
Authorship, Disrupted: AI Authors in Copyright and First Amendment Law

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Technology is often characterized as an outside force, with essential qualities, acting on the law. But the law, through both doctrine and theory, constructs the meaning of the technology it encounters. A particular feature of a particular technology disrupts the law only because the law has been structured in a way that makes that feature relevant. The law, in other words, plays a significant role in shaping its own disruption. This Essay is a study of how a particular technology, artificial intelligence, is framed by both copyright law and the First Amendment. How the algorithmic author is framed by these two areas illustrates the importance of legal context and legal construction to the disruption story.

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Technology is often characterized as an outside force that operates upon the law to disturb it.¹ Napster breaks copyright law;² 3D printing

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¹ See Meg Leta Jones, Does Technology Drive Law? The Dilemma of Technological Exceptionalism in Cyberlaw 6 (June 8, 2017) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2981855 (“[U]ntil recently the debate around technological exceptionalism has been not *whether* it exists, but *when* it exists. When is a technology so new and so different that it will

breaks patent law;³ the internet challenges First Amendment and communications law;⁴ Uber breaks employment law;⁵ the Internet of Things upends Fourth Amendment law.⁶ In reality, the picture is far more complex. The law can itself drive technological development; technologists often design around legal entitlements.⁷ To the extent new technology (or really, the social practice of a new technology⁸) disrupts the law, it does so because of how it encounters existing features of the law, both doctrinal and theoretical. The law, in constructing — that is, building the meaning of — new technological

drive significant legal change? When is a technology so novel that the law, as established, breaks and cannot account for it?”).

² See, e.g., Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263 (2002) (describing how Napster challenged and ultimately changed copyright law).

³ See, e.g., Deven R. Desai & Gerard N. Magliocca, *Patents, Meet Napster: 3D Printing and the Digitization of Things*, 102 GEO. L.J. 1691, 1695-96 (2014) (arguing that the ease of copying something through a 3D printer “kills” patents); Mark A. Lemley, *IP in a World Without Scarcity*, 90 N.Y.U. L. REV. 460, 462-63 (2014) (“Unless they strictly control and limit the sale and manufacture of 3D printers and gene printers, they may find themselves unable to prevent the production of unauthorized designs.”).

⁴ See Jack M. Balkin, *Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society*, 79 N.Y.U. L. REV. 1, 6-10 (2004) (identifying four features of the digital environment that challenge freedom of expression and related areas of law: the low cost of copying; the fact that content goes across borders; the low cost of building on (“glomming on”) to existing content; the lower costs of distribution which democratize speech) [hereinafter Balkin, *Digital Speech*].

⁵ See, e.g., Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87, 97-98 (2016) (describing how Uber disrupts employment law — but also noting that this disruption of categories has been occurring in non-Uber-related cases as well).

⁶ See generally Andrew Guthrie Ferguson, *The Internet of Things and the Fourth Amendment of Effects*, 104 CALIF. L. REV. 805 (2016) (discussing how the Internet of Things disrupts Fourth Amendment law); Scott R. Peppet, *Regulating the Internet of Things: First Steps Toward Managing Discrimination, Privacy, Security, and Consent*, 93 TEX. L. REV. 85 (2014) (discussing how the Internet of Things disrupts law more generally speaking).

⁷ See, e.g., *Am. Broad. Cos., Inc. v. Aereo, Inc.*, 134 S. Ct. 2498 (2014) (describing how defendants built a device consisting of various small antennas in a warehouse to allow unlicensed live streaming of television, in an attempt to give control to individual system users to achieve a favorable copyright law decision).

⁸ Technology is not an object; it is the social use of an object. See, e.g., Jack M. Balkin, *The Path of Robotics Law*, 6 CALIF. L. REV. 45, 48-49 (2015) (“[W]hat lawyers call ‘technology’ is usually a shorthand for something far more complex . . . (1) how people interact with new inventions and (2) how people interact with other people using those new inventions or presupposing those new inventions.”) [hereinafter Balkin, *Robotics Law*]; see also Jones, *supra* note 1, at 8 (statement of Balabanian) (“[T]echnology means not simply a collection of machines, but the relationships among them, their uses, and their relationship between them and people.”).

developments and their social uses, takes a central part in its own disruption.⁹

Conceiving of technology as some outside force that acts upon the law can lead to a technology-centric approach in which one tries to identify what features of a particular technology are legally disruptive.¹⁰ This kind of disruption narrative gets it wrong. A particular feature of a particular technology disrupts the law only because the law has been structured — doctrinally and theoretically — in a way that makes that feature relevant.¹¹ The disruptive effects (if any) of a technology become manifest when they encounter, interface with, and are given particular meaning within the law.

This Essay is a study of the way a particular technology, artificial intelligence, encounters and is incorporated into two distinct scenes of regulation:¹² copyright and First Amendment law. Artificial intelligence (“AI”) appears to pose challenges for both of these areas of U.S. law, because both areas at first glance appear to center on human speakers or authors. Can an artificially intelligent author or speaker receive copyright protection? Can it (he, she?) be protected by the First Amendment?

The algorithmic “author,” it turns out, gets framed differently by these two different legal areas, with differently disruptive results. This illustrates the importance of legal context in the disruption story —

⁹ Balkin, *Robotics Law*, *supra* note 8, at 50 (observing that the importance of certain purportedly disruptive features of robots “arises from the way that a new technology interacts with a social and legal world already in place,” what he calls the “scene of regulation.”).

¹⁰ Jones, *supra* note 1, at 2 (“For Calo, and others . . . ‘essential qualities’ of technology ‘drive the law and policy conversations that attend them.’ The task for law scholars . . . is then to identify those qualities”); see Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 CALIF. L. REV. 513, 516 (2015) [hereinafter Calo, *Lessons of Cyberlaw*]. As Calo explains, one “essential quality” of robots is that they are physically embodied; a robot can be characterized as disrupting U.S. tort law because unlike software that causes only virtual crashes, robots cause physical crashes in physical spaces. *Id.* at 533-34 (“Robots . . . differ from computers and software precisely in that they are organized to act upon the world”); see also M. Ryan Calo, *Open Robotics*, 70 MD. L. REV. 571, 598-601 (2011).

¹¹ See Telecommunications Act of 1996, 47 U.S.C. § 230 (2012); see also Balkin, *Robotics Law*, *supra* note 8, at 50 (“The problem . . . is not simply a feature of essential characteristics of a technology. Rather, it arises from the way that a new technology interacts with a social and legal world already in place.”). As several scholars have now observed, the fact that a robot can cause physical harm may break down our scheme for addressing software liability, but only because the U.S. system has created limitations on liability for information harms. See Jones, *supra* note 1, at 6.

¹² Balkin, *supra* note 8, at 50 (calling the “social and legal world already in place” the “scene of regulation”).

and the relative unimportance of particular features of the technology itself.

The law's existing construction of authorship paves the way for whether and how the law is or is not disrupted by AI authors. If U.S. copyright law constructed authorship as requiring a spark of human brilliance, or if U.S. free speech law constructed speech protection as being primarily about protecting individual human autonomy, there would be little space in either for protecting AI speakers. If, on the other hand, either or both areas of the law focused more on the needs of audience members than the rights of human speakers, then AI or emergent authors could more easily be incorporated into those systems of legal meaning. This shows that when it comes to assessing the extent of legal disruption, the details of a particular legal landscape and its underlying theories are often as important as the features of a particular technology.¹³ The AI author does not disrupt law in a vacuum, because the law constructs authorship differently in different contexts.

Technology thus does not just act upon the law; it encounters and is framed by it. Technology can make salient or foreground existing features of the law.¹⁴ But this description is incomplete; technology is not just a stable lens through which we see stable aspects of the law. It takes on a particular meaning within the law depending on what one thinks the law is or should be. The law constructs — makes meaning of — technologies.¹⁵ And that process of construction lays the groundwork for whether and how a particular technology creates challenges for the legal system.

In a forthcoming longer work,¹⁶ I address the details and consequences of this construction process, and what it means for understanding, anticipating, and even designing law for legal disruption. In that work, I also take on the project of identifying

¹³ See *id.* (“Instead of saying that law is responding to essential features of new technology, it might be better to say that social struggles over the use of new technology are being inserted into existing features of law, disrupting expectations about how to categorize situations.”).

¹⁴ See Balkin, *Digital Speech*, *supra* note 4, at 2 (“[D]igital technologies change the social conditions in which people speak, and [thus] . . . bring to light features of freedom of speech that have always existed in the background but now become foregrounded.”).

¹⁵ See Jones, *supra* note 1, at 4 (“[C]yberlaw research should consider the ways in which technologies, practices and social arrangements are constructed within certain legal contexts: the legal construction of technology.”).

¹⁶ Margot E. Kaminski, *Legal Disruption: How Technology Disrupts the Law* (2017) (unpublished manuscript) (on file with author).

different kinds and different levels of disruption — when law is just business as usual, versus when technology truly challenges it. In this Essay, I focus on the process of legal construction: the importance of understanding how the law makes meaning of technologies. I show how one type of technology can be a lens through which we better see the law.¹⁷ It can cause a move up from statutes or doctrine to reassessing the theory behind them. But technology is very rarely so disruptive that it causes the law to be unable to function. I join Meg Jones in calling for a different analytical approach: we should identify and analyze how the law constructs technology, rather than yielding to a narrative that a technology is intrinsically disruptive.¹⁸ Law is, I argue here, an important player in its own disruption.

I. ALGORITHMIC AUTHORSHIP: THE CASE STUDY

Algorithmic or AI authorship seems poised to disrupt several areas of law that at their core concern the human author. Roughly speaking, algorithmic authorship is authorship by an algorithm — a computer program, rather than a human. Artificial intelligence usually refers to a more sophisticated and independent version of an algorithm; a closely related term is “emergence,” which describes programs that produce outputs their programmers and users could not predict.¹⁹ Examples of algorithmic (though not necessarily emergent) authors include the following: Google’s DeepDream has generated artwork;²⁰ the What-If Machine came up with the premises and characters for a (not very good) West End musical;²¹ and the computer program Iamus

¹⁷ See Balkin, *Digital Speech*, *supra* note 4, at 2; see also Toni M. Massaro & Helen Norton, *Siri-ously? Free Speech Rights and Artificial Intelligence*, 110 NW. L. Rev. 1169, 1171 (2016).

¹⁸ Jones, *supra* note 1, at 4.

¹⁹ Calo, *Lessons of Cyberlaw*, *supra* note 10, at 532, 538 (“[S]ystems that do more than merely repeat instructions but adapt to circumstance.”); *id.* at 539-40 (reviewing a deeper discussion of emergence versus autonomy and the famous Turing test).

²⁰ Robert Hart, *If an AI Creates a Work of Art, Who Owns the Rights to It?*, QUARTZ (Aug. 15, 2017), <https://qz.com/1054039/google-deepdream-art-if-an-ai-creates-a-work-of-art-who-owns-the-rights-to-it/>; Matt McFarland, *Google’s Psychedelic “Paint Brush” Raises the Oldest Question in Art*, WASH. POST (Mar. 10, 2016), <https://www.washingtonpost.com/news/innovations/wp/2016/03/10/googles-psychedelic-paint-brush-raises-the-oldest-question-in-art/>.

²¹ See Mark Brown, *World’s First Computer-Generated Musical to Debut in London*, GUARDIAN (Dec. 1, 2015), <https://www.theguardian.com/stage/2015/dec/01/beyond-the-fence-computer-generated-musical-greenham-common>; Lyn Gardner, *Beyond the Fence Review — Computer-Created Show Is Sweetly Bland*, GUARDIAN (Feb. 28, 2016), <https://www.theguardian.com/stage/2016/feb/28/beyond-the-fence-review-computer->

composed music performed in 2012 by the London Symphony Orchestra.²² Are these machine-created outputs protected by copyright law or protected as free speech? Should they be? These questions have already spawned significant debate.²³

In the abstract, algorithmic authorship fundamentally challenges the notion of the romantic author or speaker: an individual human being who produces creative output during moments of enlightened creativity.²⁴ The romantic author is profoundly human; her creativity stems, in fact, from her humanity. Romanticizing creativity as some essential aspect of human identity is harder to do when a machine can produce the same creative works. Similarly, it is harder to romanticize free expression as an essential output of human autonomy when machines can spew out news, poems, and op-eds.²⁵

Algorithmic authorship in reality constitutes a spectrum of practices, many of which do not meaningfully challenge either philosophical stances on authorship or the U.S. legal system.²⁶ For example, when Google's DeepDream art was sold, the human artists who used the program kept the money — that is, they were for all

created-musical-arts-theatre-london (describing the resulting show *Beyond the Fence* as “risibly stereotypical”); Stewart Pringle, *Beyond the Fence: How Computers Spawned a Musical*, *NEW SCIENTIST* (Mar. 3, 2016), <https://www.newscientist.com/article/2079483-beyond-the-fence-how-computers-spawned-a-musical>.

²² Philip Ball, *Iamus, Classical Music's Computer Composer, Live from Malaga*, *GUARDIAN* (July 1, 2012), <https://www.theguardian.com/music/2012/jul/01/iamus-computer-composes-classical-music>.

²³ See, e.g., Bruce E. Boyden, *Emergent Works*, 39 *COLUM. J.L. & ARTS* 377, 379 (2016); James Grimmelmann, *There's No Such Thing as a Computer-Authored Work*, 39 *COLUM. J.L. & ARTS* 403, 407-08 (2016); see also Toni M. Massaro et al., *Siri-ously 2.0: What Artificial Intelligence Reveals About the First Amendment*, 101 *MINN. L. REV.* 2481, 2483 (2017).

²⁴ Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, *STAN. TECH. L. REV.*, no. 5, 2012, at 4 (describing Roland Barthes's and Michel Foucault's critiques of “the idea of the author as an individual creative personality, a solitary originator of stylistically consistent works”); *id.* (referring to romantic authorship as both “individualistic” and “proprietary”).

²⁵ *Did a Human or a Computer Write This?*, *N.Y. TIMES* (Mar. 7, 2015), <https://www.nytimes.com/interactive/2015/03/08/opinion/sunday/algorithm-human-quiz.html>.

²⁶ For a discussion of some of these difference practices, see Boyden, *supra* note 23, at 379 (“[T]he problem of computer-generated works is not a single problem, but rather a set of related problems, some of which are easier than others to resolve.”); *id.* at 380-81 (discussing a spectrum of examples, from “mad-lib” style algorithms where machines fill in the blanks, to story-generating algorithms that are sometimes indistinguishable from human-authored pieces); see also *id.* at 385-89.

practical purposes considered to be the works' authors.²⁷ One artist described the program as a “paintbrush”: a tool used to further a human author’s vision.²⁸ A creative algorithm can, at least in the right circumstances, be characterized as a tool for authors rather than as an independent creator.



My dog, Iggy/ My dog, Iggy, run through DeepDream’s DaVinci processor. Credit Matthew R. Cushing (and DeepDream)(and maybe DaVinci)

The chair of digital arts at the Pratt Institute, however, suggested that the algorithm’s human creators deserved credit, too.²⁹ A second approach to algorithmic authorship is thus to deem the human authors of the algorithm as in some way co-authors of the resulting work. For practical purposes in at least the near future, the central question of algorithmic authorship will likely be a factual one: whether the algorithm looks more like a tool, or whether the algorithm’s programmers look more like co-authors.³⁰

²⁷ McFarland, *supra* note 20.

²⁸ *Id.*

²⁹ McFarland, *supra* note 20 (“Patchen thinks credit for Atken’s work should be shared between the artist and the algorithm’s creators.”).

³⁰ See Grimmelmann, *supra* note 23, at 407-08. See generally REGISTER OF COPYRIGHTS, SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS (1966), <http://www.copyright.gov/reports/annual/archive/ar-1965.pdf>.

Finally, there is the more hypothetical question of what to do about Strong AI: as-yet-nonexistent (and in all likelihood never existent) artificial intelligence that operates independently of humans.³¹ What if DeepDream were DeeperDreamer, and came up with output on its own instead of serving as a stylistic tool for human artists? How does the law handle machines that truly think? Or, leaving aside the controversial requirement of consciousness, how does the law handle works that are recognizably creative to a human audience, but are the result of machine creation rather than deliberate human input?³² This question of what to do about emergence — that is, machine output that cannot be predicted by the humans involved — is the hardest from a legal perspective. It may require a move up from analogizing algorithms to existing doctrine and practices — using paintbrushes, having co-authors — to analyzing why we have particular areas of law in the first place, and the algorithms' relationships to those larger purposes.

II. ALGORITHMIC AUTHORSHIP AND COPYRIGHT

Algorithmic authorship is treated differently in different subparts of the legal system. This is because of differences in how those subparts of the legal system operate and are theorized — and more specifically, differences in how they theorize authorship.³³ These differences show that legal disruption does not stem from the technology alone, but from the law it encounters. Technology that is greatly disruptive in one legal area can be not-so-disruptive in another. The determinant of the level of disruption is not just the technology by itself, but how it is constructed by the law. Contemplating algorithmic authorship also shows how law can be disrupted on different levels — doctrinal, or

³¹ See Massaro et al., *supra* note 23, at 2483.

³² See Boyden, *supra* note 23, at 390 (describing emergence); *id.* at 378, 384 (describing the problem as follows: “works that consist largely of creative elements that have emerged unbidden from the operation of the program,” that is, a situation where there are “at least two works at issue, one of which produces the other”); see also Stuart M. Benjamin, *Algorithms and Speech*, 161 U. PA. L. REV. 1445, 1482 (2013) (reviewing whether the First Amendment protects algorithmic speech).

³³ As argued in this Essay, I believe the concept of authorship in these two areas of law to be distinct. There has been a recent trend, however, towards proposing unification. See Derek E. Bambauer, *Copyright = Speech*, 65 EMORY L.J. 199, 200-01 (2016) (proposing to unify the First Amendment and copyright law) [hereinafter Bambauer, *Copyright*]; Christopher Buccafusco, *A Theory of Copyright Authorship*, 102 VA. L. REV. 1229, 1231 (2015) (arguing that for purposes of copyright law, “to be an author of a writing, one must intend to produce a mental effect in an audience,” which resembles the First Amendment’s *Spence* test, discussed further below).

theoretical, requiring us to resort to theory to determine why subparts of the legal system exist.³⁴

For example, assessing copyright protection for algorithmically authored works both illuminates features of existing U.S. law and illustrates the law's role in its own disruption. Although the Copyright Office recently stated that works must be authored by a human to receive copyright protection,³⁵ that determination is likely not the end of the question of how to treat machine speech.³⁶

Algorithmic authorship could be handled under copyright law in any number of ways.³⁷ A software programmer could be deemed the author and thus the owner of the program's output. Or the user of the computer could be the author; the programmer and user could be joint authors; or, neither could be the author and the work could go un-owned.³⁸ Who gets to be called the work's author, and who gets to benefit from copyright's incentives, is a matter less of technological details of AI than of how we theorize authorship and ownership in the U.S. copyright system.

At first glance, human authorship may seem central to copyright law. The utilitarian purpose of copyright law is to incentivize (presumably human) authors to create new works for the benefit of net social welfare.³⁹ A natural rights theory of copyright, less emphasized in the United States, suggests that (human) authors

³⁴ As Jack Balkin has noted, technological change can be a prism through which we view the law and learn its underlying principles. Balkin, *Digital Speech*, *supra* note 4, at 4 (noting that the "digital revolution alters our perspective on freedom of speech and leads to a series of disputes about what the free speech principle means").

³⁵ U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2014), <https://www.copyright.gov/comp3/docs/compendium-12-22-14.pdf> ("Similarly, the Office will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author.").

³⁶ Judicial deference to the Copyright Office's decisions is controversial. See e.g., *Petition for Writ of Certiorari, Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 137 S. Ct. 1002 (No. 15-866), WL 94219, at *33-36 (discussing the circuit split over deference to the Copyright Office's registration decisions).

³⁷ See Boyden, *supra* note 23, at 383 (listing the various proposals for how to handle emergent authorship).

³⁸ *Id.* at 391 (stating that "as a theoretical matter, there is no good reason to assign initial ownership rights over such works to anyone [because] no one needs to be incentivized to produce the output of the program" and incentive to create the program "is provided by the copyright in the program as a literary work").

³⁹ William Fisher, *Theories of Intellectual Property*, in *NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY* (Stephen R. Munzer ed., 2001), <https://cyber.harvard.edu/people/TFisher/iptheory.pdf>.

deserve rewards for the labor they put into their creations.⁴⁰ A moral rights, or personhood, theory of copyright suggests that (human) authors imbue their creations with an aspect of their personality, so that if the creation is stolen or harmed, an author's personhood is afflicted.⁴¹ Each of these theories arguably depends on the humanness of an author.⁴²

Beyond theory, authorship appears in the Constitution: Congress may grant "Authors" copyright protection.⁴³ The Copyright Act refers to "works of authorship"⁴⁴ that are owned by "the author or authors of the work."⁴⁵ Human authorship thus might seem central to U.S. copyright law.

Algorithmic authorship purportedly disrupts copyright law because it removes, or greatly distances, the human author from the work.⁴⁶ If commentators are correct that much of U.S. copyright law rests on the antiquated eighteenth century notion of the romantic author — a human individual of lone genius inspired in a vacuum to create an original work — then it is certainly hard to fit an algorithmic author into that schema.⁴⁷

But U.S. copyright law — through its various players and interpreters, and at both theoretical and doctrinal levels — in fact

⁴⁰ Lior Zemer, *The Making of a New Copyright Lockean*, 29 HARV. J.L. & PUB. POL'Y 892, 893-94 (2006).

⁴¹ See, e.g., Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 957 (1982) (exploring the connection between property rights and the personhood perspective).

⁴² Boyden, *supra* note 23, at 391.

⁴³ The Progress Clause permits Congress to allocate monopolies for limited times to authors and inventors. U.S. CONST. art. I, § 8, cl. 8.

⁴⁴ 17 C.F.R. § 102(a) (2017).

⁴⁵ *Id.* § 201(a) (2017).

⁴⁶ See, e.g., Boyden, *supra* note 23, at 380 ("Computer-generated works destabilize copyright law's approach to authorship by obscuring the connection between the creative process and the work. Once that happens, it will no longer be possible to simply assume that all minimally creative elements stemmed from the mind of one or more human authors."). But see Bridy, *supra* note 24, at 27 ("The increasing sophistication of generative software and the reality that all creativity is algorithmic compel recognition that AI-authored works are less heterogeneous to both their human counterparts and existing copyright doctrine than appearances may at first suggest."); Grimmelman, *supra* note 23, at 408 (arguing that even if there is distance created it does not change ownership as the author is "is simply [making] the choice to split the creative process into two stages rather than one").

⁴⁷ See THE CONSTRUCTION OF AUTHORSHIP: TEXTUAL APPROPRIATION IN LAW AND LITERATURE 2-3 (Martha Woodmansee & Peter Jaszi eds., 1994); Oren Bracha, *The Ideology of Authorship Revisited: Authors, Markets, and Liberal Values in Early American Copyright*, 118 YALE L.J. 186, 201 (2008).

constructs authorship in a way that allows considerable room for non-human authorship. This starts with the underlying theory. The dominant theory of why we have copyright in the United States, utilitarianism, is more removed from the humanity of its author than, say, moral rights or natural rights theory. Moral rights theory focuses on a human's personhood, natural rights on the fairness of rewarding human labor mixed with commons material. By contrast, by focusing on the net benefit creative works bring to society, utilitarianism addresses not just a sole human author but also the vast human audience that receives and benefits from both copyrighted works and ownership exceptions.

Utilitarian theory makes the discussion of authorship a discussion about incentives and net social welfare rather than humanness: do the authors of algorithms need copyright as an incentive to produce algorithms that in turn produce creative works?⁴⁸ Do the algorithms themselves?⁴⁹ Utilitarianism suggests that works authored by an algorithm might bring equal value to a human audience as works authored by a human being.⁵⁰ This theoretical framing makes it more possible that an algorithmically authored work might receive copyright protection in the United States than in countries that rely on moral rights. It changes the nature of the conversation from being about rewarding humans for creative endeavors to calibrating policy to a level that benefits society as a whole, including the human audiences of algorithmically authored works.

The theoretical room for copyright protection of algorithmically authored works would have little impact if there were not also space in the doctrine. U.S. copyright law as currently developed has two doctrinal features that leave significant space for protecting algorithmic authorship: a low originality threshold, and work-made-for-hire doctrine.

Copyrighted works must be original.⁵¹ Originality proves to be a central doctrinal question of what authorship is, in copyright law.⁵²

⁴⁸ See Boyden, *supra* note 23, at 391 (suggesting ownership of copyright in the underlying program itself is enough of an incentive).

⁴⁹ Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 PITT. L. REV. 1185, 1199-200 (1986) ("Only those stuck in the doctrinal mud could ever think that computers could be 'authors.'").

⁵⁰ See Massaro et al., *supra* note 23, at 2487-88 ("[I]f and when they produce information useful to natural persons who seek to participate in public discourse, strong AI speakers should warrant similar protection.").

⁵¹ See *Feist Pubs., Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 363 (1991) ("We conclude that the names, towns, and telephone numbers copied by Feist were not original to Rural and therefore were not protected by the copyright in Rural's

Whether authorship requires human genius, or human creativity, or any human input at all, comes down to how judges interpret the originality requirement.

In early decisions, some judges and justices touted the importance of an individual and highly human creative spark, which would have resulted in a higher originality threshold.⁵³ But as Oren Bracha observes, newly powerful economic actors — commercial publishers, textbook and dictionary publishers, advertisers, and more — pushed back against the doctrinal and legislative consequence of romantic authorship.⁵⁴ An advertiser seeking copyright protection in advertisements would be ill-served by copyright doctrine that requires a high degree of (human) originality.⁵⁵ Similarly, the publisher of commercial fiction would not want a judge to evaluate just how original a new mass-market paperback potboiler is. These actors argued largely successfully for judges to stay out of the process of determining adequate levels of creativity.⁵⁶ Their arguments coincided, according to Bracha, with a philosophical shift towards evaluating the market value of objects rather than their intrinsic value, and the rise of the formalist, hands-off judge, in place of the judge who looks to social welfare.⁵⁷

The consequence over time was that the originality threshold lowered, now requiring just a “modicum of creativity” instead of human genius.⁵⁸ Thus instead of assessing creativity, courts assess authorial process and actions, such as putting pen to paper.⁵⁹ Justice

combined white and yellow pages directory.”); *see also* Bridy, *supra* note 24, at 5.

⁵² *See* Bracha, *supra* note 47, at 186; Bridy, *supra* note 24, at 6.

⁵³ *See* *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58-59 (1884) (holding that a high threshold of “novelty, invention, originality” was required); Bracha, *supra* note 47; Bridy, *supra* note 24, at 2, 6.

⁵⁴ Bracha, *supra* note 47, at 212-13 (“Revised editions, serializations of existing works, and collected works volumes were embodiments of existing works with slight changes. To the extent that commercial actors wanted to rely on copyright protection in the context of such products, a substantial originality standard was out of the question.”).

⁵⁵ *See* *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (holding that advertisements for a circus are proper subjects of copyright).

⁵⁶ *See* Bracha, *supra* note 47, at 218-23 (showing a move by the courts to review “implied intent” instead).

⁵⁷ *Id.*

⁵⁸ *Feist Pubs., Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 340 (1991).

⁵⁹ *See* Boyden, *supra* note 23, at 380 (“[T]hat inquiry has typically been carried out not by assessing the creativity of the material itself, but rather by considering the actions of the putative author . . . the court merely assumes that those choices and judgment calls — the author’s process-led to something creative in the work.”).

Holmes famously wrote that the creativity requirement in copyright can be met “even in handwriting, and a very modest grade of art has in it something irreducible, which is one man’s alone.”⁶⁰

The low originality threshold, which conflates the fact or process of creation with adequate human creativity,⁶¹ allows doctrinal room for a nonhuman author.⁶² Most work is original and therefore copyrightable; courts in practice rarely engage in asking whether an author is creative enough. Most works of algorithmic authorship will therefore meet the low *Feist* standard of showing a modicum of creativity.⁶³ Thus originality doctrine, which is how the Constitution’s requirement of authorship manifests in practice, does not preclude algorithmic authorship.

Another way of understanding this doctrinal space for algorithmic authorship is that in U.S. copyright law, judges are not supposed to make assessments of the creative value of works.⁶⁴ Ostensibly this is to prevent the censorship of (or really, the disincentivizing of) works that judges do not like.⁶⁵ It may also be related to the arc of art history; how is a non-art-expert judge to determine whether a Jackson Pollack is in fact valuable art? What this means in practice is that Barnett Newman’s zips (vertical strips of color down a color field) are as protected by copyright law as a DaVinci painting. (Of course, in practice judges make judgments about the creative value of works all the time.)⁶⁶ This refusal to make aesthetic judgments about a work relates to the lack of a requirement of a human author. If judges must forebear from analyzing whether a particular work is creative enough and thus worth protecting, this keeps them from analyzing whether the author is creative enough and thus worth rewarding.

⁶⁰ *Bleistein*, 188 U.S. at 250.

⁶¹ See Boyden, *supra* note 23, at 380.

⁶² Bridy, *supra* note 24, at 10-11, 27 (“AI authorship is readily assimilable to the current copyright framework . . .”).

⁶³ See *Feist*, 499 U.S. at 362 (“The standard of originality is low, but it does exist.”).

⁶⁴ This principle is referred to as aesthetic nondiscrimination doctrine. *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (“It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations . . .”).

⁶⁵ Alfred C. Yen, *Copyright Opinions and Aesthetic Theory*, 71 S. CAL. L. REV. 247, 248 (1998) (referring to the “possibility of censorship” and explaining that “[i]f judges used their aesthetic tastes to make these determinations, they would presumably influence the kinds of art created in the future”).

⁶⁶ *Id.* at 249 (discussing aesthetic analysis in judicial opinions and concluding that “the distinction between aesthetic reasoning and judicial reasoning is illusory”).

Looking at how an AI author could fit within the U.S. copyright regime reveals, as Annemarie Bridy has argued, just how far copyright law is in practice from requiring humanness of its creators.⁶⁷ In fact, one form of authorship already exists, the work made for hire, that ascribes authorship to a non-human entity, the employer-corporation. A work made for hire is, generally speaking, a work made by an employee for an employer where the copyright vests in the employer, not the actual author. This concept of authorship differs greatly from the romantic model.⁶⁸ Instead of author as sole (human) genius, the author is more like an automaton filling the dictates of her or his employer.⁶⁹ According to Bracha, the work-for-hire model abandoned the “most fundamental tenet” of romantic authorship: “that authors would be owners.”⁷⁰ According to Bridy, it could be the model for how to handle AI authorship.⁷¹

Work-for-hire doctrine as currently legislated technically cannot address AI authorship, but Bridy suggests amending the Copyright Act, as other countries have, to explicitly cover certain computer-created works.⁷² For Bridy, then, algorithmic authorship is not fundamentally disruptive, or really very disruptive at all. It just requires some tweaks to U.S. copyright law at the edges.

This brings us to the underlying question: just how disruptive is AI authorship to U.S. copyright law? In my forthcoming longer work, I spend more time with this question — what is legal disruption, and how might we categorize different levels of disruptiveness. The discussion of AI authorship provides a good example of several possible layers of disruption: minor doctrinal, major doctrinal, and theoretical.

Bridy believes the encounter between emergent machine authors and U.S. copyright law is just minor doctrinal disruption, requiring minor tweaks to copyright doctrine, not major doctrinal changes or shifts to underlying theory. Bruce Boyden, by contrast, argues that there is something new here — truly emergent algorithmic authorship

⁶⁷ See Bridy, *supra* note 24, at 10-11; see also Bracha, *supra* note 47, at 254-55, 264.

⁶⁸ See Bracha, *supra* note 47, at 259 (describing the author as a “wage laborer carrying out a routine task assigned to him and controlled by his supervisors”).

⁶⁹ *Id.*

⁷⁰ *Id.* at 260.

⁷¹ See Bridy, *supra* note 24, at 25-27 (“The work made for hire doctrine is a more fitting framework within which to situate the problem of AI authorship because it represents an existing mechanism for directly vesting ownership of a copyright in a legal person who is not the author-in-fact of the work in question.”).

⁷² *Id.* at 26-27 (discussing AI authorship work-for-hire policy suggestions and EU examples).

meaningfully disrupts copyright law. First, for Boyden, emergence causes more significant doctrinal disruption than Bridy observes. Boyden characterizes emergence as “a novel problem” for copyright law because “in the fashion of most Internet law conundrums [it] fails to fit well in existing doctrinal categories.”⁷³ Emergent works fail to fall clearly into the category of tool or joint author and require factual assessment of who is (or what is) contributing what.⁷⁴

Boyden also argues that emergence disrupts the theoretical rationale behind originality doctrine, “destabilize[ing] copyright law’s approach to authorship by obscuring the connection between the creative process and the work.”⁷⁵ Because one can no longer assume that any variations in a work stem from a human author’s hand, emergent algorithmic authorship threatens originality doctrine’s assumption that almost everything is adequately creative.⁷⁶ I would qualify this as a deeper kind of disruption, one level up from tweaking the doctrine, but not quite at the level of threatening foundational theories (such as utilitarianism) behind the law.

In contrast to Boyden and Bridy, James Grimmelman claims that computer authorship is not disruptive at all. Grimmelman explains that algorithmic authorship will in practice be a diverse set of practices triggering a variety of existing copyright doctrinal thickets: about digital copies, about algorithmic generation, about contribution from both programmers and users, and more.⁷⁷ According to Grimmelman, “[o]ld-fashioned pen-and-paper works raise all of the same issues; there is nothing new under the sun.”⁷⁸

What I take from the existing literature is the following: the U.S. copyright system has already moved far enough away from romantic authorship for algorithmic authorship to be, perhaps surprisingly, not fundamentally disruptive. And importantly, the reasons for this shift

⁷³ Boyden, *supra* note 23, at 379. See also Gregory N. Mandel, *History Lessons for a General Theory of Law and Technology*, 8 MINN. J.L. SCI. & TECH. 551, 552 (2007) (explaining that with new technologies, “preexisting legal categories may no longer apply”).

⁷⁴ See *id.* at 385-87 (evaluating whether emergent programs are more like a word-processor, which is basically a tool; or like early arcade games, where even though a user introduces variation, the amount of creativity inserted by the game developer means it is authored by the game developer); *id.* at 387 (discussing cases from 1980s federal courts); *id.* at 387-88 (imagining that joint authorship could be found for high-user-contribution games).

⁷⁵ *Id.* at 380.

⁷⁶ *Id.* at 384.

⁷⁷ Grimmelman, *supra* note 23, at 404.

⁷⁸ *Id.*

away from the romantic author — the disruption of a romantic foundation for U.S. copyright law — have nothing to do with current technology. Algorithmic authorship did not kill the romantic author; other things did. As Bracha has extensively chronicled, developments as far back as the nineteenth century threatened this romantic model.

Algorithmic authorship thus does not walk into a vacuum in copyright law. An earlier set of technologies (or again, really, social practices combined with technology) raised similar conversations about authorship in copyright. As discussed in the “microworks” literature, the internet and digital technologies enabled both lower-cost collaboration across even great distances, and more easy building-on and combining of clips of existing works.⁷⁹ This threatened the purportedly dominant romantic idea of authorship; instead of works being the independent creation of one author whose ideas sprung out of nowhere, they could be and often were collaborative and iterative, with new works built on top of existing pieces. In reaction, scholars challenged this notion of the author as sole and independent actor. They characterized these new models of collaborative and iterative creation as not so new after all, but an example of what authorship really is.⁸⁰ To the extent algorithmic authorship disrupts copyright law by requiring us to reassess the romantic author, that set of issues was already raised around far less complex digital technologies.

It is not that technology has no role in the story. Arguably the shift away from romantic authorship was influenced by other, earlier technologies and corresponding social practices — such as lower-cost printing that gave rise to mass-market paperbacks that led to the success of publishers who fought high originality thresholds. But technology is not a disrupter in this story in a conventional sense. It does not arrive on the scene of law that cannot handle it. It is folded into an existing package of doctrine and underlying theory that constructs the technology into its existing logics.

Current technology, in the words of Jack Balkin, may *make salient* existing features of the law.⁸¹ In copyright law, this includes the low originality threshold and work-made-for-hire law. It also includes the theoretical foundations behind these legal rules: the theoretical emphasis in the United States on utilitarianism rather than moral

⁷⁹ See Justin Hughes, *Size Matters (or Should) in Copyright Law*, 74 *FORDHAM L. REV.* 575, 610-11 (2005); Molly Shaffer Van Houweling, *Author Autonomy and Atomism in Copyright Law*, 96 *VA. L. REV.* 549, 621 (2010).

⁸⁰ See Woodmansee & Jaszi, *supra* note 47, at 3 (showing that early printed works in the United States involved large-scale collaboration).

⁸¹ Balkin, *Digital Speech*, *supra* note 4, at 2, 15, 32 (2004).

rights; relatedly looking to market forces to determine the value of a creative piece; and relatedly judicial avoidance of aesthetic judgments.⁸² These are aspects of copyright law that come back into the spotlight when the law is applied to technology that returns us to the conversation about authorship, whether that be digital technology that allows for the creation of microworks and collaborative works, or algorithmic technology that allows for nonhuman (or more-attenuated-human) authorship.

Technology does not just make salient features of the law, however. This would imply that it still acts on the system from outside the system, as a highlighter. Technology is interpreted into the law through existing systems of legal meaning, whether that meaning is on the level of doctrinal detail, or theoretical foundation. Algorithmic authorship matters to copyright law because authorship as a concept matters to copyright law. This technology comes into the law through that existing framing of authorship.

III. ALGORITHMIC AUTHORSHIP AND THE FIRST AMENDMENT

Algorithmic authorship produces different consequences in First Amendment law, because authorship is constructed differently in First Amendment law.⁸³ On a textual, theoretical, and doctrinal level, the First Amendment differs from copyright law. The meaning of emergence — the kinds of disruption it creates, the receptivity of this particular area of the law to it — differs as well.

The First Amendment protects speakers, including authors. But unlike copyright law, it does not do so explicitly in its text. As written, the First Amendment constrains Congress — “Congress shall make no law. . . abridging the freedom of speech” — rather than protecting particular actors.⁸⁴ In recent decisions, the Supreme Court has nodded to this so-called negative view of the First Amendment, constraining lawmakers even when there was no showing of impact on an actual

⁸² Yen, *supra* note 65, at 248 (“[O]rthodox interpretations of copyright law leave little, if any, room for aesthetics.”); *see also* Boyden, *supra* note 23, at 380 n.14 (“[T]he threshold for creativity has purposefully been kept at a minimal level, following Justice Holmes’s concern that federal judges were competent at assessing neither popular culture nor avant-garde art.”).

⁸³ *But see* Bambauer, *Copyright*, *supra* note 33, at 8 (showing a recent trend for unifying the two); Buccafusco, *supra* note 33, at 1231 (describing how theories of authorship affect the applications of copyright law).

⁸⁴ U.S. CONST. amend. I.

human speaker.⁸⁵ Textually, then, the First Amendment leaves even more room for algorithmic authors than the Progress Clause does.

The dominant theories behind First Amendment protection — the marketplace of ideas model, the democratic self-governance approach, autonomy theory — all also leave greater room for algorithmic authors, as noted at length by my co-authors Toni Massaro and Helen Norton.⁸⁶ In brief: First Amendment protection that is based on the marketplace of ideas will protect algorithmic speech as long as it brings more speech to the table for human audiences. First Amendment protection based on democratic self-governance will protect algorithmic speech if it contributes to the public sphere and human audiences' ability to participate in politics. Even First Amendment protection premised on protecting (human) autonomy from government intervention will protect algorithmic speech if government intervention would harm the autonomy of human audiences. In short, like the utilitarian theory of copyright law, contemporary First Amendment theories contemplate the value of algorithmic speech to human audiences and thus leave room for the protection of AI speech in the name of humans.⁸⁷

First Amendment doctrine poses different puzzles around emergence than copyright does. Where, remember, copyright law slotted the question of emergence into primarily two doctrinal areas — originality doctrine and work-made-for-hire law — First Amendment doctrine presents different questions. There is no originality or creativity requirement in First Amendment law; speech receives protection because it is speech, not because it is of high or low value or creativity. Doctrinally, this is reflected in U.S. courts' general refusal to employ proportionality analysis — to balance the value of speech against the degree of harm it causes.⁸⁸

⁸⁵ *Heffernan v. City of Paterson*, 136 S. Ct. 1412, 1418 (2016) (holding that the government's intent to violate the First Amendment is enough to trigger a First Amendment violation); see Massaro et al., *supra* note 23, at 2493 (“[T]his negative view understands the Free Speech Clause as ‘indifferent to a speaker’s identity or qualities — whether animate or in-animate, corporate or nonprofit, collective or individual.’”).

⁸⁶ Massaro & Norton, *supra* note 17, at 1176-79; Massaro et al., *supra* note 23, at 2490 (“The production of ideas and information is what matters, regardless of source.”).

⁸⁷ Massaro & Norton, *supra* note 17, at 1193 (“We have explored here whether a future, vastly more sophisticated Siri and her strong AI colleagues could hold constitutional free speech rights, not just as human-operated tools, but as independent rights bearers.”).

⁸⁸ Margot Kaminski, *Copyright Crime and Punishment*, 73 MD. L. REV. 587, 589

The doctrinal question faced by algorithmic (and other) expression in First Amendment law is not one of originality. Instead, it is whether something is speech at all, and thus covered by the First Amendment. This is also known as the question of salience⁸⁹ — is the activity at issue even salient to (and thus covered by) the First Amendment? For example, movies were originally not considered to be speech covered by the First Amendment;⁹⁰ this decision was later overruled as society changed and movies became more socially accepted as expression.⁹¹ And large swatches of what is clearly speech, such as speech integral to criminal conduct,⁹² are not covered by the First Amendment. This question of salience has more recently been applied to computer code,⁹³ to raw data,⁹⁴ and to video recording.⁹⁵ Each of these technologies has been subjected to the question of whether it is in fact speech for First Amendment purposes.

Is algorithmic speech then speech for purposes of the First Amendment? Or really, are emergent algorithms protected speakers? A number of scholars have addressed this question in the context of discussing search engines. There, because of existing First Amendment doctrine that protects newspaper editors but provides lesser protection for telecommunications providers,⁹⁶ they face a doctrinal categorization question. Are search engines — whose output is authored by an algorithm — more like newspaper editors, who receive full First Amendment coverage and protection, or more like backbone telecommunications service providers?

(2014) (comparing “proportionality analysis that most of the world’s constitutional courts use . . . with the Supreme Court’s tiered framework of review in First Amendment doctrine”) [hereinafter Kaminski, *Copyright Crime*].

⁸⁹ See Frederick Schauer, *The Boundaries of the First Amendment: A Preliminary Exploration of Constitutional Salience*, 117 HARV. L. REV. 1765, 1804 (2004).

⁹⁰ *Mutual Film Corp. v. Indus. Comm’n*, 236 U.S. 230, 241-43 (1915).

⁹¹ *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 501-02 (1952).

⁹² Eugene Volokh, *The “Speech Integral to Criminal Conduct” Exception*, 101 CORNELL L. REV. 981, 983-84 (2015).

⁹³ See Robert Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713, 716 (2000) (analyzing if and when the First Amendment applies to encryption source code).

⁹⁴ See Jane R. Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 57, 70-71 (2014) (challenging the assumption that the collection of data is not speech).

⁹⁵ See Alan K. Chen & Justin F. Marceau, *Free Speech and Democracy in the Video Age*, 116 COLUM. L. REV. 991, 996-97 (2016) (arguing that video recording is protected speech under the First Amendment); see also Margot E. Kaminski, *Privacy and the Right to Record*, 97 B.U. L. REV. 167, 171 (2017).

⁹⁶ *Miami Herald v. Tornillo*, 418 U.S. 241, 258 (1974); *Red Lion Broadcasting Co. v. F.C.C.*, 395 U.S. 367, 385-90 (1969).

Eugene Volokh has claimed that search engines are protected speakers, just like newspaper editors,⁹⁷ while Tim Wu disagrees, explaining that such purported speakers are more like passive carriers or conduits, which receive lesser protection in First Amendment doctrine.⁹⁸ Similarly, Frank Pasquale and Oren Bracha explain that search engines try to have it both ways, presenting themselves as passive conduits for purposes of liability and active editors when seeking First Amendment protection.⁹⁹ According to Pasquale and Bracha, the “prevailing character” of search engine results is “not to express meaning but . . . to do things in the world,” making search engines more functional than communicative and thus perhaps not covered by the First Amendment at all.¹⁰⁰ James Grimmelman takes a third approach, proposing treating search engines as advisors — covered by the First Amendment, but less fully protected and having significant obligations to their users.¹⁰¹

These categorization discussions look like the type of disruption described by Boyden in copyright law. They are disruptions at the level of doctrine, because the law’s existing doctrinal categories are not well suited for the newer technology. In the case of the First Amendment and search engines, the law developed to have two different categories, editors and telecommunications conduits, and the technology of search engines disrupts this by instigating discussion of where the new technology properly falls.

The disruption is set up by the law itself, which created these categories. In a legal system that treated editors and telecommunications providers equally, the technology would not trigger this discussion — or disruption — at all. And as we saw in the discussion of copyright law, even subparts of the same legal system will not address the same categorization questions.

AI authors will not all be search engines, however, pointing readers to other peoples’ content. Many, like Twitter bots, will just be straightforward speakers, creating content rather than curating or guiding others. Consequently, most AI authors likely will not face this precise categorization puzzle over editors and telecommunications services. Instead, the question of whether emergent machine speech is

⁹⁷ Eugene Volokh & Donald M. Falk, *Google: First Amendment Protection for Search Engine Search Results*, 8 J.L. ECON. & POL’Y 883, 885 (2012).

⁹⁸ Tim Wu, *Machine Speech*, 161 U. PA. L. REV. 1495, 1521-22 (2013).

⁹⁹ Oren Bracha & Frank Pasquale, *Federal Search Commission — Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1193 (2008).

¹⁰⁰ *Id.*

¹⁰¹ James Grimmelman, *Speech Engines*, 98 MINN. L. REV. 868, 893 (2014).

salient to the First Amendment occurs at two possible levels: a social/cultural one, and a fine doctrinal one. On the social or cultural level, the question of whether AI speech is covered by the First Amendment is a broader question of whether humans accept AI speakers as speakers.¹⁰² On the doctrinal level, emergent algorithmic authorship could disrupt a particular doctrinal test within the First Amendment.

In a subset of cases, the question of whether something is speech for purposes of the First Amendment manifests as a question of whether some act constitutes speech or conduct.¹⁰³ In *Spence v. Washington*, the Supreme Court asked whether taping a peace symbol to an upside-down flag constituted speech.¹⁰⁴ The Court explained that because the action constituted “an intent to convey a particularized message,” and “in the surrounding circumstances . . . the message would be understood by those who viewed it,” it was covered by the First Amendment.¹⁰⁵ This *Spence* test, requiring an intent to convey a particularized message that is likely to be understood, was used by the Court in later cases evaluating the protection of parades, and of flag burning.¹⁰⁶ Stuart Benjamin suggests applying a variant of the *Spence* test to algorithmic speech, asking whether there is “a [substantive] message that is sendable and receivable and that one actually chooses to send.”¹⁰⁷

At the doctrinal fine edges, emergent algorithmic authorship could disrupt this question. The *Spence* test asks whether a speaker *intends* to communicate a message that is likely to be understood.¹⁰⁸ Can an AI speaker have adequate intent to communicate a message, for purposes of this test?¹⁰⁹ A court could choose to reject emergent speech if it

¹⁰² Andrew Tutt, *Software Speech*, 65 STAN. L. REV. ONLINE 73, 77 (2012) (“Software, in other words, should be considered not for what it is or even what it says but for what it means to society to treat it like speech.”).

¹⁰³ See *United States v. O’Brien*, 391 U.S. 367, 370-72 (1968) (analyzing whether destruction of draft cards was speech or conduct).

¹⁰⁴ *Spence v. Washington*, 418 U.S. 405, 405 (1974).

¹⁰⁵ *Id.* at 410-11.

¹⁰⁶ *Hurley v. Irish-Am. Gay, Lesbian and Bisexual Group*, 515 U.S. 557, 569 (1995); *Texas v. Johnson*, 491 U.S. 397, 402-03 (1989).

¹⁰⁷ Benjamin, *supra* note 33, at 1461.

¹⁰⁸ *Spence*, 418 U.S. at 410-11 (1974).

¹⁰⁹ Benjamin, *supra* note 32, at 1481 (“At that point, we might say that the connection to the human creators is sufficiently attenuated Extending the First Amendment to messages produced by this artificial intelligence would raise the specter . . . [of] treating the products of machines like those of human minds.”).

decides that AI cannot have intent, or does not adequately express the intent of its human programmer.¹¹⁰

But this mischaracterizes how the *Spence* test has historically been used. *Spence* does not line draw between, say, one novel and another — it line draws between a novel and flag burning.¹¹¹ To say that an article or novel written by an algorithm does not constitute speech is to misunderstand the work the doctrine currently does in distinguishing physically situated speech from more abstract speech on the page. An article written by an algorithm is as “speechy” as an article written by a human, from the perspective of a human reader.

Returning to my work with Massaro and Norton: if what we care about is the perspective of human readers, or listeners, or informed citizens, it should not matter whether the algorithm had an intent to produce the work or not.¹¹² What should matter is whether the work reads as speech to those who encounter it. A government that censors a political novel written by an algorithm is as problematic from the perspective of a reader as a government that censors a political novel written by Tolstoy.

IV. COMPARING COPYRIGHT AND THE FIRST AMENDMENT

Emergent machine authorship will thus trigger and interface with different doctrinal and theoretical questions in copyright and First Amendment law — differently disrupting the law, with the same technology. Where copyright asks (or really does not ask) whether a work is minimally creative enough, the First Amendment asks whether a work is speech or action. Where copyright doctrine contemplates whether a machine can be a co-author or a tool, First Amendment doctrine asks whether it is an editor or a communications conduit. Where copyright theory asks if the law provides adequate incentives for the production of beneficial creative work, First Amendment theory asks whether protecting a work informs citizens,

¹¹⁰ Intent also plays a role in the historic First Amendment exceptions, which I discuss elsewhere with co-authors but refrain from delving into here. Massaro et al., *supra* note 23, at 2507 (discussing the doctrinal standard for defamation).

¹¹¹ Seth F. Kreimer, *Pervasive Image Capture and the First Amendment: Memory, Discourse, and the Right to Record*, 159 U. PA. L. REV. 335, 373 (2011) (describing how the Supreme Court now accepts that images are covered as speech, without inquiring whether they convey a particularized message likely to be understood).

¹¹² Massaro et al., *supra* note 23, at 2487 (explaining that “[c]onferring . . . AI speakers with First Amendment rights is consistent with free speech theories that focus . . . on expression’s usefulness to human listeners”).

increases the amount of speech in the marketplace, or protects reader and listener autonomy.

The relationship between copyright and First Amendment law is complicated, to say the least.¹¹³ Copyright is the “engine of free expression,” incentivizing the production of more speech at the same time that it clearly creates hurdles to downstream speech.¹¹⁴ Thus ascribing copyright protection — ascribing ownership in speech — does not and will not perfectly overlap with ascribing First Amendment protection — protecting freedom of expression.¹¹⁵ A comparison of underlying theories helps explain why.

The underlying theories behind copyright and First Amendment law— and consequently, the doctrinal treatment of authors and their output — are not one-to-one matches.¹¹⁶ For example, free speech law protects short utterances such as “Fuck the Draft,” under a hybrid marketplace-of-ideas and democratic self-governance rationale and certainly under autonomy theory.¹¹⁷ Under autonomy theory, telling someone not to utter this phrase impinges on her autonomy without mitigating an adequately significant harm. Under the marketplace of ideas theory, “Fuck the Draft” is protected because it contributes to the pool of ideas from which listeners draw; under democratic self-governance theory, it is protected because it is a political utterance.

But while “Fuck the Draft” is protected as free expression, it is likely not afforded copyright protection,¹¹⁸ because both utilitarianism and

¹¹³ See Kaminski, *Copyright Crime*, *supra* note 88, at 599-600 n.90 (identifying criticisms of the U.S. approach to copyright law and free speech).

¹¹⁴ Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985).

¹¹⁵ *But see* Bambauer, *Copyright*, *supra* note 33, at 3 (“[W]here one finds a work with sufficient authorship to obtain copyright protection, one should nearly always conclude that the work merits protection against regulation based on freedom of speech.”); Buccafusco, *supra* note 33, at 1231.

¹¹⁶ The theories behind First Amendment protection do overlap in places with the dominant theories behind copyright protection. For example, the marketplace of ideas rationale, which theorizes that we protect speech so as to increase the amount of ideas in the marketplace, could be characterized as a type of utilitarianism, protecting individual authors’ speech so that there is a larger pool of high value speech available for audiences.

¹¹⁷ *Cohen v. California*, 403 U.S. 15, 24 (1971) (“The constitutional right of free expression is powerful medicine in a society as diverse and populous as ours. It is designed and intended to remove governmental restraints from the arena of public discussion, putting the decision as to what views shall be voiced largely into the hands of each of us, in the hope that use of such freedom will ultimately produce a more capable citizenry and more perfect polity and in the belief that no other approach would comport with the premise of individual dignity and choice upon which our political system rests.”).

¹¹⁸ U.S. COPYRIGHT OFFICE, *supra* note 35, at § 313.4(C) (stating the Copyright

natural rights theory dictate that short phrases, or the building blocks of future communication, should not be owned by individuals.¹¹⁹ Utilitarianism suggests that copyrighting a short phrase would put up barriers to future speech by creating the kinds of licensing thickets or anti-commons decried by most copyright scholars.¹²⁰ This would decrease net social welfare. And natural rights theory dictates that when authors write short phrases such as this, they may not have put enough labor in to deserve ownership of the outcome.

Thus if an algorithmic author writes “Fuck the Draft,” then the answer to the questions “is this speech protected under the First Amendment” and “does this speech receive copyright protection” will be different. This is not because the author is an algorithm, but because the theories behind the areas of law dictate different answers regardless of whether the author is human or an AI.

That is, different subparts of the legal system may produce different results for the same speech by the same technology — not because of some inherent feature of the technology, but because these subparts serve different theoretical purposes. The same feature (emergence) of the same technology (algorithmic authors) will be received differently in these two areas of the law.

As the doctrine develops — as judges and scholars confront doctrinal categorization questions and call on theory to help answer them — there may be further divergence between the two areas of law. It may make sense under, say, a democratic self-governance theory to afford First Amendment protection to an algorithmically authored op-ed, treating the AI more like an editor or speaker than a communicative tool, at the same time that it may make sense from a utilitarian perspective not to ascribe joint authorship to the machine because an AI cannot be incentivized, or human authors are already adequately incentivized.

Despite theoretical differences, there are some fundamental similarities between these two areas of law as currently developed. It just so happens that the doctrinal hurdles for authorship in both copyright and First Amendment law are low enough that algorithmic authorship could plausibly pass both. One could imagine counterfactuals where this were not the case. For example, say copyright’s originality requirement was higher, and required real human ingenuity of its authors, rather than just a “modicum of

Office’s policy of not registering words or short phrases as copyrightable “because they contain a *de minimis* amount of authorship”).

¹¹⁹ See, e.g., Hughes, *supra* note 79, at 580; Van Houweling, *supra* note 79, at 621.

¹²⁰ Hughes, *supra* note 79, at 608.

creativity.” Then judges would be faced with evaluating, doctrinally, whether a machine were capable of human ingenuity — whether an AI were creative enough to count as an author, and whether such creativity would ever bestow authorship on something non-human.

Or one could imagine a First Amendment that, as free expression law does in other countries, balanced the value of particular speech against the harm it causes.¹²¹ That version of the First Amendment might, again, look to the value of the speech at issue, including evaluating its creativity or artistic and social merit. But under current theory and doctrine, we have copyright law and First Amendment law that make — perhaps surprising — room for AI authorship.

This suggests that the stories behind the development of a conception of authorship in copyright and First Amendment law might be similar. In copyright law, as discussed above, a confluence of interested actors, a change in judicial philosophy, and a shift towards appreciating the market value of creative goods over intrinsic value all pushed away from romantic authorship.¹²² In First Amendment law, the story is fairly similar. Courts have shifted First Amendment doctrine away from proportionality (balancing rights) to a categorical approach (all speech is salient, with slim exceptions such as obscenity), at least in part as a reaction to historic decisions underprotecting political speech in the 1950s.¹²³ This can also be understood as the shift towards formalistic judging instead of judging weighted with social values. In fact, current judicial refusals to weigh the value of speech in First Amendment law echo the aesthetic nondiscrimination doctrine in copyright law (and vice versa), reflecting a fear of individual judicial bias and favoring purportedly neutral formal analysis.

In First Amendment doctrine, as in copyright doctrine, powerful actors have realized the power of the doctrine and its relationship to their interests at stake. Where cases used to be litigated predominantly by news organizations, recent First Amendment cases have been

¹²¹ See, e.g., Alexander Tsesis, *Free Speech Constitutionalism*, 2015 U. ILL. L. REV. 1015, 1029, 1064 (2015) (describing how hate speech is often prohibited in other countries after weighing the harms and value of such speech).

¹²² Bracha, *supra* note 47, at 201.

¹²³ See Margot E. Kaminski, *The First Amendment’s Public Relations Problem: A Response to Alexander Tsesis’s Free Speech Constitutionalism*, 2015 U. ILL. L. REV. SLIP OPINIONS 103, 108 (“Courts’ aversion to balancing in the First Amendment context also stems from important historical examples. Use of the ‘clear-and-present-danger test’ in the 1950s gave First Amendment balancing a bad name, as the Court condemned minority propagandists who turned out, with some historical distance, to have been potential drivers of important social change.”).

brought by commercial actors seeking deregulation.¹²⁴ I do not intend here to take a side in the conversation about the validity of these claims, just to note the parallels between the development of copyright law and First Amendment law, with commercial and non-individual actors using doctrinal footholds to push for the extension of a rights regime to cover non-individual authorship or speech.¹²⁵

Algorithmic authorship thus encounters two existing scenes of regulation that have room for non-human authors. This is not because emergent machine authorship impacted the law; it is because the law developed in a way that makes a particular meaning of emergence. Copyright and First Amendment law as currently developed and theorized construct emergence in a relatively non-disruptive way. The disruption may come, instead, as courts balk at giving ownership or authorship to an actual non-human, requiring a reconfiguration of, say, originality doctrine, or a move up to questioning just how utilitarian U.S. copyright law is.

CONCLUSION

The impact of AI (emergence) on two areas of law that address authorship — copyright and First Amendment law — is determined in large part by those areas of law themselves. Emergent machine authorship does not disrupt the law because emergence, or algorithmic “intelligence,” is some sort of inherently and particularly disruptive quality of new technology. It encounters existing legal doctrine and theory, and is more or less disruptive based on how that doctrine and theory has developed.

In U.S. copyright and First Amendment law, emergence or AI disrupts the concept of authorship less than one might expect, because in both areas of law, romantic authorship has already been disrupted by other forces. It may be surprising, in both copyright and First Amendment law, that authorship does not center around humanness.¹²⁶ While algorithmic authorship may make that quality

¹²⁴ See, e.g., Amanda Shanor, *The New Lochner*, 2016 WIS. L. REV. 133, 133 (2015) (“[T]he First Amendment possesses near total deregulatory potential . . . [and] operates as the fullest boundary line of constitutional state action.”). But see Jane. R. Bambauer & Derek E. Bambauer, *Information Libertarianism*, 105 CALIF. L. REV. 335, 360-61 (2017) (advocating direct regulation of conduct rather than indirect regulation of speech and information).

¹²⁵ *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310, 371-72 (2010) (“The First Amendment protects political speech; and disclosure permits citizens and shareholders to react to the speech of corporate entities in a proper way.”).

¹²⁶ Massaro et al., *supra* note 23, at 2482 (“First Amendment law increasingly

visible — or salient — it did not cause or create that feature of the law. It has been interpreted into it.

Examining emergent machine authors and their interface with U.S. law illustrates several ways in which technology can be legally disruptive. Technology can require minor doctrinal tweaks, as in the case of work-for-hire doctrine and AI authorship. Or it can fall between existing legal categories, as in the case of assessing whether search engines are editors or conduits. Or technology can trigger a reassessment of underlying theories behind the law, whether lower level theorization of what it means to be an author in copyright, or higher level theorization of why we protect speech in a democracy.

Technology is clearly not the only element interpreted into a system of legal meaning that triggers such legal moments. Social change can similarly break down existing legal categories, and require theoretical reassessments. (One can, in fact, characterize technological changes as a type of social change.¹²⁷) Even new fact patterns can lead to these kinds of assessments. Thus a bigger question is: what, if anything, is unique about technological disruption of the law?

One answer is that technology as a type of change may merely speed up the legal processes that naturally occur anyway. Technological disruption is often characterized as being a “pacing problem,” in which law cannot keep up with technological expertise and change.¹²⁸ In conversations about technology and legal disruption, we often presume a confluence between newness and unregulability.

Emergent authorship is not, in either copyright or First Amendment law, disruptive in the sense that the law cannot function around it or keep up with new technological developments. Emergence is not unregulable, at least not in these legal contexts. It may shift the conversation in both copyright and First Amendment law from applying existing doctrine up to the level of theory, to determine whether the current state of the doctrine is doing what we want it to do. But emergence does not escape the law; it encounters, is interpreted through, and is shaped by it.

focuses not on protecting speakers as speakers but instead on providing value to listeners and constraining the government.”).

¹²⁷ Lyria B. Moses, *Why Have a Theory of Law and Technological Change?*, 8 MINN. J.L. SCI. & TECH. 589, 598 (2007) (“Technological change is one type of social change.”).

¹²⁸ *Id.* at 600 (“While technological change is not as sudden as might be imagined . . . it is usually speedier than social change and thus prompts more urgent calls for the law to ‘catch up.’”).

Thus legal disruption — the disruption of law by technology — is not always a story of technological exceptionalism or technological determinism. Legal analysis is not a matter of determining what it is about a particular technology that will act upon the law to challenge it, or change it, or destroy it. Legal disruption is largely a conversation about what a technology encounters. The law matters as much to this conversation as the technology does.