WHAT HAPPENS IF DATA IS SPEECH?

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INTRODUCTION

Following the Supreme Court's lead in *Reno v. ACLU*,[1] and related cases including *Sorrell v. IMS Health Inc.*[2] and *Brown v. Entertainment Merchants Ass'n*,[3] courts have been very willing to apply First Amendment protections, broadly speaking, to electronic forms of communication.[4] At first glance, why shouldn't they? Aren't technologies like the Internet merely new mediums through which we express ourselves? Not necessarily.

In most virtual forums, there's an actual speaker communicating through the Internet—such as when a person writes a blog post, tweets, or sends an email. But what about content created autonomously through algorithms parsing data? Examples range from the familiar—Google returning search results in response to a query—to the extreme—programs ghostwriting articles based on raw data.[5] Are

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1 521 U.S. 844, 851 (1997) ("Taken together, these tools constitute a unique medium—known to its users as 'cyberspace'—located in no particular geographical location but available to anyone, anywhere in the world, with access to the Internet.").

2 131 S. Ct. 2653, 2667 (2011) ("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.").

3 131 S. Ct. 2729, 2733 (2011) (offering First Amendment protections for violent video games).

4 *E.g.*, Langdon v. Google, Inc., 474 F. Supp. 2d 622, 629–30 (D. Del. 2007); Search King, Inc. v. Google Tech., Inc., No. CIV-02-1457-M, 2003 WL 21464568, at *4 (W.D. Okla. May 27, 2003) (holding that Google's ranking system is entitled to "full" First Amendment protection); *see also* Jack M. Balkin, *Old School/New School Speech Regulation*, HARV L. REV. (forthcoming 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2377526.

5 Steve Lohr, *In Case You Wondered, a Real Human Wrote This Column*, N.Y. TIMES, Sept. 10, 2011, http://www.nytimes.com/2011/09/11/business/computer-generated-articles-are-

the outputs of these semi-autonomous algorithms entitled to constitutional protections?

This Essay addresses this emerging area of law in five parts. First, I offer a survey of the case law and scholarly literature. The former has been very protective of speech as data, while the latter has been very skeptical and wary of extending these protections to commercial concerns. Second, I address how affording First Amendment scrutiny to data would impact data privacy regulations—many laws that limit or compel disclosures of speech would now be constitutionally suspect. Third, I turn to the most likely suspects for, and opponents of, regulations: search engines. Search engines function as critical gateways, "chokepoints" even, and their decision to include, or exclude, information significantly impacts the scope of our marketplace of ideas. Efforts to regulate these gateways, with respect to both inclusion and exclusion, tees up the question we will soon confront: what poses a greater threat to free speech, the lack of regulations, or the regulations themselves? Fourth, the question of affording constitutional protections to data becomes even more pressing in light of the convergence between the speech of people and their devices. As technology evolves from search engines that guess what people are looking for to virtual concierges that know precisely how to assist people with decisions, the line between computer and user blurs. It becomes even tougher to disentangle data and speech.

I conclude by offering a framework to consider the rights for our digital identities. This framework, building on recent scholarly contributions in this area, focuses the core of the constitutional inquiry on the nexus that the algorithmic outputs have with human interaction. This approach avoids an unwarranted expansion of the scope of protected activities under the First Amendment, and prevents the risk of excluding what could become a huge share of human communication, facilitated by algorithmic outputs. Whichever regime the courts settle on must confront this interwoven nature of human-computer interactions.

I. IS DATA SPEECH?

Three recent and significant articles have approached the important question of how data should be treated under the First

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gaining-traction.html ("The company's software takes data, like that from sports statistics, company financial reports and housing starts and sales, and turns it into articles. For years, programmers have experimented with software that wrote such articles, typically for sports events, but these efforts had a formulaic, fill-in-the-blank style. They read as if a machine wrote them.").

Amendment: *Is Data Speech?* by Jane Yakowitz Bambauer,[6] *Algorithms and Speech* by Stuart M. Benjamin,[7] and *Machine Speech* by Tim Wu.[8] Each article strives to answer key questions: what exactly do we mean by data as speech, and what does the First Amendment say about it?[9]

First, how should we characterize algorithms that automatically create content? It isn't clear. In recognizing that with data, it is often difficult to find somebody who has the traits of a typical speaker, Bambauer observes a distinction between information and information-gathering.[10] She contends that new knowledge actually being created should be better protected than merely organizing information from other sources. Benjamin refers to this new form of protected communication as "the decisions created by algorithms," or more precisely, "algorithm-based decisions."[11] Wu calls them "algorithmic outputs," focusing on the nature and functionality of the created content.[12]

Second, these articles offer a comprehensive summary of how First Amendment jurisprudence would apply to algorithmic speech. Unsurprisingly, there is no consensus—it depends. Surveying a century of case law, Bambauer finds that the cases that would not afford protection to data have fallen into desuetude and "have not aged well," while cases that would reach the opposite result "are better equipped to stand the test of time."[13] Bambauer concludes that the algorithmic speech that warrants protection is that associated with "a right to learn new things" based on a "thinker-centered First Amendment."[14]

Benjamin concludes that "most algorithm-based" outputs are "speech for First Amendment purposes."[15] The "touchstone is sending a substantive message."[16] Wu offers a different, "functional" approach that focuses on whether the speaker in fact adopts the communication as its (or his or her) own.[17] Specifically, "those who merely carry information" do not receive protections under the First

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6 Jane Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 57 (2014).
7 Stuart Minor Benjamin, *Algorithms and Speech*, 161 U. PA. L. REV. 1445 (2013).
8 Tim Wu, *Machine Speech*, 161 U. PA. L. REV. 1495 (2013).
9 *But see* Neil M. Richards, *Why Data Privacy Law Is (Mostly) Constitutional*, WM. & MARY L. REV. (forthcoming 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2335196 (conceding that, while viewing data as speech has "superficial appeal," it "is ultimately silly").
10 Bambauer, *supra* note 6, at 61, 71.
11 Benjamin, *supra* note 7, at 1447, 1449.
12 Wu, *supra* note 8, at 1496.
13 Bambauer, *supra* note 6, at 71.
14 Bambauer, *supra* note 6, at 77.
15 Benjamin, *supra* note 7, at 1447.
16 Benjamin, *supra* note 7, at 1470.
17 Wu, *supra* note 8, at 1517-24.

Amendment, and courts do not afford protections to "tools" that are "purely functional" in conveying information.[18] In a nutshell, "speech products" are protected, while "communication tool[s]" are not.[19]

II. REGULATING DATA AND PRIVACY

What would it mean for the validity of regulations if data were treated as speech? Privacy scholars are very leery of this development.[20] As Eugene Volokh pointed out, privacy laws that limit the right to speak about someone else invariably run headlong into the First Amendment.[21] Giving constitutional protections to big data-service providers, such as Google or Facebook, inhibits regulations aimed at protecting privacy.[22]

Bambauer notes that affording strict constitutional scrutiny to privacy laws would "wreak havoc on consumers and vulnerable populations."[23] Likewise, Wu warns that "[t]oo much protection would threaten to constitutionalize many areas of commerce and private concern without promoting the values of the First Amendment," and the results would be "both absurd and disruptive."[24] Benjamin recognizes that there would be "dramatic consequences" if courts apply heightened scrutiny to "every regulation that affects algorithm-based transmissions."[25] However, he stresses that "laws of general applicability like antitrust and tax laws" do not "implicate the First Amendment."[26] These limitations would "reduc[e] the potential universe of

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18 Wu, *supra* note 8, at 1497.

19 Wu, *supra* note 8, at 1498.

20 Richards, *supra* note 9 ("If 'data' were somehow 'speech,' virtually every economic law would become clouded by constitutional doubt. Economic or commercial policy affecting data flows (which is to say all economic or social policy) would become almost impossible.").

21 Eugene Volokh, *Freedom of Speech and Information Privacy: The Troubling Implications of a Right to Stop People from Speaking About You*, 52 STAN. L. REV. 1049, 1050–51 (2000).

22 *See, e.g.*, Ashutosh Bhagwat, Sorrell v. IMS Health*: Details, Detailing, and the Death of Privacy*, 36 VT. L. REV. 855, 855–56 (2012); Neil M. Richards, *Reconciling Data Privacy and the First Amendment*, 52 UCLA L. REV. 1149, 1173 (2005).

23 Bambauer, *supra* note 6, at 110.

24 Wu, *supra* note 8, at 1496, 1498, 1508 ("At some point a broad theory of speech would encounter the anticanonical influence of *Lochner v. New York*, or the prescription that the federal judiciary should not strike economic legislation based on its policy preferences." (footnotes omitted)); *see also* Richards, *supra* note 9 ("At the dawn of the Industrial Age, business interests persuaded the Supreme Court in the *Lochner* case that the freedom of contract should immunize them from regulation. We reject the similar calls of modern advocates for digital *Lochner*.").

25 Benjamin, *supra* note 7, at 1451.

26 Benjamin, *supra* note 7, at 1476 n.98, 1482.

situations in which heightened scrutiny under the Free Speech Clause would apply" and "alleviat[e] . . . concerns."[27]

While data-based constitutional defenses will make enforcing information privacy laws more difficult, these concerns only scratch the surface of advancing constitutional protections to algorithmic outputs.

III. SEARCH ENGINES AND THE FIRST AMENDMENT

In the early days of the information superhighway, users were forced to manually crawl through an undifferentiated morass of hyperlinks to find the brass ring. Now, search engines like Google deliver the tiny piece of that pie users want—really, the slice Google thinks they want (not always the same thing).[28] Though, this curating comes at a cost—users miss the rest. Or more precisely, they never know that the remainder of the pie ever existed.

Oren Bracha and Frank Pasquale view this selection process critically, and have described search engines as the "bottlenecks of the information infrastructure,"[29] and "technological chokepoints."[30] These gatekeepers "exercise extraordinary control over data flow," they contend, and give rise to "concerns similar to those associated with traditional mass media.[31]

What is worse than Google broadcasting personal information to the world? In the age of big data, the opposite may very well be more deleterious. Eric Schmidt, the long-time CEO of Google, put it succinctly: "The true cost of remaining anonymous [in the future], then, might be irrelevance; even the most fascinating content, if tied to an anonymous profile, simply won't be seen because of its excessively low ranking."[32] While Schmidt views this process passively, oth-

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27 Benjamin, *supra* note 7, at 1482.

28 Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. (forthcoming 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2309703.

29 Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1150 (2008). For a similar take, see James Grimmelmann, *Speech Engines*, 98 MINN. L. REV. 868 (2014).

30 Bracha & Pasquale, *supra* note 29, at 1152.

31 *Id.* at 1150–51; *see also* Evegeny Morozov, *Future Shlock: Meet the Two-world Hypothesis and Its Havoc*, NEW REPUBLIC (May 27, 2013) http://www.newrepublic.com/article/113272/eric-schmidt-and-jared-cohenthe-new-digital-ages-futurist-schlock ("Coming from senior executives of the world's most powerful intermediary[,] . . . all this talk about the disappearance of intermediaries is truly bizarre and disingenuous.").

32 ERIC SCHMIDT & JARED COHEN, THE NEW DIGITAL AGE: RESHAPING THE FUTURE OF PEOPLE, NATURE AND BUSINESS 33 (2013); *see also* Jonas Lerman, *Big Data and Its Exclusions*, 66 STAN. L. REV. ONLINE 55 (Sept. 3, 2013), http://www.stanfordlawreview.org/sites/default/files/

ers contend that Google has and will take an active role in controlling access to information by promoting favored sources, and inevitably, demoting disfavored sources. In the future, everyone will be famous for fifteen microseconds, if given a high rank by Google.

A recent search-engine dispute illustrates the power of ranking, and its impact on speech. In December 2013, Google determined that RapGenius.com, a site that collects rap lyrics, utilized improper search-engine optimization techniques.[33] Apparently as a punishment, Google immediately demoted the site on its search rankings. Instead of appearing on page one, as it did before, a search for "Rap Genius" only appeared on the fifth page of results.[34] The blog *TechCrunch* noted that this is "likely further than anyone would look."[35] Google eventually reversed this decision, and restored their ranking, but its ability to immediately and pervasively "disappear" a site is significant. If you don't play by the rules, your ranking can be destroyed, and you are effectively invisible on a search engine with nearly seventy-percent market share.[36]

Consider this dynamic charitably. If Google's algorithms choose *not* to include a person or piece of information in its search results—even due to legitimate page-rank concerns, such as RapGenius—in the world of tomorrow, the person in many respects will be invisible. Now, consider this dynamic less charitably. Google profits from endorsing certain partners.[37] Those in Google's good graces can rest assured that they will remain within the core of Google's all-seeing search robots. Everyone else may fade outside Google's algorithmic penumbras. Without Google's binary blessing, information may exist on the Internet, but will invariably be demoted into obscurity.

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online/topics/66_stanlrevonline_55_lerman.pdf (discussing implications of people being left out of big data).

33 This account is taken from Josh Constine, *Google Destroys Rap Genius' Search Rankings as Punishment for SEO Spam, but Resolution in Progress*, TECHCRUNCH (Dec. 25, 2013), http://techcrunch.com/2013/12/25/google-rap-genius.

34 *Id.*

35 *Id.*

36 Danny Goodwin, *Google Fails to Gain Search Market Share, Bing Steals from Yahoo*, SEARCH ENGINE WATCH (Nov. 14, 2013), http://searchenginewatch.com/article/2307115/Google-Fails-to-Gain-Search-Market-Share-Bing-Steals-From-Yahoo.

37 Adam Raff, Op-Ed., *Search, but You May Not Find*, N.Y. TIMES, Dec. 28, 2009, http://www.nytimes.com/2009/12/28/opinion/28raff.html ("With the introduction in 2007 of what it calls 'universal search,' Google began promoting its own services at or near the top of its search results, bypassing the algorithms it uses to rank the services of others. Google now favors its own price-comparison results for product queries, its own map results for geographic queries, its own news results for topical queries, and its own YouTube results for video queries.").

In a white paper commissioned by Google,[38] and subsequently published in the *Journal of Law, Economics & Policy*,[39] Eugene Volokh and Donald Falk warned against possible regulations of search results. They argued that Google is a speaker, entitled to First Amendment protections, for three reasons. First, Google conveys information that the company creates, such as maps. Second, Google reports on other's speech, in the form of search results that direct users to a particular destination. Third, Google's algorithms, based on its "engineers' judgment," have "made a conscious choice to include those results in a particular place."[40] Volokh and Falk stress that searches are the "result not just of individual editorial choices, but also of the computerized algorithms that search engine employees have created to implement these choices."[41] Bracha and Pasquale counter that the "speech" from search engines is "thin and limited."[42]

But what poses a greater threat to free speech—the lack of regulations, or the regulations themselves? Are Bracha and Pasquale right that "the more significant threat is posed by the broad structural biases of search engines"?[43] The authors posit that we can no longer believe in a hands-off "Internet-speech utopianism" to "safeguard the Internet as a vital and diverse speech environment."[44] Volokh and Falk insist that the free market forces—mainly users leaving Google if search results are flawed—can remedy this problem. Though foot voting[45] (or click voting as it were) is always an option, it's impossible to know if a search is flawed when one only sees what the search engine delivers.

Or is the greater threat posed by allowing the government the power to interfere with algorithms? Volokh and Falk stress that Google has made no "guarantee" of neutrality, and has "never given up its right as a speaker to select what information it presents and how it presents" search results.[46] In any event, "the government may not demand that a search engine live up to some hypothetical and

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38 EUGENE VOLOKH & DONALD M. FALK, GOOGLE: FIRST AMENDMENT PROTECTION FOR SEARCH ENGINE RESULTS (2012), *available at* http://www.volokh.com/wp-content/uploads/2012/05/SearchEngineFirstAmendment.pdf.

39 Eugene Volokh & Donald M. Falk, *Google: First Amendment Protection for Search Engine Search Results*, 8 J.L. ECON. & POL'Y 883 (2012).

40 *Id.* at 884, 889.

41 *Id.* at 888.

42 Bracha & Pasquale, *supra* note 29, at 1197.

43 *Id.* at 1172.

44 *Id.* at 1157.

45 *See* Ilya Somin, *Foot Voting, Federalism, and Political Freedom*, 55 NOMOS (forthcoming 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2160388.

46 Volokh & Falk, *supra* note 39, at 893.

undefined expectations of abstract objectivity."[47] Bracha and Pasquale recognize that "[p]roposals of any direct regulation of search engines are likely to raise vigorous resistance."[48] Many will raise the First Amendment as a defense—the Volokh and Falk white paper commissioned by Google is an opening salvo in this future litigation.[49]

The tradeoff can be stated differently, in terms of a positive and negative conception of liberty. In order to promote expression, free from the constraints *of intermediaries like Google*, the government *should* have the power to control algorithmic outputs.[50] Conversely, in order to promote expression, free from the constraints *of the regulatory state*, the government *should not* have the power to control algorithmic outputs. These competing visions, oft-stated as two sides of the same coin, more clearly state the tension of what this future debate will portend.

What is the solution? Applying his functional approach, Wu tries to analogize information offered by an algorithm to traditional forms of communication that are, and are not constitutionally protected. Wu asks, "[D]oes such advice fall closer to a recognized medium, the generalized book or instruction manual that happens to be communicating one-on-one . . . ?"[51] These outputs would more likely warrant protections. Or, does "the output of a concierge program merely provid[e] some function for its user like the doctor's [personalized] diagnosis?"[52] These "recommendation" tools are "unlikely to be protected."[53] This distinction is similar to how courts have distinguished legal self-help books (protected) from customized legal help by non-lawyer entities such as Legal Zoom (not protected).[54] Wu offers this rule of thumb: "[T]he more the concierge merely tells the user about himself, the more like a tool and less like protected speech the program is. The more the programmer puts in place his

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47 *Id.*

48 Bracha & Pasquale, *supra* note 29, at 1209.

49 Google also commissioned a white paper, co-authored by the late Robert Bork and Greg Sidak, arguing that antitrust law does not support a possible FTC suit. *See* Josh Blackman, *Academics Help Google Escape FTC Suit*, JOSH BLACKMAN'S BLOG (Jan. 14, 2013), http://joshblackman.com/blog/2013/01/04/academics-help-google-escape-ftc-suit.

50 *See generally* Andrew Tutt, The New Speech 59 (2013) (unpublished manuscript) (on file with author) (arguing that if data is a form of speech, "[w]hat is at stake, then, is the very idea that we can protect the freedom of speech through government intervention designed to enhance that freedom").

51 Wu, *supra* note 8, at 1532.

52 *Id.*

53 *Id.*

54 Janson v. LegalZoom.com, Inc., 802 F. Supp. 2d 1053, 1064 (W.D. Mo. 2011) ("Here, LegalZoom's internet portal offers consumers not a piece of self-help merchandise, but a legal document service which goes well beyond the role of a notary or public stenographer.").

opinion, and tries to influence the user, the more likely there will be First Amendment coverage."[55]

This rule is helpful as a starting point, but will prove increasingly difficult as the output from algorithms become less dependent on the judgments of the programmer, and more responsive to the individual thoughts of the user. This interwoven vision of data distorts any line—fuzzy or clear—between a tool and speech. Concerns about biased search rankings, or selective delivery of preferred information, pale in comparison to the potential for abuse as data providers become more integral in the daily decision-making process of dependent people.

IV. FROM SEARCH ENGINES TO ASSISTED DECISION MAKING

Today, search engines are primarily used to help people find information. Ultimately, the decision of what to do with that information is still made by the user, though informed by what the computer suggests. For some time, Google has made clear that their goal is to help people make better decisions about their lives[56] and serve as our "constant companion," capable of offering "the ubiquitous presence of a personal assistant that never stops working."[57] Google cofounders Larry Page and Sergey Brin "have asserted [that] the goal is to insert a chip inside your head for the most effortless search engine imaginable."[58] This is not just science fiction. Google Glass is but the first incarnation of this technology.

Tim Wu referred to such a technology as a "concierge" that can not only find information, but can dispense "advice."[59] The concierge or adviser is similar to what I have elsewhere defined as "assisted decision making."[60] That is, relying on intelligent algorithms that can

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55 Wu, *supra* note 8, at 1533.

56 Josh Blackman, *Omniveillance, Google, Privacy in Public, and the Right to Your Digital Identity: A Tort for Recording and Disseminating an Individual's Image over the Internet*, 49 SANTA CLARA L. REV. 313, 336 (2009) (reporting Schmidt's prediction that "users [will] . . . be able to ask the question such as 'What shall I do tomorrow?' and 'What job shall I take?' and Google would be able to answer those questions.").

57 Ian Burrell, *Inside Google HQ: What Does the Future Hold for the Company Whose Visionary Plans Include Implanting a Chip in Our Brains?*, INDEPENDENT (London), July 20, 2013, http://www.independent.co.uk/life-style/gadgets-and-tech/features/inside-google-hq-what-does-the-future-hold-for-the-company-whose-visionary-plans-include-implanting-a-chip-in-our-brains-8714487.html.

58 *Id.*

59 Wu, *supra* note 8, at 1531. (James Grimmelmann similarly offers that "[a] good search engine advises its users). *See* Grimmelmann, *supra* note 29, at 950.

60 *See* Josh Blackman et al., *FantasySCOTUS: Crowdsourcing a Prediction Market for the Supreme Court*, 10 NW. J. TECH. & INTELL. PROP. 125, 164–65 (2012) (describing how a computer can be used as an "intelligent litigation assistant"). Elsewhere in my publications, I ad-

comb through vast amounts of data in order to assist people in making more informed decisions. Both visions of the technology further blur and break down the lines between the computer and the user. As Internet technologies evolve from helping users retrieve information to helping users make decisions, and the line between human and program becomes blurred, concerns about constitutional scrutiny for data regulations become more potent.

V. RIGHTS FOR YOUR DIGITAL IDENTITY

In the future, as it becomes tougher to disentangle the concierge from the user, deciding not to protect these forms of communication risks unintentionally contracting the scope of free expression. Rather than fearing an unwarranted expansion in the scope of protected activities under the First Amendment, we risk excluding what could become a huge share of human communication, facilitated by algorithmic outputs.

Whatever regime the courts settle on must confront this interwoven nature of human-computer interactions. The optimal regulatory balance must consider—as others have suggested, looking to the speaker—the content of the message, and the functionality of the communication. The core of the constitutional inquiry should focus on the *nexus* that the algorithmic outputs have with human interaction. The more the human interacts, the closer the communication will be to something the human created herself, and something that warrants protection. In contrast, outputs that are created with isolated autonomy, and involve little personal involvement—save for the programmer's coding—departs further from the humanistic expression that warrants protection.

This is the exact opposite of the third reason Volokh and Falk identify, which centers on protecting the "engineers' judgment" as a form of speech.[61] If the algorithmic output was in fact closely tied to an "engineer's judgment," we wouldn't need to look to the user, as the debate over protecting that speech would be fairly straightforward. These algorithms exist to provide interaction with the user—

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dress issues of liability for expert systems that offer legal advice, in terms of unauthorized practice of law violations, as well as broader tort liability. *See also* Josh Blackman, *Robot, Esq.* (2013), *available at.* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2198672. I posit that occupational licensing regimes, such as the cartelized legal bar, will offer one of the first challenges to data systems that can offer professional advice—and you can be sure that the First Amendment will be raised as a defense. *See generally* Blackman et al., *supra*, 166 (predicting that before legal data systems can be accepted by society, ethical and regulatory arguments will be made against their use).

61 Volokh & Falk, *supra* note 39, at 884, 889.

not to output information in the abstract. No one cares about Google's code until a user enters a search query. The results, based on the interaction, are what interest us, and what warrant the strongest protection.

Let's consider an example involving art.[62] No one would contend that paint or a canvas is speech, but if an artist combines the two, and creates a painting, that would clearly be a protected form of expression. Second, if a person draws on a computer, perhaps using an application like Photoshop, and creates a work of art, that too would be a form of expression—even though it was developed through an algorithm (pixels instead of paints were used). Third, imagine if Photoshop had a feature for lazy artists that would generate, at random, a drawing—no human input would be involved, other than clicking a "generate" button. That too would likely be protected by the First Amendment, but the case is not as strong. Volokh and Falk's reasoning would view this as an expression of the programmer's judgment, though a randomly created pile of pixels would be a tougher call. Fourth, imagine if an engineer designs a robot that can paint, totally at random, on a canvas by itself, through arbitrary strokes dipped in blended paints.[63] Would that painting be protected? That's a harder case to make, as the robot acts entirely independently, after the initial source code is compiled, though the engineer programmed the algorithm that generated the random strokes. This is closer to the zenith of autonomy, and warrants the least amount, if any, of constitutional protection.

Fifth, let's proceed towards the other end of the spectrum. Imagine that an engineer designs a robot to recreate a painting based on a person's favorite works of art. Here, there is minimal input and interaction. The robot is simply copying and repainting something already created, based on a simple input (let's put aside copyright concerns for the moment). This is

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62 I thank Corey Carpenter for helping me formulate this illustration. I use art as an example for its simplicity, but other examples, which involve core political speech, articulated through algorithms—such as prediction markets—warrant stronger First Amendment protections. *See* Josh Blackman et al., *Cutting Access to InTrade Violates Americans' Speech Rights*, HOUS. CHRON., Dec. 7, 2012, http://www.chron.com/news/politics/opinion/outlook/article/Cutting-access-to-InTrade-violates-Americans-4100729.php.

63 This idea is not so fanciful. *See* Zach Honig, *3D Printer Duplicates Paintings Down to the Last Brush Stroke (Video)*, ENGADGET (Sept. 24, 2013), http://www.engadget.com/2013/09/24/3d-art-printer ("Tim Zaman, a Dutch researcher, has reportedly developed a 3D duplication technique capable of capturing incredible detail, such as brush strokes and other textures on a painting. With a captured image on hand, it's then possible to print a reproduction matching every detail, including raised brush strokes."). Or what about a macaque monkey who stole a camera and managed to snap a picture of himself? Would that be protected? *Monkey Steals Camera to Snap Himself*, TELEGRAPH (London) (July 4, 2011), http://www.telegraph.co.uk/news/newstopics/howaboutthat/8615859/Monkey-steals-camera-to-snap-himself.html.

akin to what Google does with a search result—taking a general query, and pulling preexisting knowledge from the ether, based on the user's preference. Sixth, let's move one step further along the path towards greater human involvement. Imagine that an engineer designs a robot that can learn a person's taste in art. The robot understands what she likes and doesn't like. It even inquires about art she has never seen before (similar to the way Pandora suggests music a person may like based on other similar tastes). Based on this profile, the robot decides what her ideal painting would look like—effectively commissioning an ideal piece of art. This would be the ideal art concierge, in Wu's terminology.

Here, the painting would be the perfect manifestation of what the person wanted—even if she independently could not have articulated what she wanted, owing to a lack of artistic talent, or a lack of knowledge about art. This creation would be the ultimate representation of a person's artistic taste, even though the decision of what to paint would be powered entirely through algorithms. Though this may be the most surreal concept along the spectrum, shouldn't this painting receive similar protection as the first example offered, where a person, by herself, creates the painting? If not, consider if we are protecting the idea, or just the act of splashing paints on a canvas. In this last example, the robot becomes a medium for a person's expression, assisting (inspiring?) the decision-making process of what to design.

CONCLUSION

Offering protections to data as speech may be an unsettling and jarring thought, but in certain cases it will soon become more difficult to unbundle technology's speech rights from our own. To deny the concierge any protections, ultimately, can vitiate our own rights. This is not to ignore the arguments made by Bracha and Pasquale, and others, about the power of these strong intermediaries. Indeed, these gateways will serve increasingly important functions as they are involved with how people make decisions. Yet, the utility of these tools to enable people to improve their knowledge, and decision-making processes, should not be ignored. It is far from clear how sticking a regulatory wrench inside the intricately designed algorithms of these giants would work. As a society, we must contend with the rights for our digital identities.[64]

64 Blackman, *supra* note 56, at 354.