollar figure generated by a computer running a program designed to measure the national debt. There need be no human involvement beyond creating the billboard or webpage and the program measuring the debt. Yet I don't think there is any real doubt that such a billboard or webpage would constitute speech in light of the Supreme Court's jurisprudence. It conveys a substantive message. Its running total of the national debt reflects a focus on and interest in the size of the national debt. It may not be clear to viewers exactly what the creator is trying to say about the national debt, but if nothing else the billboard or webpage communicates that the national debt is sufficiently important to merit this focus.⁶⁴

⁶² The same may not be true with respect to lower courts' jurisprudence. Most notably, lower courts have found that encyclopedias, how-to books, etc. are covered by the First Amendment, but have upheld liability for defective aeronautical charts without suggesting that such liability raised any First Amendment issues. *See, e.g., Aetna Cas. & Sur. Co. v. Jeppesen & Co.*, 642 F.2d 339, 341-44 (9th Cir. 1981) (addressing liability for a defective aeronautical chart without discussing the First Amendment); *cf. Brocklesby v. United States*, 767 F.2d 1288, 1295 n.9 (9th Cir. 1985) (not reaching the First Amendment issue in a case involving an aeronautical chart because it was raised for the first time on appeal). It may be that aeronautical charts are best understood as falling into an exception that the Supreme Court has articulated. But it may well be that the Court's jurisprudence would treat these charts as speech for First Amendment purposes.

⁶³ This is not a product of my imagination, of course. There is a well-known, billboard-sized "National Debt Clock" in Manhattan. Its central features are tallies of the national debt and the debt per American family. (The only text reads "Our National Debt," "Your Family Share," and "The National Debt Clock.") The clock simply follows an algorithm to calculate the national debt and then displays the result. There are also websites that perform similar functions. *See, e.g., US DEBT CLOCK*, <http://www.usdebtclock.org> (providing continuously updated information on the national debt and related numbers—gross domestic product, credit card debt, etc.).

⁶⁴ Note that the fact that the person or entity claiming to be engaged in speech does not create the underlying content is irrelevant for purposes of First Amendment coverage. *See Hurlley v. Irish-Am. Gay, Lesbian & Bisexual Grp. of Bos., Inc.*, 515 U.S. 557, 570 (1995) ("First Amendment protection [does not] require a speaker to generate, as an original matter, each item featured in the communication. . . . [T]he presentation of an edited compilation of speech

Significantly, many communications that the Supreme Court treats as speech do not express a clear viewpoint, from a banner stating “BONG HiTS 4 JESUS”⁶⁵ to almost every form of art. Given the ambiguities inherent in almost every piece of art, the Supreme Court’s application of First Amendment protections to art precludes a requirement of a clear viewpoint or message. As the Court stated in *Hurley v. Irish-American Gay, Lesbian & Bisexual Group of Boston, Inc.*, “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.”⁶⁶ In *Hurley* the Supreme Judicial Court of Massachusetts held that the Boston St. Patrick’s Day parade was not speech for First Amendment purposes because “it is impossible to discern any specific expressive purpose entitling the Parade to protection under the First Amendment.”⁶⁷ But the U.S. Supreme Court, in reversing, unanimously rejected that argument, stating that “the parade does not consist of individual, unrelated segments that happen to be transmitted together for individual selection by members of the audience. Although each parade unit generally identifies itself, each is understood to contribute something to a common theme.”⁶⁸ The Court explained that, “[r]ather like a composer, the Council [running the parade] selects the expressive units of the parade from potential participants, and though the score may not produce a particularized message, each contingent’s expression in the Council’s eyes comports with what merits celebration on that day.”⁶⁹

Imagine that a person sets up a bulletin board (an old-fashioned, physical bulletin board) on which she posts every article she finds that uses some

generated by other persons is a staple of most newspapers’ opinion pages, which, of course, fall squarely within the core of First Amendment security, as does even the simple selection of a paid noncommercial advertisement for inclusion in a daily paper.” (citations omitted)); *Turner I*, 512 U.S. 622, 636 (1994) (finding that cable operators “engage in and transmit speech” by choosing channels to air); see also Danny Sullivan, *The New York Times Algorithm & Why It Needs Government Regulation*, SEARCH ENGINE LAND (July 15, 2010) <http://searchengineland.com/regulating-the-new-york-times-46521> (analogizing Google to a newspaper).

⁶⁵ See *Morse v. Frederick*, 551 U.S. 393, 397 (2007). The Court treated the banner as speech under the First Amendment even though “the message on Frederick’s banner is cryptic. It is no doubt offensive to some, perhaps amusing to others. To still others, it probably means nothing at all.” *Id.* at 401.

⁶⁶ *Hurley*, 515 U.S. at 569 (citations omitted).

⁶⁷ *Irish-Am. Gay, Lesbian & Bisexual Grp. of Bos. v. City of Boston*, 636 N.E.2d 1293, 1299 (Mass. 1994) (internal quotation marks omitted), *rev’d sub. nom. Hurley*, 515 U.S. 557 (1995).

⁶⁸ 515 U.S. at 576.

⁶⁹ *Id.* at 574.

specific words (say, “God is dead”⁷⁰). She is not creating the articles; she is merely collecting articles written by others. And she is not editing beyond looking for the words; she is indiscriminately amassing all articles that use these words. But I think we would regard the bulletin board as speech for First Amendment purposes. The bulletin board would be communicating a substantive message to those who viewed it. Her viewpoint might not be clear (does she agree or disagree that God is dead?) but, if nothing else, the bulletin board tells her viewers that she thinks this topic is important enough to merit special attention, in the form of her bulletin board. Presenting all articles containing the words “God is dead” (or “Boston St. Patrick’s Day Parade,” for that matter) would not present a single clear message; rather, as in *Turner I*, it would constitute an exercise of editorial discretion through which the bulletin board editor sought to communicate a message about the importance of articles containing the words “God is dead.”

Now imagine that the bulletin board editor discovers the Internet, and she transmogrifies her physical bulletin board into a virtual one. She performs computer searches for “God is dead” and posts links to all the articles that incorporate this phrase. Then she realizes that she can largely automate this process, so she creates a macro that lets her hit a single key to search the Web for the words “God is dead,” and another macro that lets her hit a second key to upload onto her bulletin board any link that is not already posted. She begins to tire of performing these searches and realizes that a trained monkey could perform this task. Fortunately for her, she has a trained monkey, so she decides to let the monkey hit the two keys. The bulletin board editor then combines the operation into a single key for the monkey. Finally, after the monkey tires of all this typing, the bulletin board editor realizes that she can create a program that will automatically perform the search and post the relevant links without needing the monkey. Once the program starts, it continually searches the Web. In these steps from a physical bulletin board to an automated process, nothing relevant to free speech coverage under the Supreme Court’s jurisprudence has changed. When it was physical, the editor’s bulletin board communicated the importance to her of articles containing the words “God is dead.” The same thing is communicated when the process is automated.

Similarly, consider the following progression: a time-pressed reporter realizes that she can write more articles if she uses some standard boilerplate to communicate information that arises repeatedly. She starts with cutting and pasting but finds that too laborious. So she creates macros for standard

⁷⁰ This example is not of my own making; I adapted it from elsewhere.

descriptions (e.g., “Team *A* scored seven runs in the third inning, and team *B* then scored nine runs in the third inning”). The macros become more complex, and utilize fancier language (e.g., “in one inning the visitors notched an impressive 7 runs in the top half of the third inning, but the home team responded with a whopping nine runs in the bottom of the third”). The macros become so sophisticated that the reporter can create a template for virtually every outcome, and by adding some facts can stitch together blocks of text that produce a coherent article. Eventually, the reporter’s computer skills become so advanced that she can input some basic data from a spreadsheet (e.g., the box score from a baseball game) and run a macro that creates an entire article based on those facts. Finally she creates a macro that gathers those facts and writes the article, leaving her creative input entirely in the creation of the programs.

This is not a fanciful example. A company called Narrative Science “produce[s] content by way of algorithm, no human reporting necessary,” for publications such as *Forbes*.⁷¹ Narrative Science employs “meta-writers” and engineers who work with its clients to determine what facts and angles are of interest to them, compile a relevant vocabulary, and create algorithms to construct the articles.⁷² As with the example of the “God is dead” bulletin

⁷¹ See *The State of the News Media 2013: Annual Report on American Journalism*, PEW RES. CTR.’S PROJECT FOR EXCELLENCE JOURNALISM, available at <http://stateofthemediamedia.org/2013/overview-5> (last visited Apr. 10, 2013); see also NARRATIVE SCIENCE, <http://narrativescience.com> (last visited Apr. 10, 2013) (“Using complex Artificial Intelligence algorithms, [our program] extracts and organizes key facts and insights and transforms them into stories, at scale.”).

In fact, the baseball example comes from an article quoting the following from a Narrative Science article:

Friona fell 10-8 to Boys Ranch in five innings on Monday at Friona despite racking up seven hits and eight runs. Friona was led by a flawless day at the dish by Hunter Sundre, who went 2-2 against Boys Ranch pitching. Sundre singled in the third inning and tripled in the fourth inning . . . Friona piled up the steals, swiping eight bags in all.

Steven Levy, *Can an Algorithm Write a Better News Story than a Human Reporter?*, WIRED (April 24, 2012), <http://www.wired.com/gadgetlab/2012/04/can-an-algorithm-write-a-better-news-story-than-a-human-reporter/all> (quoting a Narrative Science article). Not bad for a computer, eh?

⁷² See Amy Hadfield, *Narrative Science, Newsblaster Show that Algorithm-Writing Articles Have a Key Role to Play in Journalism’s Future*, EDITORS WEBLOG (Aug. 8, 2012), <http://www.editorsweblog.org/2012/08/22/narrative-science-newsblaster-show-that-algorithm-writing-articles-have-a-key-role-to-pla> (noting that Narrative Science “employs a team of ‘meta-writers’—journalists who work alongside the company’s engineers to produce a set of templates that give the story its ‘angle,’ the most interesting element of the event it is writing up. To construct sentences, the algorithms draw on topic-specific lists of vocabulary provided by the meta-writers, and then place these sentences within pre-set article frameworks”).

This is not unique to articles, nor is it that new. In 2008 a Russian publishing company programmed software to create a novel that was a variation on Leo Tolstoy’s *Anna Karenina* written

board, it is hard to see how any step in this progression crosses a line between speech and nonspeech that arises from the Court's jurisprudence. The reporter/programmer is producing a substantive communication via editorial decisions. She designs the boilerplate and the mechanisms to put it together, and she does so in order to convey substantive information. Note that in all the steps of the progression, the reporter/programmer is relying to some degree on boilerplate that she did not create specially for the occasion. With each step she pushes more of her input to the front end (the creation of the boilerplate and the macros to input them), and leaves more implementation for the programs she has created.⁷³

Most of the examples above involve webpages that focus on one particular area of interest. Does the analysis change without that focus? No. Suppose someone decides to create a website with the most important news of the moment, and the creator's substantive judgment is that importance is a function of popularity: the more popular an item is, the more important it is. So she creates an algorithm to identify news-oriented websites and to measure the popularity of items appearing on those websites, and the product of those algorithms yields an ever-changing set of links (in order of popularity) on her webpage. Above the links, her webpage says, "Here is the most important news, and by 'most important' I mean most popular." Her page would just be an automated collection of links, but under *Turner I* it would be speech. Similarly, a search engine that tells users "We prioritize websites that are family friendly" is communicating a substantive message in its deletion of adult-oriented links. Or, in a different vein, an aggregator or search engine that promises "We prioritize links that have the most outrageous porn on the Web" is sending a substantive message that its users will receive, and that the Supreme Court's jurisprudence would treat as speech.

That brings me to a search engine called blekko.⁷⁴ It presents itself on its main page as "the spam-free search engine,"⁷⁵ and beyond that states flatly: "blekko biases towards quality sites. We do not attempt to gather all of the world's information. We purposefully bias our index away from sites with

in the style of Haruki Murakami (whose books were uploaded into the program). See Irina Titova, *Book Written by Computer Hits Shelves*, ST. PETERSBURG TIMES (Russ.) (Jan. 22, 2008), available at <http://www.sptimes.ru/story/24786>. The publisher's chief editor explained, "Today publishing houses use different methods of the fastest possible book creation in this or that style meant for this or that readers' audience. Our program can help with that work." *Id.* He added, "However, the program can never become an author, like PhotoShop can never be Raphael." *Id.*

⁷³ We have not yet, to my knowledge, reached that point with law review articles. Beep.

⁷⁴ See BLEKKO, <http://blekko.com> (last visited Apr. 10, 2013).

⁷⁵ *Id.*

low quality content.”⁷⁶ Not much translation is needed here: blekko is making editorial decisions based on quality. Blekko is not generating the linked-to content on its own, but the same is true of most of the examples above (and of the Drudge Report and other link aggregators).⁷⁷

That said, there are two distinctions between blekko and most of the examples above that might seem relevant for First Amendment purposes. First, whereas one might surmise that the creators of the National Debt webpage and the “God is dead” link page are motivated by a particular viewpoint (even if one might guess incorrectly what that viewpoint was), one cannot plausibly ascribe any viewpoint to blekko, as it is a general interest tool. Second, rather than collect items of interest in advance, it searches for them based on the user’s preferences. These two points are closely related. Search engines respond to users’ queries and present information in light of those queries, and they do not screen for or focus on particular viewpoints.

As to the first point, under the prevailing jurisprudence, First Amendment coverage is not limited to speakers with a specific viewpoint, or even to speech of particular value.⁷⁸ Magazines that publish articles on politics from every political perspective engage in what everyone would agree is speech, even if the editors themselves have no identifiable political views of their own. Regarding the second point, this seems to be a distinction without a difference for First Amendment purposes. Consider two platforms. The first compiles in advance a list of all the information sources

⁷⁶ *About*, BLEKKO, <http://blekko.com/about> (last visited Apr. 10, 2013).

⁷⁷ A search engine called DuckDuckGo adopts a strategy that is in some ways between blekko and Google, in that it focuses on blocking spam as a proxy for relevance. *See* DUCKDUCKGO, <https://duckduckgo.com> (last visited Apr. 10, 2013). DuckDuckGo’s founder Gabriel Weinberg explained in an interview that “[t]he main benefit you see right away is we try to get way better instant answers. . . . We’re also way more aggressive with spam.” Jose Vilches, *Interview with DuckDuckGo Founder Gabriel Weinberg*, TECHSPOT (Aug. 21, 2012), <http://www.techspot.com/article/559-gabriel-weinberg-interview/page2.html>. Weinberg added,

There’s been a lot of the data that shows that initially when people click on content farm results, they actually like them because they often match their query exactly. But we believe that in the long run you won’t like them, because they’re often low quality content. So, that’s a hard problem for search engines because a lot of the metrics they use for relevance show those results are very relevant, even though I think that they’re not.

Id.

⁷⁸ *See* *United States v. Stevens*, 130 S. Ct. 1577, 1591 (2010) (“*Most* of what we say to one another lacks ‘religious, political, scientific, educational, journalistic, historical, or artistic value’ (let alone serious value), but it is still sheltered from government regulation. Even ‘[w]holly neutral futilities . . . come under the protection of free speech as fully as do Keats’ poems or Donne’s sermons.’” (quoting *Cohen v. California*, 403 U.S. 15, 25 (1971))).

that it judges to be of high quality, and it lets users search among and select those sources in a variety of ways. The second platform does not compile anything in advance, but instead selects the information sources it judges to be of high quality in response to users' queries. We can call the first platform "digital cable television that emphasizes quality" and the second platform "blekko." They are making the same judgments (well, assuming a digital cable television operator that in fact emphasizes quality). The only difference is the users' browsing experience, for users who choose to browse rather than simply search. It is difficult to see how anything of constitutional significance could turn on this distinction. Even if it did, it is not clear which way the distinction would cut. Having an installed library of choices allows users to passively graze (or channel surf, in the digital cable context), whereas giving only the choice of search requires more active participation on the part of the user. The result is that the product of that search may be less reflective of the decisions of the platform and more reflective of the decisions of the user, but it is not clear whether that makes this product more or less clearly "speech." In any event, nothing seems to turn on the level of user participation, because both platforms are best understood as engaging in speech under the Court's First Amendment jurisprudence.

Is Google different from blekko under the Supreme Court's jurisprudence? I think not. Google often articulates its goals in terms of quality. For instance, it presented its 2011 changes to its algorithms (known as Panda) as a means of returning more high-quality websites.⁷⁹ Google also articulates its goals in terms of relevance and usefulness for its users.⁸⁰

⁷⁹ See Matt Cutts, *Another Step to Reward High-Quality Sites*, GOOGLE WEBMASTER CENTRAL BLOG (Apr. 24, 2012, 2:45 PM), <http://googlewebmastercentral.blogspot.com/2012/04/another-step-to-reward-high-quality.html> ("The goal of many of our ranking changes is to help searchers find sites that provide a great user experience and fulfill their information needs. We also want the 'good guys' making great sites for users, not just algorithms, to see their effort rewarded. To that end we've launched Panda changes that successfully returned higher-quality sites in search results.").

⁸⁰ This relates to an interesting and revealing episode involving Google searches. In 2004, the top result in Google searches for "jew" was Jew Watch, which markets itself as "An Oasis of News for Americans Who Presently Endure the Hateful Censorship of Zionist Occupation" and features stridently anti-Jewish content. See JEW WATCH, <http://www.jewwatch.com> (last visited Apr. 10, 2013); see also James Grimmelman, *The Google Dilemma*, 53 N.Y.L. SCH. L. REV. 939, 943-45 (2008-2009); Somini Sengupta, Opinion, *Free Speech in the Age of YouTube*, N.Y. TIMES, Sept. 23, 2012, at SR 4. This led a Jewish activist to link the word "jew" to a Wikipedia article instead of Jew Watch, followed by neo-Nazi efforts to point "jew" back to jewwatch.com. See Grimmelman, *supra*, at 943. Activists also requested that Google change its search results so that they would exclude Jew Watch entirely, or, at a minimum, exclude it from search results for "jew." *Id.* As Grimmelman has noted, "Google could easily have changed their software so no trace of Jew Watch remained in its results pages, no indication that anything other than the usual process of looking for relevant results had ever taken place." *Id.* Google chose not to demote or remove Jew

What if we assume that Google (or another algorithm-based provider) does not care about “quality,” but instead only about relevance and usefulness for the user? Are Google’s algorithm-based outputs based on its understanding of relevance and usefulness speech under the Supreme Court’s jurisprudence? Yes. Google disclaims any adoption of the expression in the sites it finds,⁸¹ but it is making all sorts of judgments in determining what its customers want.⁸² There is a reasonable argument against this conclusion, flowing from the position that editing and transmitting information based

Watch, but it added a link to a Google site as one of the top results for “jew,” with Google’s own message. *Id.* at 943-44. The website, entitled *An Explanation of Our Search Results*, begins by stating, “If you recently used Google to search for the word ‘Jew,’ you may have seen results that were very disturbing. We assure you that the views expressed by the sites in your results are not in any way endorsed by Google.” *An Explanation of Our Search Results*, GOOGLE, <http://www.google.com/explanation.html> (last visited Apr. 10, 2013). The website goes on to explain:

A site’s ranking in Google’s search results relies heavily on computer algorithms using thousands of factors to calculate a page’s relevance to a given query

The beliefs and preferences of those who work at Google, as well as the opinions of the general public, do not determine or impact our search results. . . . We will, however, remove pages from our results if we believe the page (or its site) violates our Webmaster Guidelines, if we believe we are required to do so by law, or at the request of the webmaster who is responsible for the page.

Id. Thus Google, in both the content and placement of this webpage, engaged in speech, and a key element of that speech was its denial of the relevance of its workers’ beliefs and preferences (though it noted the relevance of its guidelines in making its decisions about what to remove). As Grimmelmann noted in response:

Is it really the case that search engine results are purely automated, impersonal things that don’t reflect anyone’s opinion at all? In one sense, passing the buck and saying “don’t blame us, the computers did it” is an uncomfortable position for any computer programmer to take. Who, after all, gave the computer its instructions? The programmer did. Everything that Google’s automated ranking system does, it does because Google programmers told it to. A computer is just a glorified abacus; it does what you tell it to. . . .

And, of course, the “beliefs and preferences” of Google’s employees and users do enter into its search results in another sense. The employees *prefer* that Google return results that the users *believe* to be useful. They optimize their algorithms all the time to make the results more relevant to their users’ questions. They don’t want you to get Jew Watch if you search for “mongolian gerbils.”

Grimmelmann, *supra*, at 944.

⁸¹ See *An Explanation of Our Search Results*, *supra* note 80 (“We assure you that the views expressed by the sites in your results are not in any way endorsed by Google.”).

⁸² See Eric Goldman, *Search Engine Bias and the Demise of Search Engine Utopianism*, 8 YALE J.L. & TECH. 188, 189, 192 (2006) (titling his first section “Search Engines Make Editorial Choices” and stating that “search engines make editorial judgments just like any other media company”). For an example of Google debating how to improve searches for its customers, see Google, *Search Quality Meeting: Spelling for Long Queries (Annotated)*, YOUTUBE (Mar. 12, 2012), <http://www.youtube.com/watch?v=JtRJXnXgE-A> (showing Google’s search quality team deliberating on algorithmic decisions during a meeting held on December 1, 2011).

on what users want is not an expression of the speaker's own desires and thus is not real speech. As I discuss in the next Part, however, the Supreme Court has not adopted that position and its jurisprudence is not consistent with it.

Many algorithm-based outputs will not constitute speech under this jurisprudence because they are not sending a substantive message. Transmission Control Protocol and Internet Protocol (often referred to as TCP/IP) route information through the Internet, but its creators are not communicating a substantive message in doing so.⁸³ But when people create algorithms in order to selectively present information based on its perceived importance or value or relevance, *Turner I* indicates that they are speakers for purposes of the First Amendment (or the Supreme Court's jurisprudence, at any rate). Nothing in the Court's jurisprudence supports the proposition that reliance on algorithms transforms speech into nonspeech. The touchstone is sending a substantive message, and such a message can be sent with or without relying on algorithms.⁸⁴

One final note: many trees were felled before *Brown* was decided, as courts and commentators debated whether video games constituted speech for First Amendment purposes.⁸⁵ And yet the Court treated this as a

⁸³ For an explanation of the TCP/IP protocols, see Jonathan Strickland, *How Does the Internet Work?*, HOWSTUFFWORKS (May 7, 2010), <http://computer.howstuffworks.com/internet/basics/internet1.htm>.

⁸⁴ In his contribution to this Symposium, Tim Wu argues that under the prevailing jurisprudence, the key inquiry is whether the alleged speaker adopts the information it provides as its own. See Wu, *supra* note 6, 1530 ("Neither the newspaper nor cable operator cases support the idea that the First Amendment protects something like an index, as opposed to content adopted or selected by the speaker as its own. It is that step—the adoption of information, as a publisher, as opposed to merely pointing the user to it—that marks the difference."). I agree with Wu that the Supreme Court's jurisprudence does not support treating an unedited index as speech, but I do not think the line he articulates arises from, or is consistent with, that jurisprudence. The Court in *Turner I* held that cable operators engage in speech because of their editing, without any suggestion that cable operators do, or need to, adopt as their own the communications of the channels they carry. See 512 U.S. 622, 636 (1994) ("Through . . . 'exercising editorial discretion over which stations . . . to include in its repertoire,' cable . . . operators 'see[k] to communicate messages'"); see also *Hurley v. Irish-Am. Gay, Lesbian & Bisexual Grp. of Bos., Inc.*, 515 U.S. 557, 570 (1995) (noting that "even the simple selection of a paid noncommercial advertisement for inclusion in a daily paper" "fall[s] squarely within the core of First Amendment security"). Under *Turner I*, engaging in substantive editing sends a message and thus triggers application of the First Amendment—no adoption or endorsement of the carried programming is needed. To use Wu's example, no one who watches Fox News, MSNBC, or any other cable channel addressing topic *X* says, "Look what my cable operator said about *X* yesterday," or, "It was interesting what my cable operator had to say about *X*." Nonetheless, the First Amendment encompasses the cable operator's selection of channels. See Wu, *supra* note 6, at 1528 (using the quoted language to illustrate the line he sees between speech and nonspeech in the jurisprudence relevant to search engines); see also *infra* note 98 (discussing the implications of Wu's line).

⁸⁵ See, e.g., *Interactive Digital Software Ass'n v. St. Louis County*, 200 F. Supp. 2d 1126, 1133-34 (E.D. Mo. 2002) (finding that video games are not speech for First Amendment purposes),

question with an obvious answer. Indeed, part of what is so striking about the opinion is how easy the Court found the answer to be.⁸⁶

IV. PRODUCING A DIFFERENT RESULT

As I noted above, there are a host of competing conceptions of free speech, none of which has been widely accepted as explaining or driving First Amendment doctrine.⁸⁷ But let me now ask whether adopting one of the competing theories of the First Amendment would produce a different result without upending existing case law. More broadly, how easy or hard would it be to craft a coherent exception to the prevailing First Amendment jurisprudence such that algorithm-based decisions, or search results more specifically, would not be encompassed by the First Amendment but most of the remaining First Amendment jurisprudence would remain? This is different from asking whether, in the first instance, any theory of the First Amendment would exclude algorithm-based decisions from coverage. The answer to that question is yes. That is, we could rely on a particular conception of the First Amendment that would radically rethink the Supreme Court's existing approach in ways that would exclude search engine results and much else. We could, for example, limit "the freedom of speech" in the First Amendment to core political speech, or speech that directly promotes a meaningfully constrained notion of democratic deliberation or self-

rev'd, 329 F.3d 954 (8th Cir. 2003); *America's Best Family Showplace Corp. v. City of New York*, 536 F. Supp. 170, 174 (E.D.N.Y. 1982) (same); Marc Jonathan Blitz, *A First Amendment for Second Life: What Virtual Worlds Mean for the Law of Video Games*, 11 VAND. J. ENT. & TECH. L. 779, 785 (2009) (arguing that even nonnarrative video games and other "communication-free forms of electronic imagery" should be "staunchly protected"); Terri R. Day & Ryan C. W. Hall, *Déjà Vu: From Comic Books to Video Games: Legislative Reliance on "Soft Science" to Protect Against Uncertain Societal Harm Linked to Violence v. the First Amendment*, 89 OR. L. REV. 415, 450 (2010) (arguing that video games are "no less deserving of First Amendment protection than movies, works of art, and literature"); Patrick M. Garry, *Defining Speech in an Entertainment Age: The Case of First Amendment Protection for Video Games*, 57 SMU L. REV. 101, 122 (2004) (arguing against full First Amendment protection for video games); Paul E. Salamanca, *Video Games as a Protected Form of Expression*, 40 GA. L. REV. 153, 194-205 (2005) (arguing against viewing video games as unprotected speech); Kevin W. Saunders, *Regulating Youth Access to Violent Video Games: Three Responses to First Amendment Concerns*, 2003 MICH. ST. L. REV. 51, 101-05 (arguing that video games are noncommunicative and not speech for First Amendment purposes); Anthony Ventry III, Note, *Application of the First Amendment to Violent and Nonviolent Video Games*, 20 GA. ST. U. L. REV. 1129, 1131 (2004) (arguing that "courts should apply a case-by-case approach in determining whether video games are constitutionally protected speech instead of deciding conclusively that all video games are (or are not) protected speech").

⁸⁶ See *supra* notes 43-48 and accompanying text; see also *Sorrell v. IMS Health, Inc.*, 131 S. Ct. 2653, 2659 (2011) ("Speech in aid of pharmaceutical marketing . . . is a form of expression protected by the Free Speech Clause of the First Amendment.")

⁸⁷ See *supra* notes 28-32 and accompanying text.

government, and thereby exclude search engine results, as a category, from the ambit of the First Amendment.⁸⁸ We would also exclude most forms of art, however.⁸⁹ My question in this Part is, without radically changing our First Amendment jurisprudence, how easy would it be to exclude algorithm-based decisions, or search engine results more specifically?

A. *Relying on Particular Theories of the First Amendment*

The most obvious possibility would be to focus the First Amendment analysis on individuals. This could lead to a suggestion that communications by corporations do not constitute speech. But newspapers and magazines are owned by corporations, and a revamping of the First Amendment to exclude those publications as speech would be a radical departure from our existing jurisprudence.

One might instead try to exclude from First Amendment coverage speech that a corporation makes purely for its own benefit. The problem is that it is difficult to come up with any articulation of speech in a corporation's interest that would exclude algorithm-based decisions, or more specifically search engine results, without also excluding newspapers and magazines. A distinction based on speech that is in a corporation's interest fails to distinguish newspapers and magazines. Same for excluding speech that is aimed solely at increasing a corporation's value. Indeed, for a newspaper or magazine owner who is a faithful agent, with shareholders who want the highest possible return on their investment, presumably all the owner's actions would be undertaken in order to maximize shareholder value. Simply stated, search results are in the search engine's interests in the same way that compelling content is in the interest of any conveyor of content, whether newspaper, political website, or porn website.⁹⁰

⁸⁸ See, e.g., Bork, *supra* note 27, at 20 (“Constitutional protection should be accorded only to speech that is explicitly political.”).

⁸⁹ We could avoid such a result if we adopted a very broad definition of “core political speech,” “democratic deliberation,” or “self-government,” but then we would end up back where we started. As Frederick Schauer has noted,

Theories based on self-government or democratic deliberation have a hard time explaining why (except as mistakes, of course) the doctrine now covers pornography, commercial advertising, and art, *inter alia*—none of which has much to do with political deliberation or self-governance, except under such an attenuated definition of “political” that the justification's core loses much of its power.

Schauer, *Boundaries*, *supra* note 5, at 1785.

⁹⁰ This is obviously different from the question involved in *Citizens United v. FEC*, which involved limits on the use funds from the general treasuries of corporations. 130 S. Ct. 876 (2010).

A more conventional line would distinguish commercial speech. A number of theorists have argued for the exclusion of commercial speech from First Amendment coverage.⁹¹ This would be a fairly significant reworking of First Amendment jurisprudence.⁹² Excluding commercial speech also would not affect most algorithm-based decisions. It would apply to search engines' (and newspapers') advertisements, but most search engine results are not paid advertisements.⁹³

A different way of emphasizing individuals would focus on their expression. Theories focused on self-expression, for example, emphasize that it is an individual's self-expression that matters, and autonomy-based theories similarly emphasize individual autonomy. The problem is that many algorithm-based decisions similarly involve the creator's self-expression and autonomy. Depending on the algorithm, algorithm-based decisions may well constitute self-expression, enhance autonomy, and contain meaningful thought. The algorithm is simply a means to gather relevant information, but the creator chooses what to gather. The person who creates the National Debt webpage, or the "God is dead" linkpage, is expressing a view about the importance of those topics. Or consider a webpage that uses an algorithm to amass links to articles with the words "Obama sucks" or "Romney sucks." These webpages require less curating than does the Drudge Report, but all of them reflect autonomous expression.

Search engines are a closer question, but a definition of self-expression that excludes them would be a fairly crabbed one. Start with a search engine that focuses on family-friendly material (or, if you prefer, porn). This seems to encode autonomous expression—"We value family-friendly material/porn, and we want to make it easier for you to find it." Of course, the creators'

⁹¹ See, e.g., C. Edwin Baker, *Commercial Speech: A Problem in the Theory of Freedom*, 62 IOWA L. REV. 1, 3 (1976) ("[G]iven the existing form of social and economic relationships in the United States, a complete denial of first amendment protection for commercial speech is not only consistent with, but is required by, first amendment theory."); CASS R. SUNSTEIN, *DEMOCRACY AND THE PROBLEM OF FREE SPEECH* 123, 127 (1993) (arguing for little protection of advertising because it does not contribute to democratic deliberation).

⁹² See, e.g., *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n*, 447 U.S. 557, 561 (1980) ("The First Amendment . . . protects commercial speech from unwarranted governmental regulation."); *44 Liquormart, Inc. v. Rhode Island*, 517 U.S. 484 (1996) (applying First Amendment scrutiny to the regulation of commercial advertisements).

⁹³ Some early search engines relied heavily on payments in determining what to present and where to present it. One of Google's selling points was that it used page-rank algorithms and that what little paid content it had was clearly demarcated as such. Newer search engines have followed Google's lead. Google and its newer competitors realized that they could attract users by prioritizing relevant quality websites, and make more money from advertisers relegated to the side because of the large number of people who would be attracted by the promise of search results containing relevant websites.

actual motivation might be more base—most obviously, “We just want to make money.” But that may well be the true motivation for many newspapers and magazines, and many artists, for that matter (I’m looking at you, Jeff Koons). And because theories of self-expression and individual autonomy treat art as squarely within their understanding of speech, those who emphasize self-expression or autonomy usually do not focus on the speaker’s subjective motivation, but instead on the apparent expression reflected in the message. In this case there is an apparent expression, as I noted above.

It is a very small step from that expression to blekko’s expression. Instead of “We value family-friendly material/porn, and we want to make it easier for you to find it,” the expression would be “We value quality websites, and we want to make it easier for you to find them.” And it is then another small step to Google’s expression. As I noted above, Google, too, articulates quality as its goal. But even if we credit only its focus on relevance, substituting “relevant” for “quality” in the expression does not make it any less of an expression. In all cases, the algorithm creators are expressing their views about what they value.

Perhaps Google in particular (and maybe blekko, too) is different, insofar as its message is not so much “We value relevant websites” but more like “We select for you what you want.” In the latter formulation, Google arguably is not expressing its own preferences so much as it is indicating that it wants to satisfy ours.

Differentiating Google for purposes of First Amendment coverage based on its catering to users’ interests would be a significant shift in First Amendment jurisprudence, as publications and editors that frankly focus on their viewers’ or readers’ interests would be unprotected. It has not mattered in the past whether a magazine owner (or cable operator) was merely responding to a market opportunity or was expressing its own subjective preferences, but now that difference would be dispositive. If we define unprotected speech to include speech that responds to public demand, only the few publications that push their ideas regardless of public interest⁹⁴ would be speakers, and that would upend most First Amendment law.

Beyond that, this would be a mighty thin reed on which to rest a distinction. We can recharacterize Google’s position as “Our preference is to select for you what we believe you find valuable.” If we substitute “is” for “you find,” or change the locution to “we believe you *should* find valuable,” there is clearly expression. So we would be putting an enormous amount of weight on the creators’ articulation as focused on what others want.

⁹⁴ We usually call these “vanity publications.”

Articulating one's goal in terms of serving others is still an exercise of autonomy and a form of self-expression. "What makes you happy makes me happy" is an expression of self—one that looks to another for one's happiness, but an expression of personal motivation nonetheless. In the same way, the artist who proclaims that she is guided by what her viewers want has still made a self-defining and art-defining statement.⁹⁵

It also bears noting that decisions about what users want are analogous to the decisions of cable operators that the Court found to be speech in *Turner I*. In their briefs, the cable operators stressed that a key consideration in choosing what channels to include was what they thought their customers wanted.⁹⁶ Indeed, a major element of the cable operators' argument that there was no sufficient justification for the statute was their assertion that cable operators would be guided by viewer interest and thus would air the most popular channels whether or not they had an ownership interest in them.⁹⁷ The cable operators, in choosing what channels to air, were engaged in editing, on whatever substantive basis they chose, and those editorial decisions constituted speech. The cable operators claimed they were editing in light of their sense of their customers' wishes, and Google is doing the exact same thing.⁹⁸

⁹⁵ Cf. THE KINKS, GIVE THE PEOPLE WHAT THEY WANT (Arista Records 1981).

⁹⁶ See, e.g., Reply Brief for Appellants Turner Broad. Sys., Inc. at 19-20, *Turner I*, 512 U.S. 622 (1994) (No. 93-44), 1993 WL 664649 ("A cable operator's very raison d'être is to choose from among the enormous variety of sources of video programming available in order to put together a package of programming that will be appealing to television viewers."); Reply Brief for Appellants Discovery Commc'ns, Inc. and the Learning Channel, Inc. at 6, *Turner I*, 512 U.S. 622 (No. 93-44), 1993 WL 664652 (emphasizing the role of market forces in cable operators' choices of which channels to carry).

⁹⁷ Nothing in the Court's opinion suggests that any aspect of First Amendment coverage turned on the degree to which a cable operator chose channels purely on mechanistic measures of popularity.

⁹⁸ Tim Wu's contribution to this Symposium contends that under the Supreme Court's jurisprudence the crucial question is whether the alleged speaker adopts the information provided as its own. See Wu, *supra* note 6, at 1530. As I noted above, this distinction is inconsistent with the prevailing Supreme Court jurisprudence. Beyond that, it would not exclude all algorithm-based outputs from First Amendment coverage. The National Debt billboard, the "God is Dead" webpage, and the articles written by the journalist using boilerplate and by Narrative Science all entail adoption by their creators. Wu's focus on functionality would exclude certain categories of substantive editing, whether they were produced by humans or algorithms. His emphasis on search engines "merely pointing the user to [information]" applies with equal strength to human and nonhuman pointers. So a human who manually performs the functions of a search engine or an automated concierge would not be engaged in speech. By hypothesis, such a human would not adopt the information provided but instead would search for and retrieve it exactly as an algorithm would. Algorithms make such nonadoptive retrieval more common, but in Wu's formulation the line between algorithms and non-algorithms is not central to First Amendment coverage. This is an important area of

A different tack would entail a focus on the audience. Some Supreme Court opinions and some commentators have emphasized the importance of listeners and viewers having access to a wide range of views.⁹⁹ But a “right to receive information” is articulated as an addition to the rights of speakers, as opposed to a substitute for them, and so would not limit the treatment of algorithm-based decisions as speech.¹⁰⁰ It does bear noting, though, that a focus on the rights of the audience might buttress the position of some algorithm-based outputs—in particular, search engines. One way of conceptualizing the rights of listeners and viewers is as a right to unencumbered access to information.¹⁰¹ Such a conceptualization would lend support to the

agreement between Wu and me: algorithm-based outputs underscore the breadth of the test that the Supreme Court has developed, but do not provide a useful line at which to limit that breadth.

In light of my focus on algorithms, in this Article I do not address the normative attractiveness, on their own terms, of proffered lines between speech and nonspeech that do not focus on algorithms (e.g., limiting First Amendment coverage to political speech, *see supra* note 88). Wu’s line may well be a desirable one. I would note, though, that the line between adoption and pointing is no clearer than other lines in First Amendment coverage, and arguably much less clear. Many Web aggregators that would constitute speakers under most every definition of “speech” consist of links to webpages without any clear adoption or endorsement. *See, e.g.*, ARTS & LETTERS DAILY, <http://www.aldaily.com/> (last visited Apr. 10, 2013); REDDIT, <http://www.reddit.com/> (last visited Apr. 10, 2013). On which side of the line do they fall? An individual at Arts & Letters Daily chooses the articles to which to link whereas Reddit uses an algorithm based on the popularity of a given link, but, as I noted above, nothing in Wu’s focus on adoption turns on whether the entity choosing the links is a human or an algorithm created by humans. *See Arts & Letters Daily*, WIKIPEDIA, http://en.wikipedia.org/wiki/Arts_%26_Letters_Daily (last updated Feb. 10, 2013); *Reddit*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Reddit> (last updated Apr. 4, 2013). And the line between Reddit (which displays the most popular links of the moment at its top) and a search on Google for “the most popular links right now” is not obvious.

⁹⁹ *See, e.g.*, *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 783 (1978) (noting that the First Amendment affords the public “access to discussion, debate, and the dissemination of information and ideas”); *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc.*, 425 U.S. 748, 757 (1976) (stating that the “freedom of speech ‘necessarily protects the right to receive’”); *Kleindienst v. Mandel*, 408 U.S. 753, 762 (1972) (“In a variety of contexts this Court has referred to a First Amendment right to receive information and ideas.” (internal quotation marks omitted)); *Stanley v. Georgia*, 394 U.S. 557, 564 (1969) (“It is now well established that the Constitution protects the right to receive information and ideas.”); *Griswold v. Connecticut*, 381 U.S. 479, 482 (1965) (stating that the freedom of speech includes “the right to receive”); *see also* Thomas I. Emerson, *Legal Foundations of the Right to Know*, 1976 WASH. U. L.Q. 1, 2 (“It is clear at the outset that the right to know fits readily into the first amendment”); Thomas Scanlon, *A Theory of Freedom of Expression*, 1 PHIL. & PUB. AFF. 204 (1972) (arguing that the First Amendment protects listeners’ access to information and viewpoints and thereby protects autonomy).

¹⁰⁰ *See Va. State Bd. of Pharmacy*, 425 U.S. at 756 (“Freedom of speech presupposes a willing speaker. But where a speaker exists, . . . the protection afforded is to the communication, to its source and to its recipients both.”).

¹⁰¹ *See, e.g., id.*; *Sorrell v. IMS Health, Inc.*, 131 S. Ct. 2653, 2670-71 (2011) (“[T]he fear that people would make bad decisions if given truthful information cannot justify content-based burdens on speech. The First Amendment directs us to be especially skeptical of regulations that seek to keep people in the dark for what the government perceives to be their own good.”)

treatment of an individual's search results as part of the information that is encompassed by the Free Speech Clause. A different conceptualization would interpret the rights of listeners and viewers as justifying government regulation of information providers, but application of such arguments to exclude information providers from coverage by the Free Speech Clause would be a radical change in First Amendment jurisprudence.¹⁰² For better or worse, the Supreme Court's jurisprudence has decisively rejected this vision.¹⁰³

Yet another direction would focus on the government's purpose or motive in enacting a particular regulation. Some commentators (including then-professor Elena Kagan) have suggested that First Amendment coverage should turn on the government's purpose or motive, such that an economic motive should not trigger First Amendment coverage but a censorious motive should.¹⁰⁴ Whatever the merits of this approach, and whatever its application to algorithm-based outputs, it is inconsistent with a significant number of Supreme Court cases that applied the First Amendment despite the fact that the underlying regulation had an economic motive.¹⁰⁵

(citations and internal quotation marks omitted); *Edenfield v. Fane*, 507 U.S. 761, 767 (1993) ("The commercial marketplace, like other spheres of our social and cultural life, provides a forum where ideas and information flourish. . . . [T]he general rule is that the speaker and the audience, not the government, assess the value of the information presented.").

¹⁰² See *Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 390 (1969) (suggesting that the freedom of speech includes "the right of the public to receive suitable access to social, political, esthetic, moral, and other ideas and experiences"); Jerome A. Barron, *Access to the Press—A New First Amendment Right*, 80 HARV. L. REV. 1641, 1666 (1967) ("It is to be hoped that an awareness of the listener's interest in broadcasting will lead to an equivalent concern for the reader's stake in the press, and that first amendment recognition will be given to a right of access for the protection of the reader, the listener, and the viewer.").

¹⁰³ See, e.g., *Pac. Gas & Elec. Co. v. Pub. Utils. Comm'n*, 475 U.S. 1, 4, 20-21 (1986) (plurality opinion) (holding that a state utility commission could not constitutionally compel a private utility company to include in its billing envelopes materials produced by an adverse group); *Miami Herald Publ'g Co. v. Tornillo*, 418 U.S. 241, 258 (1974) (holding unconstitutional a state statute guaranteeing political candidates media access to respond to criticism). Indeed, the Supreme Court has largely abandoned its intimation in *Red Lion* that the First Amendment empowers the government to give access rights to listeners and viewers. As it turns out, broadcasting is the only area that the Court has treated as justifying a right of access—and even there, the Court has held that broadcasters have First Amendment rights (just diminished ones).

¹⁰⁴ See, e.g., Elena Kagan, *Private Speech, Public Purpose: The Role of Governmental Motive in First Amendment Doctrine*, 63 U. CHI. L. REV. 413, 414 (1996) (arguing "that First Amendment law, as developed by the Supreme Court over the past several decades, has as its primary, though unstated, object the discovery of improper governmental motives."); Jed Rubenfeld, *The First Amendment's Purpose*, 53 STAN. L. REV. 767, 775-79 (2001) (asserting the centrality of a law's purpose in determining the appropriate application of the First Amendment).

¹⁰⁵ See *Sorrell*, 131 S. Ct. at 2665 (applying First Amendment scrutiny to a regulation motivated by economic considerations and stating that, "[w]hile the burdened speech results from an economic motive, so too does a great deal of vital expression"); *United States v. United Foods*,

There are of course other theories of the First Amendment, but all would either draw arbitrary lines or exclude much that we currently consider to be speech.

B. *An Algorithm-Based Line that Works*

As the discussion above indicates, crafting a First Amendment exclusion only for algorithm-based decisions would be arbitrary, and crafting a nonarbitrary category that excludes algorithm-based decisions would exclude much of what we regard as speech and thus significantly change our jurisprudence. Because of the similarity of algorithm-based decisions to communications that are clearly speech under the prevailing Supreme Court jurisprudence, there do not appear to be any principled distinctions that would leave algorithm-based decisions uncovered without upending significant aspects of that jurisprudence. But a different line is tenable and might do significant work in the future even if it would not do any at present: excluding outputs that do not reflect human decisionmaking.

A key element of the discussion so far is that there is a human mind behind all the algorithms. The fact that an algorithm is involved does not mean that a machine is doing the talking. Individuals are sending a substantive message in such a way that others can receive it. What happens to the analysis, however, if humans are no longer meaningfully creating the message? That is, how should we analyze a situation in which artificial intelligence has developed to the point that a set of algorithms have freed themselves from human direction such that the product of the algorithms does not reflect human decisionmaking about what to communicate?

Computer scientists have developed programs that engage in massive data analysis that would take humans eons to complete, but those programs do not develop the models and analyses on their own. Compilers change programs from high-level to low-level languages (e.g., Java to assembly code), but those compilers are not exercising any independent judgment in doing so.

Some programs use random variation as a means of experimentation and possible adaptation. For instance, some programs use not only formulas but also some prescribed points of randomness to allow the computer program to produce a range of outcomes. A particularly enjoyable example is The

Inc., 533 U.S. 405, 408, 417 (2001) (applying First Amendment scrutiny to an agricultural assessment requirement on the grounds that it compelled mushroom handlers to fund speech with which they disagreed); *Turner I*, 512 U.S. 622, 638 (1994) (applying First Amendment scrutiny to legislation while also finding that “Congress’ overriding objective in enacting [a law requiring cable carriage of local television broadcasters] was . . . to preserve access to free television programming for the 40 percent of Americans without cable”).

Nietzsche Family Circus, a webpage which, with each hit of the “refresh” button, pairs a randomized Family Circus cartoon with a randomized Friedrich Nietzsche quote.¹⁰⁶ Whatever meaning we find in this randomized process and its results is due to the program’s clever (human) designer and our reactions to that design. After all, the same effect could be achieved (à la John Cage) by throwing grains of rice emblazoned (in *very* tiny letters) with Nietzsche quotations into the air above a checkerboard of Family Circus cartoons. There would likely be all sorts of interesting pairings, but we wouldn’t attribute any agency in generating a message to the grains of rice.

A bit closer to home, programmers have created programs that generate random papers, at least one of which was accepted at a recent conference.¹⁰⁷ But the random processes are not crafting substantive messages.¹⁰⁸ Humans are crafting messages about academic standards and are employing randomness to do so. As the webpage of the Postmodernism Generator (which “creates realistic-looking but meaningless academic papers about postmodernism, poststructuralism and similar subjects”) notes, “The papers produced are perfectly grammatically correct and read as if written by a human being; any meaning found in them, however, is purely coincidental.”¹⁰⁹ That is the substantive message, and it derives from decisions made by the human designers. The programs are fun precisely because we may ascribe meaning even to the result of random processes, whether random words or random

¹⁰⁶ See NIETZSCHE FAMILY CIRCUS, <http://www.losanjealous.com/nfc> (last visited Apr. 10, 2013).

¹⁰⁷ See, e.g., SCIGEN—AN AUTOMATIC CS PAPER GENERATOR, <http://pdos.csail.mit.edu/scigen/#relwork> (last visited Apr. 10, 2013) (“SCIgen is a program that generates random Computer Science research papers, including graphs, figures, and citations. It uses a hand-written context-free grammar to form all elements of the papers. Our aim here is to maximize amusement, rather than coherence.” (emphasis omitted)); timothy, *Randomly Generated Paper Accepted to Conference*, SLASHDOT (Apr. 13, 2005, 2:00 PM), <http://entertainment.slashdot.org/story/05/04/13/1723206/randomly-generated-paper-accepted-to-conference> (“Some students at MIT wrote a program called SCIgen . . . [and] one of their randomly generated paper[s] was accepted to [the 2005 World Multiconference on Systemics, Cybernetics, and Informatics]. Now they are accepting donation[s] to fund their trip to the conference and give a randomly generated talk.” (emphasis omitted)).

¹⁰⁸ The whole point is that humans are prone to find messages and meaning even in random collections of words and numbers.

¹⁰⁹ POSTMODERNISM GENERATOR, <http://page112.com/iphone/pomo/> (last visited Apr. 10, 2013). The creators of The Postmodern Generator added the elegantly understated caveat that “submitting generated texts to journals or academic courses is not recommended.” *Id.*

This is different from the process used by Narrative Science, *see supra* notes 71-73 and accompanying text, because Narrative Science *does* try to communicate substantive messages with its choice of words, just as a human author does. Just as a writer (or law professor) who cuts and pastes boilerplate into her article does so in order to communicate a substantive message (just one that can be communicated via off-the-shelf language), so too Narrative Science utilizes its boilerplate in order to communicate information.

raindrops on the pavement. Those raindrops have not in fact sent us a substantive message; we just choose to read something into the random picture they create.

Other programs use randomness for purposes of experimentation and adaptation toward a prescribed goal. Programmers have, for example, created programs that break into multiple offshoots, each of which has some decision points at which randomness comes into play and thus produces different outcomes. The program itself (or the programmer) then determines which of these permutations comes closest to achieving a prescribed goal (modeling past stock movements and predicting future stock movements are popular), and there can be multiple generations of such permutations, resulting in unguided adaptation toward a goal. This is also how some computer viruses work: they are programmed to use randomness at key points (often in response to the host program's defenses), in the hope that some versions of the virus will become more effective at propagating and achieving the programmer's goal. This is different from random raindrops on the pavement, because once we see what adaptation best achieves our goal (e.g., "add yesterday's closing price of Wal-Mart's stock to the previous day's rainfall in Seattle and divide by the previous night's number of viewers of the PBS NewsHour"), we can replicate its pattern. But the adaptation is not communicating a substantive message. We find the adaptation useful because it happens to move us toward a goal that *we* have chosen. We are supplying the volition and all the meaning.¹¹⁰

That said, artificial intelligence could cross, or at least blur, this line.¹¹¹ Imagine that artificial intelligence advances to such a level that machines are in some meaningful sense choosing their own goals and what substantive communications will achieve those goals. Just as a machine may at some point satisfy the Turing test,¹¹² it may at some point demonstrate a level of

¹¹⁰ To put the matter a bit differently, telling the world that this formula, or the price of tea in China, predicts the stock market's movements is a form of substantive communication. But that fact does not mean that the formula, or the price of tea in China, is independently communicating anything.

¹¹¹ See, e.g., SAMIR CHOPRA & LAURENCE F. WHITE, A LEGAL THEORY FOR AUTONOMOUS ARTIFICIAL AGENTS (2011) (extending legal principles to the unique challenges posed by the evolution and increasing sophistication of artificial agents).

¹¹² On the Turing test, see David Dowe & Graham Oppy, *The Turing Test*, STANFORD ENCYCL. OF PHIL. (Jan. 26, 2011), <http://plato.stanford.edu/entries/turing-test> (noting that a machine passes the Turing Test when a person is unable to detect that she is conversing with a machine instead of a fellow person). On the legal implications of machines capable of meeting the Turing standard, see generally JAMES BOYLE, BROOKINGS INST., ENDOWED BY THEIR CREATOR? THE FUTURE OF CONSTITUTIONAL PERSONHOOD 6 (2011), available at http://www.brookings.edu/~media/research/files/papers/2011/3/09%20personhood%20boyle/0309_personhood_boyle ("In the coming century, it is overwhelmingly likely that constitutional law will have

choice or volition that is indistinguishable from that of humans. At that point, we might say that the connection to the human creators is sufficiently attenuated that the results no longer reflect humans' decisions about how to determine what to produce, such that there is no longer a human sending a substantive message. No human would be communicating anything. Extending the First Amendment to messages produced by this artificial intelligence would raise the specter that may underlie Tim Wu's concerns: we would be treating the products of machines like those of human minds.¹¹³ We could then say that "speech" was truly created (and not just transmitted, or aided) by a machine.¹¹⁴

V. SCOPE

Does this mean that heightened scrutiny will apply to almost every regulation of entities that produce words via algorithm? No. Two hurdles to First Amendment coverage are particularly significant. First, the algorithm must send a substantive message. Algorithms that are designed to speed transmission, or make a network operate more efficiently, are not sending any substantive message. Your landline telephone (remember those?) might work better if the telephone company installed algorithms that reduce background noise, but the telephone company has not substantively communicated anything by doing so.¹¹⁵ Second, laws of general applicability like antitrust and tax laws are treated as laws that do not abridge the freedom of speech and thus do not implicate the First Amendment.¹¹⁶

to classify artificially created entities that have some but not all of the attributes we associate with human beings.").

¹¹³ See Wu, *supra* note 18.

¹¹⁴ Of course, this assumes we would regard such machines as materially different from humans in the first place. As James Boyle has noted, our grandchildren might view such machines as rightfully entitled to all the protections of personhood. See BOYLE, *supra* note 112. But I leave that scenario for another day.

¹¹⁵ See Benjamin, *supra* note 8, at 1686.

¹¹⁶ See *Cohen v. Cowles Media Co.*, 501 U.S. 663, 669 (1991) ("[G]enerally applicable laws do not offend the First Amendment simply because their enforcement against the press has incidental effects on its ability to gather and report the news."). The Supreme Court has invoked this principle in a long line of antitrust cases. See *infra* note 123 and accompanying text. Some have argued that *Cowles Media's* statement sweeps too broadly. See *Cowles Media*, 501 U.S. at 676-77 (Souter, J., dissenting) ("[T]his case does not fall within the line of authority holding the press to laws of general applicability where commercial activities and relationships, not the content of publication, are at issue."); Alan E. Garfield, *The Mischief of Cohen v. Cowles Media Co.*, 35 GA. L. REV. 1087, 1095 (2001) ("[T]he fact that a law is generally applicable does not necessarily mean there is no need for further First Amendment analysis."); Eugene Volokh, *Speech as Conduct: Generally Applicable Laws, Illegal Courses of Conduct, "Situation-Altering Utterances," and the Uncharted Zones*, 90 CORNELL L. REV. 1277, 1294 (2005) (distinguishing "a facially speech-neutral law, which

Paying income taxes may well limit the ability of a speaker (algorithm-based or not) to communicate as she wishes, but such a limitation is not covered by the Free Speech Clause. One could reject either of these limitations, but such a rejection would constitute a significant remaking of First Amendment jurisprudence.

Each of these axes of limitation can and should extend further. As I noted above, my view is that the mere existence of substantive editing is not sufficient for status as speech under the Free Speech Clause. A substantive communication entails a message that can be sent and received, and that has been sent.¹¹⁷ And not only should generally applicable laws be exempt from First Amendment scrutiny, but so too should laws aimed more specifically at speakers that do not regulate their speech.

Both of these interpretations of the scope of the First Amendment are consistent with the Supreme Court's jurisprudence but arguably not compelled by it. Their adoption would also have the effect of reducing the potential universe of situations in which heightened scrutiny under the Free Speech Clause would apply, and thus alleviating the concerns of those who think that the First Amendment has been applied too broadly. To be clear, I think these are the best readings of the materials and thus would adopt them whether or not they limited the scope of the Free Speech Clause. But insofar as that scope is a concern, these interpretations diminish those concerns to some degree.

I offer these two interpretations because I think they are sound in their own right and consistent with Supreme Court jurisprudence. Both limit the breadth of what "the freedom of speech" might encompass without changing First Amendment jurisprudence. If one's goal were to limit the impact of the Free Speech Clause on the government's ability to regulate, there are other proposals one could advocate—for example, lowering the level of scrutiny entailed in the tests that courts apply to regulations of speech. I do not suggest such changes both because limiting the government's ability to

is to say a law applicable to a wide variety of conduct, whether speech or not," from "a facially press-neutral law, which is to say a law applicable equally to the press and to others," and stating that the language from the *Cowles Media* majority opinion quoted above "only means that the press gets no special exemption from press-neutral laws. The Court didn't consider whether speakers were entitled to protection from speech-neutral laws, especially when those laws are content-based as applied"). None of these critics argues, however, that generally applicable laws not aimed at content, such as antitrust and tax laws, should in fact be subject to First Amendment scrutiny. See Garfield, *supra*, at 1094 ("[O]ne can hardly disagree . . . that the press is not exempt from laws of general applicability. Surely the First Amendment does not immunize the press from obeying fire safety laws in its buildings or from having its delivery trucks obey the speed limits."); Volokh, *supra*, at 1294.

¹¹⁷ See *supra* notes 52-62 and accompanying text; see also Benjamin, *supra* note 8, at 1701.

regulate is not my goal and because I am focusing here on interpretations of the scope of the Free Speech Clause that are fully consistent with the existing Supreme Court jurisprudence. My point is that without having to change the prevailing approach, the Free Speech Clause can and should be interpreted in ways that limit its scope.

A. *Requiring Communicating About Your Editing*

The criteria I laid out above include that a message is sendable and receivable, and is actually sent. If you attribute your own private meaning to some action and communicate that meaning to no one, I find it hard to say that you have engaged in speech. In some situations the underlying communication is so clear that the speaker does not need to do anything special to alert listeners or viewers. Newspapers generally do not proclaim “This newspaper is the product of our writing and editing,” because that is simply understood by the reading public. In other situations, the relevant action is fairly clearly not speech, so alerting the audience will not transmogrify that action into speech. In *Rumsfeld v. Forum for Academic & Institutional Rights, Inc.*, the Supreme Court stated that the fact that conduct would be expressive only if accompanied by speech identifying its expression was itself an indicator that the conduct was not speech.¹¹⁸

The question is whether there are situations in which communicating about the underlying activity is necessary for it to be speech. I think the answer is yes. In most situations it will be obvious, but not always; and when it is not obvious, failing to communicate means that the recipient does not know that a message has been sent.

Consider some forms of art, for example. A pile of mud is art, and thus speech, only when it is so presented (e.g., in an art gallery). A pile of candy on the floor becomes artistic communication only when it is identified as the communication of an artist.¹¹⁹ Maybe, however, all this shows is that art is contextual.

Perhaps a more apt real-world comparison is to a secretly edited bulletin board (virtual or otherwise). Consider a webpage open to comments that

¹¹⁸ See 547 U.S. 47, 66 (2006) (“The expressive component of a law school’s actions is not created by the conduct itself but by the speech that accompanies it. The fact that such explanatory speech is necessary is strong evidence that the conduct at issue here is not so inherently expressive that it warrants protection under [*United States v. O’Brien* [391 U.S. 369 (1968)].”).

¹¹⁹ One of Felix Gonzalez-Torres’s “signature works” was “Untitled (Placebo—Landscape—for Roni),” which consisted of hard candy wrapped in cellophane on a concrete floor. See Cate McQuaid, *Sweet but Not Sugarcoated*, BOSTON.COM (Dec. 13, 2007) http://www.boston.com/ae/theater_arts/articles/2007/12/13/sweet_but_not_sugarcoated.

are, to all appearances, unedited. There is no suggestion on the part of the website that it moderates or edits these comments in any way, and the number and range of tasteless, offensive comments would support the impression that there is no ongoing moderating or editing. Unbeknownst to all but the few commenters who are censored (and whose complaints are then censored), the webpage owners secretly engage in substantive editing of the comments—maybe they remove posts that are too tasteful, or that support the Socialist Workers Party. The commenters are certainly engaged in speech for First Amendment purposes, but does the webpage owners' editing constitute speech? I think the answer is no, because the owners have not indicated to their users that they are engaged in substantive editing. The users' reading experience has been altered by the webpage owners, but the users have not received a recognizable message. The webpage owners are speaking in a language that sounds like meaningless noise to the users, and the owners are not revealing that it is, in fact, a language but are instead keeping it a secret. By keeping their editing secret, they are not sending any messages. Simply stated, the webpage owners would not have communicated to their users.

That said, I acknowledge that the Supreme Court's jurisprudence does not compel this conclusion. The Court's cases do indicate that a substantive message is necessary, but no case similarly clarifies that it is necessary to alert the world to the existence of your substantive message in situations where that message is not obvious. Indeed, *Turner I* highlights that public affirmations of editing often will not be required. In that case, nothing in the Court's opinion indicates that public pronouncements by cable operators were necessary or even relevant. The Court apparently treated the operators' editing—the fact that they chose what channels to put in their lineups—as sufficiently obvious that public statements by the cable operators were not necessary. There is no Supreme Court case in which the activity giving rise to a message was sufficiently nonobvious that speech acknowledging that activity would have been necessary to put the audience on notice. In my view, this is the most coherent understanding of "communication." A concern about First Amendment overexpansion would further support this view.

This question will be purely academic for many algorithm-based decisions, both because the editors' work will be obvious and because they will acknowledge it. Web users understand, for example, that search engines are not simply presenting them with "the Internet" but are instead using algorithms in order to find the most relevant or highest quality sites in response to their queries. And, as I noted above, the search engines themselves so

state.¹²⁰ Similarly, most websites do engage in some screening (algorithm-based, proactive by humans, and/or in response to complaints by humans) of user-submitted material, and communicate that to the world.¹²¹ Conversely, most algorithms that affect our experience of the Internet more broadly (like TCP/IP) are designed not to engage in any substantive editing in the first place and do not send any substantive messages.

But there may be situations in which algorithm-based substantive editing is not obvious and the editor keeps it a secret, or sends mixed messages that create doubt. Internet service providers advertise their services as offering the Internet, as opposed to a substantively edited portion of the Internet. But imagine that an Internet service provider engages in substantive editing that would not be obvious and does not communicate that editing to users (say, blocking some webpages that extol the virtues of Falun Gong). Users would find fewer positive sources about Falun Gong on the Web than actually existed, and this might influence their views about Falun Gong (which presumably would be the reason for editing in the first place), but they would not know that their ISP had engaged in such editing. Their ISP would not have sent them any readily understandable message.

What would be required of the hypothetical ISP? The message must be both sendable and sent, but I do not think it is necessary that the message be received. There is obviously no magic formula. And the articulation could depend on how concerned one was about the breadth of the First Amendment's application in the first place. My own view, based on what I think of as a bare-bones understanding of what communication entails, is that the touchstone would be that the speaker had meaningfully attempted to communicate its message to the world, and in particular to its audience.¹²² There are many different forms of communication—formal advertising, news releases, statements by company officials, blog posts, tweets. A memo that was written and then deleted would not suffice, as there would have been no attempt at communication, but a clear public message would seem to suffice, even if the company did not trumpet it. In an earlier era, identifying a clear public message might have been difficult sometimes. Before the Internet, perhaps a single advertisement in a given city would have had no meaningful chance of being disseminated more broadly and thus would

¹²⁰ See *supra* notes 74-82 and accompanying text.

¹²¹ Even seemingly anarchic Internet communities like 4chan have moderators (and junior moderators, known on 4chan as "janitors") whose role is made clear on the website. *FAQ: What Are "Janitors"?*, 4CHAN, <http://www.4chan.org/faq#whojan> (last visited Apr. 10, 2013).

¹²² See Benjamin, *supra* note 8, at 1701 (explaining that communication requires a substantive message that can be sent and received and has actually been sent).

not really have been a message sent to the world. But in the Internet era, for better or worse this difficulty largely evaporates: any tweet, blog post, or statement by a company official that presents a company's new position is subject to widespread dissemination via the Web. An entity's public declaration of its policy thus would, in ordinary circumstances, constitute a meaningful attempt to communicate.

The bigger pitfall would involve mixed messages. If one arm of a company proclaims "We edit your experience" and another arm equally loudly proclaims "We don't do any editing," then no meaningful message has been communicated. Such incoherence is more likely if a company changes its position, because articulations of the company's earlier position are likely to remain on the Web. A change in position may impose a greater burden on an entity, because the entity will have to do more in order to communicate its message. The principle is fairly straightforward: in order to engage in speech, one must actually send a substantive message, and the level of action required to send a message may depend on the surrounding circumstances—other statements the entity has made, a contrary reputation that it may have cultivated, etc.

The larger point, though, is that the argument for this requirement could be strengthened, and indeed the nature of the requirement could be toughened, if one wanted to limit the expansiveness of the First Amendment's coverage. Even absent a goal of reining in the application of the First Amendment, in my view the reading outlined above is the most persuasive and coherent understanding of what a communication entails. But such a goal would be furthered by adoption of this requirement.

B. *Regulations of Speakers Not Aimed at Their Speech*

The Supreme Court has consistently held that laws of general applicability, like antitrust laws, can be applied to speakers without implicating the First Amendment.¹²³ That said, there are a couple of exceptions. Under

¹²³ See *Associated Press v. United States*, 326 U.S. 1, 19-20 (1945) (applying generally applicable antitrust laws to a company's core First Amendment activities); *id.* at 7 ("The fact that the publisher handles news while others handle food does not . . . afford the publisher a peculiar constitutional sanctuary in which he can with impunity violate laws regulating his business practices."); *Lorain Journal Co. v. United States*, 342 U.S. 143, 156 (1951) ("Injunctive relief under . . . the Sherman Act is as appropriate a means of enforcing the Act against newspapers as it is against others."); see also *FCC v. Nat'l Citizens Comm. for Broad.*, 436 U.S. 775, 800 n.18 (1978) ("[A]pplication of the antitrust laws to newspapers is not only consistent with, but is actually supportive of the values underlying, the First Amendment."). This also extends to remedies. See *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 697-98 (1978) ("In fashioning a

Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.,¹²⁴ antitrust enforcement against actions aimed at changing regulations would implicate the First Amendment. And politically motivated boycotts are covered by the First Amendment under *NAACP v. Claiborne Hardware Co.*¹²⁵ *Noerr* construed the Sherman Act not to apply to conduct aimed at “influencing the passage or enforcement of laws” in light of the constitutional problems with a contrary construction—that regulation of such conduct would conflict with the First Amendment right to petition the government.¹²⁶ *Claiborne Hardware*, meanwhile, emphasized that the challenged action (a boycott of white merchants by the NAACP in Mississippi during the civil rights movement) “sought to bring about political, social, and economic change. Through speech, assembly, and petition—rather than through riot or revolution—petitioners sought to change a social order that had consistently treated them as second-class citizens.”¹²⁷

Both of these categories of First Amendment applicability have been construed fairly narrowly to apply only to coordinated actions aimed

remedy, the District Court may, of course, consider the fact that its injunction may impinge upon rights that would otherwise be constitutionally protected, but those protections do not prevent it from remedying the antitrust violations.”)

¹²⁴ 365 U.S. 127 (1961).

¹²⁵ 458 U.S. 886, 907 (1982) (“[B]oycott[s] [are] a form of speech or conduct . . . ordinarily entitled to protection under the First and Fourteenth Amendments.”).

¹²⁶ See *Noerr*, 365 U.S. at 137-38 (“To hold that the government retains the power to act in this representative capacity and yet hold, at the same time, that the people cannot freely inform the government of their wishes . . . would raise important constitutional questions. The right of petition is one of the freedoms protected by the Bill of Rights, and we cannot, of course, lightly impute to Congress an intent to invade these freedoms.”); see also *id.* at 139 (“A construction of the Sherman Act that would disqualify people from taking a public position on matters in which they are financially interested would thus deprive the government of a valuable source of information and, at the same time, deprive the people of their right to petition in the very instances in which that right may be of the most importance to them.”). The Court reiterated this interpretation of the Sherman Act in light of the speech principles at stake in *United Mine Workers of America v. Pennington*. See 381 U.S. 657, 670 (1965) (“*Noerr* shields from the Sherman Act a concerted effort to influence public officials regardless of intent or purpose.”); see also *Cal. Motor Transp. Co. v. Trucking Unlimited*, 404 U.S. 508, 510-11 (1972) (“We conclude that it would be destructive of rights of association and of petition to hold that groups with common interests may not, without violating the antitrust laws, use the channels and procedures of state and federal agencies and courts to advocate their causes and points of view respecting resolution of their business and economic interests *vis-à-vis* their competitors.”). In *Allied Tube and Conduit Corp. v. Indian Head, Inc.*, the Court summarized the doctrine by stating flatly that “[c]oncerted efforts to restrain or monopolize trade by petitioning government officials are protected from antitrust liability under the doctrine established by *Noerr*; *Pennington*; and *California Motor Transport Co.*” 486 U.S. 492, 499 (1988).

¹²⁷ 458 U.S. at 911-12.

directly at influencing government action.¹²⁸ *FTC v. Superior Court Trial Lawyers Ass'n* is instructive.¹²⁹ The case involved a group of court-appointed lawyers who objected to the low level of compensation in Washington, DC, criminal cases and organized a boycott aimed at increasing that compensation.¹³⁰ After the Federal Trade Commission initiated an antitrust action against the lawyers' group, the Court of Appeals for the D.C. Circuit concluded that the boycott "contain[ed] an element of expression warranting First Amendment protection" and applied heightened scrutiny.¹³¹ The Supreme Court rejected this notion, and further emphasized that *Noerr* had found the First Amendment relevant in an antitrust action against a publicity campaign designed to produce government action, not an antitrust action against a restraint of trade.¹³² The Court also stressed the narrowness of *Claiborne Hardware*, holding that First Amendment coverage for political boycotts was "not applicable to a boycott conducted by business competitors who 'stand to profit financially from a lessening of competition in the boycotted market.'"¹³³

One unsettled question is whether the First Amendment encompasses laws that single out speakers (and thus are not generally applicable) but do not regulate their speech. In *Arkansas Writers' Project, Inc. v. Ragland*, the Supreme Court suggested that any law singling out a set of speakers for special treatment was subject to First Amendment scrutiny.¹³⁴ By contrast,

¹²⁸ See, e.g., *Noerr*, 365 U.S. at 144 ("There may be situations in which a publicity campaign, ostensibly directed toward influencing governmental action, is a mere sham to cover what is actually nothing more than an attempt to interfere directly with the business relationships of a competitor and the application of the Sherman Act would be justified.")

¹²⁹ 493 U.S. 411 (1990).

¹³⁰ *Id.* at 414-18.

¹³¹ 856 F.2d 226, 248 (D.C. Cir. 1988), *rev'd in part*, 493 U.S. 411 (1990).

¹³² Specifically, the Court stated:

[I]n the *Noerr* case the alleged restraint of trade was the intended *consequence* of public action; in this case the boycott was the *means* by which respondents sought to obtain favorable legislation. The restraint of trade that was implemented while the boycott lasted would have had precisely the same anticompetitive consequences during that period even if no legislation had been enacted.

Superior Court Trial Lawyers Ass'n, 493 U.S. at 424-25.

¹³³ *Id.* at 426-27 (quoting *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 508 (1988)). *Allied Tube* similarly distinguished politically motivated from profit-motivated boycotts, and held that only the former trigger First Amendment scrutiny. 486 U.S. at 506-10. The Court distinguished *Claiborne Hardware* by emphasizing that the civil rights boycott in *Claiborne Hardware* "was not motivated by any desire to lessen competition or to reap economic benefits . . . and the boycotters were consumers who did not stand to profit financially from a lessening of competition in the boycotted market." *Id.* at 508.

¹³⁴ See 481 U.S. 221, 228 (1987) ("[S]elective taxation of the press—either singling out the press as a whole or targeting individual members of the press—poses a particular danger of abuse

in *Leathers v. Medlock* the Court held that First Amendment review applies only to differential taxation schemes that threaten to suppress the expression of particular ideas or viewpoints, target a small group of speakers, or discriminate based on the content of speech.¹³⁵ *Leathers* stated that “differential taxation of speakers, even members of the press, does not implicate the First Amendment unless the tax is directed at, or presents the danger of suppressing, particular ideas.”¹³⁶

What about the application of the First Amendment to a regulation whose only connection to speech was that it applied to an entity that engages in speech? The D.C. Circuit has treated all regulations of cable operators as raising First Amendment issues. Some of these regulations directly relate to cable operators’ speech.¹³⁷ Requiring cable operators to set aside some of their capacity for public, educational, and governmental channels, and for stations subject to leased access, for instance, could reduce the number of channels over which cable operators can exercise editorial control and thus limit their ability to engage in speech under the First Amendment.¹³⁸ Other regulations that the D.C. Circuit has subjected to First Amendment scrutiny, however, have no direct connection to cable operators’ editing. The best example is the regulation of the rates that cable companies can charge to their customers. The D.C. Circuit, with little discussion, held that such regulation is subject to First Amendment scrutiny.¹³⁹ The nexus between rate regulation and cable operators’ exercise of editorial discretion is not obvious. One could argue that rate regulation reduces revenues, which limits the ability of a cable operator to produce the content

by the state.”); see also *Turner I*, 512 U.S. 622, 640-41 (1994) (“[L]aws that single out the press, or certain elements thereof, for special treatment . . . are always subject to at least some degree of heightened First Amendment scrutiny.”).

¹³⁵ 499 U.S. 439, 447 (1991).

¹³⁶ *Id.* at 453.

¹³⁷ One example is vertical concentration limits on cable operators, which limit the percentage of channels in which an operator has an ownership interest that it can include in its lineup, thus constraining the operator’s choice of which channels to air. See 47 U.S.C. § 533(f)(1)(B) (2006) (mandating that the FCC “establish[] reasonable limits on the number of channels on a cable system that can be occupied by a video programmer in which a cable operator has an attributable interest”); *Time Warner Entm’t Co. v. FCC*, 240 F.3d 1126, 1137-39 (D.C. Cir. 2001) (applying First Amendment scrutiny to rules promulgated under § 533(f)(1)(B)).

¹³⁸ See *Time Warner Entm’t Co. v. FCC*, 93 F.3d 957, 973 (D.C. Cir. 1996) (finding that such regulation could present First Amendment problems, but rejecting a facial challenge to the statute at issue).

¹³⁹ See *Time Warner Entm’t Co. v. FCC*, 56 F.3d 151, 181-82 (D.C. Cir. 1995) (addressing the First Amendment’s application in a single sentence).

it wants and to exercise editorial discretion as it sees fit.¹⁴⁰ But this argument would suggest that virtually every regulation that specifically applies to a company engaged in speech will be subject to First Amendment scrutiny, because almost any regulation can have the effect of reducing revenue.

The Supreme Court has not considered cases involving the rate regulation of cable television service or other regulations that have similarly tenuous connections to speech.¹⁴¹ That is, every regulation to which the Court has applied First Amendment scrutiny has had some additional element connecting it to speech, and thus the Court has never considered the applicability of the First Amendment to a regulation whose only connection to speech was that it was not of general applicability and applied to an entity that engaged in speech.

Whereas excluding algorithm-based decisions (or even just search engines) from the ambit of the First Amendment would entail a significant revamping of First Amendment jurisprudence, rejecting the D.C. Circuit's position would have no such effect. It is about as discrete and separable a question as arises in the First Amendment context. The Supreme Court's jurisprudence permits either answer: the logic of the cases simply does not dictate, or even strongly hint at, an answer to this question. And, for the

¹⁴⁰ See Christopher S. Yoo, *Architectural Censorship and the FCC*, 78 S. CAL. L. REV. 669, 687 (2005) (contending that "rate regulation had the unintended consequence of degrading the quality of existing cable offerings and foreclosing the emergence of higher quality channel packages despite viewers' willingness to pay for them").

¹⁴¹ The Supreme Court has invalidated statutes giving local officials authority to permit or ban distribution of newspapers and other forms of speech, but those cases focused on the possibility of content and viewpoint discrimination created by unbridled discretion to permit or ban. See *City of Lakewood v. Plain Dealer Publ'g Co.*, 486 U.S. 750, 767-68 (1988) ("[T]his Court has long been sensitive to the special dangers inherent in a law placing unbridled discretion directly to license speech, or conduct commonly associated with speech, in the hands of a government official."); see also *Saia v. New York*, 334 U.S. 558, 562 (1948) ("When a city allows an official to ban [loud-speakers] in his uncontrolled discretion, it sanctions a device for suppression of free communication of ideas."); *Lovell v. City of Griffin*, 303 U.S. 444, 450-51 (1938) (invalidating a regulation prohibiting the distribution of leaflets without the approval of the city manager). Indeed, in *Plain Dealer* the Court stated,

This is not to say that the press or a speaker may challenge as censorship any law involving discretion to which it is subject. The law must have a close enough nexus to expression, or to conduct commonly associated with expression, to pose a real and substantial threat of the identified censorship risks.

486 U.S. at 759.

reasons I discussed at the outset, textual and historical interpretive tools do not provide an answer.¹⁴²

In other words, with respect to generic regulations of speakers—that is, regulations that are not directly connected to the conduct giving rise to speech and that betray no censorious goals, no preference for content, and no desire to squelch particular speakers—there seem to be no broadly accepted sources or reasoning that push us strongly in one direction or another. As a result, in my view this is an appropriate place for other considerations to play a role. I incline toward consequentialism, and I think there are good consequentialist reasons related to the concerns about heightened scrutiny applying too broadly for rejecting the D.C. Circuit's position. Given the rise of substantive editing (happening all the more frequently via algorithms, but of course not limited to algorithms), applying the First Amendment to all specific regulations of companies engaged in such editing would have a massive impact. One could reject the D.C. Circuit's approach on other bases of course. Under conceptions focusing on autonomy and self-expression, for example, it would be risible for a court to apply the First Amendment to economic regulation of companies engaged in speech. My point is simply that insofar as we are concerned about First Amendment scrutiny applying too broadly, this is an appropriate point of limitation.

CONCLUSION

In this Article I have attempted to take seriously both broadly accepted sources and forms of reasoning and concerns about expansion of the application of the First Amendment. Consistent with that focus, I have considered how those broadly accepted sources (in particular Supreme Court jurisprudence) would apply to First Amendment coverage of algorithm-based decisions, whether we can exclude such decisions from the First Amendment without radically revamping First Amendment jurisprudence, and whether there are attractive interpretations of the First Amendment's scope consistent with current jurisprudence that would limit its feared overexpansion.

Those worried about the Free Speech Clause expanding too far, particularly with respect to algorithm-based decisionmaking (or maybe just Google), might find the proposals in the previous Part unsatisfying. If drawing nonarbitrary lines that do not radically reorient First Amendment

¹⁴² Other than, perhaps, the possible originalist conclusion that our entire First Amendment jurisprudence is misbegotten because the freedom of speech is only a freedom from prior restraints. See *supra* note 27 and accompanying text.

jurisprudence provides protections for algorithm-based outputs, then perhaps we should be willing to draw arbitrary lines or radically reorient First Amendment jurisprudence.

There is no way to definitively refute these arguments. Perhaps inclusion of algorithm-based decisions illuminates just how far Free Speech jurisprudence has gone off the rails (to use a technical term), such that we need to remake it. Or perhaps algorithm-based decisions are such unattractive candidates for First Amendment inclusion that we should draw a somewhat arbitrary line excluding them.

In my view, any line between algorithm-based and human-based decisions would be unjustifiably arbitrary, so a radical reorientation is the more attractive of the two options in this context.¹⁴³ But that does not answer the

¹⁴³ Commerce Clause jurisprudence provides a point of comparison. Even after *United States v. Lopez*, the Supreme Court's interpretation of Congress's interstate commerce power has been so expansive that almost every imaginable piece of federal legislation is authorized by the commerce power. See 514 U.S. 549, 567 (1995) (refusing to hold that "the possession of a gun in a local school zone" reflects economic activity that rises to the level of interstate commerce and thus implicates the commerce power); see also *United States v. Morrison*, 529 U.S. 598 (2000) (holding a federal statutory remedy for the victims of gender-motivated violence unconstitutional because it did not comport with the Commerce Clause). Cf. *Gonzales v. Raich*, 545 U.S. 1 (2005) (upholding the constitutionality of the Federal Controlled Substances Act as applied to intrastate, noncommercial cultivation and possession of marijuana under the Commerce Clause). Some of those concerned about this development (notably Justice Thomas) have argued for a radical reorientation of the Court's jurisprudence. See *Lopez*, 514 U.S. at 584 (1995) (Thomas, J., concurring) (arguing that the Court "ought to temper [its] Commerce Clause jurisprudence"); *Morrison*, 529 U.S. at 627 (Thomas, J., concurring) (criticizing the Court's "view that the Commerce Clause has virtually no limits" and advocating for a shift to a "standard more consistent with the original understanding"). Others have argued for drawing ad hoc, and arguably arbitrary, lines to limit the expansion of that power. Both of these positions were articulated (minus any concession of possible arbitrariness) in arguments against the constitutionality of the Affordable Care Act. Some advocates argued for a radical revamping of Commerce Clause jurisprudence. See, e.g., Brief for Virginia Delegate Bob Marshall et al. as Amici Curiae in Support of Respondents at 11-14, *Dep't of Health & Human Servs. v. Florida*, 132 S. Ct. 2566 (2012) (No. 11-398), 2012 WL 484059 (Feb. 13, 2012) (arguing for a reconsideration of the Court's Commerce Clause cases, particularly *Wickard v. Filburn*, 317 U.S. 111 (1942), and *United States v. Darby*, 312 U.S. 100 (1941)). Many more pushed for a distinction between activity and inactivity. They often acknowledged that the distinction was ad hoc, and that they preferred a more fundamental rethinking of Commerce Clause jurisprudence. But they saw the action-inaction distinction as a tenable way of limiting Commerce Clause expansion without entailing a radical reorientation of the jurisprudence. See, e.g., Randy E. Barnett, *Commandeering the People: Why the Individual Health Insurance Mandate Is Unconstitutional*, 5 N.Y.U. J.L. & LIBERTY 581, 619 (2010) ("Of course, like the distinction between economic and noneconomic activity, the activity-inactivity distinction would not perfectly distinguish between incidental and remote exercises of implied powers. But, however imperfect, some such line must be drawn to preserve Article I's scheme of limited and enumerated powers."). Whatever the merits of that argument in the Commerce Clause context, I think drawing a line between algorithm-based and human-based decisions for purposes of First Amendment coverage is so arbitrary as to be undesirable.

question whether a major revamping of First Amendment jurisprudence is in fact desirable, and none of the arguments in this Article squarely addresses that question. The analysis in this Article does, however, highlight the stakes involved (because of the growing importance of algorithms in our lives), and in that way may provide a boost to arguments for a radical reorientation of the existing jurisprudence. That said, it would be a fairly small boost. Encompassing algorithm-based decisions within the ambit of the Free Speech Clause is a natural and modest step. The profusion of computer algorithms designed by humans to do the work other humans once did may alter our economy,¹⁴⁴ but it does not significantly change the First Amendment analysis. So long as humans are making substantive editorial decisions, inserting computers into the process does not eliminate the communication via that editing.¹⁴⁵ Arguments for a radical revamping should stand or fall on other grounds.

¹⁴⁴ See, e.g., ERIK BRYNJOLFSSON & ANDREW MCAFEE, RACE AGAINST THE MACHINE: HOW THE DIGITAL REVOLUTION IS ACCELERATING INNOVATION, DRIVING PRODUCTIVITY, AND IRREVERSIBLY TRANSFORMING EMPLOYMENT AND THE ECONOMY (2011) (arguing that innovations in information technology will, inter alia, destroy many jobs).

¹⁴⁵ Or so our computer overlords would have us believe. See *Jeopardy!* (ABC television broadcast Feb. 15, 2011) (documenting the reaction of Ken Jennings, the most successful *Jeopardy!* player of all time, upon realizing that he was going to lose to an IBM computer named Watson). In his final answer, Jennings paraphrased the venerable Simpsons: "I for one welcome our new computer overlords." *Id.*; see also Melissa Maerz, *Watson Wins "Jeopardy!" Finale; Ken Jennings Welcomes "Our New Computer Overlords,"* L.A. TIMES (Feb. 16, 2011), <http://latimesblogs.latimes.com/showtracker/2011/02/watson-jeopardy-finale-man-vs-machineshowdown.html>; Ratzule, *Watson the New Computer Overlord,* YOUTUBE (Feb. 16, 2011), <http://www.youtube.com/watch?v=Skfw282fJak> (video of Jennings's answer and Watson's victory).