Constitutional Rights and Technological Change

David S. Han[*]

Technological change has long acted as an agent of doctrinal disruption within constitutional rights jurisprudence. This disruptive potential is rooted in a basic tension that pervades all constitutional rights doctrine: while such doctrine carries a substantial degree of stickiness and inertia, it is also crafted at a particular time, under a particular set of technological conditions and social intuitions shaped by those conditions. Thus, whenever longstanding constitutional rights doctrine collides with significant technological change, it inevitably creates the risk of doctrinal obsolescence — the perpetuation of an outdated doctrinal framework that no longer sensibly fits the actual world in which we live today.

This Article examines this interaction between constitutional rights doctrine and technological change by focusing specifically on the two rights that have been the most directly and visibly affected by such change: the First Amendment's protection of free speech and the Fourth Amendment's right against unreasonable searches and seizures. Unlike most academic commentary on this subject, which has tended to focus on discrete doctrinal issues, this Article elucidates this interaction at a broad, trans-substantive level, which yields some useful observations and principles that can guide courts in a wide variety of constitutional rights contexts.

The Article first catalogues the different ways by which technological change produces disruption within constitutional rights doctrine. Technological change can disrupt doctrine by altering the preexisting balance between individual freedom and the government's ability to act; by producing novel scenarios that stretch the boundaries of the right as presently conceptualized; or by shifting social attitudes and practices regarding the right in question. Each unsettles the doctrine in a distinct

 Professor of Law, Pepperdine University Caruso School of Law. This paper was presented at the UC Hastings Faculty Colloquium, the University of Illinois Constitutional Law Colloquium, the Loyola Constitutional Law Colloquium, and the ACS Constitutional Law Scholars Forum. Many thanks to the participants for their helpful comments and suggestions.

manner, requiring courts to evaluate different aspects of the doctrinal framework or the theoretical premises underlying the doctrine.

The Article then argues that in moments of significant and rapid technological change like the present, courts should loosen the traditionally strong preference for clear, rule-like approaches in constitutional rights doctrine and embrace an incremental degree of doctrinal complexity and open-endedness. The present technological context represents an inflection point at which the lack of fit between the rigid rules of the past and the rapidly changing circumstances of the present is simply too great to justify the benefits associated with many traditional bright-line rules. In times like this, real-world complexity calls for more nuanced, provisional, and open-ended doctrinal approaches. A failure to recognize this dynamic — as the Court has evinced in its recent First Amendment jurisprudence — threatens to entrench outdated doctrinal frameworks that will only grow more irrelevant and unstable as technological conditions continue to evolve.

TABLE OF CONTENTS

INTRODUCTION

In recent years, much of the Supreme Court's constitutional rights jurisprudence has revolved around the substantial changes wrought by the rapid development of technology. Within the past decade, for example, the Court has evaluated the extent to which violent video games[1] and data-mining[2] are protected by the First Amendment; whether police can conduct a warrantless search of a smartphone incident to a lawful arrest;[3] and the extent to which the government can restrict a sex offender's access to social media.[4] And in the 2018 case of *Carpenter v. United States*, the Court confronted the question of whether the government can obtain historical cell tower location data without a warrant[5] — a decision that will likely represent a significant turning point in the trajectory of Fourth Amendment doctrine.[6]

This is not, of course, a new phenomenon. Technological change has long acted as an agent of doctrinal disruption within constitutional rights jurisprudence.[7] And this disruption is rooted in an inherent tension that arises whenever constitutional rights doctrine confronts significant technological change. On the one hand, constitutional rights doctrine naturally carries a significant degree of stickiness and inertia, given the general conception of constitutional rights as immutable and consistent over time, insulated from the vicissitudes of public debate that shape the contours of ordinary interests.[8]

On the other hand, constitutional rights doctrine is necessarily crafted at a particular time, under particular technological conditions, based on a particular set of social and cultural intuitions and assumptions shaped by those conditions. As such, whenever longstanding constitutional rights doctrine collides with significant technological change, it inevitably creates the risk of doctrinal obsolescence — the perpetuation of an outdated doctrinal framework that no longer sensibly fits the actual world and conditions in which we live today.[9]

---

[1] *See* Brown v. Entm't Merchs. Ass'n, 564 U.S. 786, 789 (2011).

[2] *See* Sorrell v. IMS Health Inc., 564 U.S. 552, 557-58 (2011).

[3] *See* Riley v. California, 573 U.S. 373, 373 (2014).

[4] *See* Packingham v. North Carolina, 137 S. Ct. 1730, 1733 (2017).

[5] Carpenter v. United States, 138 S. Ct. 2206, 2211 (2018).

[6] *See infra* Part I.A.1.

[7] *See infra* Part I.

[8] *See infra* text accompanying notes 136–139.

[9] To be sure, arguments of obsolescence within the realm of constitutional rights doctrine can be — and often are — premised on non-technological factors, such as the evolution of social norms or academic consensus. *See, e.g.*, Planned Parenthood of

These moments of technological disruption represent particularly valuable opportunities to elucidate and clarify the underlying structure and premises of the right in question, on both the broad level of principle and theory and on the specific level of doctrinal implementation. Technological change counteracts the inertia inherent to constitutional rights doctrine: it forces courts to revisit, reevaluate, and clarify the fundamental theoretical and intuitional judgments that underlie the existing doctrinal framework.

This Article examines the dynamic between technological change and constitutional rights doctrine, focusing specifically on the two rights that have been the most directly and visibly affected by such change: the First Amendment's protection of free speech and the Fourth Amendment's right against unreasonable searches and seizures.[10] Unlike the vast majority of academic commentary addressing this issue, my primary purpose here is not to focus on discrete contemporary issues or to prescribe specific doctrinal adjustments.[11] Rather, my goal

Southeastern Pa. v. Casey, 505 U.S. 833, 861-62 (1992) (observing that the *Lochner* line of cases were struck down because they "rested on fundamentally false factual assumptions about the capacity of a relatively unregulated market to satisfy minimal levels of human welfare," which "required the new choice of constitutional principle that *West Coast Hotel* announced"). These sorts of arguments, however, are often controversial and closely tied to one's own ideological or theoretical priors, whereas arguments based on technological change are rooted in changes that are far more visible, objective, and concrete in nature. One would be hard pressed, for example, to deny the existence and widespread impact of recent technological advances such as the internet, social media, and Global Positioning System ("GPS") tracking within a wide range of constitutional domains.

[10] Technological change can certainly disrupt other areas of constitutional rights doctrine, such as the Second Amendment right to bear arms, see, for example, James B. Jacobs & Alex Haberman, *3D-Printed Firearms, Do-It-Yourself Guns, & the Second Amendment*, 80 L. & CONTEMP. PROBS. 129 (2017) (analyzing Second Amendment ramifications with respect to government regulation of 3D-printing-firearm software), and due process, see, for example, Danielle Keats Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249 (2008) (discussing the rise of automated decision-making within the administrative state). The First Amendment and Fourth Amendment, however, are uniquely fertile areas for analysis and discussion of this issue simply because of the considerable volume, breadth, and depth of the Court's jurisprudence in these areas. *See infra* text accompanying notes 14–21 (highlighting the Court's long history of addressing technological change in these areas).

[11] Technological change in the Fourth Amendment context has been a popular topic within the scholarly literature, particularly around times when the Supreme Court is deciding a noteworthy case raising the issue, like *Kyllo v. United States*, 533 U.S. 27 (2001). *See, e.g.*, Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 802 n.7 (2004) [hereinafter *The Fourth Amendment and New Technologies*] (listing numerous articles grappling with various aspects of technology and Fourth Amendment doctrine, including many responding directly to the Court's decision in *Kyllo*). This scholarship

is to elucidate the interaction between technological change and constitutional rights doctrine at a broader, trans-substantive level,[12] which ultimately produces some useful observations and principles that can guide courts in a wide variety of constitutional rights contexts.

In Part I, I catalogue and clarify the different ways by which technological change produces disruption within constitutional rights doctrine. It can disrupt the doctrine by equilibrium alteration — that is, by fundamentally altering the preexisting balance between individual freedom and the government's ability to act. It can disrupt doctrine through boundary stretching — introducing novel scenarios that reach beyond the paradigmatic circumstances upon which the existing scope of the right has been established. And it can disrupt doctrine by shifting social and cultural attitudes and practices that, in turn, alter the fundamental intuitions upon which constitutional judgments are ultimately based. Although some of these means of doctrinal disruption may overlap in particular cases, each unsettles the doctrine in a distinct manner, requiring the reviewing court to evaluate different aspects of the doctrinal framework or the theoretical premises underlying the doctrine.

In Part II, I set forth two broad prescriptions as to how courts should confront constitutional rights cases dealing with technological change. On a broad level, courts should seize the opportunity presented by these cases to candidly revisit, scrutinize, clarify, and perhaps modify the sorts of fundamental assumptions, judgments, and intuitions that

ranges from focused examinations of particular technologies to broader analyses regarding the relationship between technological change and fundamental principles of Fourth Amendment doctrine. *See, e.g.*, Susan W. Brenner, *The Fourth Amendment in an Era of Ubiquitous Technology*, 75 MISS. L.J. 1 (2005); Laura K. Donohue, *The Fourth Amendment in a Digital World*, 71 N.Y.U. ANN. SURV. AM. L. 553 (2016); Renée McDonald Hutchins, *Tied Up in* Knotts*? GPS Technology and the Fourth Amendment*, 55 UCLA L. REV. 409 (2007); Ric Simmons, *Why 2007 is Not Like 1984: A Broader Perspective on Technology's Effect on Privacy and Fourth Amendment Jurisprudence*, 97 J. CRIM. L. & CRIMINOLOGY 531 (2007); Russell L. Weaver, *The Fourth Amendment, Privacy and Advancing Technology*, 80 MISS. L.J. 1131 (2011). In the First Amendment context, recent scholarly commentary regarding issues of technological change has tended to coalesce around discrete areas of inquiry, such as the constitutional status of computer code, search engine results, automated recommendations, or data mining. *See infra* notes 107–111 and accompanying text.

[12] My focus here is not on the Court's particular methodologies for interpreting constitutional text. *See, e.g.*, Allen R. Kamp, *Constitutional Interpretation and Technological Change*, 49 NEW ENG. L. REV. 201 (2015) (surveying the Court's interpretive methodology in a wide range of constitutional rights contexts). But rather on the broad interaction between preexisting doctrinal frameworks and substantial technological change. I have not come across any extended academic accounts of this interaction pitched at this sort of expansive, trans-substantive level.

underlie the existing doctrinal framework. This sort of deep, open, and transparent consideration of first principles works as a corrective against the strong tendency of constitutional rights doctrine to calcify into rigid formalisms that may no longer correspond to the world and conditions of the present day. Frank discussion of these sorts of first principles — combined with a measure of epistemic humility — preserves the capacity of constitutional rights doctrine to evolve in a healthy manner, and this is true even if courts, as a result of this sort of careful consideration, ultimately decide that no doctrinal change is necessary.

Furthermore, in moments of significant and rapid technological change like the present, courts should loosen the traditionally strong preference for clear, rule-like approaches in constitutional rights doctrine and embrace an incremental degree of doctrinal complexity and open-endedness. While there are plenty of compelling reasons to fear this sort of complexity in constitutional rights doctrine, the present technological and social context — in which modern technologies have destabilized many of the empirical, normative, and theoretical assumptions underlying First and Fourth Amendment doctrine — represents an inflection point at which the lack of fit between the rigid rules of the past and the rapidly changing circumstances of the present is simply too great to justify the benefits associated with many of the traditional bright-line rules. In times of substantial and rapid technological change, real-world complexity calls for more nuanced, incremental, and open-ended doctrinal approaches.[13] Although the Court did well to embrace this dynamic in *Carpenter*, it has consistently failed to do so in its recent First Amendment jurisprudence, thereby entrenching an outdated doctrinal framework that will only grow more irrelevant and unstable over time.

In Part III, I argue that the *Carpenter* Court's approach to technological change can serve as a valuable template across a wide range of constitutional rights contexts. This approach was self-consciously designed to be narrow in scope but open-ended and standard-like in nature, with the expectation that it might represent merely a stopgap, intermediate solution rather than a harbinger of a broad doctrinal sea change. Adopting this incremental and provisional

[13] As I discuss below, this is not to say that First Amendment and Fourth Amendment doctrine will and should inevitably move towards greater segmentation, complexity, and open-endedness from this moment onward. It is only to say that constitutional rights doctrine should be conceptualized in an organic manner, in which the optimal means of doctrinal evolution may shift in conjunction with prevailing conditions. *See infra* text accompanying note 229.

approach to doctrine building in a context like the present — when rapid and significant technological changes outstrip courts' capacity to evaluate their full ramifications — gives courts the flexibility to address the most egregious instances of doctrinal obsolescence wrought by technological change while preserving the time and space necessary to adequately consider the extent to which such change should alter the broad doctrinal framework as a whole. Such approaches can act either as transitional stepping-stones if courts ultimately conclude that a radically different doctrinal framework is necessary, or as narrow exceptions if they ultimately conclude that intervening technological changes do not warrant such widespread doctrinal modification. Part IV concludes.

I. HOW TECHNOLOGICAL CHANGE DISRUPTS EXISTING DOCTRINE

The Supreme Court has long confronted cases directly addressing the relationship between significant technological advancements and preexisting constitutional rights doctrine. In the Fourth Amendment context, for example, the Court has dealt with the advent of the automobile,[14] the telephone,[15] and aerial surveillance.[16] Similarly, in the First Amendment context, the Court has dealt with the development of sound amplification,[17] the rise of radio[18] and television,[19] and the emergence of motion pictures[20] and video games.[21]

The tension between rapidly evolving technology and existing constitutional rights doctrine, however, has ratcheted up significantly in the past couple of decades. This has been broadly spurred, of course, by the emergence and sudden ubiquity of revolutionary technologies such as the internet, social media, smartphones, GPS devices, mass tracking and data analysis, and artificial intelligence ("AI"). As such, courts have often been called upon in recent years to reconcile these technological developments with the existing body of constitutional rights doctrine — longstanding doctrinal frameworks that the Court had developed under a very different set of technological conditions.

---

[14] *See, e.g.*, Carroll v. United States, 267 U.S. 132, 146-47 (1925).

[15] *See, e.g.*, Olmstead v. United States, 277 U.S. 438, 464-66 (1928).

[16] *See, e.g.*, Florida v. Riley, 488 U.S. 445, 447-50 (1989) (plurality opinion); California v. Ciraolo, 476 U.S. 207, 211-15 (1986).

[17] *See, e.g.*, Kovacs v. Cooper, 336 U.S. 77, 78-79 (1949).

[18] *See, e.g.*, FCC v. Pacifica Found., 438 U.S. 726, 729-31 (1978).

[19] *See, e.g.*, Denver Area Educ. Telecomms. Consortium v. FCC, 518 U.S. 727, 732 (1996).

[20] *See, e.g.*, Joseph Burstyn, Inc. v. Wilson, 343 U.S. 495, 497 (1952).

[21] *See, e.g.*, Brown v. Entm't Merchs. Ass'n, 564 U.S. 786, 789 (2011).

This Part catalogues the different ways in which technological change can disrupt preexisting constitutional rights doctrine. First, technological change can disrupt doctrine through equilibrium alteration — by drastically shifting the preexisting balance between individual freedom and the government's freedom to act. Second, it can disrupt doctrine through boundary stretching — introducing novel scenarios that reach beyond the paradigmatic circumstances upon which the existing scope of the right has been established. And finally, it can disrupt doctrine by shifting social and cultural attitudes and practices that, in turn, alter the fundamental intuitions upon which constitutional judgments are ultimately based. In each of these scenarios, new technology unsettles the preexisting doctrinal framework by introducing the possibility of doctrinal obsolescence — the idea that the current framework no longer sensibly fits within the present technological context.

This typology may not always be cut and dry in application; one might reasonably debate which category a particular case falls into, and different types of disruption may be present in a single case. But it illuminates the distinct means by which technological change can unsettle doctrine, which in turn helps to identify the specific aspects of the doctrinal framework — or the theoretical premises underlying the doctrine — that reviewing courts must ultimately evaluate.

A. Equilibrium Alteration

First, technological advancements can significantly alter the existing balance between individual freedom and the government's freedom to act. Using the terminology first developed by Orin Kerr in the Fourth Amendment context,[22] I will refer to this as equilibrium alteration. Technology might, for example, greatly increase (or decrease) individuals' capacity to inflict social harm via speech, or it might broadly enhance (or limit) the government's capacity to intrude into people's private lives. These sorts of alterations to the existing empirical balance — the balance reflected by existing constitutional rights doctrine — ultimately force courts to clarify the fundamental nature of the right in question. Does the currently prevailing doctrinal framework merely reflect some sort of fixed, instrumental equilibrium between state interests and the individual right in question?[23] Or is it ultimately

[22] *See* Orin S. Kerr, *An Equilibrium-Adjustment Theory of the Fourth Amendment*, 125 HARV. L. REV. 476, 480 (2011) [hereinafter *Equilibrium-Adjustment Theory*].

[23] *See id.* (setting forth an "equilibrium-adjustment" theory of the Fourth Amendment, which holds that "[w]hen new tools and new practices threaten to expand

premised on fundamental principles that continue to apply regardless of any substantial changes to the preexisting balance?

1. CSLI Tracking Data and Aerial Surveillance

The Supreme Court's recent decision in *Carpenter v. United States*[24] provides a paradigmatic example of this dynamic.[25] In *Carpenter*, the Court confronted a Fourth Amendment challenge to the government's use of cell-site location information ("CSLI") — location data produced by modern cell phones constantly pinging nearby cell towers.[26] As the Court noted, cell phones "tap into the wireless network several times a minute whenever their signal is on, even if the owner is not using one of the phone's features";[27] furthermore, "[w]ireless carriers collect and store CSLI for their own business purposes," and they also sell aggregated CSLI data to data brokers.[28] The precision of CSLI data "depends on the size of the geographic area covered by the cell site," and the rapid growth in the number of cell sites has led to "increasingly compact coverage areas,"[29] with the present "capability to pinpoint a phone's location within 50 meters."[30] In *Carpenter*, the government obtained historical CSLI records of Timothy Carpenter's cell phone without a warrant, and it used these records at trial to establish that Carpenter was at the scene of four separate robberies at the time they occurred, leading to his conviction.[31]

As the Court observed, the background law revolved around two different sets of cases. First, in *United States v. Knotts*[32] — a case dealing with tracking "beepers" used to help police follow vehicles through traffic[33] — the Court established that "[a] person traveling in an automobile on public thoroughfares has no reasonable expectation of

or contract police power in a significant way, courts adjust the level of Fourth Amendment protection to try to restore the prior equilibrium").

[24] Carpenter v. United States, 138 S. Ct. 2206 (2018).

[25] My summary of the *Carpenter* opinion in this section, along with portions of the accompanying discussion, draw from my previous work. *See* David S. Han, Brandenburg *and Terrorism in the Digital Age*, 85 BROOK. L. REV. 85, 93-99 (2019) [hereinafter *Terrorism in the Digital Age*].

[26] *Carpenter,* 138 S. Ct. at 2211.

[27] *Id.*

[28] *See id.* at 2212.

[29] *See id.* at 2211-12.

[30] *See id.* at 2219.

[31] *See id.* at 2212-13.

[32] United States v. Knotts, 460 U.S. 276 (1983).

[33] *See id.* at 277.

privacy in his movements from one place to another."[34] The Court reasoned that any person traveling on public thoroughfares could be observed and followed by any member of the public, such that the traveler has "voluntarily conveyed" her location and movement "to anyone who wanted to look."[35]

Thirty years later, in *United States v. Jones*,[36] the Court addressed the police's use of a GPS tracking device to monitor the location of the defendant's vehicle over a twenty-eight-day span.[37] Unlike the beeper in *Knotts*, the GPS tracker was used to pinpoint Jones's location at all times, over an extended period of time, with a very high degree of accuracy and minimal effort. Although the Court deemed this to violate Jones's Fourth Amendment rights, it premised its holding specifically on the government's physical trespass on his car, explicitly sidestepping the question of whether the tracking itself violated Jones's reasonable expectation of privacy.[38]

Second, the Court had long adhered to the principle that "a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties."[39] In *United States v. Miller*, the Court applied this third-party doctrine in finding no Fourth Amendment violation for warrantless acquisitions of a defendant's bank records.[40] Three years later, in *Smith v. Maryland*, it similarly found no violation for the warrantless acquisition of a log of outgoing phone calls made from a defendant's home phone.[41] In both cases, the Court held that the defendant — having voluntarily conveyed the information to a third party (the bank and the phone company, respectively) — assumed the risk that the business records retained by the companies would be shared with the police.[42]

Setting aside longstanding debates as to the wisdom of these doctrinal principles,[43] both of them — at least on their face — clearly apply to

[34] *Id.* at 281.

[35] *See id.* at 281-82.

[36] United States v. Jones, 565 U.S. 400 (2012).

[37] *See id.* at 403.

[38] *See id.* at 411-13. In separate opinions, however, five justices appeared to agree that long-term GPS tracking does violate a person's reasonable expectation of privacy. *See id.* at 415 (Sotomayor, J., concurring); *id.* at 430-31 (Alito, J., concurring).

[39] *See* Carpenter v. United States, 138 S. Ct. 2206, 2216 (2018) (quoting Smith v. Maryland, 442 U.S. 735, 743-44 (1979)).

[40] *See* United States v. Miller, 425 U.S. 435, 437-43 (1976).

[41] *See* Smith v. Maryland, 442 U.S. 735, 739-46 (1979).

[42] *See id.* at 745-46; *Miller*, 425 U.S. at 442-43.

[43] As Kerr observed, "[t]he third-party doctrine is the Fourth Amendment rule scholars love to hate. It is the *Lochner* of search and seizure law, widely criticized as

CSLI records. Just as a person making a bank transaction is voluntarily conveying the information to bank employees, any person using a cell phone is voluntarily conveying CSLI to the wireless provider.[44] And just as a person has no privacy interest in the bank's own business records logging such transactions, neither does she have a privacy interest in the CSLI records kept for business purposes by cell phone providers. Furthermore, to the extent that the CSLI data is used to track a suspect's movements on public thoroughfares, she cannot be deemed to have a reasonable expectation of privacy, as she can be freely observed and followed by anyone on such thoroughfares.

But the technological gap between the relatively crude beeper in *Knotts* and the GPS- and CSLI-based tracking featured in *Jones* and *Carpenter* is substantial. The beeper used in *Knotts* provided the police with only incremental benefits in physically tracking a vehicle on public thoroughfares. As the facts in *Knotts* made clear, the beeper still required the police to physically follow the vehicle in order to stay within range of the beeper's signal; it merely gave them a greater margin for error when following the vehicle.[45] Thus, *Knotts* still largely left intact what Justice Alito described in his *Jones* concurrence as the "greatest protection[] of privacy" in this circumstance: the practical cost of constant physical monitoring of a vehicle through police stakeouts, helicopters, and so forth.[46] The beeper in *Knotts* did not eliminate the expense of such physical monitoring; rather, it merely made the monitoring marginally easier and more effective.

By contrast, GPS trackers and CSLI data "make long-term monitoring relatively easy and cheap," eliminating the primary practical barrier to

profoundly misguided." Orin S. Kerr, *The Case for the Third-Party Doctrine*, 107 MICH. L. REV. 561, 563 & n.5 (2009) ("A list of every article or book that has criticized the doctrine would make this the world's longest law review footnote.").

[44] The *Carpenter* Court distinguished the sort of "voluntary exposure" involved in CSLI data collection. It argued that phone users do not voluntarily assume the risk of exposing comprehensive CSLI data in any "meaningful sense," given that the use of cell phone services "is indispensable to participation in modern society" and that "a cell phone logs a cell-site record by dint of its operation, without any affirmative act on the part of the user beyond powering up." *Carpenter*, 138 S. Ct. at 2220. But in doing so, the Court effectively signaled a shift in the doctrine rather than apply the existing doctrine in a straightforward manner; as Kerr observed, the Court framed its voluntariness analysis as a normative judgment premised on whether the voluntariness in question was "meaningful" rather than as a simple question of fact. *See* Orin S. Kerr, *Implementing* Carpenter, *in* THE DIGITAL FOURTH AMENDMENT (forthcoming) (manuscript at 20) [hereinafter *Implementing* Carpenter].

[45] *See* United States v. Knotts, 460 U.S. 276, 278 (1983).

[46] *See* United States v. Jones, 565 U.S. 400, 429 (2012) (Alito, J., concurring).

extensive and long-running location tracking.[47] Police need not follow a vehicle equipped with a GPS tracker or physically observe where the suspect is carrying his phone; rather, GPS and CSLI tracking are relatively costless, fully automated, and exhaustive in nature. As Justice Alito observed in *Jones* — and as the Court reiterated in *Carpenter* — "society's expectation has been that law enforcement agents and others would not — and indeed, in the main, simply could not — secretly monitor and catalogue every single movement of an individual's car for a very long period."[48]

Furthermore, the breadth of the information available from CSLI records or GPS tracking goes well beyond that available from bank records or pen registers. Each can potentially provide a detailed and exhaustive log of a person's physical location over a span of years, and as the *Carpenter* Court noted, "There is a world of difference between the limited types of personal information addressed in *Smith* and *Miller* and the exhaustive chronicle of location information casually collected by wireless carriers today."[49]

Thus, in *Carpenter*, the tension between technology and constitutional rights doctrine resulted from a fundamental alteration of the preexisting balance between individual rights and the government's freedom to act. The third-party doctrine was developed in a world of crude tracking beepers, bank records, and pen registers. But the emergence of GPS and CSLI tracking technologies has radically altered this balance, as they allow the government to obtain incredibly accurate, exhaustive, and detailed location data — data containing far more intimate information than mere bank records or pen registers — over a long period of time, at minimal cost. Technology has thus radically enhanced the government's capacity to intrude into individuals' private lives to a degree that was unthinkable when the current doctrinal framework was developed.

These sorts of circumstances ultimately force courts to confront and clarify the fundamental nature of the right in question. The right — and the doctrine reflecting the right — might be conceptualized as capturing a particular preestablished, instrumental equilibrium between individual interests on the one hand and state interests on the other. Under this view, if technological change significantly alters this equilibrium, the court can adopt doctrinal adjustments to recapture the "correct" instrumental balance. Alternatively, the right — and the

[47] *See id.*

[48] *Id.* at 430; *accord Carpenter*, 138 S. Ct. at 2217.

[49] *See Carpenter*, 138 S. Ct. at 2219.

doctrine reflecting the right — might be conceptualized as resting on fundamental principles that continue to apply regardless of any significant technology-based changes in this balance.

Within the Fourth Amendment context, Orin Kerr has referred to the former view as an "equilibrium-adjustment" approach to social and technological change. As Kerr describes this approach, "[w]hen new tools and new practices threaten to expand or contract police power in a significant way, courts adjust the level of Fourth Amendment protection to try to restore the prior equilibrium."[50] In other words, courts continuously modify constitutional rights doctrine as a "correction mechanism" to account for fundamental changes to the existing balance between government power and individual rights.[51] Technological change may render the existing doctrinal framework obsolete, and it is up to the courts to update it accordingly.

The Court clearly adopted this approach in *Carpenter*. In outlining the contours of the Fourth Amendment right, the Court highlighted the "historical understandings 'of what was deemed an unreasonable search and seizure when the Fourth Amendment was adopted[,]'" indicating that "a central aim of the Framers was 'to place obstacles in the way of a too permeating police surveillance.'"[52] Thus, "[a]s technology has enhanced the Government's capacity to encroach upon areas normally guarded from inquisitive eyes, this Court has sought to 'assure preservation of that degree of privacy against government that existed when the Fourth Amendment was adopted.'"[53]

Thus, although the government's warrantless acquisition of CSLI data fit quite comfortably within the principles set forth in *Knotts*, *Miller*, and *Smith*,[54] the Court deemed it a search for Fourth Amendment purposes, stating:

> [W]hile the third-party doctrine applies to telephone numbers and bank records, it is not clear whether its logic extends to the qualitatively different category of cell-site records. After all, when *Smith* was decided in 1979, few could have imagined a society in which a phone goes wherever its owner goes, conveying to the wireless carrier not just dialed digits, but a detailed and comprehensive record of the person's movements.

---

[50] Kerr, *Equilibrium-Adjustment Theory*, *supra* note 22, at 480.

[51] *See id.*

[52] *Carpenter*, 138 S. Ct. at 2214 (quoting Carroll v. United States, 267 U.S. 132, 149 (1925)).

[53] *Id.* (quoting Kyllo v. United States, 533 U.S. 27, 34 (2001)).

[54] *See supra* text accompanying notes 32–44.

> We decline to extend *Smith* and *Miller* to cover these novel circumstances.[55]

The Court therefore made clear that despite appearances to the contrary its seemingly categorical formulation, the third-party doctrine — that "a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties"[56] — is not, in fact, a fundamental statement of principle. Rather, it is merely shorthand for a balancing judgment calibrated for a particular set of technological and social conditions — a world of beepers and pen registers rather than GPS tracking and CSLI data. Thus, when technological and social conditions change, these sorts of broad doctrinal "principles" may no longer apply — for example, when technology advances to the point where everyone, as a matter of course, shares highly detailed, intimate, and comprehensive private data about themselves with third parties like Verizon, Comcast, or Google. As Kerr observed, "[b]efore the digital age, people could keep much of their private information private by keeping it in places and things that they controlled. . . . *Carpenter* reflects the majority's fear that digital technology has displaced that assumption."[57]

The *Carpenter* Court therefore viewed the current doctrine as capturing a particular equilibrium between individual privacy and the state's freedom to act, at least in the CSLI context. When technological change alters the various premises and assumptions underlying the existing doctrinal framework, the doctrine must be recalibrated to account for that change. Under this view, the Fourth Amendment right is essentially an instrumental balance: the Constitution envisions a particular equilibrium between government intrusion and individual privacy, leaving courts free to adjust even longstanding doctrinal principles and frameworks to account for any alterations of the balance caused by technological change.[58]

But courts need not take this instrumental, equilibrium-based approach when confronted with the challenges posed by technological change on constitutional rights. They could instead conceptualize the doctrinal framework as reflecting broad, concrete principles that are fundamentally tied to the underlying right itself: principles that — given

---

[55] *See Carpenter*, 138 S. Ct. at 2216-17.

[56] *Id.* at 2216 (quoting Smith v. Maryland, 442 U.S. 735, 743-44 (1979)).

[57] Kerr, *Implementing* Carpenter, *supra* note 44 (manuscript at 8).

[58] *See* Kerr, *Equilibrium-Adjustment Theory*, *supra* note 22, at 481-82 ("Equilibrium-adjustment maintains fidelity to the Fourth Amendment in the face of rapid change by allowing judges to maintain the balance struck by the Fourth Amendment.").

the very nature of the right — must continue to apply regardless of any changed conditions wrought by technology.

Take, for example, the Supreme Court's treatment of aerial surveillance in the Fourth Amendment context. Under the longstanding open fields doctrine, the police have free rein to enter the open fields surrounding a home, but individuals retain an expectation of privacy with respect to the "curtilage" immediately surrounding the house.[59] And one of the relevant factors in identifying curtilage is "whether the area is included within an enclosure surrounding the home" — that is, whether the area in question is fenced in with the house.[60] Thus, for example, a small, fenced-in backyard located immediately behind the house that is used for purely personal purposes would almost certainly be off-limits to the police without a warrant.

In *California v. Ciraolo*, however, the police, flying 1,000 feet up in the air in a private plane, looked into the defendant's fenced-in backyard and photographed the illegal marijuana plants therein, all without a warrant.[61] Although the Court recognized that the backyard fell within the house's constitutionally protected curtilage, it nevertheless upheld the officer's actions as constitutional. The Court justified its result by invoking a longstanding principle of Fourth Amendment doctrine, which the Court first set forth in *Katz v. United States*:[62] "What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection."[63] The Court reasoned that because the police officers were within publicly navigable airspace, they were merely in a space where any member of the public legally could have been, and as such, the defendant could not have any expectation of privacy with respect to his fenced backyard being viewed from above.[64]

---

[59] *See* United States v. Dunn, 480 U.S. 294, 300 (1987).

[60] *See id.* at 301.

[61] California v. Ciraolo, 476 U.S. 207, 209 (1986).

[62] Katz v. United States, 389 U.S. 347 (1967).

[63] *Ciraolo*, 476 U.S. at 213 (quoting *Katz*, 389 U.S. at 351).

[64] *See id.* at 213-15. Three years later, in *Florida v. Riley*, a splintered Court upheld the police's warrantless aerial observation of the defendant's partially covered greenhouse from a helicopter flying at a height of 400 feet. *See* Florida v. Riley, 488 U.S. 445, 448, 450 (1989) (plurality opinion). The plurality reached this conclusion under the same rationale as *Ciraolo*. *Id.* at 450-52. Justice O'Connor, in her concurrence in the judgment, would have premised the decision on whether public air travel at that altitude was "a sufficiently routine part of modern life that it is unreasonable for persons on the ground to expect that their curtilage will not be observed from the air at that altitude." *See id.* at 453-54 (O'Connor, J., concurring). Interestingly, a majority of the justices

Here, the Court took the opposite approach from *Carpenter*.[65] The police activity — as the Court noted — seemed to fall within the broad *Katz* principle that "[w]hat a person knowingly exposes to the public . . . is not a subject of Fourth Amendment protection." But the same could be said of the police's collection of CSLI data and the third party doctrine — a principle the Court had previously set forth in equally absolute terms.[66] And just like in *Carpenter*, aerial surveillance radically altered the balance between personal privacy and government intrusion: it gave the government far more power to intrude upon a person's erstwhile protected curtilage unless the person took drastic measures (like building a roof over her backyard).

So the Court could have simply followed the same *Carpenter* blueprint. The broad, unalloyed *Katz* principle is simply shorthand for the particular instrumental balance between individual privacy and governmental intrusion, and it was crafted in a world where aerial surveillance by police was still in its relative infancy.[67] But as aerial surveillance technology matured and became widely adopted, it upset this balance such that the principle must yield, just as the third-party doctrine yielded in the face of CSLI tracking technology.

The Court, however, did not take this path — it continued to apply the *Katz* principle at full force. Why this different approach? Perhaps underlying the Court's judgment was a broad sense that the *Katz* principle must fundamentally follow from *any* meaningful conception of privacy. In other words, it is simply nonsensical to state that someone could have a reasonable expectation of privacy in anything she knowingly exposes to the public. Thus, even if technology changes such

appeared to agree with Justice O'Connor's approach, if not her result. *See id.* at 464-65 (Brennan, J., dissenting); *id.* at 467 (Blackmun, J., dissenting).

65 Kerr has characterized these aerial surveillance decisions as a form of equilibrium adjustment — to restore power back to the police in response to criminals erecting fences and walls to evade the police's established power to explore open fields. *See* Kerr, *Equilibrium-Adjustment Theory*, *supra* note 22, at 522-25. I am not sure that I find this characterization persuasive; at the time of the framing, people were certainly able to build fences around their houses and yards to protect their privacy, so it seems that the more plausible baseline standard would be a society with fences but no aerial surveillance, rather than a society with nothing but open fields.

66 *See* Smith v. Maryland, 442 U.S. 735, 743-44 (1979) ("This Court consistently has held that a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties.").

67 *See* Ernie Stephens, *Police Mission Equipment*, AVIATION TODAY (July 1, 2011), https://www.aviationtoday.com/2011/07/01/police-mission-equipment/ [https://perma.cc/RNY7-L9BN] ("In the 1960s and 70s, . . . police departments in the United States were first finding their wings but didn't have access to the technology found on today's aircraft.").

that far more of a person's private life is effectively exposed to the public, no exceptions to the *Katz* principle ought to be recognized to recalibrate the balance, simply because to contradict the principle is to contradict any reasonable conception of privacy itself.

Of course, the *Katz* principle and the third-party doctrine are essentially identical. And as Justice Kennedy noted in his *Carpenter* dissent, the *Carpenter* Court could have similarly construed the third-party doctrine as a broadly applicable principle — inherent to the nature of privacy itself — that defendants simply do not retain any reasonable expectation of privacy in information voluntarily shared with third parties (and specifically, in any business records developed and owned by third parties).[68] Nevertheless, the *Carpenter* Court chose to take an equilibrium-adjustment approach to the case, jettisoning the principle to account for changed technological conditions, while the *Ciraolo* Court held fast to existing doctrinal principles, technological changes notwithstanding.

This illustrates that the dynamic at play in these cases is not a simple binary question of whether courts have adopted an equilibrium-adjustment view versus an absolute-principle view of constitutional rights doctrine when faced with technological change. Rather, the pure equilibrium-adjustment view and the pure absolute-principle view of the doctrine represent extremes on either end of a spectrum, and the more precise question is where courts fall (or should fall) along that spectrum.

To say that established doctrinal principles should generally be viewed instrumentally in accounting for technological change is not to say that doctrine must *always* be adjusted in the face of such change. Unsettling a broad doctrinal principle like the third-party doctrine comes with substantial costs: it injects complexity and open-endedness into the doctrine, which produces uncertainty amongst state and private actors, reduces administrability, and opens the door to potentially worrisome judicial discretion.[69] So if the equilibrium alteration produced by the technological development is not sufficiently severe as to justify these associated costs, courts might be better off adhering to existing doctrinal principles, even if this leads to a somewhat altered balance between individual and governmental interests.

On the other side of the spectrum, even the most fundamental principles within constitutional rights jurisprudence have their

[68] *See* Carpenter v. United States, 138 S. Ct. 2206, 2228-30 (2018) (Kennedy, J., dissenting).

[69] *See infra* text accompanying notes 166–184.

practical limits. This is directly evinced by the Court's adoption of strict scrutiny in its constitutional rights doctrine,[70] which acts as a "safety valve" to account for highly exceptional circumstances within which even core constitutional rights must yield.[71] At a certain point, changed technological conditions may alter the balance between individual and state interests to such an extent that existing doctrinal principles are rendered effectively meaningless. Imagine, for example, a world in which digital assistants, with microphones that are always on, have become completely ubiquitous and are considered an indispensable aspect of modern life. If adhering to the third-party doctrine therefore means that every single audible statement that a person utters — even within her own home — is unprotected by the Fourth Amendment, then the privacy right enshrined in that provision has effectively ceased to exist.

So technological change can disrupt doctrine by altering the preexisting balance between individual interests and state interests. And this, in turn, forces courts to consider the extent to which constitutional rights doctrine ought to be viewed as an instrumental device designed to capture the "correct" balance between these interests, or as the product of fundamental principles that are inseparable from the nature of the right itself (and thus insensitive to any changes to the existing equilibrium wrought by technology).

2. Incitement Doctrine in the Social Media Age

This dynamic raises interesting questions within First Amendment doctrine. Take, for example, the Court's doctrine governing incitement.[72] In the landmark case of *Brandenburg v. Ohio*, the Supreme Court distinguished between fully protected advocacy of lawless action and unprotected incitement to imminent lawless action, holding that the government cannot "forbid or proscribe advocacy of the use of force or of law violation except where such advocacy is directed to inciting or producing imminent lawless action and is likely to incite or produce such action."[73] This narrow and highly speech-protective formulation

[70] Under the strict scrutiny standard of review, a regulation is upheld only if it is "narrowly tailored to promote a compelling Government interest." United States v. Playboy Entm't Grp., 529 U.S. 803, 813 (2000).

[71] *See* Ashutosh Bhagwat, *Hard Cases and the (D)Evolution of Constitutional Doctrine*, 30 CONN. L. REV. 961, 961-62 (1998).

[72] My discussion in this section draws from my previous work, which explores this issue in greater detail. *See* Han, *Terrorism in the Digital Age*, *supra* note 25, at 99-104.

[73] *See* Brandenburg v. Ohio, 395 U.S. 444, 447 (1969) (per curiam).

of low-value incitement[74] emerged after decades of internal debate within the Court regarding such speech, and it represented a substantial departure from the far more permissive approach taken by the Court in earlier cases starting with *Schenk v. United States*.[75]

On the one hand, one can conceptualize the *Brandenburg* test in purely instrumental terms, like the *Carpenter* Court viewed the third-party doctrine. Under this view, the test simply captures the optimal balance between the actual and potential harms associated with dangerous advocacy on the one hand and the benefits associated with individuals' freedom to speak freely on the other. While speech falling short of the *Brandenburg* test might still cause some social harm like riots or vandalism, the test may ultimately reflect a practical judgment that the expected social harm of that speech is broadly insufficient to trump the value of unfettered speech.

If viewed in this manner, one might reasonably argue that incitement doctrine is due for some equilibrium adjustment. In 1969, when the *Brandenburg* test was formulated, the paradigmatic instances of dangerous advocacy the Court likely had in mind were public rallies or the physical distribution of leaflets — forms of speech dissemination that are, by nature, constrained by physical limitations.[76] Given these limitations, the Court may have simply decided that the expected harm produced by dangerous advocacy falling short of the *Brandenburg* standard was sufficiently low as to be outweighed by the value associated with protecting speech.[77]

---

[74] Gerald Gunther famously called the *Brandenburg* test "the most speech-protective standard yet evolved by the Supreme Court." Gerald Gunther, *Learned Hand and the Origins of Modern First Amendment Doctrine: Some Fragments of History*, 27 STAN. L. REV. 719, 755 (1975).

[75] *See* 249 U.S. 47, 51-53 (1919); *see also* Whitney v. California, 274 U.S. 357, 371 (1927); Frohwerk v. United States, 249 U.S. 204, 206-10 (1919); Abrams v. United States, 250 U.S. 616, 618-24 (1919).

[76] To be sure, the audience-expanding potential of new technologies was already clear at the time of *Brandenburg*, as the rally in that case was recorded and portions of it were broadcast locally and nationally. *See Brandenburg*, 395 U.S. at 445. But the advent of the internet has both broadened the scope of speech dissemination and radically lowered the cost of such dissemination to a degree that would be utterly foreign in the world of 1969. *See, e.g.*, Eugene Volokh, *Cheap Speech and What It Will Do*, 104 YALE L.J. 1805, 1806-07 (1995) (observing that in contrast to the pre-internet era, in which finding a publisher or "[g]etting access to nationwide radio and TV" was difficult for the poor or those with unorthodox views, the advent of the internet allows for "[c]heap speech [which] will mean that far more speakers — rich and poor, popular and not, banal and avant-garde — will be able to make their work available to all").

[77] Or, perhaps, the *Brandenburg* Court did not consider these sorts of instrumental questions at all, since in the world of 1969, the degree of expected harm caused by advocacy short of incitement was sufficiently low that the Court had no real need to

But the world of today is fundamentally different from the world of 1969. With the advent of the internet and social media, an online speaker can cheaply and instantly communicate dangerous advocacy to millions of people around the world over an indefinite span of time — unlike, say, a speaker at a rally who can only reach the people who happen to be physically present at the time.[78] The likelihood that dangerous advocacy would translate into harmful action would therefore be multiplied accordingly.[79] Furthermore, as many have observed, the internet and social media can lead to the creation of online "echo chambers" in which people insulate themselves within a cocoon of like-minded people, news sources, and commentary.[80] These echo chambers might significantly reduce the likelihood that dangerous advocacy will be neutralized by counter-speech while increasing the likelihood that such advocacy will blossom into harmful action due to constant reinforcement. Given these substantial changes wrought by

distinguish between instrumental and principle-based justifications for the doctrinal test.

[78] *See* Mark Tushnet, *Internet Exceptionalism: An Overview from General Constitutional Law*, 56 WM. & MARY L. REV. 1637, 1651-58 (2015) [hereinafter *Internet Exceptionalism*]. As Cass Sunstein observed, social media "can dramatically amplify the capacity of speech in one place to cause violence elsewhere at some uncertain time." Cass R. Sunstein, *Islamic State's Challenge to Free Speech*, BLOOMBERG (Nov. 23, 2015, 12:38 PM), https://www.bloomberg.com/view/articles/2015-11-23/islamic-state-s-challenge-to-free-speech [https://perma.cc/7QU7-Q3LE] [hereinafter *Islamic State's Challenge*].

[79] *See* Cass R. Sunstein, *Constitutional Caution*, 1996 U. CHI. LEGAL F. 361, 370 (1996) (observing that "[w]hen messages advocating murderous violence are sent to large numbers of people, it is possible to think that the *Brandenburg* calculus changes"); Tushnet, *Internet Exceptionalism*, *supra* note 78, at 1653 ("Internet exceptionalism would allow legislatures to make the judgment that the substantially larger audience available for communications over the Internet increases otherwise acceptable levels of risk beyond a tolerable threshold."). As Tushnet notes, however, the increased size and accessibility of the audience can cut both ways in the calculus, as it might also increase the social harm produced by suppressing the material in question. *See id.* at 1654.

[80] *See, e.g.*, CASS R. SUNSTEIN, #REPUBLIC: DIVIDED DEMOCRACY IN THE AGE OF SOCIAL MEDIA 1-6 (2017) (discussing online echo chambers); Eric Posner, *ISIS Gives Us No Choice But to Consider Limits on Speech*, SLATE (Dec. 15, 2015, 5:37 PM), http://www.slate.com/articles/news_and_politics/view_from_chicago/2015/12/isis_s_online_radicalization_efforts_present_an_unprecedented_danger.html [https://perma.cc/Z4AG-2XSL] ("Today, the Internet makes possible the constant circulation of captivating videos, vivid images, and extremist text, creating a 'radicalization echo chamber.'"). Echo chamber effects may be exacerbated by certain aspects of social media platforms' designs, such as automated recommendations on YouTube or Facebook's reliance on "engagement" to promote content on automated news feeds. *See* Han, *Terrorism in the Digital Age*, *supra* note 25, at 102.

modern technology, some scholars have argued that a wholesale rebalancing of the onerous *Brandenburg* standard is in order.[81]

But conceptualizing the *Brandenburg* standard in this purely instrumental manner would likely produce significant discomfort to many — a discomfort rooted in a strong sense that the contours of the *Brandenburg* test follow directly from fundamental free speech principles. As the *Brandenburg* Court noted, its test reflected the principle that advocacy — speech that produces action by *persuading* listeners — is protected, while incitement — speech that produces action by short-circuiting deliberative processes — is not.[82] And as David Strauss has observed, the Court has consistently adhered to this "persuasion principle" — the idea that absent "extraordinary circumstances, the government may not restrict speech because it fears, however justifiably, that the speech will persuade those who hear it to do something of which the government disapproves."[83]

---

[81] Cass Sunstein, for example, argued that the government should have free rein to regulate dangerous advocacy when "people are explicitly inciting violence" and "it produces a genuine risk to public safety, whether imminent or not." Sunstein, *Islamic State's Challenge*, *supra* note 78. And Eric Posner has called for a law that would, among other things, criminalize "access[ing] websites that glorify, express support for, or provide encouragement for ISIS" — a law that, as Posner notes, would require significant modification of existing First Amendment doctrine to be constitutional. *See* Posner, *supra* note 80.

[82] *See* Brandenburg v. Ohio, 395 U.S. 444, 448 (1969) (per curiam) ("[T]he mere abstract teaching . . . of the moral propriety or even moral necessity for a resort to force and violence, is not the same as preparing a group for violent action and steeling it to such action."); *see also* David A. Strauss, *Persuasion, Autonomy, and Freedom of Expression*, 91 COLUM. L. REV. 334, 339 (1991) ("The persuasion principle, as I have defined it, directly justifies the requirement of imminence: the risk of law violation can justify suppression of speech only if the speech brings about the violation by bypassing the rational processes of deliberation.").

[83] Strauss, *supra* note 82, at 334. Furthermore, this principle follows naturally from the primary theoretical rationales surrounding the protection of free speech: democratic self-governance, the pursuit of truth, and individual autonomy. The democratic self-governance rationale holds that democracy cannot flourish without the unfettered opportunity to persuade other citizens regarding issues of public concern. *See* ALEXANDER MEIKLEJOHN, FREE SPEECH AND ITS RELATION TO SELF-GOVERNMENT 16-17, 26 (1948). Similarly, the marketplace of ideas cannot operate to identify truth unless "dangerous" ideas can be tested alongside all other ideas; persuasion is the ultimate mechanism by which the truth is identified and falsehoods discarded. *See* JOHN STUART MILL, ON LIBERTY 41-42 (Batoche Books 2001) (1859). Finally, individual autonomy cannot be fully realized unless each person has the opportunity to persuade — and to be persuaded — with respect to all ideas in formulating her own personal identity and views. *See* Strauss, *supra* note 82, at 354 (arguing that violations of the persuasion principle are wrong because they "involve a denial of autonomy in the sense that they interfere with a person's control over her own reasoning processes").

The *Brandenburg* test may therefore be conceptualized as a direct manifestation of the persuasion principle — a principle that is essential to any meaningful conception of free speech. Its onerous requirements are designed to distinguish protected advocacy that operates by persuasion and deliberation from unprotected incitement that operates via emotion and instinct (like exhorting a frenzied mob to burn down a nearby building). Viewed in this manner, any attempt to extend government regulation to dangerous advocacy operating via persuasion is simply off limits — despite any drastic increases in expected social harm produced by technological change — as it would be fundamentally inconsistent with the very concept of free speech.

The same dynamic applies to other areas of protected speech. Take, for example, the rise of automated bots propagating "fake news" — that is, false speech on issues of public concern — on social media platforms.[84] On the one hand, one could argue that the sheer breadth and volume of such automated falsehoods that can be produced by modern technology inescapably alters the preexisting equilibrium between the harm caused by such speech and the risks of regulating the speech, such that the government should have greater flexibility to regulate. On the other hand, one could argue that the broad anti-paternalist principle underlying the protection of speech — the deep-seated suspicion of any government regulation of public discourse[85] — requires that such speech remain fully protected,[86] even at the cost of absorbing the far-greater harm that can now be accomplished in a modern technological context where such speech can be produced with little human effort, at a minimal cost, and at a heretofore unseen scale and reach.

It is unclear which conception of *Brandenburg* the Court would adopt if and when it is squarely confronted with this issue. My guess is that courts would be far more reluctant to conceptualize incitement doctrine under the same sort of "equilibrium adjustment" framework that the *Carpenter* Court adopted, and as I have discussed elsewhere, there are some plausible bases for distinguishing this particular First Amendment

---

[84] *See, e.g.*, Scott Shane, *The Fake Americans Russia Created to Influence the Election*, N.Y. TIMES (Sept. 7, 2017), https://www.nytimes.com/2017/09/07/us/politics/russia-facebook-twitter-election.html [https://perma.cc/6CHJ-26UU].

[85] *See, e.g.*, Elena Kagan, *Private Speech, Public Purpose: The Role of Governmental Motive in First Amendment Doctrine*, 63 U. CHI. L. REV. 413, 422, 426 (1996); Jed Rubenfeld, *The First Amendment's Purpose*, 53 STAN. L. REV. 767, 776 (2001).

[86] *See* David S. Han, *Categorizing Lies*, 89 U. COLO. L. REV. 613, 645-46 (2018) (observing that "any content-based regulation of fake news bears a heavy presumption of invalidity," given the "massive risks of chilling effects and government abuse").

context from the Fourth Amendment context.[87] But the basic dynamic in both scenarios is identical: technological change drastically alters the preexisting balance between individual interests and state interests, which forces courts to determine the extent to which existing doctrine is best conceptualized as capturing the optimal instrumental balance between these conflicting interests, or as a direct representation of fundamental principles that are inseparable from the nature of the right itself.

B. Boundary Stretching

Technological change can also disrupt existing constitutional rights doctrine in a different manner: by introducing completely novel circumstances that require courts to reconsider and reevaluate the breadth of the right in question. To be sure, all technological change, by nature, introduces novel circumstances into the equation. But there is a distinction between novel circumstances that nevertheless fall within the broad contours of existing constitutional doctrine — like, for example, using GPS technology to track cars instead of beepers, or using social media to disseminate dangerous advocacy rather than leaflets — and those that force courts to confront the fundamental question of whether, and to what extent, the constitutional right ought to even extend to the situation in question.

In the Fourth Amendment context, one of the clearest examples of this sort of doctrinal disruption was the Court's attempts to grapple with the advent of the telephone and government wiretapping. In the 1928 case of *Olmstead v. United States*,[88] the Court held that the government did not violate the Fourth Amendment when it set up a wiretap of Olmstead's telephone line and listened in on his conversations. Observing that under the Fourth Amendment, "the search is to be of material things — the person, the house, his papers, or his effects," the

[87] One reason might be that the persuasion principle is fundamental to the concept of the freedom of speech in a way that the third-party doctrine is not with respect to personal privacy. Or perhaps there is something intrinsically different between First Amendment rights and Fourth Amendment rights that may make courts far more willing to embrace equilibrium adjustment in the latter rather than the former. After all, the language of the Free Speech Clause is more absolute on its face than the language of the Fourth Amendment, which suggests a far more pragmatic and context-sensitive approach. *See* Han, *Terrorism in the Digital Age*, *supra* note 25, at 99 (discussing these arguments and others in greater detail). *Compare* U.S. CONST. amend. I ("Congress shall make no law . . . abridging the freedom of speech."), *with* U.S. CONST. amend. IV (establishing constitutional protection against "unreasonable searches and seizures").

[88] Olmstead v. United States, 277 U.S. 438 (1928).

Court held that the wiretap did not constitute a search or seizure, as "[t]here was no entry of the houses or offices of the defendants."[89]

Forty years later, however, the Court overruled *Olmstead* in *Katz v. United States*, a case that dealt with the government's installation of an "electronic listening and recording device" on the outside of a public telephone booth.[90] In stark contrast to the traditional conception of the Fourth Amendment adopted by the *Olmstead* Court — one premised on the government's physical intrusion onto suspects' "persons, houses, papers, and effects" — the *Katz* Court stated that "the Fourth Amendment protects people, not places," observing that it "governs not only the seizure of tangible items, but extends as well to the recording of oral statements overheard without any technical trespass under local property law."[91] At least on its face,[92] *Katz* represented a momentous shift in the evolution of the Court's Fourth Amendment doctrine, as it marked the transition from a Fourth Amendment approach premised solely on physical intrusion to one premised primarily on the defendant's reasonable expectation of privacy.[93]

Why this shift in the doctrine? As the *Katz* Court noted, to read the Fourth Amendment — as the *Olmstead* Court did — to deny any constitutional protection to a person's private conversation in a closed phone booth "is to ignore the vital role that the public telephone has come to play in private communication."[94] In other words, the advent of the telephone introduced something completely novel into the existing universe of Fourth Amendment problems: the possibility of private conversations, held at great distances, through physical channels extending beyond people's homes and offices, between parties

[89] *Id.* at 464.

[90] Katz v. United States, 389 U.S. 347, 348 (1967).

[91] *Id.* at 351, 353.

[92] Many scholars have argued that *Katz* was far less revolutionary than it appeared and merely served to entrench the preexisting physical property-based conception of the right. *See, e.g.*, Donohue, *supra* note 11, at 559 (arguing that *Katz* "aspired to rather more than it delivered," as it ultimately "entrenched the private/public distinction" of the previous doctrinal regime); Kerr, *Implementing* Carpenter, *supra* note 44 (manuscript at 5-6) (arguing that "the Supreme Court's application of *Katz* has closely traced the Fourth Amendment's [traditional] focus on places and things").

[93] *See, e.g.*, Kyllo v. United States, 533 U.S. 27, 33 (2001) ("[A] Fourth Amendment search occurs when the government violates a subjective expectation of privacy that society recognizes as reasonable."). As the Court later made clear in *Jones*, however, the *Katz* approach did not fully displace the traditional trespass-based approach for establishing whether a Fourth Amendment search had occurred. *See* United States v. Jones, 565 U.S. 400, 409 (2012) ("[T]he *Katz* reasonable-expectation-of-privacy test has been *added to*, not *substituted for*, the common-law trespassory test.").

[94] *Katz*, 389 U.S. at 352.

who reasonably expect such conversations to be private. This technological development thus forced the Court to confront fundamental questions regarding the breadth of the Fourth Amendment's protection: is its sole concern with *physical* intrusion, or does it extend to something beyond that traditional limitation? And as the Court in *Katz* eventually held, the Fourth Amendment's protection extends beyond physical intrusion, reaching violations of people's reasonable expectations of privacy — a conclusion that, perhaps, would not have easily been reached in the absence of novel circumstances, produced by technological change, that forced the Court to reconsider these first principles of its doctrine.

This sort of doctrinal disruption in the Fourth Amendment context, however, has been relatively rare. In a post-*Katz* world, in which the Court's paramount concern for individuals' reasonable expectation of privacy is firmly established, most issues involving technological change have revolved around the alteration of the balance between individual privacy and government intrusion caused by technology — the scenario discussed in the previous subpart — rather than a fundamental reevaluation as to what the Fourth Amendment is meant to protect in the first place.[95]

This stands in notable contrast to contemporary First Amendment doctrine, in which one of the paramount recurring issues is whether and how preexisting First Amendment doctrine ought to apply given technological changes that have produced (and continue to produce) novel forms of potential "speech."[96] While Fourth Amendment doctrine has, in recent years, dealt primarily with technological change as an agent of equilibrium alteration, First Amendment doctrine is currently grappling with the advent of novel forms of communication and communicative contexts that push against fundamental concepts of what the First Amendment is meant to protect.[97] These issues are representative of the broad trend of free speech expansionism that has,

[95] *See, e.g.*, Riley v. California, 573 U.S. 373 (2014) (searching the contents of cell phones incident to arrest); *Kyllo*, 533 U.S. 27 (2001) (thermal imaging); California v. Ciraolo, 476 U.S. 207 (1986) (aerial surveillance); United States v. Knotts, 460 U.S. 276 (1983) (tracking beepers). *But see* Kerr, *Implementing* Carpenter, *supra* note 44 (manuscript at 6) (arguing that in the wake of *Carpenter*, "[f]or the first time, the Fourth Amendment is no longer about places and things," as *Carpenter* inaugurated "a new kind of expectation of privacy test, one that focuses on how much the government can learn about a person regardless of the place or thing from which the information came").

[96] Portions of the following discussion draw from my previous work. *See* David S. Han, *Middle-Value Speech*, 91 S. CAL. L. REV. 65, 77-78, 91-93 (2017) [hereinafter *Middle-Value Speech*].

[97] *See id.* at 91-92.

to a significant extent, come to define modern First Amendment jurisprudence.[98]

As a historical matter, the modern era of First Amendment jurisprudence began in the early twentieth century with a set of cases dealing with textbook examples of political dissent, and it is these early political speech cases that produced probably the two most influential and oft-quoted opinions in all of First Amendment jurisprudence: Justice Holmes's dissent in *Abrams v. United States*[99] and Justice Brandeis's concurrence in *Whitney v. California*.[100] And much of the fundamental structure of current First Amendment doctrine — including the cornerstone rule that all content-based regulations of speech must be subject to strict scrutiny — can be traced back to a handful of seminal cases dealing with political or otherwise ideological speech[101] in some form.[102]

The story of modern First Amendment doctrine, however, has been one of steady expansion beyond the core categories of the highest-value speech that have disproportionately shaped the doctrine's fundamental design. If, for example, attorneys in the 1940s were to suggest that nude dancing, crush videos, commercial advertising, or false statements of fact were entitled to protection under the First Amendment, they would likely be laughed out of the room. As Lillian BeVier has noted, "[b]efore the Court's extension of First Amendment protection to commercial

---

[98] *See* Frederick Schauer, *The Politics and Incentives of First Amendment Coverage*, 56 WM. & MARY L. REV. 1613, 1616-17 (2015) [hereinafter *Politics and Incentives*].

[99] 250 U.S. 616, 630 (1919) (Holmes, J., dissenting) ("But when men have realized that time has upset many fighting faiths, they may come to believe even more than they believe the very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas — that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out.").

[100] 274 U.S. 357, 376-77 (1927) (Brandeis, J., concurring) (stating that "[f]ear of serious injury cannot alone justify suppression of free speech and assembly" and that whenever possible, "the remedy to be applied [to dangerous speech] is more speech").

[101] By "ideological speech," I mean speech concerning political, religious, or social issues. *See* Frederick Schauer, *Commercial Speech and the Architecture of the First Amendment*, 56 U. CIN. L. REV. 1181, 1186 (1988) [hereinafter *Commercial Speech*] (describing the "core" speech category of "political, religious, and otherwise ideological communication").

[102] *See, e.g.*, Police Dep't of Chi. v. Mosley, 408 U.S. 92, 92-94 (1972) (striking down a city ordinance that prohibited picketing within 150 feet of a school); Brandenburg v. Ohio, 395 U.S. 444, 445-48 (1969) (striking down Ohio's criminal syndicalism statute); N.Y. Times Co. v. Sullivan, 376 U.S. 254, 256-58 (1964) ("We are required in this case to determine for the first time the extent to which the constitutional protections for speech and press limit a State's power to award damages in a libel action brought by a public official against critics of his official conduct.").

speech in 1976, the overwhelming majority of First Amendment cases involved attempts to regulate speech that was in one way or another speech about government."[103]

This expansion continues to the present day. As Frederick Schauer has observed, recent cases have evinced an "accelerating attempt to widen the scope of First Amendment coverage to include actions and events traditionally thought to be far removed from any plausible conception of the purposes of a principle of free speech"[104] — a trend perhaps driven by the unique magnetism and attractiveness of First Amendment arguments in a broad range of legal disputes.[105] Thus, for example, the First Amendment has recently been invoked by companies arguing against mandated disclosures to the SEC, by tattoo parlors seeking to be shielded from health regulations, and by therapists seeking to escape state regulation of scientifically unproven therapeutic methods.[106]

One major component of this expansion involves novel types of potential "speech" and novel speech contexts brought about by modern technology. Contemporary First Amendment scholarship has grappled with the constitutional status of, for example, search engine results,[107] computer code,[108] automated recommendations,[109] pervasive video recording,[110] and the widespread collection and dissemination of

---

[103] Lillian R. BeVier, *The First Amendment on the Tracks: Should Justice Breyer Be at the Switch?*, 89 MINN. L. REV. 1280, 1287 (2005).

[104] Schauer, *Politics and Incentives*, *supra* note 98, at 1616-17.

[105] *See id.* at 1633.

[106] *See id.* at 1614.

[107] *See, e.g.*, Stuart Minor Benjamin, *Algorithms and Speech*, 161 U. PA. L. REV. 1445, 1446-47 (2013) (discussing if "algorithm-based outputs" are "speech" under the First Amendment); Oren Bracha, *The Folklore of Informationalism: The Case of Search Engine Speech*, 82 FORDHAM L. REV. 1629, 1632 (2014) (discussing different arguments for search engines as First Amendment speech); James Grimmelmann, *Speech Engines*, 98 MINN. L. REV. 868, 873 (2014) (noting tension between different theories of speech for the search engine Google); Tim Wu, *Machine Speech*, 161 U. PA. L. REV. 1495, 1525-31 (2013) (discussing the First Amendment status of search engines).

[108] *See* Adam Candeub, *Digital Medicine, the FDA, and the First Amendment*, 49 GA. L. REV. 933, 941 & n.39 (2015) (surveying the substantial literature surrounding this issue); Kyle Langvardt, *The Doctrinal Toll of "Information as Speech,"* 47 LOY. U. CHI. L.J. 761, 769-75 (2016) (describing court decisions regarding the characterization of code for First Amendment purposes).

[109] *See* Toni M. Massaro & Helen Norton, *Siri-ously? Free Speech Rights and Artificial Intelligence*, 110 NW. U. L. REV. 1169, 1170-72 (2016); Wu, *supra* note 107, at 1531-33.

[110] *See, e.g.*, Seth F. Kreimer, *Pervasive Image Capture and the First Amendment: Memory, Discourse, and the Right to Record*, 159 U. PA. L. REV. 335, 339 (2011) (arguing that legal decisionmakers will need to grapple with the constitutional status of pervasive video recording); Justin Marceau & Alan K. Chen, *Free Speech and Democracy in the*

personal data[111] — heretofore unexplored issues arising out of the many recent social and technological changes associated with our communications culture, such as the advent of mass data collection and analysis, the ubiquity of the internet and smartphones, the rise of social media, and the development of algorithm-based "smart" communications.

These potential subsets of speech are, on their face, very different in nature from the highest-value ideological speech that is paradigmatically associated with the First Amendment. Computer code, or a list of websites produced in response to a search query, or a detailed database filled with customer data populated through automated processes are a far cry from newspaper editorials, or speeches at political rallies, or truthful news reporting. As such, they not only raise significant issues as to the degree of constitutional protection that should be afforded to them; they often implicate the preliminary question of whether the First Amendment should even apply in the first instance.[112]

These novel speech contexts produce substantial disruption because the currently existing set of doctrinal rules and theoretical principles were broadly calibrated for a very different and far narrower First Amendment — one focused squarely on government efforts to regulate ideological speech. To the extent the Court has set forth the underlying theoretical rationales for its present free speech doctrine, many of these rationales — most notably, the promotion of democratic self-governance — have evinced the First Amendment's assumed focus on such speech.[113] And although the Court has distinguished some subsets

Video Age, 116 COLUM. L. REV. 991, 992 (2016) (noting tension created by pervasive video recording between free speech and personal privacy).

111 *See, e.g.*, Jane Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 57, 58-60 (2014) (discussing competing interests surrounding the privacy of personal information and the First Amendment).

112 Indeed, as Kyle Langvardt has noted, nascent technologies continue to emerge that may increasingly push the boundaries of what can reasonably be characterized as raising First Amendment issues, such as 3D printing, synthetic biology, and cryptocurrencies. *See* Langvardt, *supra* note 108, at 792-801.

113 *See, e.g.*, Police Dep't of Chi. v. Mosley, 408 U.S. 92, 95-96 (1972) ("Any restriction on expressive activity because of its content would completely undercut the 'profound national commitment to the principle that debate on public issues should be uninhibited, robust, and wide-open.'"); N.Y. Times Co. v. Sullivan, 376 U.S. 254, 269 (1964) ("The general proposition that freedom of expression upon public questions is secured by the First Amendment has long been settled by our decisions. The constitutional safeguard, we have said, 'was fashioned to assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people.'"); Whitney v. California, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring) ("Those who

of low-value speech such as obscenity, incitement, and true threats (along with one major category of "middle-value" speech in commercial speech), technological change has produced a variety of novel "speech" contexts that do not fit comfortably within any of these existing categories.

Take, for instance, the issue of search engine results. In *Search King, Inc. v. Google Technology, Inc.*,[114] Search King sued Google for tortious interference with contractual relations, arguing that Google had "purposefully and maliciously" lowered the company's "PageRank" — a "numerical representation of the relative significance of a particular web site as it corresponds to a search query" — once Google discovered that Search King "was competing with Google and that it was profiting by selling advertising space on web sites ranked highly by Google's PageRank system."[115] This reduction, Search King argued, "adversely impacted the business opportunities available to Search King . . . by limiting [its] exposure on Google's search engine."[116] In response, Google argued that tort liability could not be found under these circumstances because its PageRanks constituted protected speech; the district court agreed, characterizing PageRanks as "constitutionally protected opinions."[117]

Whether the First Amendment applies to search engine results has been the subject of considerable academic debate.[118] Eugene Volokh and Donald Falk, for example, have argued that such results constitute fully protected expression as "editorial judgments about selection and arrangement of content."[119] By contrast, Frank Pasquale, Oren Bracha, and Tim Wu have argued that such results are not entitled to First Amendment protection, as they are predominantly functional in nature — more akin to passive conduits of information rather than "the

won our independence . . . believed that freedom to think as you will and to speak as you think are means indispensable to the discovery and spread of political truth; that without free speech and assembly discussion would be futile; that with them, discussion affords ordinarily adequate protection against the dissemination of noxious doctrine; that the greatest menace to freedom is an inert people; that public discussion is a political duty; and that this should be a fundamental principle of the American government.").

114 Search King, Inc. v. Google Tech., Inc., No. CIV-02-1457-M, 2003 WL 21464568 (W.D. Okla. May 27, 2003).

115 *Id.* at *1-2.

116 *Id.* at *1.

117 *Id.* at *4.

118 *See supra* note 107.

119 Eugene Volokh & Donald M. Falk, *Google: First Amendment Protection for Search Engine Search Results*, 8 J.L. ECON. & POL'Y 883, 887 (2012).

paradigmatic expression protected in cases involving newspapers."[120] And James Grimmelmann has favored a middle path, focusing on the user side of the equation, in which search engines act as "trusted advisor[s]" to users "actively seek[ing] out information."[121]

What is clear, however, is that search engine results represent a unique form of expression that is far afield from core ideological expression. And current First Amendment doctrine — the product of a more traditional, far narrower conception of free speech protection — does not possess the tools to adequately account for this form of speech. Thus, evaluating the question of whether search engine results constitute protected speech (and, if so, the degree to which they should be protected) requires a reassessment, premised on first principles, of the nature, purpose, and breadth of the First Amendment right itself. A court might ultimately conclude that search engine results ought to be valued the same as core political speech, and thus the general rule against content-based regulation should apply without modification. It might conclude that search engine results do not fall within the sort of "speech" that the First Amendment is meant to protect, or that they represent a category of "middle-value" speech entitled to a lesser degree of protection than political speech. Regardless of the result, the novelty presented by search engine results forces courts to undertake some sort of first-principles boundary analysis — one that will have broad ramifications on how we fundamentally conceptualize and theorize the First Amendment across the board.

The same could be said of, for example, computer code, or advice given by automated digital assistants, or mass data-mining. In all of these situations, technology pushes against paradigmatic assumptions regarding the breadth of the speech right, requiring courts to evaluate the degree to which it truly extends beyond the realms of core ideological speech upon which it has traditionally focused. As I have discussed elsewhere, this mismatch between a doctrinal framework built around ideological speech and the far more expansive body of "speech" that may potentially fall within First Amendment protection

---

120 Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1194 (2008); *see* Wu, *supra* note 107, at 1528-30.

121 *See* Grimmelmann, *supra* note 107, at 873-74 ("From the user's perspective, a search engine is not primarily a conduit or an editor. Instead, it is a trusted advisor. It listens to a user's description of her goals in the form of a search query, performs research on her behalf, uses its expert judgment to sift through what it has learned, and reports back to her with recommendations on which websites to visit and which ones to ignore. This point of view harmonizes the conduit and editor theories by incorporating insights from both.").

has generated significant strain on the integrity of the doctrine.[122] And as shifting technological conditions continue to drastically alter the landscape of our communications culture, courts will be increasingly forced to confront novel and difficult speech contexts that do not fit easily within the currently prevailing doctrinal and theoretical framework.[123]

C. Shifting Social Attitudes and Practices

Finally, technological change can work to disrupt doctrine by producing broad shifts in social and cultural attitudes and practices — shifts that, in turn, alter the sorts of fundamental, intuitional judgments upon which the present doctrinal framework rests. As new technology becomes integrated into society, it alters society's fundamental perceptions of, for example, how much privacy we ought to expect, or what sorts of resources we deem essential to participate meaningfully in public discourse. And over time, these social and cultural shifts bump up against preexisting doctrine: as attitudes, practices, and expectations evolve amongst society at large, these changes filter into the courts, which then face the question of whether and how such shifts should be reflected in the doctrine.

In the context of Fourth Amendment doctrine, the difficulties posed by these sorts of social and cultural shifts are clear. Privacy expectations change as technology evolves, and significant technological changes — like, for example, a GPS tracker in every person's pocket — may lead to major changes in popular attitudes.[124] Thus, as Justice Kennedy argued in his *Carpenter* dissent, "expectations of privacy in one's location" might be less reasonable today than 30 years ago, since "[m]illions of Americans choose to share their location on a daily basis, whether by using a variety of location-based services on their phones, or by sharing their location with friends and the public at large via social media."[125] And this reasonable expectation of privacy may have nothing to do with what we might think is right or preferable: in a world full of ubiquitous

---

[122] *See* Han, *Middle-Value Speech*, *supra* note 96, at 95-105.

[123] *See id.* at 90-94.

[124] *See, e.g.*, City of Ontario v. Quon, 560 U.S. 746, 759 (2010) ("Rapid changes in the dynamics of communication and information transmission are evident not just in the technology itself but in what society accepts as proper behavior."); Kerr, *The Fourth Amendment and New Technologies*, *supra* note 11, at 866-67 (describing the changing social importance of the public telephone from the time of *Katz* to the modern age of the cellphone).

[125] Carpenter v. United States, 138 S. Ct. 2206, 2232 (2018) (Kennedy, J., dissenting).

GPS trackers, or street cameras, or CSLI tracking data, it may simply be the case that we, as a society, have resigned ourselves to the fact that this is the world we now live in (even if we don't particularly like it).[126] To say otherwise is, in effect, to willfully shut one's eyes from the world we actually inhabit; whether we like it or not, society as a whole — by integrating new technology into our social and cultural lives — has already made the decision.

On the other hand, as the Court has observed, some external measure of a reasonable expectation of privacy must be present to anchor the analysis,[127] lest the Fourth Amendment devolve into the absurdity that "the government could conduct any kind of search by announcing loudly that it will conduct certain kinds of searches, thus eliminating expectations of privacy."[128] The social and cultural shifts wrought by technological change thus cannot be dispositive in and of themselves. This is, in effect, what the *Carpenter* Court held: even if people may no longer actually *expect* privacy given the widespread use of cell phones, some sort of substantive backstop exists at which police intrusion into private lives is simply too extreme as an absolute matter.[129] Thus, courts must sort out the extent to which these sorts of major shifts in social attitudes and practices driven by technological change should matter.

Social and cultural shifts can disrupt constitutional rights doctrine in other ways. Consider, for example, the Court's decision in *Packingham v. North Carolina*.[130] In *Packingham*, the Court struck down a North

[126] *See* United States v. Jones, 565 U.S. 400, 427 (2012) (Alito, J., concurring) ("New technology may provide increased convenience or security at the expense of privacy, and many people may find the tradeoff worthwhile. And even if the public does not welcome the diminution of privacy that new technology entails, they may eventually reconcile themselves to this development as inevitable.").

[127] *See* Rakas v. Illinois, 439 U.S. 128, 143 n.12 (1978) ("Legitimation of expectations of privacy by law must have a source outside of the Fourth Amendment, either by reference to concepts of real or personal property law or to understandings that are recognized and permitted by society.").

[128] Michael Abramowicz, *Constitutional Circularity*, 49 UCLA L. REV. 1, 60 (2001); *see also* Orin S. Kerr, *Four Models of Fourth Amendment Protection*, 60 STAN. L. REV. 503, 532 (2007) (observing that a purely descriptive, "probabilistic" approach "cannot provide the exclusive guide to Fourth Amendment protection").

[129] *See Carpenter*, 138 S. Ct. at 2214 ("[A] central aim of the Framers was 'to place obstacles in the way of a too permeating police surveillance.'" (quoting United States v. Di Re, 332 U.S. 581, 595 (1948))); *see also* Paul Ohm, *The Many Revolutions of* Carpenter, 32 HARV. J.L. & TECH. 357, 388 (2019) ("*Carpenter* advances the idea that, at least when police surveillance technology changes rapidly, the proper role for the court is the normative one Justice Harlan advocated. We should not saddle society with merely what it has come to expect.").

[130] Packingham v. North Carolina, 137 S. Ct. 1730 (2017).

Carolina law that "ma[de] it a felony for a registered sex offender to gain access to a number of websites, including commonplace social media websites like Facebook and Twitter."[131] Justice Kennedy, writing for the Court, observed that "[s]even in ten American adults use at least one Internet social networking service," and that social media users "employ these websites to engage in a wide array of protected First Amendment activity on topics as diverse as human thought."[132] He then continued:

> The nature of a revolution in thought can be that, in its early stages, even its participants may be unaware of it. And when awareness comes, they still may be unable to know or foresee where its changes lead. . . . While we now may be coming to the realization that the Cyber Age is a revolution of historic proportions, we cannot appreciate yet its full dimensions and vast potential to alter how we think, express ourselves, and define who we want to be.[133]

As Justice Kennedy observed, technology can produce massive social and cultural shifts that may, in turn, drastically shift the sorts of fundamental intuitions that underlie society's broad understanding of freedom of speech. Take, for example, the entire concept of a social media presence. In today's world, most people have some sort of social media identity — one that is often carefully curated and designed to be the person's outward face to the online world. Social media has increasingly become the central locus of social interaction between friends, strangers, companies, and anyone else on the internet. It has also grown to be the preeminent source of news for a large proportion of people; a gathering place where like-minded people can assemble and share their interests; and a place where parties can participate in transactions, commercial or otherwise.

This technological evolution has fundamentally altered our present social and cultural perceptions of freedom of speech.[134] In practical terms, freedom of speech now increasingly presupposes access to a computer, smartphone, or tablet that is connected to the internet. It

---

131 *Id.* at 1733 (internal quotation marks omitted).

132 *Id.* at 1735-36 (internal quotation marks omitted).

133 *Id.* at 1736. In his opinion concurring in the judgment, Justice Alito, joined by Chief Justice Roberts and Justice Thomas, chastised the Court for its "undisciplined dicta" that "seem[ed] to equate the entirety of the internet with public streets and parks." *Id.* at 1738 (Alito, J., concurring).

134 I am here referring to broad free speech principles rather than the technical boundaries of free speech doctrine.

presupposes the freedom to establish an online identity of some sort — a curated public persona that may be calibrated differently from one's offline persona. And as *Packingham* indicates, these massive social and cultural shifts, over time, inevitably influence the fundamental intuitions underlying how judges, the legislature, and the public view the free speech right. It seems highly unlikely that the regulation in *Packingham* would have been struck down thirty years ago as applied to, say, early "bulletin board systems" ("BBSes") — far more primitive and decentralized online forums accessed only by a small number of particularly tech-savvy users.[135] But as widespread internet use and the rise social media have permeated deeply into our social and cultural practices and consciousness — as they have become recognized as indispensable aspects of public discourse in twenty-first century America — upholding this sort of broad law has become unthinkable, as the Court's unanimous decision in *Packingham* attests.

II. HOW COURTS SHOULD CONFRONT TECHNOLOGICAL CHANGE

Thus, as outlined above, technological change can disrupt existing constitutional rights doctrine in different ways, each of which forces courts to confront some fundamental aspect of the right in question. When technology alters the preexisting equilibrium between the individual interests and government interests in question, courts must consider whether the current doctrinal structure represents an instrumental balance that may be adjusted to retain the desired equilibrium, or statements of fundamental principle that are largely immutable even when technology brings substantially changed circumstances. When technology introduces completely novel circumstances that do not fit within the paradigmatic instances upon which the doctrine has been constructed, courts must consider the breadth of the right itself, which requires a reexamination of the first principles underlying the right. And finally, where technology has produced major shifts in social attitudes and practices, courts must consider the extent to which the right in question ought to evolve in conjunction with these shifts.

Having described the different ways by which technological change may disrupt constitutional rights doctrine, this Part sets forth two prescriptions as to how courts should approach such cases. First, on a

[135] *See* Benj Edwards, *The Lost Civilization of Dial-Up Bulletin Board Systems*, ATLANTIC (Nov. 4, 2016), https://www.theatlantic.com/technology/archive/2016/11/the-lost-civilization-of-dial-up-bulletin-board-systems/506465/ [https://perma.cc/96Q9-EYAA].

broad level, courts should seize the opportunity presented by these cases to candidly revisit, scrutinize, clarify, and perhaps modify the sorts of fundamental assumptions, judgments, and intuitions that underlie the existing doctrinal framework. This sort of deep, open, and transparent consideration of first principles is vital in ensuring that constitutional rights doctrine is an accurate reflection of the world that we actually inhabit today, rather than the particular moment in time and the particular circumstances under which the doctrine happened to be formulated. Frank discussion and deliberation regarding these sorts of first principles preserves the capacity of constitutional rights doctrine to evolve in a healthy manner, and this is true even if courts ultimately decide that no doctrinal changes are necessary.

Second, given the rapid rate of significant technological change in the present moment, courts should loosen the traditionally strong preference for clear, rule-like approaches in constitutional rights doctrine and embrace an approach centered around incremental doctrinal complexity and open-endedness. While there are compelling reasons to favor clear and categorical rules in both the First Amendment and Fourth Amendment contexts, the present technological and social context represents an inflection point at which the lack of fit between the rigid rules of the past and the rapidly changing circumstances of the present is simply too great to justify the benefits associated with many of the traditional bright-line rules. In times of substantial and rapid technological change, when courts are tasked with evaluating novel technologies with only a dim sense of future ramifications, real-world complexity calls for more nuanced, incremental, and open-ended doctrinal approaches.

A. Technological Change as a Catalyst for Clarifying and Reevaluating First Principles

As the discussion above made clear, when technological change disrupts doctrine, it effectively forces courts to confront distinct questions that go to the very foundations of the right in question — questions related to the fundamental nature of the right, the breadth to which it extends, and its interaction with technologically driven changes in social attitudes and practices. As such, while technological change can strain and destabilize constitutional rights doctrine, it also affords courts the valuable opportunity to scrutinize and reassess the fundamental intuitions, assumptions, and principles upon which the present doctrine has been built.

Constitutional rights doctrine carries with it a significant degree of inertia.[136] Once core doctrinal rules and principles have been established — like, for example, the expansive rule that all content-based speech restrictions are subject to strict scrutiny — they are not easily subject to critical reassessment.[137] This is eminently sensible in the abstract, as there is significant value in this sort of doctrinal stickiness: it establishes predictability and constraint in areas of doctrine constantly subject to the vicissitudes of public debate, which is particularly important in the context of free speech doctrine.[138] Furthermore, it accords with a broad conception of rights as immutable and consistent over time.[139]

But constitutional doctrine is formulated at a particular time, under particular circumstances, based on a particular set of social and cultural intuitions and assumptions. Had the Court developed its core doctrinal frameworks from scratch in 2020 — a world of the internet, social media, ubiquitous GPS tracking, and the radically different social attitudes and practices shaped by these technologies — it is unlikely that the doctrine would look identical to doctrine developed in the era of leafletting, newspapers, landline telephones, and crude beepers.[140] Thus, doctrinal inertia inevitably raises the risk of obsolescence —

---

[136] *See, e.g.*, Ozan O. Varol, *Constitutional Stickiness*, 49 UC DAVIS L. REV. 899, 912 (2016) (observing that "starting points in constitutional design can, and often do, exert substantial historical weight on subsequent choices").

[137] *See, e.g.*, Deborah M. Ahrens & Andrew M. Siegel, *Of Dress and Redress: Student Dress Restrictions in Constitutional Law and Culture*, 54 HARV. C.R.-C.L. L. REV. 49, 92 (2019) ("While shifting cultural and political forces have a profound effect on the shape of constitutional law, most observers agree that law does not always or predictably move in lockstep with shifting norms and values. To the contrary, legal doctrine is often 'sticky,' refusing to budge for some time or in some places or to some degree even after popular sentiments and habits of thought have shifted.").

[138] *See, e.g.*, W. Va. State Bd. of Educ. v. Barnette, 319 U.S. 624, 638 (1943) (observing, in striking down the compulsory flag salute in public schools, that "[t]he very purpose of a Bill of Rights was to withdraw certain subjects from the vicissitudes of political controversy, to place them beyond the reach of majorities and officials and to establish them as legal principles to be applied by the courts").

[139] *See, e.g.*, Armster v. U.S. Dist. Court for the Cent. Dist. of Cal., 792 F.2d 1423, 1429 (9th Cir. 1986) ("[O]ur constitutional rights are fixed and immutable, subject to change only in the manner our forefathers established for the making of constitutional amendments.").

[140] *Cf.* Olmstead v. United States, 277 U.S. 438, 473 (1928) (Brandeis, J., dissenting) ("[T]ime works changes, brings into existence new conditions and purposes. Subtler and more far-reaching means of invading privacy have become available to the government. Discovery and invention have made it possible for the government, by means far more effective than stretching upon the rack, to obtain disclosure in court of what is whispered in the closet.").

perpetuating a doctrinal framework that does not sensibly fit the world we currently inhabit.[141]

The disruptions produced by technological change present particularly valuable opportunities for courts to combat such doctrinal obsolescence, and courts should take full advantage of such opportunities by reassessing the existing doctrinal framework from the ground up. That is, courts should approach such cases by delving back into first principles in order to scrutinize, clarify, and possibly modify the fundamental assumptions and judgments upon which the current doctrine has been constructed.[142] In doing so, courts should of course be careful in balancing the benefits of a better-fitting doctrine against the costs of upending doctrinal stability and predictability. After all, courts are not crafting constitutional rights doctrine from a blank slate, and constant doctrinal modification has its costs. But confronting the novel issues posed by technological change should lead courts to carefully reassess what may have been long-settled assumptions and judgments.[143]

To be clear, I am not, at the moment, proposing any substantive prescriptions as to how courts ought to decide these cases;[144] I am merely advocating a particular mode or approach that courts should take. And it is important to emphasize here that whenever courts are confronted with significant technological change within a constitutional rights context, *any* decision that the court reaches — even a decision to keep the doctrinal framework as is — represents a shift in the doctrine. There is no "neutral" result. When technology

---

[141] *See* Orin S. Kerr, *Foreword: Accounting for Technological Change*, 36 HARV. J.L. & PUB. POL'Y 403, 403 (2013) [hereinafter *Accounting for Technological Change*] ("[C]hanging technology and social practice often trigger a need for legal adaptation. Maintaining the function of old rules can require changing those rules to adapt to the new environment."); Varol, *supra* note 136, at 912 ("[S]tickiness may impede constitutional change and freeze in place norms that will continue to generate undesirable consequences.").

[142] *Cf.* David S. Han, *Transparency in First Amendment Doctrine*, 65 EMORY L.J. 359, 371-79 (2015) [hereinafter *Transparency in First Amendment Doctrine*] (describing the value of "transparent" doctrinal approaches that force courts to directly articulate and wrestle with the foundational intuitions underlying First Amendment jurisprudence, particularly in circumstances where "social and cultural norms shift and novel speech issues arise").

[143] *See, e.g.*, Massaro & Norton, *supra* note 109, at 1174-75 (observing that the advent of sophisticated AI may produce "normative and practical concerns [that] might well inspire closer examination and even revision of the free speech doctrine and theory we now have," given that "very little in current free speech theory or doctrine makes First Amendment coverage contingent upon a human speaker").

[144] I offer more substantive prescriptions in the following subpart. *See infra* Part II.B.

drastically alters the preexisting equilibrium between individual rights and government interests, or presents novel circumstances that push against the boundaries of the right as presently conceptualized, or radically upends social attitudes and practices with respect to the right in question, the court is ultimately solving a different problem than has existed before — one that was not taken into account in the original formulation of the doctrinal framework.[145] Perhaps the framework ought to nevertheless remain the same; perhaps some doctrinal adjustment, like creating an exception, is warranted. But saying, for example, that search engine results are subject to the same preexisting rule against content-based speech restrictions (as opposed to carving out an exception for such speech) is still a meaningful doctrinal shift, simply from the fact that it expands the boundaries of core First Amendment protection to an extent the Court never contemplated in its original design of the doctrine.

These cases thus serve as unique opportunities for courts to openly revisit, scrutinize, critique, and potentially revise the fundamental intuitions, principles, and assumptions upon which the present doctrinal framework is based. Why do we value free speech? How valuable are different types of speech, and how does this balance against the social harms associated with such speech? What is the Fourth Amendment ultimately designed to protect? How much privacy do we (or should we) expect in different situations? What should the government reasonably be able to do in carrying out its investigative duties? When technology substantially changes the world around us — presenting problems that are meaningfully different than those upon which the doctrine was originally constructed — courts should directly address and grapple with these fundamental questions anew, rather than hide behind a façade of formal neutrality.[146]

Take, for example, the Supreme Court's decision in *Brown v. Entertainment Merchants Association*, in which the Court struck down a California statute prohibiting the sale or rental of violent video games to minors.[147] Justice Scalia, writing for the Court, categorically

---

[145] *See* Kerr, *Accounting for Technological Change*, *supra* note 141, at 403 ("Laws are enacted with a background understanding of the facts. When those facts change, the effect of the old legal rules can change along with them. A law created for one world may have a very different impact when applied to the facts of a different era.").

[146] *Cf.* Jorge R. Roig, *Emerging Technologies and Dwindling Speech*, 16 U. PA. J. CONST. L. 1235, 1247-48 (2014) (arguing that in evaluating the scope of First Amendment coverage to emerging technologies, the Court should "engage in a conscientious and transparent debate regarding the values underlying the First Amendment").

[147] Brown v. Entm't Merchs. Ass'n, 564 U.S. 786 (2011).

pronounced that "the basic principles of freedom of speech and the press, like the First Amendment's command, do not vary when a new and different medium for communication appears."[148] With that theme as the backdrop, the Court observed that under the rule set forth in *United States v. Stevens*,[149] a subset of speech can only be classified as low-value if it has been historically recognized as such.[150] Classifying the speech in question as "speech about violence," the Court found that such speech has not been historically recognized as low-value, and it thus held that strict scrutiny must apply to any content-based regulations.[151] In doing so, the Court dismissed out of hand the argument that modern video games are meaningfully distinguishable from the more traditional forms of media contemplated by the present doctrine, comparing the games to Grimm's Fairy Tales, the Odyssey, and choose-your-own adventure books.[152]

Whether or not one ultimately agrees with the rationale or result adopted by the Court, Justice Scalia's highly formal and syllogistic approach to the case — one squarely presenting an issue of significant technological change — squandered the opportunity to engage meaningfully with first principles of First Amendment doctrine and the sorts of fundamental judgments upon which the doctrine was established.

Much of the Court's unfortunate lack of in-depth, transparent engagement with the difficult issues posed in the case can be traced to the Court's earlier adoption of the *Stevens* test, under which no low-value categories of speech would be recognized unless they were historically recognized as such or "part of a long (if heretofore unrecognized) tradition of proscription."[153] As I have written extensively elsewhere, the "historical" analysis set forth in *Stevens* is irredeemably manipulable, as the outcome generally rests on the manner in which the subset of speech in question is framed and the level of generality at which the speech is analogized to other subsets of low-value speech — judgments that are ultimately driven by the very sorts of value judgments that the *Stevens* Court had condemned.[154] As

[148] *Id.* at 790.

[149] 559 U.S. 460 (2010).

[150] *See Brown*, 564 U.S. at 791-92.

[151] *See id.* at 793-99.

[152] *See id.* at 795-98.

[153] *See id.* at 792.

[154] *See* David S. Han, *Autobiographical Lies and the First Amendment's Protection of Self-Defining Speech*, 87 N.Y.U. L. REV. 70, 85-87 (2012); Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 383-85.

such, the Court's historical analysis does little more than create a façade of neutrality and constraint that obscures the underlying value judgments actually driving the Court's decisions. It therefore allowed the *Brown* Court to obscure and sidestep any forthright discussion of the fundamental value judgments in question by pointing to "neutral" history as effectively dictating the result.[155]

But the problems with Justice Scalia's analysis extend beyond the *Stevens* test. The underlying framework of First Amendment doctrine was developed at a time well before the advent of the sort of highly detailed, highly realistic, and highly violent video games available today; as such, they represent a novel form of speech not accounted for in the previous doctrinal framework. And as Justice Alito observed, there may well be something distinct and far more dangerous about fully immersive violent video games — as opposed to, say, violent works of literature — when minors are exposed to them.[156] Yet Justice Scalia made no real effort to engage meaningfully with the difficult issues posed in the case; instead, he blithely dismissed these arguments with a wave of the hand, simply pronouncing that violent video games are no different than any other "speech about violence," like dime-store paperbacks.[157] Framed in such a manner, the Court effectively characterized the result as the inevitable consequence of a mechanical application of existing doctrine, without much thoughtful engagement with the complications produced by new technology.

Contrast this to the approach taken by Justice Alito in his concurrence in the judgment. He stated:

> In considering the application of unchanging constitutional principles to new and rapidly evolving technology, this Court should proceed with caution. We should make every effort to understand the new technology. We should take into account the possibility that developing technology may have important societal implications that will become apparent only with time. We should not jump to the conclusion that new technology is fundamentally the same as some older thing with which we are familiar.[158]

---

155 *See* Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 391-95.

156 *Brown*, 564 U.S. at 816-21 (Alito, J., concurring).

157 *See id.* at 793-99 (majority opinion).

158 *Id.* at 806 (Alito, J., concurring).

And although Justice Alito would have reached the same result as the Court on narrower grounds,[159] he criticized the Court for being "far too quick to dismiss the possibility that the experience of playing video games (and the effects on minors of playing violent video games) may be very different from anything that we have seen before."[160] As Justice Alito observed, reading about a murder in *Crime and Punishment* may well be a meaningfully different experience than, say, choosing to murder a photorealistic depiction of a person in an interactive medium, taking specific actions to accomplish the murder, and actually experiencing the physical sensations associated with the murder.[161]

Justice Alito's opinion exhibits the sort of candid engagement with fundamental questions and assumptions with which courts should approach cases dealing with technological change. Unlike Justice Scalia, Justice Alito approached the novel issue posed in the case with a healthy degree of epistemic humility — a recognition that there is much we simply do not know about interactive violent video games and how they compare to other types of violent media. And underlying Justice Alito's approach is a recognition that technological change necessarily leads us to evaluate whether to adhere to existing assumptions, such as whether all violent media ought to be treated as a monolithic category entitled to an identical degree of constitutional protection, or whether further subcategorization is necessary.

My point here is not to criticize the result that Justice Scalia reached, but rather the means by which he reached it. One can imagine an approach that, while reaching the exact same result, more meaningfully and candidly engages with first principles. Rather than simply declare that violent video games are no different than violent books, Justice Scalia could have more clearly articulated exactly why, as a matter of first principles, any greater harm produced by violent video games is irrelevant to the degree of protection that ought to be afforded to them. Rather than simply declare that, for purposes of the *Stevens* historical analysis, the speech category in question was "speech about violence," he could have articulated why fundamental First Amendment principles require framing the speech in this particular manner, and at this particular level of generality.[162]

---

[159] *Id.* at 806-13 (arguing that the statute should be struck down solely on vagueness grounds).

[160] *Id.* at 816.

[161] *Id.* at 820.

[162] As Justice Breyer observed, one could just as easily craft an entirely different historical narrative by framing this case as one about "protection of children" — for which there is certainly a longstanding historical tradition — rather than "depictions of

Approaching cases dealing with technological change with this sort of epistemic humility and deep engagement with first principles ensures that courts are actively engaged in clarifying, reevaluating, and (if necessary) reshaping doctrine to appropriately reflect a very different set of circumstances from those which prevailed when the doctrine was originally formulated. It invites open dialogue on these issues, both amongst courts and outside of courts.[163] And by subjecting to critical reevaluation all of the various intuitions, assumptions, and judgments upon which the existing doctrine has been built, it spurs forthright discussion and debate that will ultimately help courts, legislatures, and society at large to develop, through considered deliberation, a sharper and more nuanced sense of these fundamental questions.[164]

Technological change is therefore an important catalyst for doctrinal evolution. While established doctrines carry with them a significant degree of inertia, technological change produces the sort of disruption and novelty sufficient to unsettle this inertia. And when courts undertake this sort of forthright, in-depth reexamination of first principles, this carries significant value, even if courts ultimately decline to incorporate any formal doctrinal modifications. It allows for purposeful and thoughtful doctrinal development — one that takes into account the full range of doctrinal, theoretical, and institutional issues posed in each case.

By contrast, the more that courts rely uncritically on existing doctrinal principles and assumptions, the more they lose their capacity to craft good and sensible doctrine through common-law development — one that better captures what may be a radically different world than that in which the existing doctrinal framework had been developed. And the costs of this overly formalistic approach are high: it produces a doctrine that is opaque, arbitrarily rigid, and increasingly divorced from

violence." *Id.* at 841 (Breyer, J., dissenting); *see also id.* at 814-15 (Alito, J., concurring) (criticizing the Court's holding that "any law that attempts to prevent minors from purchasing violent video games must satisfy strict scrutiny instead of the more lenient standard applied in *Ginsberg*").

163 *See* Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 372-79 (describing the value of this sort of broad dialogue as a form of collective decision making).

164 As Justice Breyer framed it, there is "a need for judicial caution and humility" in situations where "we seek to arrive democratically at solutions to important technologically based problems." Stephen Breyer, *Our Democratic Constitution*, 77 N.Y.U. L. REV. 245, 261 (2002). In Breyer's view, these sorts of difficult, complex questions posed by technological change "call[] for resolution through a form of participatory democracy" — an expansive national conversation that encompasses not only courts and legislatures, but society at large. *Id.* at 263.

any practical understanding of the present world. As such, it risks perpetuating obsolete doctrines that either yield nonsensical results or devolve into meaningless window dressing.[165]

B. Embracing Incremental Doctrinal Complexity in an Increasingly Complex World

As I discussed in Part I, technological change often creates strain in preexisting constitutional rights doctrine — doctrine that was originally crafted under very different circumstances. And as I discussed in the previous section, this strain provides courts with the valuable opportunity to undertake the sort of deep scrutiny and reevaluation of the fundamental rules, principles, and intuitions underlying the present doctrine that is necessary for the doctrine to evolve in a healthy manner in conjunction with changing technological conditions.

This subpart sets forth a more substantive prescription. I argue that courts, in confronting the challenges of harmonizing a rapidly evolving technological landscape with existing constitutional rights frameworks, should embrace a greater degree of doctrinal complexity and open-endedness within the doctrine. This incremental complexity can take many different forms: courts might, for example, craft exceptions to a categorical rule; create new doctrinal categories or subdivide existing categories; introduce a wider variety of doctrinal standards and tests; or reformulate existing rules to incorporate more open-ended balancing.

To be sure, this prescription runs directly counter to the traditionally strong preference within constitutional rights jurisprudence for simple, easily administrable bright-line rules — a preference that is eminently sensible in the abstract. But such a preference cannot be absolute. At some point, the benefits rooted in the predictability, administrability, and judicial constraint associated with a rule-like regime are outweighed by the increasing lack of fit between the rigid rules in question and the rapidly evolving world in which they are applied. And given the rapid and significant technological change of the past thirty years, there is strong reason to believe that this inflection point has been reached with respect to some of the traditional categorical rules within constitutional rights jurisprudence.

The Court's general approach in *Carpenter* — in which it consciously introduced greater complexity and nuance into the doctrine to counteract the growing disjunction between existing doctrine and

---

[165] *See* Han, *Middle-Value Speech*, *supra* note 96, at 95-105 (describing the distortion effects associated with the Court's adherence to a categorical rule against content-based distinctions).

present-day realities — can serve as a model for future cases considering the effects of technological change on constitutional rights doctrine. This sort of approach is particularly needed in the First Amendment context, where the Court has consistently clung to an increasingly obsolete, unitary conception of the free speech right that no longer accurately reflects the multifaceted and complex First Amendment of the present day.

A strong preference for doctrinal simplicity — one premised on rigid, concrete, and categorical rules rather than more flexible, open-ended, and narrowly applied standards — has long been entrenched in the Court's rhetoric in both the First Amendment and Fourth Amendment contexts. Although First Amendment doctrine has its share of open-ended, balancing-oriented inquiries,[166] the longstanding cornerstone rule of the doctrine is rigid and clear: all content-based restrictions on speech are subject to strict scrutiny,[167] which essentially preordains their invalidity.[168] As I have discussed elsewhere, this extremely broad and highly onerous rule tends to produce anomalous results, simply because it fails to distinguish between the highest-value core speech to which such stringent protection is clearly justified (for example, ideological speech) and other types of speech for which such stringent protection may seem anomalous (for example, nude dancing, professional speech, or search engine results).[169]

Yet the Court has consistently adhered to this simple, predictable, and categorical cornerstone rule.[170] And this preference makes sense given

166 *See, e.g.*, Ward v. Rock Against Racism, 491 U.S. 781, 791 (1989) (discussing content-neutral time, place, or manner restrictions); United States v. O'Brien, 391 U.S. 367, 376-77 (1968) (discussing expressive conduct).

167 *See, e.g.*, Reed v. Town of Gilbert, 576 U.S. 155, 163 (2015) ("Content-based laws — those that target speech based on its communicative content — are presumptively unconstitutional and may be justified only if the government proves that they are narrowly tailored to serve compelling state interests."); Police Dep't of Chi. v. Mosley, 408 U.S. 92, 95 (1972) ("[T]he First Amendment means that government has no power to restrict expression because of its message, its ideas, its subject matter, or its content."). The Court has recognized only a few narrowly defined categories of low-value speech to which this rule does not apply. *See* United States v. Stevens, 559 U.S. 460, 468-69 (2010).

168 *See* Richard H. Fallon, Jr., *Strict Judicial Scrutiny*, 54 UCLA L. REV. 1267, 1313 (2007) ("In free speech cases, the Supreme Court most commonly applies a version of strict scrutiny that is 'strict' in theory and fatal in fact.").

169 *See* Han, *Middle-Value Speech*, *supra* note 96, at 68.

170 *See, e.g.*, *Reed*, 576 U.S. at 165 (holding that all facially content-based speech regulations are "subject to strict scrutiny regardless of the government's benign motive, content-neutral justification, or lack of animus toward the ideas contained in the

the doctrinal context: after all, if one of the core underlying principles regarding the freedom of speech is fear that the government will manipulate the marketplace of ideas for its own ends,[171] constraining discretion and the potential for abuse ought to be a focal point of free speech doctrine. Thus, as Geoffrey Stone has observed, "the Court has appropriately embraced a 'fortress model' of jurisprudence that gives judges little room to maneuver and that intentionally overprotects speech, in order to minimize the potential harm from legislative and administrative abuse and judicial miscalculation."[172] The lack of fit between the onerous strict scrutiny rule for content-based speech restrictions and the wide variety of speech to which it applies is justified by the benefits of a predictable, administrable rule that limits chilling effects and imposes clear constraints on judicial and legislative discretion.

The Court has similarly emphasized the need for rule-like simplicity and administrability in the Fourth Amendment context — so much so that Albert Alschuler wryly characterized the Court as having "contracted bright line fever," such that it "seem[s] not to care very much about the facts of individual cases."[173] Take for example, the Court's decision in *United States v. Robinson*.[174] In *Robinson*, the police — after arresting the defendant for driving with a revoked license — conducted a full search incident to the arrest, ultimately finding heroin hidden within a cigarette pack in the defendant's coat pocket.[175] The D.C. Circuit, hearing the case *en banc*, held that only a *Terry* frisk for weapons was warranted for these sorts of traffic arrests, stating that for such offenses, "no search of the person for evidence may be allowed at all because no evidence exists to be found."[176] The Supreme Court disagreed, choosing instead to adopt a categorical, bright-line rule: with respect to any lawful custodial arrest, a full search incident to an arrest is always "reasonable," regardless of the offense in question.[177] In doing so, the Court noted its "fundamental disagreement" with the

regulated speech"); *Stevens*, 559 U.S. at 472 (disclaiming any "freewheeling authority to declare new categories of speech outside the scope of the First Amendment").

171 *See supra* note 85.

172 Geoffrey R. Stone, *Content-Neutral Restrictions*, 54 U. CHI. L. REV. 46, 73-74 (1987).

173 Albert W. Alschuler, *Bright Line Fever and the Fourth Amendment*, 45 U. PITT. L. REV. 227, 260 (1984).

174 United States v. Robinson, 414 U.S. 218 (1973).

175 *Id.* at 220-23.

176 United States v. Robinson, 471 F.2d 1082, 1094 (D.C. Cir. 1972) (en banc), *rev'd*, 414 U.S. 218 (1973).

177 *Robinson*, 414 U.S. at 235.

"suggestion that there must be litigated in each case the issue of whether or not there was present one of the reasons supporting the authority for a search of the person incident to a lawful arrest."[178]

Later, in *New York v. Belton*, the Court directly articulated this strong preference for simple, administrable rules, emphasizing the importance of such rules for police officers tasked with making rapid, real-time decisions in the field:

> Fourth Amendment doctrine . . . is primarily intended to regulate the police in their day-to-day activities and thus ought to be expressed in terms that are readily applicable by the police in the context of the law enforcement activities in which they are necessarily engaged. A highly sophisticated set of rules, qualified by all sorts of ifs, ands, and buts and requiring the drawing of subtle nuances and hairline distinctions, may be the sort of heady stuff upon which the facile minds of lawyers and judges eagerly feed, but they may be 'literally impossible of application by the officer in the field.'[179]

Although one might quibble with the accuracy of this narrative in different contexts,[180] it is difficult to deny the basic premise at the heart of it. Open-ended doctrine that allows for significant judicial discretion raises major concerns in the First Amendment context, as it creates chilling effects and invites the possibility of judicial biases to infect the analysis, particularly in times of "pathological" stress like wartime.[181] Similarly, open-ended doctrine, in the abstract, makes life far more difficult for police officers tasked with making split-second decisions in the field amidst an infinite array of possible factual circumstances,[182] which might translate to risk-averse police officers declining to take

---

178 *Id.*

179 New York v. Belton, 453 U.S. 454, 458 (1981) (quoting Wayne R. LaFave, *"Case-by-Case Adjudication" Versus "Standardized Procedures": The* Robinson *Dilemma*, 1974 SUP. CT. REV. 127, 141-42).

180 *See, e.g.*, Mary D. Fan, *The Police Gamesmanship Dilemma in Criminal Procedure*, 44 UC DAVIS L. REV. 1407, 1464-66 (2011) (challenging the conventional wisdom of the narrative, as "[e]ven a seemingly bright-line rule in practice requires contextual judgment calls and refinements that muddy the imagined clarity of a rule").

181 *See* Vincent Blasi, *The Pathological Perspective and the First Amendment*, 85 COLUM. L. REV. 449, 449-50 (1985); Stone, *supra* note 172, at 73-74.

182 *But see* Alschuler, *supra* note 173, at 231 ("Not only do categorical fourth amendment rules often lead to substantial injustice; in addition, their artificiality commonly makes them difficult, not easy, to apply."); Fan, *supra* note 180, at 1464-66 (challenging the assumption that "bright-line rules . . . are more easily administrable by officers who have to make on-the-fly judgment calls").

constitutionally valid actions or risk-preferring police officers committing more constitutional violations.[183] In both contexts, it makes sense to place a thumb on the scale in favor of rigid, categorical simplicity as opposed to more complex and open-ended approaches.

But under the basic rules-versus-standards framework, the benefits associated with rule-like approaches come at a cost. By nature, a rigid and easy-to-administer rule must be either over- or under-inclusive in its coverage, as such simplified rules cannot account for all of the many contextual factors that would be necessary to reach the "correct" result in every case.[184] By contrast, a completely open-ended standard can take all factors into account and thus potentially reach the "correct" result in any given case, but at the cost of administrability, predictability, and the potential harm associated with unfettered judicial discretion.[185]

Thus, there reaches a point at which the fit between a bright-line rule and the "correct" answers in cases to which it applies has grown so attenuated that the rule's benefits no longer justify its costs. If a bright-line rule produces too many wrong answers — if, for example, circumstances have grown so complex that the simplified bright-line trigger is no longer a largely reliable means of arriving at correct answers — then it makes sense to transition towards more incrementally open-ended, standard-like approaches that can better account for such complexity.

This is, in effect, what the Court did in *Carpenter*. As discussed above, the third-party doctrine, on its face, was clear, administrable, and unequivocal in its scope: "[A] person has no legitimate expectation of privacy in information he voluntarily turns over to third parties."[186] Yet

---

[183] *See* Kerr, *The Fourth Amendment and New Technologies*, *supra* note 11, at 861 ("Unclear rules mean unclear limits on government power, increasing the likelihood of abuses by aggressive government officials. . . . From a public safety perspective, clear rules also allow investigators to use the full power granted to them under constitutional and statutory law to pursue evidence of criminal activity.").

[184] *See* Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1689 (1976) ("The choice of rules as the mode of intervention involves the sacrifice of precision in the achievement of the objectives lying behind the rules."); Kathleen M. Sullivan, *The Supreme Court, 1991 Term — Foreword: The Justices of Rules and Standards*, 106 HARV. L. REV. 22, 58 (1992) ("A rule necessarily captures the background principle or policy incompletely and so produces errors of over- or under-inclusiveness. But the rule's force as a rule is that decisionmakers follow it, even when direct application of the background principle or policy to the facts would produce a different result.").

[185] *See* Sullivan, *supra* note 184, at 58-59 ("Standards allow the decisionmaker to take into account all relevant factors or the totality of the circumstances."); *id.* at 62 ("Standards produce uncertainty, thereby chilling socially productive behavior.").

[186] Smith v. Maryland, 442 U.S. 735, 743-44 (1979).

in *Carpenter*, the Court was confronted with the problem of CSLI tracking — a novel set of facts to which application of this simple, categorical rule would yield an incorrect result, measured by the fundamental principles of the Fourth Amendment. The Court therefore introduced an incremental degree of complexity and uncertainty into the doctrine: although the third-party doctrine is still viable in the abstract, its application is *not* categorical, but rather contingent on the particular circumstances in question.[187]

As both the majority opinion and Justice Alito's dissent recognized, this move will inevitably bring greater unpredictability and instability to the doctrine. Although the Court gave assurances that it did not "disturb the application of *Smith* and *Miller* or call into question conventional surveillance techniques and tools, such as security cameras,"[188] the decision destabilized and muddied what was once a relatively clear and easy-to-apply categorical rule. Furthermore, the Court proceeded in a purposefully incremental manner. While recognizing the barrage of unanswered questions left in the wake of its opinion, the Court ultimately chose to demur on offering any further guidance:[189] framing its decision as "a narrow one," the Court observed that it "must tread carefully in such cases, to ensure that we do not 'embarrass the future.'"[190] In his dissent, Justice Alito was highly critical of this approach, stating that "this Court will face the embarrassment of explaining in case after case that the principles on which today's decision rests are subject to all sorts of qualifications and limitations that have not yet been discovered," thus producing "a crazy quilt of the Fourth Amendment."[191]

But the nub of the Court's reasoning here is that when a categorical rule produces an erroneous result of this magnitude, it must yield: the administrability and predictability benefits of such a rule are outweighed by the error produced by its application to all cases. A

---

[187] *See, e.g.*, Carpenter v. United States, 138 S. Ct. 2206, 2219 (2018) (characterizing *Smith* and *Miller* as not "rely[ing] solely on the act of sharing," but applying the third-party doctrine based on "the nature of the particular documents sought" in determining "whether there is a legitimate expectation of privacy concerning their contents").

[188] *Id.* at 2220.

[189] Paul Ohm has argued that the *Carpenter* Court identified three factors driving the analysis: "(1) 'the deeply revealing nature' of the information; (2) 'its depth, breadth, and comprehensive reach'; and (3) 'the inescapable and automatic nature of its collection.'" Ohm, *supra* note 129, at 370. He acknowledged, however, the likelihood of disagreement regarding these factors "given the wide-ranging nature of the opinion." *Id.*

[190] *Carpenter*, 138 S. Ct. at 2220 (quoting Nw. Airlines, Inc. v. Minnesota, 322 U.S. 292, 300 (1944)).

[191] *Id.* at 2261 (Alito, J., dissenting).

categorical third-party doctrine may have made sense in a world of bank statements and pen registers, but technological change has introduced "an entirely different species of business record — something that implicates basic Fourth Amendment concerns about arbitrary government power much more directly than corporate tax or payroll ledgers."[192] In other words — despite a broad preference for administrable and predictable rules — greater doctrinal nuance, complexity, and open-endedness has become necessary, as the previous categorical approach simply cannot account adequately for the significant changes to our world wrought by technological evolution. While this introduction of complexity into the doctrine comes at a cost in the form of doctrinal uncertainty and unpredictability, it is worth it as a means for courts to work through the development of a new doctrine that better fits current realities.

Contrast this to the approach that the Court has consistently taken in First Amendment cases. As discussed above, the cornerstone rule of First Amendment doctrine is that all content-based restrictions on speech are subject to strict scrutiny. This rule — developed at a time when the Court's clear focus was on the realm of core ideological speech[193] — reflects the Court's strong preference for simple, categorical rules in First Amendment doctrine: it is easy to apply, constrains potentially harmful judicial discretion, and — apart from a few narrowly defined low-value speech exceptions — applies categorically to all speech.

Like in the *Carpenter* context, the circumstances under which the Court had developed this rule have changed drastically: as noted above, the scope of the First Amendment's coverage has expanded rapidly — and continues to expand — well beyond the realm of the most valuable core ideological speech upon which this rule was premised. Yet unlike in *Carpenter*, the Court has consistently resisted introducing greater complexity into First Amendment doctrine. Rather, it has doubled-down on the traditional doctrinal framework by taking various measures to *increase* the rigidity of the framework. It has severely limited the extent to which new low-value speech categories can be recognized by adopting a purely historical test for such speech;[194] it has reemphasized the categorical nature of the content-based/content-

[192] *Id.* at 2222 (majority opinion).

[193] *See supra* text accompanying notes 98–103.

[194] *See* United States v. Stevens, 559 U.S. 460, 470 (2010).

neutral inquiry;[195] and it has eroded the distinction between core ideological speech and less-protected commercial speech.[196]

Indeed, as I have written about extensively elsewhere, the Court's resistance to loosening the onerous bright-line rule at the center of First Amendment doctrine is so great that the Court — when confronted with cases in which applying the rule would appear to be anomalous or otherwise incorrect — has consistently chosen to distort its doctrinal analyses to arrive at the desired result rather than forthrightly address the possibility of doctrinal revision.[197] That is, rather than undertaking any serious assessment of the first principles underlying the rule and evaluating the possibility of modifying the rule, the Court has consistently chosen to reach the "correct" result through doctrinal manipulation, such as surreptitiously watering down the strict scrutiny standard,[198] classifying content-based regulations as content-neutral,[199] or leaving the actual standard of review intentionally vague.[200]

The Court's pathological aversion to introducing complexity into First Amendment doctrine — particularly in this era of significant and rapid technological change — is both wrongheaded and dangerous. Even within the context of First Amendment jurisprudence — where we are particularly suspicious of broad judicial and legislative discretion — introducing incremental complexity and open-endedness into the

---

[195] *See* Reed v. Town of Gilbert, 576 U.S. 155, 165 (2015) ("A law that is content based on its face is subject to strict scrutiny regardless of the government's benign motive, content-neutral justification, or lack of 'animus toward the ideas contained' in the regulated speech." (quoting Cincinnati v. Discovery Network, Inc., 507 U.S. 410, 429 (1993))).

[196] *See* Sorrell v. IMS Health Inc., 564 U.S. 552, 565 (2011) (applying "heightened judicial scrutiny" to a content-based regulation of truthful commercial speech); Jack M. Balkin, *Information Fiduciaries and the First Amendment*, 49 UC DAVIS L. REV. 1183, 1198 (2016) ("*Sorrell* suggests that a majority of the Justices will offer true and non-misleading commercial speech protection almost as great as core political speech.").

[197] Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 400-13.

[198] *See* Williams-Yulee v. Fla. Bar, 575 U.S. 433, 445-56 (2015); Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 402-05 (describing how the *Williams-Yulee* Court applied a watered-down version of strict scrutiny in upholding a rule that prohibited candidates in judicial elections from personally soliciting campaign funds).

[199] *See* City of Renton v. Playtime Theatres, 475 U.S. 41, 44, 47-48 (1986) (deeming a zoning restriction on "adult motion picture theaters" to be content-neutral because the restriction "aimed not at the content of the films shown at 'adult motion picture theatres,' but rather at the secondary effects of such theaters on the surrounding community").

[200] Han, *Transparency in First Amendment Doctrine*, *supra* note 142, at 411; *see* Holder v. Humanitarian Law Project, 561 U.S. 1, 26-28 (2010) (stating that a standard of review more demanding than intermediate scrutiny applied, but otherwise leaving the standard vague).

doctrine may well be the healthiest course of action. A highly administrable rule isn't ultimately worth very much if it fits poorly with the present world, or when it is applied well outside of its intended scope of operation.

To lose sight of this fundamental principle of doctrinal design is to deny the basic truth that all constitutional rights doctrine evolves through common law development.[201] As Frederick Schauer has observed, we "cannot design the edifice in advance" when building such doctrine.[202] It is continuously shifting, changing, and evolving — and this is true even if the technical rules themselves do not change, as doctrines come to mean something different when they are applied in circumstances well beyond those originally contemplated.[203] To effectively foreclose any possibility of introducing complexity into the doctrine — at least without any sort of meaningful, deep-seated reevaluation of first principles — is to stultify any capacity for the doctrine to adapt and evolve in a rapidly changing world. It is a failure to acknowledge what the *Carpenter* Court forthrightly recognized: that inviting incremental uncertainty and complexity into the doctrine may be necessary to accommodate the "seismic shifts" in technology that unsettle the assumptions and conditions upon which the current rules were premised.

And given the nature, coverage, and complexity of the First Amendment as it exists today, the Court's pathological adherence to the categorical, rule-like approach of the past is particularly troublesome. Traditional First Amendment doctrine, centered around the near-categorical rule regarding content-based regulations, is ultimately premised on an underlying assumption that First Amendment doctrine is, at its essence, unitary and universal rather than fragmented and piecemeal. While this assumption may have been true — or at least true enough — when the central foundations of First Amendment doctrine were established in the 1960s and 1970s, it is clearly inaccurate today in a world where the breadth (and potential breadth) of First Amendment coverage has exploded.

In today's world, we do not have a singular First Amendment. We have multiple, distinct (but sometimes overlapping) First Amendments, each with unique theoretical and doctrinal concerns revolving around

---

[201] *See, e.g.*, Schauer, *Commercial Speech*, *supra* note 101, at 1202 (observing that "common law development, as apt a characterization as any for what the courts do with respect to the first amendment, cannot design the edifice in advance").

[202] *Id.*

[203] *See supra* text accompanying notes 144–145.

different types of problems.[204] Traditional First Amendment doctrine, as discussed above, was not designed with a First Amendment of this broad scope, complexity, and variety in mind. Rather, the traditional doctrine is best characterized as, in effect, an ideological speech First Amendment: it was formulated and calibrated based on the theoretical justifications for, and the perceived value of, unfettered political speech, or religious speech, or other speech on social issues.

But given the highly varied and eclectic coverage of the First Amendment in the present day, there are multiple other First Amendments, each supported by distinct theoretical justifications for speech protection and distinct intuitions as to the perceived value of speech. Indeed, the Court itself recognized this decades ago, when it carved out commercial speech as, in effect, a distinct First Amendment premised on different theoretical foundations and calling for a distinct set of doctrines.[205] Beyond this, one could say that there exists an artistic speech First Amendment;[206] a data mining First Amendment;[207] a

[204] *See, e.g.*, Robert Post & Amanda Shanor, *Adam Smith's First Amendment*, 128 HARV. L. REV. F. 165, 181 (2015) ("First Amendment doctrine is plural. There is no single structure of First Amendment doctrine. The principles that protect public discourse do not apply to commercial speech, or to professional speech, or to the speech of professional tour guides."); Frederick Schauer, *Must Speech Be Special?*, 78 NW. U. L. REV. 1284, 1303 (1983) (describing the First Amendment as "the umbrella under which are located a number of more or less distinct separate principles, each with its own justification, and each directed towards a separate group of problems," such that "we might in fact have several first amendments").

[205] *See* Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n, 447 U.S. 557, 566 (1980) (establishing intermediate scrutiny standard for truthful commercial speech); Ohralik v. Ohio State Bar Ass'n, 436 U.S. 447, 456 (1978) (observing that the Court "afforded commercial speech a limited measure of protection, commensurate with its subordinate position in the scale of First Amendment values, while allowing modes of regulation that might be impermissible in the realm of noncommercial expression"); Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, 425 U.S. 748, 771 n.24 (1976).

[206] *See, e.g.*, Mark Tushnet, *Art and the First Amendment*, 35 COLUM. J.L. & ARTS 169, 207-15 (2012) (observing that "First Amendment theory has taken artworks' coverage for granted, despite the difficulty of fitting such works into general First Amendment theories").

[207] *See, e.g.*, Ashutosh Bhagwat, Sorrell v. IMS Health*: Details, Detailing, and the Death of Privacy*, 36 VT. L. REV. 855, 880 (2012) (describing the Court's "failure to recognize that factual speech is distinct from, and requires different constitutional analysis than, the sorts of political and cultural speech that have traditionally been the mainstay of First Amendment litigation").

professional speech First Amendment;[208] a computer code First Amendment;[209] and so forth.

It therefore makes little sense to simply pronounce that the particular rules applicable to core ideological speech must apply to these other, theoretically distinct areas of speech regulation. Rather, the Court should recognize that within many of these areas of First Amendment coverage, we are, in effect, building a distinct First Amendment from scratch. When technology produces a completely novel speech context — like, for example, the regulation of search engine results — the Court's approach ought not to be mechanical application of the rules tailored for a completely distinct subset of speech. Rather, its approach should be to rip everything down to the studs: to analyze the issue from first principles, at the theoretical level, and to formulate the governing doctrine from the ground up.[210]

Thus, just as the *Carpenter* Court invited unpredictability and complexity into Fourth Amendment doctrine to account for a technologically changed world, the Court should evince a stronger willingness to break away from its unitary approach to First Amendment doctrine given the far more complex, varied, and eclectic First Amendment of today. Perhaps, for example, courts should more openly embrace intermediate scrutiny as a default standard with respect to the many subsets of non-ideological "middle-value" speech that have increasingly become the subject of First Amendment scrutiny.[211] Or perhaps they can formulate more concrete standards of review that are specifically geared towards different types of speech — after all, the theoretical rationales for protecting, say, data-mining, professional speech, search engine results, or AI-based recommendations are all distinct, and as such they may benefit from the development of more bespoke, category-specific doctrinal standards.[212]

To be sure, this does not necessarily mean that the Court should always adopt different rules for each distinct "First Amendment" — there are of course benefits to retaining similar rules across different First

---

[208] *See, e.g.*, Post & Shanor, *supra* note 204, at 177-81 ("The principles that protect public discourse do not apply to commercial speech, or to professional speech, or to the speech of professional tour guides.").

[209] *See, e.g.*, Langvardt, *supra* note 108, at 765-75 (discussing the unique issues surrounding computer code within First Amendment doctrine).

[210] *See supra* Part II.A.

[211] *See generally* Han, *Middle-Value Speech*, *supra* note 96 (describing the concept of middle-value speech and setting forth examples of such speech).

[212] *Cf. id.* at 126 ("In the context of middle-value speech, some degree of doctrinal partitioning within the broad intermediate scrutiny framework is sensible, given the varied and eclectic nature of the speech that can fall within this broad classification.").

Amendment contexts. A court might ultimately and reasonably decide that adhering to the traditional doctrinal approach makes sense in a novel technological context falling outside of the area of ideological speech. But any such decision ought to be the product of a careful, reasoned judgment that the benefits of doing so outweigh the value of crafting a more finely calibrated doctrine, rather than the product of a knee-jerk, pathological adherence to the rule-like approaches of the past.

I want to conclude this subpart with some brief observations regarding the utility of drawing trans-substantive comparisons between Fourth Amendment doctrine and First Amendment doctrine with respect to the present discussion. As noted above, the rights are textually framed in a different manner: the First Amendment protects speech in terms that appear absolute on their face, while the Fourth Amendment establishes protection against "unreasonable searches and seizures," suggesting a more context-sensitive approach.[213] As such, perhaps doctrinal complexity is less of a problem in the Fourth Amendment context — in which the right is framed in a more qualified, pragmatic manner — as opposed to the more absolute protection of the First Amendment.

Furthermore, the Court's entrenched preference for clear, administrable rules might operate differently in the First Amendment and Fourth Amendment contexts. In the First Amendment context, the primary rationale for adopting simple, categorical rules is to provide a degree of prophylaxis that overprotects individual freedom at the expense of government interests.[214] In the Fourth Amendment context, however, the rationale for adopting clear, categorical rules might be to aid the *government* — to give police officers the sort of clear guidance that will enable them to make split-second decisions in the field more easily.[215] One might therefore argue that the Court ought to be more comfortable eroding such prophylaxis and introducing uncertainty within the Fourth Amendment context — at least where this would operate to the detriment of the government — while it ought to be far

[213] *See supra* note 87.

[214] *See, e.g.*, Gertz v. Robert Welch, Inc., 418 U.S. 323, 342 (1974) (stating that the Court's goal in crafting its defamation jurisprudence is to "assure to the freedoms of speech and press that 'breathing space' essential to their fruitful exercise" (quoting NAACP v. Button, 371 U.S. 415, 433 (1963)).

[215] Take, for example, the Court's adoption of a bright-line rule in *Robinson*. United States v. Robinson, 414 U.S. 218 (1973). In *Robinson,* the Court chose a bright-line approach that arguably under-protects individual privacy interests in certain cases in order to ensure that police working in the field can more easily make real-time judgments under predictable rules. *See supra* text accompanying notes 174–178.

less so in the First Amendment context — where this would generally operate to the detriment of individual freedom.

There is certainly some force to these arguments; comparing First Amendment jurisprudence to Fourth Amendment jurisprudence may not always be an apples-to-apples endeavor. But these differences do not ultimately alter my broad conclusion here. Perhaps there are strong reasons to be more wary of doctrinal complexity and open-endedness in the First Amendment context as opposed to the Fourth Amendment context. But the underlying problem of doctrinal obsolescence — the increasing rift between timeworn doctrine calibrated for a very particular set of conditions and the world we actually inhabit today — continues to persist in both contexts, and at a certain point it must be addressed if constitutional rights doctrine is to represent something more than meaningless window dressing.

So even if the threshold for introducing new categories, tests, and exceptions ought to be higher in the First Amendment context as compared to the Fourth Amendment context, that threshold still exists. And when it is reached, the *Carpenter* Court's candid embrace of incremental doctrinal complexity to account for an increasingly complex technological world serves as a model for the Court to follow in the First Amendment context. Indeed, the Court can look to its own historical experience in crafting commercial speech doctrine as some assurance that introducing some sensible segmentation and complexity into the doctrine — rather than treating it as a unitary whole subject to unitary rules — can happen without the sky falling.

III. THE VALUE OF PROVISIONAL DOCTRINAL APPROACHES

I want to close my discussion by focusing on a particular aspect of the *Carpenter* Court's analysis: its self-conscious adoption of a narrow, open-ended, and provisional doctrinal approach as a response to rapidly changing technological conditions. Such an approach — which prioritizes caution, open deliberation, and incrementalism over countervailing considerations such as clarity, stability, and administrability — represents a particularly valuable tool for a Court tasked with navigating the clash between significant technological change and preexisting doctrinal frameworks in a wide variety of constitutional rights contexts.

In highlighting the value of this approach, it is worth touching briefly upon a broad question that I have sidestepped up to this point: whether it should be up to the legislature, rather than the courts, to grapple (at least initially) with the intersection between rapid technological change and constitutional rights. As Orin Kerr has argued in the Fourth

Amendment context, legislatures may be more institutionally suited to deal with rapidly changing technologies, since they can create generally applicable *ex ante* rules, retain greater flexibility to enact new rules, and are better equipped to develop a "comprehensive understanding of technological facts."[216]

On the other hand, the Court cannot simply defer to legislative and executive judgments, lest it abdicate its constitutionally designated role as a check on legislative and executive power.[217] As Susan Freiwald and Stephen Smith observed in reference to the *Carpenter* Court's admonition that the Court must "tread carefully" in cases dealing with technological change, "[i]t is one thing to tread carefully in tax cases, as Justice Frankfurter was discussing when he used the phrase quoted, but quite another to refrain from correcting a widespread error that enabled constitutional violations on an epic scale."[218]

There is a longstanding scholarly debate on this question, which I need not delve into for present purposes.[219] In the end, one's views as to the promptness and degree to which courts should inject themselves into constitutional rights questions dealing with technological change are the product of how one balances the concerns on either side of the equation, and my broad purpose here is not to argue in favor of any particular position on this question.

At the moment when courts *do* decide to inject themselves into these questions, however, the particular approach taken by the *Carpenter* Court provides some balance to the concerns on both sides of the debate. As described above, the *Carpenter* Court self-consciously decided the case in a manner that was both narrow and open-ended. It

---

[216] Kerr, *The Fourth Amendment and New Technologies*, *supra* note 11, at 875; *see also* Carpenter v. United States, 138 S. Ct. 2206, 2261 (2018) (Alito, J., dissenting) ("Legislation is much preferable to the development of an entirely new body of Fourth Amendment caselaw for many reasons, including the enormous complexity of the subject, the need to respond to rapidly changing technology, and the Fourth Amendment's limited scope."); Tushnet, *Internet Exceptionalism*, *supra* note 78, at 1643-44 ("[N]either legislatures nor courts have any special insights, relative to the other, about the constitutionally appropriate response when [technological] innovations have just been introduced. This counsels in favor of deference to democratically responsible decision making or, as Justice Stevens put it, deference to congressional choices.").

[217] *See* Susan Freiwald & Stephen Wm. Smith, *The* Carpenter *Chronicle: A Near-Perfect Surveillance*, 132 HARV. L. REV. 205, 234 (2018).

[218] *Id.* at 232.

[219] For a detailed treatment of this debate, see generally Kerr, *The Fourth Amendment and New Technologies*, *supra* note 11. Kerr argues that "courts should place a thumb on the scale in favor of judicial caution when technology is in flux, and should consider allowing legislatures to provide the primary rules governing law enforcement investigations involving new technologies." *Id.* at 805.

was narrow because it left intact previous applications of the third-party doctrine, and it specifically carved out only CSLI data as an exception to that doctrine.[220] It was open-ended because it declined to offer really *any* concrete guidance for future cases, with the Court declaring its desire to "tread carefully" lest it "embarrass the future."[221]

Despite Justice Alito's critique of this approach as breeding chaos and an unmanageable doctrine, the Court's approach exhibited the sort of epistemic humility and caution that befits its institutional role amidst the rapid and significant technological developments of the present day. The fear that courts are institutionally ill-equipped to adequately understand the complexities of technological change — and that they may act prematurely based on this less-than-full understanding — is exacerbated by a broad expectation that courts must set forth clear, categorical guidance to govern these new technological contexts.[222] As the Court has recognized, when courts are expected to decide cases in this manner, it greatly multiplies the risk that the expansive rules they craft will prove to be poor fits in the future.[223] And rules governing constitutional rights, once established, are not easily changed.[224]

But inviting incremental complexity and nuance into the analysis — as the Court did in *Carpenter* — allows courts to act cautiously and provisionally within the rapidly changing technological context without sacrificing their role as a check on government action.[225] This sort of deliberative, incremental approach is one of the great virtues of

[220] *Carpenter*, 138 S. Ct. at 2219-21.

[221] *Id.* at 2220.

[222] *See supra* text accompanying notes 166–183 (discussing the broad preference for bright-line rules in constitutional rights doctrine).

[223] *See, e.g.*, Packingham v. North Carolina, 137 S. Ct. 1730, 1736 (2017) ("The forces and directions of the Internet are so new, so protean, and so far reaching that courts must be conscious that what they say today might be obsolete tomorrow."); City of Ontario v. Quon, 560 U.S. 746, 759 (2010) ("The judiciary risks error by elaborating too fully on the Fourth Amendment implications of emerging technology before its role in society has become clear.").

[224] *See* David S. Han, *Terrorist Advocacy and Exceptional Circumstances*, 86 FORDHAM L. REV. 487, 498-99 (2017) [hereinafter *Terrorist Advocacy*].

[225] *See Carpenter*, 138 S. Ct. at 2220 (characterizing the decision as a "narrow one" and observing that the Court "must tread carefully in such cases, to ensure that we do not 'embarrass the future'" (quoting Nw. Airlines, Inc. v. Minnesota, 322 U.S. 292, 300 (1944); *Quon*, 560 U.S. at 760 (deciding the case on "narrower grounds" because a "broad holding . . . might have implications for future cases that cannot be predicted"); Breyer, *supra* note 164, at 261 (arguing that there is "a need for judicial caution and humility" in situations where "we seek to arrive democratically at solutions to important technologically based problems").

common-law development.[226] The Court may not be in a position to craft an entire framework or a clear set of comprehensive rules, given the novelty of the technology and the Court's institutional limitations in understanding its full ramifications. But the correct result in discrete cases may nevertheless be clear, and in these circumstances, this sort of stepwise approach to adjudication is particularly valuable. In such contexts, the benefits of promptly identifying constitutional violations, along with the benefits of sparking the sort of in-depth examination of first principles necessary to advance the doctrine, justify the increased unpredictability and instability introduced into the doctrine by such an approach.

This is not to say that constitutional rights doctrine, over time and with intervening technological and social developments, must inexorably grow more complex and less rule-like. This might be the case under certain conditions: perhaps, for example, the First Amendment's broad expansion into realms of non-ideological speech continues to the point that increasing doctrinal complexity is largely inevitable, simply because the doctrine's scope has become so complex and eclectic that it cannot be captured adequately by simple and easy-to-apply rules.

But technological change might also ultimately produce a wholesale doctrinal shift in which longstanding constitutional rules are displaced by a new set of broad rules that better fit the current state of technological development. Just as the advent and popularization of the telephone eventually prompted a broad doctrinal shift from the trespass-based approach of *Olmstead* to the expectation of privacy-based approach of *Katz*,[227] the advent of the internet, social media, GPS tracking, and other technologies might presage a similar sea change in constitutional rights doctrine, in which the overarching rules and principles of the past give way to a very different set of rules and principles that reflect the distinct technological context of the present era.

In this context, the *Carpenter* Court's incremental, narrow, and open-ended approach has significant value as a form of provisional doctrine. Amidst rapid technological change, where the consequences and ramifications in question may be difficult to discern, this approach allows the Court to broaden the analytical framework, giving it the

[226] *See, e.g.*, Lawrence Lessig, *The Path of Cyberlaw*, 104 YALE L.J. 1743, 1745 (1995) ("Unlike other lawmaking, what defines the process of the common law is small change, upon which much large change gets built; small understandings with which new understandings get made."); Suzanna Sherry, *Haste Makes Waste: Congress and the Common Law in Cyberspace*, 55 VAND. L. REV. 309, 312 (2002) ("Judges are constantly reevaluating doctrine, . . . tweaking it to take into account new factual contexts.").

[227] *See supra* text accompanying notes 88–94.

space to grapple openly with all of the fundamental questions implicated by such change. It also provides the Court with a narrow path to proceed cautiously and incrementally, lest it make a hasty decision that it will later regret. As such, this approach affords the Court significant flexibility, which is particularly valuable given the substantial uncertainty produced by the collision of longstanding doctrinal frameworks and novel technologies.

On the one hand, if the ramifications of the technological change in question on the preexisting doctrinal framework prove to be far more limited than originally presumed, the narrowness of the Court's approach preserves ample opportunity for the Court to reverse course, as it can later frame the case as a narrow doctrinal exception rather than as a harbinger of a major doctrinal sea change. On the other hand, if the ramifications of the technological change in question will ultimately result in a fundamentally different doctrinal framework governed by a distinct set of broadly applicable rules, the Court's incremental approach effectively acts as an intermediate stepping-stone to help smooth the transition between these two different doctrinal regimes. By proceeding in a case-by-case manner that gradually pivots away from the prior doctrinal regime — rather than switching immediately to a new set of categorical rules — the Court can dampen the disruptions associated with rapid doctrinal change, as such an approach gives litigants, government actors, and lower courts notice of where the doctrine is headed and limits the institutional costs associated with frequent and sharp shifts in the doctrinal framework.

The provisional approach adopted by the *Carpenter* Court is thus particularly valuable because it provides the Court with the time, space, and flexibility to work through the nature and ramifications of the new technology in question, accumulating data and experience through case-by-case analyses. And as technological changes, over time, become embedded into social and cultural practices in a more concrete manner, the Court may in turn acquire greater knowledge and certainty regarding the social, cultural, and empirical ramifications of such changes. As such, it may eventually be in a position either to isolate narrow exceptions to the existing doctrinal framework or to formulate new categorical, bright-line rules that better fit the new status quo.[228]

[228] *See* Langvardt, *supra* note 108, at 815 ("Over time, the crush of litigation and the need for certainty will tend to congeal an initially case-specific inquiry into a more rule-bound analysis shaped by roughly drawn categories: for example, 'digital blueprints for 3D printers are never protected.'"); Tushnet, *Internet Exceptionalism*, *supra* note 78, at 1644 ("As experience accumulates, judges should be in a position to assimilate regulations of now not-so-new technologies to the general body of First Amendment

Adopting the *Carpenter* Court's narrow, open-ended, and incremental approach ensures that the Court has ample space and flexibility to undertake this sort of deep deliberative process, and it protects against any broad, knee-jerk doctrinal judgments within the rapidly evolving technological context that it may later come to regret.

CONCLUSION

Technological change plays a vital role in the evolution and development of constitutional rights doctrine. It serves as a reminder to courts that constitutional rights jurisprudence — like any other area of law — is subject to the dangers of doctrinal obsolescence: the perpetuation of rules and principles that do not sensibly fit the world that we currently inhabit. And the destabilizing force of technological change on constitutional rights doctrine ultimately serves as a valuable opportunity for courts to reevaluate, in a deep and meaningful manner, the fundamental theoretical, intuitional, and empirical judgments that underlie the existing doctrinal framework. Such periodic reevaluation is essential to the healthy evolution of the doctrine, ensuring that it does not devolve into meaningless window dressing that grows increasingly detached from the present technological context.

As I have argued above, embracing an incremental degree of doctrinal complexity and open-endedness within constitutional rights doctrine is particularly conducive to this sort of deep reevaluation of first principles. But to be clear, I am not arguing that courts should broadly abandon *any* general preference for predictable, rule-like approaches whenever those are feasible. Constitutional rights doctrine, as developed through common law processes, is best conceptualized as an organic and ever-shifting structure, for which the optimal means of doctrinal evolution may shift in conjunction with prevailing technological and social conditions. Introducing an incremental degree of doctrinal complexity and open-endedness may be desirable in a doctrinal context that has been destabilized by momentous and not-yet-fully-understood shifts in technological development. But a retrenchment into more simplified, rule-like approaches might be preferable once courts and society at large have gained a deeper

doctrine, perhaps . . . with some tweaks to deal with truly distinctive features of the technology."); *cf.* Han, *Terrorist Advocacy*, *supra* note 224, at 500-01 (describing a similar dynamic with respect to regulations of terrorist advocacy).

understanding and stronger shared intuitions as to how such technologies ought to interact with the rights in question.[229]

Within the present context of rapid and substantial technological change, however, introducing incremental complexity and open-endedness into constitutional rights doctrine has significant salutary effects. It allows courts to play their institutional role as protector of constitutional values while mitigating the risk of "embarrassing the future" with poorly calibrated, ill-informed categorical rules. It provides them with an intermediate doctrinal stopping point that gives them the time, space, and flexibility to revisit, scrutinize, and perhaps revise the fundamental principles, assumptions, and intuitions upon which the existing doctrinal framework has been constructed. And it leaves legislatures — with all of their institutional advantages in these contexts — with some room to operate, thereby preserving a degree of healthy dialogue between legislatures and courts.[230] In all of this, it engenders an environment that is conducive to the establishment of sensible, measured, and well-informed doctrinal responses to technological change. Viewed in this manner, the short-term uncertainty and instability produced by such approaches is well worth these long-term benefits.

[229] In arguing for greater legislative involvement amidst significant technological change, Kerr has stated, "When technology is in flux, Fourth Amendment protections should remain relatively modest until the technology stabilizes." Kerr, *The Fourth Amendment and New Technologies*, *supra* note 11, at 805. I share this broad sentiment insofar as it applies to courts' *own* approaches to doctrinal design. Times of rapid technological change should call for doctrinal modesty and a correspondingly greater appetite for incremental open-endedness. But when technological development stabilizes, courts may be better positioned to formulate clearer and more administrable rules that adequately fit the technology in question.

[230] *See* Breyer, *supra* note 164, at 263-64 (describing legislatures as a part of the broad "national conversation" regarding complex issues dealing with technology and constitutional rights, and calling for "judicial caution or modesty" given that a "broad[] constitutional rule might . . . limit legislative options in ways now unforeseeable").