

FROM LEX INFORMATICA TO THE CONTROL REVOLUTION

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ABSTRACT

Legal scholarship on the encounter between networked digital technologies and law has focused principally on how law should respond to new technological developments and has spent much less time considering what that encounter might signify for the shape of legal institutions themselves. This essay focuses on the latter question. Within fields like technology studies, labor history, and economic sociology, there is a well-developed tradition of studying the ways that new information technologies and the “control revolution” they enabled—in brief, a quantum leap in the capacity for highly granular oversight and management—have elicited long-term, enduring changes in the structure and operation of economic organizations. I begin by considering some lessons of work in that tradition for law understood as a set of organizations constituted for the purpose of governance. Next, I turn the lens inward, offering some observations about techlaw scholarship that are essentially therapeutic. The disruptions of organizational change have affected scholars who teach, think, and write about techlaw in ways more profound than are commonly acknowledged and discussed. It seems fitting, in a symposium dedicated to Joel Reidenberg’s life and work, to use the process of grief as a device for exploring the arc of techlaw scholarship over its first quarter century. The fit is surprisingly good and the takeaways relatively clear: if, as I intend to suggest, the organizational forms that underpin our familiar legal institutions have been in the process of evolving out from under us, we still have choices to make about how legal institutions optimized for the information economy will be constituted. Finally, I identify two sets of important considerations that should inform processes of organizational and institutional redesign.

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I. INTRODUCTION

In the beginning (techlaw-wise) came two texts.¹ Together, they defined an agenda for exploring the encounter between networked digital technologies and law—and together, they also encoded methodological fractures and disciplinary blind spots that persist today. “Lex Informatica” was an article published by a legal scholar—Joel Reidenberg, to whose memory this symposium is dedicated—for an audience of other legal scholars.² Complex and subtle, it explored the ways government authorities might reassert themselves within pathways and processes defined in the first instance by computer networks and digital code. The other text—Lawrence Lessig’s *Code and Other Laws of Cyberspace*—began as a law review article but evolved into a book crafted for a more general audience.³ Punchy and attention-grabbing, it offered a simple, flat taxonomy of regulatory forces, each assertedly different in kind and origin from the others, and identified ways that processes emerging

1. This Article borrows the useful neologism coined by Rebecca Crootof & BJ Ard, *Structuring Techlaw*, 34 HARV. J.L. & TECH. 348 (2021).

2. Joel R. Reidenberg, *Lex Informatica: The Formulation of Information Policy Rules Through Technology*, 76 TEX. L. REV. 553 (1998).

3. LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (1999); Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501 (1999).

in the domain of digital code might frustrate other processes traditionally located in the domain of law.

If one accepted the premise that governing new technological activities required new types of responses from law- and policymakers,⁴ the two texts dictated different approaches to identifying those responses. Consider, for example, the question of what (if anything) to do about copyright management technologies designed to enable licensing but simultaneously frustrating other important copyright policy goals. Or consider the question of what (if anything) to do about a global networked communications architecture that promised to evade governance by both nation-states and other intermediaries traditionally entrusted with ensuring information quality. Because “Lex Informatica” was the product of a mind trained in both North American and European ways of thinking about law and regulation, it turned automatically to the mechanics of injecting regulatory authority into the processes by which networked communications technologies and associated standards were being developed and deployed.⁵ Because *Code* was a product of the “New Chicago School,” it foregrounded the influence of markets and norms and the bottom-up solutions they might generate.⁶ There are layers upon layers of irony here. *Code*, but not “Lex Informatica,” purported to offer a new approach to theorizing the regulatory properties of technology; “Lex Informatica” was more pragmatic in its orientation. And yet “Lex Informatica,” but not *Code*, surfaced the complex *interplay* between regulatory forces. “Lex Informatica” framed new digital formations as situated opportunities for interventions by policymakers and other interested actors—an approach broadly compatible with decades of accumulated, interdisciplinary learning on emergent sociotechnical processes—whereas *Code* described an elemental regulatory struggle that unfolded as a contest over *terra nullius* and that resonated with the reigning neoliberal ethos of the era.

Gradually but inexorably, however, new developments began to pose questions that the two texts did not contemplate—questions about what the encounter between networked digital technologies and law might signify for the shape of legal institutions themselves. For example, what does it mean to require ongoing “compliance” with a remedial decree directed to the operation of data-driven, algorithmic processes? What corrective actions can remedial

4. Some did not. The canonical example is Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207 (1996), though I hesitate to give it yet another citation.

5. Reidenberg, *supra* note 2, at 583–92.

6. LESSIG, *supra* note 3, at 85–99, 122–41, 164–85, 223–26. See generally Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661 (1998); Mark Tushnet, “Everything Old Is New Again”: Early Reflections on the “New Chicago School”, 1998 WISC. L. REV. 579 (1998).

orders directed to smaller actors within networked information ecosystems plausibly require, and what obligations should be placed on the larger actors that design and operate such systems? What organizational configurations and practices are needed to ensure sufficient public accountability of compliance operations? What organizational configurations and practices are needed to ensure that data-driven surveillance processes designed to operate on populations afford sufficient dignity and respect to individuals and communities?

As these examples suggest, there is an important difference between understanding networked digital technologies as “regulating” in ways that might challenge or complement law and understanding such technologies as catalyzing deep structural transformation in organizations of all sorts, including the organizational forms of legal institutions carefully stewarded—and venerated—over decades and centuries. This essay takes the latter perspective as its point of departure. Within fields like technology studies, labor history, and economic sociology, there is a well-developed tradition of studying the ways that new information technologies and the “control revolution” they enabled—in brief, a quantum leap in the capacity for highly granular oversight and management—have elicited long-term, enduring changes in the structure and operation of economic organizations.⁷ Part II considers some lessons of work in that legal tradition for law understood as a set of organizations constituted for the purpose of governance.

Part III turns the lens inward, offering some observations about techlaw scholarship that are essentially therapeutic. The disruptions of organizational change have affected scholars who teach, think, and write about techlaw in ways more profound than are commonly acknowledged and discussed. It seems fitting, in a symposium dedicated to Joel Reidenberg’s life and work, to use the process of grief as a device for exploring the arc of techlaw scholarship over its first quarter century. The fit is surprisingly good and the takeaways relatively clear: if, as I intend to suggest, the organizational forms that underpin our familiar legal institutions have been in the process of evolving out from

7. The term comes from JAMES R. BENIGER, *THE CONTROL REVOLUTION: TECHNOLOGICAL AND ECONOMIC ORIGINS OF THE INFORMATION SOCIETY* (1986). It was later appropriated by ANDREW SHAPIRO, *THE CONTROL REVOLUTION: HOW THE INTERNET IS PUTTING INDIVIDUALS IN CHARGE AND CHANGING THE WORLD WE KNOW* (1999), which misunderstood the nature of the shift in control that digital networks represented. For an important but conceptually distinct exploration of the evolving role of control within digital information and communications networks, see LAURA DENARDIS, *THE INTERNET IN EVERYTHING: FREEDOM AND SECURITY IN A WORLD WITH NO OFF SWITCH* (2020) (arguing that digital networks are undergoing a phase shift from communication to control as their principal purpose).

under us, we still have choices to make about how legal institutions optimized for the information economy will be constituted. Learning to identify the reflex reactions emanating from grief's intermediate stages will help us make better choices.

Building on the insights from Parts II and III, Part IV identifies two sets of important considerations that should inform the redesign of legal institutions after the control revolution. One set of considerations involves efficacy. Legal institutions for the control revolution require organizational forms that are optimized to networked information and communication geographies, flows, points of control, and failure modes. The second relates to normative sufficiency; the redesign of legal institutions requires appropriately framed rule-of-law criteria. Part V concludes.

II. THE CONTROL REVOLUTION IN GOVERNANCE

The relationship between law and networked digital technologies is, and always has been, a two-way street. Legal actors respond to new technological developments, but the principals in new technological dramas also exploit and work to reconfigure legal and governance regimes in ways that are most congenial to their own activities and goals.⁸ Scholarship in the law and society tradition has long acknowledged and grappled with the power of self-interested advocacy to reshape the *rules* by which litigants, regulated industries, and other actors in legal dramas must play.⁹ But “law” also consists of *organizations* constituted for the purpose of governance, and those organizations also are affected by sociotechnical change. Additionally, although some institutional realignments reflect the intentional efforts of self-interested *actors*, sociotechnical transformation produces both intended and unintended *systemic effects*. Here, I bring classic mid-twentieth-century studies of the encounter between for-profit organizations and emerging informational capabilities to bear on law’s evolving organizational and systemic accommodations to the informational era.

First, some important definitions: By “organization,” I mean to refer to an entity constituted to achieve a particular goal, with sets of rules that define its

8. See generally JULIE E. COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM (2019). On the concept of technological drama, see Bryan Pfaffenberger, *Technological Dramas*, 17 SCI., TECH., & HUM. VALUES 282 (1992).

9. See generally Marc Galanter, *Why the “Haves” Come Out Ahead: Speculations on the Limits of Legal Change*, 9 L. & SOC’Y REV. 95 (1974); MORTON J. HORWITZ, THE TRANSFORMATION OF AMERICAN LAW, 1780–1860 (1977).

structure and govern the practices of its members.¹⁰ For-profit companies like Amazon or Microsoft are organizations; courts, regulatory agencies, and industry standards bodies are organizations, too. By “institution,” I mean either an organization or an otherwise well-defined set of practices that serves a public or social purpose.¹¹ Some institutions, such as courts and administrative agencies or the pre-internet “press,” have (or had) distinct organizational forms. Others, such as contract law and tort law, do not, but even institutions of the latter sort (which I will call rule-based institutions) may reflect assumptions about the particular organizational contexts within which they will be interpreted and applied. This is particularly true for rule-based institutions, such as corporate law or administrative law, that are intended to provide structural specifications for organizations. Finally, by “legal institution,” I mean an institution whose outputs are constituted as binding by political authority. In this essay, I will be concerned with transformations in the organizational forms (or, for rule-based institutions, the assumed organizational contexts) of legal institutions.

As scholars in fields like technology studies, labor history, and economic sociology began to study the organizational impacts of new information technologies, they noticed that organizations undergo profound changes as new methods of seeing and managing their own activities are taken on board. In his magisterial study of organizational transformation, historian of technology James Beniger gave this process a name—the “control revolution”—that is equally useful for thinking about changes in the organization of governance.¹² Scholarly accounts of the interrelationships between information technologies and the organization of economic production have three more particular lessons for legal scholars—including not only those who say they study techlaw but also those who insist that they don’t and won’t.

The first lesson of the control revolution is that it changes *how* organizations produce outputs. As Beniger showed, the control revolution in production involved radical jumps in the quantity and granularity of information generated by newly mechanized production processes and correspondingly radical changes in the configuration of control processes for

10. See generally Saylor Breckenridge & Scott Savage, *Organizations*, OXFORD BIBLIOGRAPHIES (July 27, 2011), <https://www.oxfordbibliographies.com/view/document/obo-9780199756384/obo-9780199756384-0039.xml>.

11. See generally Fabio Rojas, *Institutions*, OXFORD BIBLIOGRAPHIES (Aug. 26, 2013), <https://www.oxfordbibliographies.com/view/document/obo-9780199756384/obo-9780199756384-0132.xml>.

12. BENIGER, *supra* note 7.

collecting and managing information and directing production accordingly.¹³ New information technologies afforded perspectives on production that were simultaneously panoptic and synoptic. One could zoom in on a particular set of operations in a highly granular way—for example, by investigating the relationship between a particular machine configuration and production throughput. One could also zoom out for a large-scale view of the organization's operations—for example, asking and answering questions about geographic and seasonal variation in demand. And, increasingly, one could ask new types of questions about the interplay between the granular and the systemic—for example, questions about how workspace configurations, supply chains, and a host of other factors might be rearranged to respond most effectively to serve and reinforce new patterns of mass production and consumption.¹⁴

The second lesson of the control revolution is that it changes *what* organizations produce. Newly granular and comprehensive control of production logistics enabled organizations to formulate new production plans that would enable them to capitalize on the infrastructural and informational investments they were making. So, for example, as it became possible to manage food production and distribution over extended geographic areas, the nature of food production changed to emphasize pre-processing, standardized packaging, and distribution via self-service supermarkets.¹⁵

The third lesson of the control revolution is that changes in the *how* and *what* of production created points of entry for changing ideologies about what and whom production was (good) for—about *why* organizations produce. As labor historians like Harry Braverman and Sanford Jacoby showed, the control revolution facilitated large-scale changes in the conditions of labor. New cadres of managerial workers were needed to operate the new systems for communication and control, and the managerial turn in the organization of production aligned with the goals of those wishing to shift control of production away from workers and concentrate it among the owners of capital.¹⁶ The control revolution and the managerial turn in the organization of production unfolded alongside other, technologically-mediated transformations in financial markets—in particular, the emergence of

13. *See id.* Beniger rejected rigidly deterministic explanations for these changes, indicating that he viewed them as coupled in varying degrees of tightness with other economic and social developments. *See id.* at 6–10.

14. *Id.* at 293–317.

15. *See id.* at 248–78, 337–42.

16. *See* HARRY BRAVERMAN, LABOR AND MONOPOLY CAPITAL 251–69 (Monthly Rev. Press 1998) (1974); SANFORD JACOBY, EMPLOYING BUREAUCRACY: MANAGERS, UNIONS, AND THE TRANSFORMATION OF WORK IN THE 20TH CENTURY (rev. ed. 2004).

increasingly complex and financialized performance metrics and investment vehicles—and these developments also reinforced the growing power of management and capital more generally.¹⁷ As the twentieth century wore on, the cumulative effects of those changes proved congenial to a neoliberal worldview that envisioned government as existing principally to steward and validate the results of market processes.¹⁸ For all of these historically contingent reasons, the instrumentalities of the control revolution in economic production increasingly were directed toward surplus extraction for the benefit of managers and investors.

In retrospect, it seems utterly naïve to have thought that these lessons would not apply to the organizational forms of legal institutions. Consider a few examples:

In the domain of dispute resolution, networked information technologies and systems have facilitated widespread outsourcing of small, low-dollar value disputes in areas such as consumer satisfaction and human resources, and they also have enabled parties to large-scale tort and regulatory litigation to develop new organizational mechanisms for producing and managing settlements in ways only nominally under supervision by courts.¹⁹ Changes in how disputes are resolved have shaped what dispute resolution produces. Both large-scale settlements and privatized processes for resolving small-scale disputes require and normalize elaborate sets of managerial practices for administering payments and (sometimes) for measuring and documenting compliance with agreed organizational changes. These processes require new cadres of managerial workers and may also involve an assortment of other third parties—compliance auditors, litigation financiers, specialized arbitrators and

17. See GIOVANNI ARRIGHI, *THE LONG TWENTIETH CENTURY: MONEY, POWER, AND THE ORIGINS OF OUR TIMES* (new and updated ed. 2010); GRETA KRIPPNER, *CAPITALIZING ON CRISIS: THE POLITICAL ORIGINS OF THE RISE OF FINANCE* (2011); Natascha Van der Zwan, *Making Sense of Financialization*, 12 SOCIO-ECON. REV. 99 (2014).

18. See THE ROAD FROM MONT PELERIN: THE MAKING OF THE NEOLIBERAL THOUGHT COLLECTIVE (Philip Mirowski & Dieter Plehwe eds., paperback ed. 2015); Nicholas Gane, *The Governmentalities of Neoliberalism: Panopticism, Post-Panopticism, and Beyond*, 60 SOCIO. REV. 611, 627–29 (2012); Gerard Hanlon, *The First Neo-Liberal Science: Management and Neo-Liberalism*, 52 SOCIO. 298 (2018).

19. See COHEN, *supra* note 8, at 155–67. On dispute outsourcing, see Lauren B. Edelman & Mark Suchman, *When the "Haves" Hold Court: Speculations on the Organizational Internalization of Law*, 33 L. & SOC'Y REV. 941 (1999); Rory Van Loo, *The Corporation as Courthouse*, 33 YALE J. ON REG. 547 (2016). On the flexible production of large-scale dispute resolution, see Abbe R. Gluck & Elizabeth Chamblee Burch, *MDL Revolution*, 96 N.Y.U. L. REV. 1 (2021); David M. Jaros & Adam S. Zimmerman, *Judging Aggregate Settlement*, 94 WASH. U. L. REV. 545 (2017); Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 COLUM. L. REV. 583 (2014).

judges, and so on.²⁰ Their outputs typically do not consist of citable opinions articulating rule-based formulations about proper conduct and appropriate liability. These developments have elicited both criticism and praise; within the legal academy, there is contestation over what and whom dispute resolution is (good) for.²¹

In the administrative state, regulators charged with overseeing the operations of the informational economy must demand, evaluate, and act on new kinds of representations by regulated entities. In fields ranging from finance and healthcare to pollution control and avionics, data-driven algorithmic processes demand correspondingly sophisticated oversight mechanisms.²² Meanwhile, regulators who administer large-scale benefits and revenue systems rely ever more heavily on automated tools for case management and decision-making.²³ Changes in how regulators exercise their oversight and decision-making authority translate into changes in both the form and the substance of regulatory outputs. Guidances, collaborative best practices statements, and consent decrees requiring changes to regularized control practices increasingly stand in for more formal rules and more definite enforcement orders. Decisions about technical standard-setting and information systems procurement play increasingly central roles, and as regulated activities in sectors such as banking, consumer finance, environmental protection, and the like have grown ever more informationally complex, the regulatory landscape has widened to include a diverse group of third-party auditors, systems vendors, and other compliance intermediaries.²⁴

20. See COHEN, *supra* note 8, at 159–64; Charles F. Sabel & William H. Simon, *Destabilization Rights: How Public Law Litigation Succeeds*, 117 HARV. L. REV. 1016 (2004).

21. See generally GILLIAN K. HADFIELD, *RULES FOR A FLAT WORLD: WHY HUMANS INVENTED LAW AND HOW TO REINVENT IT FOR A COMPLEX ECONOMY* (2017); Brooke D. Coleman, *One Percent Procedure*, 91 WASH. L. REV. 1005 (2016); Jason Parkin, *Aging Injunctions and the Legacy of Institutional Reform Litigation*, 70 VAND. L. REV. 167 (2017); Judith Resnik, *Diffusing Disputes: The Public in the Private of Arbitration, the Private in Courts, and the Erasure of Rights*, 124 YALE L.J. 2804 (2015); Sabel & Simon, *supra* note 20.

22. See COHEN, *supra* note 8, at 170–200. See generally Mehrsa Baradaran, *Regulation by Hypothetical*, 67 VAND. L. REV. 1247 (2014); Cary Coglianese, *The Limits of Performance-Based Regulation*, 50 U. MICH. J. L. REFORM 525 (2017); Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 STAN. L. REV. 657 (2012); Wendy Wagner & Martin Murillo, *Is the Administrative State Ready for Big Data?*, KNIGHT FIRST AMEND. INST. (Apr. 30, 2021), <https://knightcolumbia.org/content/is-the-administrative-state-ready-for-big-data>; Karen Yeung, *Algorithmic Regulation: A Critical Interrogation*, 12 REG. & GOV. 505 (2018).

23. See Ryan Calo & Danielle Keats Citron, *The Automated Administrative State: A Crisis of Legitimacy*, 70 EMORY L.J. 797 (2021).

24. See COHEN, *supra* note 8, at 189–93; Kenneth A. Bamberger, *Technologies of Compliance: Risk and Regulation in a Digital Age*, 88 TEX. L. REV. 669 (2010); Kenneth A. Bamberger,

Concurrently, the universe of theoretical accounts of regulatory behavior has widened to include new narratives about the virtues of regulatory devolution and enlightened self-governance, and these narratives too are contested.²⁵ In particular, the proliferation of new regulatory inputs, outputs, and intermediaries does not seem to be producing more effective oversight of information-economy activities, and data-driven algorithmic processes also enable new types of gaming that can be difficult to detect.²⁶

Within law enforcement agencies and inside the national security state, networked information technologies have facilitated new data-driven surveillance practices focused on the ready availability of digital traces of human movement and communication that can be gathered remotely without tasking individual officers to follow suspects, execute search warrants, and tap phone lines. That tectonic shift in how surveillance is conducted has elicited, and worked to naturalize, new tools and capabilities—for computer forensic investigations, for collecting and analyzing digital images, for gathering and correlating location information, and for conducting data-driven predictive analysis—and those tools and capabilities in turn generate new outputs that must be evaluated.²⁷ Some data-driven surveillance processes have elicited new types of managerial oversight, but others continue to operate in ways

Regulation as Delegation: Private Firms, Decisionmaking, and Accountability in the Administrative State, 56 DUKE L.J. 377 (2006); Deirdre K. Mulligan & Kenneth A. Bamberger, *Procurement as Policy: Administrative Process for Machine Learning*, 34 BERKELEY TECH. L.J. 773 (2019).

25. See generally Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. REV. 543 (2000); Michael Livermore & Richard L. Revesz, *Regulatory Review, Capture, and Agency Inaction*, 101 GEO. L.J. 1337 (2012); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004); Jodi L. Short, *The Paranoid Style in Regulatory Reform*, 63 HASTINGS L.J. 633 (2012).

26. See, e.g., Cary Coglianese & Jennifer Nash, *The Law of the Test: Performance-Based Regulation and Diesel Emissions Control*, 34 YALE J. ON REG. 33 (2017); Makena Kelly, *FCC's Net Neutrality Rollback Overwhelmed by Bogus Industry Comments, Investigation Finds*, THE VERGE (May 6, 2021), <https://www.theverge.com/2021/5/6/22422818/net-neutrality-rollback-ajit-pai-telecom-broadband-new-york-attorney-general>; STAFF OF S. COMM. ON ANTITRUST, COM. AND ADMIN. L. COMM. ON JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS (2020).

27. See, e.g., SARAH BRAYNE, PREDICT AND SURVEIL: DATA, DISCRETION, AND THE FUTURE OF POLICING (2020); Orin S. Kerr, *Searches and Seizures in a Digital World*, 119 HARV. L. REV. 531 (2005); Eric Lichtblau, *More Demands on Cell Carriers in Surveillance*, N.Y. TIMES (July 8, 2012), <https://www.nytimes.com/2012/07/09/us/cell-carriers-see-uptick-in-requests-to-aid-surveillance.html>; Andrea Roth, *Machine Testimony*, 126 YALE L.J. 1972 (2017); CLARE GARVIE, ALVARO BEDOYA & JONATHAN FRANKLE, THE PERPETUAL LINEUP: UNREGULATED POLICE FACE RECOGNITION IN AMERICA, GEORGETOWN L.: CTR. ON PRIV. & TECH. (Oct. 18, 2016), <https://www.perpetuallineup.org/>.

seemingly unconstrained by existing constitutional and statutory protections.²⁸ Many cross preexisting organizational lines, emerging out of procurement processes, hybrid public-private partnerships, and cross-jurisdictional policing and border enforcement initiatives.²⁹ Many have come to seem uniquely unaccountable to the broader public whose interests they are supposed to be serving.

The ultimate lesson of the control revolution for law is that networked information technologies are not simply new modes of knowledge production to be governed, but also powerful catalysts for organizational restructuring that change the enterprise of governance (and so, necessarily, also that of law³⁰) from the inside out. They produce new organizational formations that resemble the idealized legal-institutional models taught in law school courses only vestigially and incidentally. And the new organizational formations of the control revolution generate outputs that familiar modes of legal-institutional understanding cannot parse.

III. GRIEF COUNSELING FOR LAW PROFESSORS

For legal scholars, large-scale, disruptive change in the organizational forms of legal institutions is not an abstraction to be studied at arms-length. It represents a profound loss that reverberates through every facet of our carefully burnished, collective professional identity. As we move from teaching students about institutional configurations notable chiefly because they no longer exist outside the pages of casebooks, to writing about those same configurations in the pages of law reviews as though they still deserved to

28. On managerial oversight, see, e.g., Daphna Renan, *The FISC's Stealth Administrative Law*, in GLOBAL INTELLIGENCE OVERSIGHT: GOVERNING SECURITY IN THE TWENTY-FIRST CENTURY 121 (Zachary K. Goldman & Samuel J. Rascoff ed., 2016). On unconstrained surveillance behavior, see, e.g., Kimberly N. Brown, *Outsourcing, Data Insourcing, and the Irrelevant Constitution*, 49 GA. L. REV. 607 (2015); Sara Morrison, *A Surprising Number of Government Agencies Buy Cellphone Location Data. Lawmakers Want to Know Why*, VOX RECODE (Dec. 2, 2020), <https://www.vox.com/recode/22038383/dhs-cbp-investigation-cellphone-data-brokers-venntel>.

29. See, e.g., Caroline Haskins, *Scars, Tattoos, and Licenses Plates: This is What Palantir and the LAPD Know About You*, BUZZFEED NEWS (Sept. 29, 2020), <https://www.buzzfeednews.com/article/carolinehaskins1/training-documents-palantir-lapd>; Elizabeth E. Joh, *The Undue Influence of Surveillance Technology Vendors on Policing*, 92 N.Y.U. L. REV. ONLINE 101 (2017); Mulligan & Bamberger, *supra* note 24; Priscilla M. Regan, Torin Monahan & Krista Craven, *Constructing the Suspicious: Data Production, Circulation, and Interpretation by DHS Fusion Centers*, 47 ADMIN. & SOC'Y 74 (2015); Morgan Simon, *Investing in Immigrant Surveillance: Palantir and the #NoTechForICE Campaign*, FORBES (Jan. 15, 2020), <https://www.forbes.com/sites/morgansimon/2020/01/15/investing-in-immigrant-surveillance-palantir-and-the-notechforice-campaign/?sh=3ea7ca7b7707>.

30. For more on this distinction, see *infra* Part IV.B.

command the lion's share of our attention and energy, to envisioning the possible futures of a system of governance whose central tenets and operational presumptions no longer seem to cohere, both our day-to-day routines and our more sustained intellectual projects continually remind us that the system into which we were trained has lost its moorings.

Put differently and more starkly, we experience grief—and grief calls for a type of introspection to which the legal academy is unaccustomed. Here, I use Kubler-Ross's well-known five-stage framework as a device for mapping scholarly responses to the control revolution's disruptions.³¹ (Without question, this sort of exercise is reductive and risks oversimplification. Even so, it can be useful for diagnostic purposes. My aim here is to prompt reflection, not to urge outright dismissal of important works that fall into each of these categories.)

A. BACK(ING IN) TO THE FUTURE

The first response to large-scale, disruptive, and profoundly grief-inducing change tends to be denial. So too within techlaw scholarship. An essential mode of legal theorizing about networked digital technologies has been the assertion that nothing *really fundamental* about legal subject x has changed, will change, or should change as a result of development y .

Denial is a tricky subject to unpack because the rearview mirror represents law's methodological wheelhouse (and the objects reflected in it are always much closer than they appear). Judges and legislators alike move forward only slowly and tentatively, continually looking backward, identifying analogies, and redeploying familiar common law concepts—even when interpreting statutes clearly intended to craft new institutional settlements. But they also must contend with the entrepreneurialism of practicing lawyers and the self-interested actors they represent. Sometimes, however, denial benefits powerful actors, and the ensuing dynamic represents law's most dangerous endemic failure mode: a downward spiral into institutional paralysis catalyzed by self-interest, self-importance, and conceptual rigidity.

There is no better illustration of the dynamic of denial spiraling into institutional paralysis than the path charted by the mainstream of scholarship and advocacy about the First Amendment implications of the networked information revolution. Consider the debates about “deplatforming” unwanted speakers. For some First Amendment traditionalists, questions

31. ELISABETH KUBLER-ROSS & DAVID KESSLER, ON GRIEF AND GRIEVING: FINDING THE MEANING OF GRIEF THROUGH THE FIVE STAGES OF LOSS (2005) (identifying as the five stages denial, anger, bargaining, depression, and acceptance, and exploring their complexities and interrelationships).

about the power to deplatform are easy to answer because of the public-private distinction that (in their view, appropriately) structures the universe of speech protections.³² The earliest scholarly commentary on deplatforming worried about private power to stifle dissenting speech emanating from members of marginalized groups and from the political left. For those commentators, there were equally traditionalist answers: the “back to the future” strategies of treating platforms as either public forums or company towns obligated to permit speech with which they disagree.³³ More recently, deplatforming efforts directed at purveyors of white supremacist and other hate speech has caused advocates of the “company town” approach to reconsider that position, even as avowed traditionalists from the right float the very different “back to the future” strategy of subjecting platforms to common carrier obligations.³⁴ Others, meanwhile, have fallen back on a different type of traditionalist argument: faith in the “marketplace of ideas” to produce clear rejection of white supremacy and hate once brought into the light of day.³⁵

The problem, though, is that none of these arguments reckons adequately with underlying transformations in the structure of speech environments. The “long tail” marketplace of the platform-mediated speech environment, which facilitates access to and monetization of all perspectives, does not seem to be furthering large-scale rejection of white supremacy, ethnonationalism, and hate. Rather, it is nurturing them. Although mainstream media organizations

32. See, e.g., Eric Goldman, *Of Course the First Amendment Protects Google and Facebook (and It's Not a Close Question)*, KNIGHT FIRST AMEND. INST. (Mar. 23, 2021), <https://knightcolumbia.org/content/course-first-amendment-protects-google-and-facebook-and-its-not-close-question>.

33. See, e.g., Steven G. Gey, *Reopening the Public Forum—From Sidewalks to Cyberspace*, 58 OHIO ST. L.J. 1535 (1998); Dawn C. Nunziato, *The Death of the Public Forum in Cyberspace*, 20 BERKELEY TECH. L.J. 1115 (2005); see also Kyle Langvardt, *Regulating Online Content Moderation*, 106 GEO. L.J. 1353 (2018) (invoking the company town doctrine to justify public oversight of content moderation practices).

34. *Biden v. Knight First Amend. Inst.* At Columbia Univ., 141 S. Ct. 1220, 1222–26 (2021) (Thomas, J., concurring); Eugene Volokh, *Trump Was Kicked Off Twitter. Who's Next?*, N.Y. TIMES (Jan. 11, 2021) <https://www.nytimes.com/2021/01/11/opinion/trump-twitter-facebook-parler.html>; Eugene Volokh, *Facebook “Removing Content Containing the Phrase ‘Stop the Steal’”*, REASON (Jan. 11, 2021) <https://reason.com/volokh/2021/01/11/facebook-removing-content-containing-the-phrase-stop-the-steal/>.

35. See, e.g., Danielle Keats Citron & Helen Norton, *Intermediaries and Hate Speech: Fostering Digital Citizenship for Our Information Age*, 91 B.U. L. REV. 1435, 1474 (2011) (“By challenging hate speech with counter-speech, intermediaries can help transform online dialogue by documenting the continuing existence of racism and other forms of hatred while concomitantly rebutting it.”); Richard Delgado & Jean Stefancic, *Hate Speech in Cyberspace*, 49 WAKE FOREST L. REV. 319, 341 (2014) (“Denouncing the group or individual publicly can demonstrate to users of the Internet that disseminating hate through this medium brings consequences and can give pause to others who might be tempted to follow suit.”).

and prominent political figures continue to function as principal content hubs in networked media ecosystems, platform-based techniques for profiling users and their social networks and for routing, upranking, and recommending content have been game-changers. These techniques have supplied powerful, flexible tools for seeding mainstream media environments with disinformation, hate, and polarizing discursive frames, recruiting new adherents to hate-based worldviews, and expanding extremist communities and networks.³⁶ Because the platform-mediated speech environment relies on probabilistic profiles and engagement metrics to route, uprank, and recommend content and communities, post hoc content- and speaker-level interventions do not meaningfully disrupt the mechanisms by which extremist sentiment diffuses across interlinked networks.³⁷

The blunt Newtonian instruments supplied by current First Amendment doctrine are wholly inadequate to the task of apportioning governance authority within such spaces. Because current doctrine presumes functioning speech markets populated by rational listeners, it assumes away the distinctive dysfunctions of platform-based information environments optimized for behavioral microtargeting, automatic engagement, and rapid, cascading spread.³⁸ And modes of constitutional argumentation that simply reassert private authority to govern such processes in a more fine-grained way

36. On the centrality of mainstream media organizations and political figures, see YOCHAI BENKLER, ROBERT FARIS & HAL ROBERTS, *NETWORK PROPAGANDA: MANIPULATION, DISINFORMATION, AND RADICALIZATION IN AMERICAN POLITICS* (2018); YOCHAI BENKLER, CASEY TILTON, BRUCE ETLING, HAL ROBERTS, JUSTIN CLARK, ROBERT FARIS, JONAS KAISER & CAROLYN SCHMITT, *MAIL-IN VOTER FRAUD: ANATOMY OF A DISINFORMATION CAMPAIGN* (Berkman Klein Ctr. Research Publication No. 2020-6, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3703701. On the complementary, amplifying effects of platform-based media infrastructures, see Joan Donovan, *Source Hacking: Media Manipulation in Practice*, DATA & SOC'Y (Sept. 4, 2019), <https://datasociety.net/library/source-hacking-media-manipulation-in-practice/>; Anthony Nadler, Matthew Crain & Joan Donovan, *Weaponizing the Digital Influence Machine*, DATA & SOC'Y (Oct. 17, 2018), <https://datasociety.net/library/weaponizing-the-digital-influence-machine/>; Manoel Horta Ribeiro, Raphael Ottoni, Robert West, Virgilio A. F. Almeida & Wagner Meira, *Auditing Radicalization Pathways on YouTube*, 2020 PROC. 2020 CONF. ON FAIRNESS, ACCOUNTABILITY, & TRANSPARENCY 131 (Jan. 2020), <https://arxiv.org/pdf/1908.08313.pdf>; Francesca Tripodi, *Searching for Alternative Facts*, DATA & SOC'Y (May 16, 2018), <https://datasociety.net/library/searching-for-alternative-facts/>.

37. See, e.g., Corin Faife & Dara Kerr, *Facebook Said it Would Stop Recommending Anti-Vaccine Groups. It Didn't*, THE MARKUP (May 20, 2021), <https://themarkup.org/citizen-browser/2021/05/20/facebook-said-it-would-stop-recommending-anti-vaccine-groups-it-didnt>; Nadler et al., *supra* note 36; Tripodi, *supra* note 36.

38. See Julie E. Cohen, *Tailoring Election Regulation: The Platform is the Frame*, 4 GEO. L. TECH. REV. 641, 642–55 (2020).

undermine efforts to render the increasingly complex manifestations of platform power publicly accountable.

My argument here is not about the way that ostensibly neutral moves within free speech discourse work systematically to benefit already-powerful economic and political actors and to effect erasure of other distinctions that really do matter (in part because I think that is so clearly true as to be beyond serious debate); rather, I want to underscore a more basic point. It is long past time to call into question interpretive conventions devised during the era of broadcast media for a constitutional text that is itself an artifact of an even earlier era, to acknowledge and retire the assumptions about information flow that have continued to inform those interpretive conventions even when they no longer describe reality, and to pursue other ways of honoring the foundational commitments the text sought to express.³⁹

The costs of denial are existential. Failure to recognize and reckon with the paradigm shifts in our information environment may yet herald the end of both our particular 250-year experiment with democratic self-governance and other democratic experiments worldwide. Fortunately, the therapeutic lens also suggests that First Amendment denialism represents an evolutionary stage that techlaw scholarship and our legal system more broadly may yet transcend.

B. THE WRATH OF NETWORKS

The second stage of grief is anger, and here an initial caveat is in order. I do not mean to use the stages-of-grief device to diminish techlaw scholarship expressing anger at the ways in which new forms of informationalized power have mobilized legal institutions to work systemic economic and racialized injustice.⁴⁰ Righteous wrath over law's complicity in the perpetuation of systemic injustice has a centrally important role in legal scholarship and public

39. See generally Tim Wu, *Is the First Amendment Obsolete?*, 117 MICH. L. REV. 547 (2018); Lawrence Lessig, *Fidelity in Translation*, 71 TEX. L. REV. 1165 (1993); cf. Danielle Keats Citron & Neil M. Richards, *Four Principles for Digital Expression (You Won't Believe #3!)*, 95 WASH. L. REV. 1353 (2018) (discussing non-constitutional strategies for translating concerns about expressive liberty into online environments).

40. See, e.g., VIRGINIA EUBANKS, *AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR* (2018); Ifeoma Ajunwa, *Race, Labor, and the Future of Work*, in OXFORD HANDBOOK OF RACE AND LAW (Devon Carbado, Emily Houh & Khiara M. Bridges eds., 2020); Alvaro M. Bedoya, *Privacy as a Civil Right*, 50 N.M. L. REV. 301 (2020); Rashida Richardson, *Government Data Practices as Necropolitics and Racial Arithmetic*, GLOBALDATAJUSTICE (Oct. 8, 2020), <https://globaldatajustice.org/covid-19/necropolitics-racial-arithmetic>; see also RUHA BENJAMIN, *RACE AFTER TECHNOLOGY: ABOLITIONIST TOOLS FOR THE NEW JIM CODE* (2019); SAFIYA UMOJA NOBLE, *ALGORITHMS OF OPPRESSION: HOW SEARCH ENGINES REINFORCE RACISM* (2018); CATHY O'NEIL, *WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY* (2016).

interest advocacy. The anger that I want to spotlight here is different and more unique to techlaw. It is the anger of the frustrated (cyber)libertarian who takes issue with the asserted need to have a system of law at all.

Confronted with the increasing inadequacy and imperfection of traditional governance mechanisms, some legal scholars began to advance variations on the theme of frustrated utopianism. They argued that centralized gatekeeping was the enemy, that bottom-up creativity and crowd-sourced ordering were potent forces for good, and that under such circumstances, law's highest and best goal was to minimize its own footprint.⁴¹

Anger and frustrated utopianism have been especially notable features of scholarly and policy debates about the future of digital copyright. Copyright law has always represented an effort to balance the competing goals of commercial reward and creative and expressive freedom. Because networked digital environments enable both new types of freedom and new types of control—and because the major industry stakeholders had long been accustomed to dictating the shape of new legislation—proposals for digital-era copyright legislation were highly contentious.⁴² As the major copyright industries pushed for legal recognition of expanded control and the mainstream of copyright scholarship resisted proposals that seemed overly draconian, the perfect became the enemy of the good. Some scholars rejected compromises that would entail any sacrifice of flexibility to copy, manipulate, or share digital content. So, for example, proposals for automated filtering of content uploaded to file-sharing platforms drew criticism because filtering algorithms could not duplicate the flexibility and nuance that fair use doctrine required, and proposals to restrict copying of audio and/or video files were criticized on the ground that depriving users of the ability to reuse content would limit their creative freedom.⁴³ Complaints about emergent linking and

41. See, e.g., David R. Johnson & David Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 (1996); LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2002); SHAPIRO, *supra* note 7; see also Jane R. Bambauer & Derek E. Bambauer, *Information Libertarianism*, 105 CALIF. L. REV. 335 (2017). Two prominent works in cyberutopian canon were more nuanced, offering accounts of bottom-up creativity that were also keenly sensitive to the prospects for abuses of private power and to the roles that law might play in constraining such abuses. See YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2007); JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET AND HOW TO STOP IT* (2008).

42. For good summaries, see BILL HERMAN, *THE FIGHT OVER DIGITAL RIGHTS: THE POLITICS OF COPYRIGHT AND TECHNOLOGY* (2013); JESSICA LITMAN, *DIGITAL COPYRIGHT* (2006).

43. See, e.g., Dan L. Burk & Julie E. Cohen, *Fair Use Infrastructure for Copyright Management Systems*, 15 HARV. J.L. & TECH. 41 (2001); Rebecca Tushnet, *Copy This Essay: How Fair Use*

embedding practices that channeled advertising revenues away from legacy content producers to new digital intermediaries were roundly mocked as the last gasps of industrial-economy gatekeepers seeking to silence new citizen performers, documentarians, and journalists.⁴⁴

Having spent some quality time in this stage of scholarly grief myself, I continue to think that some of the anger at copyright overreach was and is amply justified—as we are about to see, compromise requires two sides—but it also has delayed a much-needed reckoning with the governance challenges of networked digital environments.⁴⁵ And because power abhors a vacuum, legislative and policy stalemates over the legitimate reach of copyright law have privileged narrower, self-interested arrangements that reinforce economic power. The leading copyright intermediaries have retained and in some cases expanded their traditional strongholds, while newer information platforms have emerged as the default aggregators for new forms of cultural production (such as short video clips) and for self-published content.⁴⁶ These institutional settlements have not been costless. Platform intermediaries have moved quickly to design their own automated filtering systems and develop their own

Doctrine Harms Free Speech and How Copying Serves It, 114 YALE L.J. 535, 558–60 (2004); Rebecca Tushnet, *I Put You There: User-Generated Content and Anti-Circumvention*, 12 VAND. J. ENT. & TECH. L. 889 (2010). For more recent variations on these themes, see Dan L. Burk, *Algorithmic Fair Use*, 86 U. CHI. L. REV. 283 (2019); Rebecca Tushnet, *All of This Has Happened Before and All of It Will Happen Again: Innovations in Copyright Licensing*, 29 BERKELEY TECH. L.J. 1447 (2014) [hereinafter Tushnet, *All of This Has Happened Before*].

44. See, e.g., Dan Hunter & Gregory F. Lastowka, *Amateur-to-Amateur*, 46 WM. & MARY L. REV. 951 (2005). For more recent variations on this theme, see Annemarie Bridy, *The Price of Closing the “Value Gap”: How the Music Industry Hacked EU Copyright Reform*, 22 VAND. J. ENT. & TECH. L. 323 (2020); Mike Masnick, *The Bizarre Reaction To Facebook’s Decision To Get Out Of The News Business In Australia*, TECHDIRT (Feb. 18, 2021), <https://www.techdirt.com/articles/20210217/22383446265/bizarre-reaction-to-facebooks-decision-to-get-out-news-business-australia.shtml>; Calla Wahlquist, *Australia’s Proposed Media Code Could Break the World Wide Web, Says the Man who Invented It*, THE GUARDIAN (Jan. 19, 2021), <https://www.theguardian.com/media/2021/jan/20/australias-proposed-media-code-could-break-the-world-wide-web-says-the-man-who-invented-it>.

45. See, e.g., Burk & Cohen, *supra* note 43; Julie E. Cohen, *Pervasively Distributed Copyright Enforcement*, 95 GEO. L.J. 1 (2006); Julie E. Cohen, *Copyright and the Perfect Curve*, 53 VAND. L. REV. 1799 (2000); Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 BERKELEY TECH. L.J. 1089 (1998); Julie E. Cohen, Lochner in Cyberspace: *The New Economic Orthodoxy of “Rights Management”*, 97 MICH. L. REV. 462 (1998).

46. See, e.g., Sara Morrison, *Why Facebook Banned (and then Unbanned) News in Australia*, VOX RECODE (Feb. 25, 2021), <https://www.vox.com/recode/22287971/australia-facebook-news-ban-google-money>; THOMAS POELL, DAVID B. NIEBORG & BROOKE ERIN DUFFY, *THE PLATFORMIZATION OF CULTURAL PRODUCTION* (1st ed. 2021); see also Guy Pessach, *Beyond IP—The Cost of Free: Informational Capitalism in a Post IP Era*, 54 OSGOOD HALL L. REV. 225, 239–45 (2016) (arguing that networked platform ecosystems create new patterns of media concentration and content standardization).

linking and embedding conventions, and those choices in turn have systematically shifted creative agency away from human beings and digital advertising revenues away from entities such as news providers that serve important public needs.⁴⁷

The push to elevate generativity over gatekeeping also produced section 230 of the Communications Decency Act (CDA 230), which insulates information intermediaries from most forms of civil liability for most expressive choices by their users, while granting them broad latitude to engage in content moderation operations of their own design.⁴⁸ Over the years, debates about the wisdom of the institutional settlement reflected in CDA 230 have demonstrated the continuing influence of First Amendment denialism (thereby illustrating that grief is not a linear journey). CDA 230's supporters and advocates have expressed both cyberlibertarian outrage at the prospect of imposing gatekeeping obligations on the new digital frontier and backward-looking lawyerly confidence in the crude public-private distinction that the statute encodes.⁴⁹ They have held to both positions even as the death of gatekeeping has demonstrated more and more powerfully that generativity is a scalar, not a vector; that torrents of xenophobia, hate, and conspiracy theory are generative in all the wrong ways; and that platforms govern their own operations continually in ways that amplify those torrents because they are profitable.

I do not mean to be glib about the urgency of the threats to freedom of expression surfaced by cyberlibertarian legal scholarship. Conflicts between institutional control and expressive freedom arise in any centrally governed

47. On automated filtering and its effects, see Ira Steven Nathenson, *Civil Procedures for a World of Shared and User-Generated Content*, 48 U. LOUISVILLE L. REV. 911, 937–38 (2010); Sonia K. Katyal, *Filtering, Piracy Surveillance and Disobedience*, 32 COLUM. J.L. & ARTS 401, 412–13 (2008). On proprietary linking and embedding conventions, see Tushnet, *All of This Has Happened Before*, *supra* note 43. On the impacts of platformization on journalism, see MIKE ANANNY, NETWORKED PRESS FREEDOM: CREATING INFRASTRUCTURES FOR A PUBLIC RIGHT TO HEAR (2018); Erin C. Carroll, *Platforms and the Fall of the Fourth Estate*, 78 MD. L. REV. 529 (2019).

48. 47 U.S.C. § 230(c)(1)–(2).

49. See, e.g., Eric Goldman, *Why Section 230 is Better than the First Amendment*, 95 NOTRE DAME L. REV. ONLINE 33 (2019); Jeff Kosseff, *Defending Section 230: The Value of Intermediary Immunity*, 15 J. TECH. L. & POL'Y 123 (2010). For representative work advocating reform of section 230, see Danielle Keats Citron & Benjamin Wittes, *The Internet will Not Break: Denying Bad Samaritans Sec. 230 Immunity*, 86 FORDHAM L. REV. 401 (2018); see also Mary Anne Franks, Mike Goodwin, Jeff Kosseff & Andrés Martínez, *Where Do We Go From Here with Section 230*, SLATE (Dec. 15, 2020), <https://slate.com/technology/2020/12/legal-scholars-mary-anne-franks-mike-goodwin-and-jeff-kosseff-on-section-230-of-the-cda.html> (recounting a roundtable discussion among three prominent commentators with different perspectives on section 230 reform).

regime, but in networked spaces they are both endemic and especially difficult to resolve. Sublimated anger about law's inherent repressiveness, however, is untenable as a long-term survival strategy both for the legal academy and more generally for any moderately complex society. Concededly, governance institutions are always-already imperfect and freedom-limiting, and they also must fight continual rearguard actions against capture, abuse, and overreach. But they are also necessary.

C. GETTING TO MEH

After anger comes bargaining—another wheelhouse mode for lawyers. In the particular context of techlaw scholarship, bargaining expresses hope that the control revolution's disruptions might be accommodated by making relatively minor tweaks and adjustments to the law's core institutions and routines.

In many contexts, bargaining is an ordinary and expected way of producing good-enough results for all parties—and sometimes, it can yield creative resolutions vastly superior to the remedies that a court would be empowered to devise.⁵⁰ But bargaining presumes both a relatively equal distribution of bargaining power and a clear understanding of the universe of effective interventions. If one party is relatively well-resourced and well-equipped to undertake costly litigation, it will have little incentive to agree to concessions that seem unnecessary. If the same party also controls access to information about feasible remedial actions and need not share that information, it may be impossible for the other party to know what interventions to propose.⁵¹

The ongoing debates about content moderation and digital privacy protection illustrate the perils of bargaining without discernible leverage. In the United States, the potent combination of statutory immunity for content moderation operations, broad privilege to harvest and process most user personal information, and sheer economic might has allowed the dominant platform firms to assume that refusal to compromise is costless. Whether defying requests for information from regulators, violating issued enforcement orders, or deflecting questions from members of Congress, their behavior has manifested clear awareness of their own impunity.⁵² Additionally, continuing a

50. See generally Thomas O. Main, *ADR: The New Equity*, 74 U. CIN. L. REV. 329 (2005) (describing the potential flexibility of ADR).

51. See generally Russell Korobkin, *A Positive Theory of Legal Negotiation*, 88 GEO. L.J. 1789, 1804-06 (2000) (analyzing the effects of information costs in ADR).

52. See U.S. SENATE COMM. ON COMMERCE, SCIENCE, AND TRANSPORTATION, OFFICE OF OVERSIGHT AND INVESTIGATIONS MAJORITY STAFF, *A REVIEW OF THE DATA BROKER INDUSTRY: COLLECTION, USE, AND SALE OF CONSUMER DATA FOR MARKETING PURPOSES* 10–11 (Dec. 18, 2013); U.S. FED. TRADE COMM'N, *DATA BROKERS: A CALL FOR*

theme developed in the previous two Sections, information technology firms of all sizes have leveraged the staying power of First Amendment denialism, weaponizing arguments about expressive liberty in the service of a more narrowly self-interested vision of immunity from regulatory oversight. Fueled by their contributions, a litigation campaign to extend First Amendment protection to all forms of information processing has been gathering strength.⁵³

The content moderation and digital privacy debates also illustrate the costs of insufficient access to relevant information about the operation of data-driven algorithmic processes. Technology firms—especially the dominant platforms that wield the greatest economic and cultural power—go to extraordinary lengths to keep their processes for profiling users and routing content shrouded in secrecy.⁵⁴ Additionally, although platforms govern their own operations continually, they share only the most basic and superficial information about how internal governance processes work.⁵⁵ Without such information, it is impossible to formulate concrete proposals for governing differently.

As a different illustration of the costs of insufficient access to relevant information, consider the evolving discussions about algorithmic fairness, accountability, and transparency in search, digital advertising, and image recognition. As awareness of endemic problems of bias in automatic activity began to spread, journalists and scholars documented troubling patterns and

TRANSPARENCY AND ACCOUNTABILITY 7–10 (2014); *Transcript of Mark Zuckerberg's Senate Hearing*, WASH. POST (Apr. 10, 2018), <https://www.washingtonpost.com/news/the-switch/wp/2018/04/10/transcript-of-mark-zuckerbergs-senate-hearing/>; *Transcript of Zuckerberg's Appearance before House Committee*, WASH. POST (Apr. 11, 2018), <https://www.washingtonpost.com/news/the-switch/wp/2018/04/11/transcript-of-zuckerbergs-appearance-before-house-committee/>; SHOSHANA ZUBOFF, *THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER* 145–48, 159–61 (2019). *See generally* FRANK PASQUALE, *THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION* (2015).

53. *See Sorrell v. IMS Health, Inc.*, 564 U.S. 552, 563–70 (2011); Jane R. Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 57 (2014); Eugene Volokh & Donald Falk, *First Amendment Protection of Search Engine Search Results*, 8 J. L. ECON. & POL'Y 88 (2012); *see generally* COHEN, *supra* note 8, at 89–97; Amanda Shanor, *The New Lochner*, 2016 WISC. L. REV. 133 (2016); Jameel Jaffer & Ramya Krishnan, *Clearview AI's First Amendment Theory Threatens Privacy—and Free Speech Too*, SLATE (Nov. 17, 2020), <https://slate.com/technology/2020/11/clearview-ai-first-amendment-illinois-lawsuit.html>.

54. *See sources in supra* note 52.

55. *See evelyn douek, The Rise of Content Cartels*, KNIGHT FIRST AMEND. INST. (Feb. 11, 2020), <https://knightcolumbia.org/content/the-rise-of-content-cartels>. *See generally* Rory Van Loo, *The Missing Regulatory State: Monitoring Businesses in an Age of Surveillance*, 72 VAND. L. REV. 1563 (2019).

advocacy organizations filed discrimination lawsuits.⁵⁶ Particularly when considered in light of the longer history of antidiscrimination litigation, the research and the lawsuits seemed to dictate fairly obvious corrective measures—adjust the algorithms to make them fairer, exclude particularly problematic data fields (such as race or gender), and so on. In a series of highly publicized statements and settlements, digital giants such as Facebook and Google agreed to make those sorts of changes.⁵⁷ In reality, however, such limited interventions only make problems of bias more intractable. Machine learning algorithms reproduce and reinforce the patterns that exist in the data sets used to train them. Even when first-order data about protected characteristics such as race or gender is placed off limits, they will detect and reproduce preexisting patterns of systemic racial or gender-based disadvantage.⁵⁸ Addressing patterns of injustice that are fundamentally social,

56. *See, e.g.*, Dep't of Hous. & Urban Dev. v. Facebook, Inc., FHEO No. 01-18-0323-8 (2019) (enforcement action against Facebook for discriminatory housing advertisements); Nat'l Fair Hous. All. v. Facebook, Inc., No. 1:18-cv-02689 (S.D.N.Y. Feb. 6, 2019) (lawsuit against Facebook for discriminatory housing advertisements); Divino Group LLC v. Google LLC, No. 5:19-cv-04749 (N.D. Cal. Aug. 13, 2019) (lawsuit against YouTube and its parent company Google for algorithmic discrimination of creators based on race and sexual orientation); Alistair Barr, *Google Mistakenly Tags Black People as 'Gorillas,' Showing Limits of Algorithms*, WALL ST. J. (July 1, 2015), <https://www.wsj.com/articles/BL-DGB-42522>; James Hale, *Four Black Creators File Suit Against YouTube, Alleging Racial Discrimination in Algorithm*, TUBEFILTER (June 19, 2020), <https://www.tubefilter.com/2020/06/19/youtube-black-creators-lawsuit-algorithm-discrimination/>; Latanya Sweeney, *Discrimination in Online Ad Delivery*, COMM. ACM, May 2013, <http://cacm.acm.org/magazines/2013/5/163753-discrimination-in-online-ad-delivery/>.

57. *See, e.g.*, Sheryl Sandberg, *Doing More to Protect Against Discrimination in Housing, Employment and Credit Advertising*, FACEBOOK (Mar. 19, 2019), https://about.fb.com/news/2019/03/protecting-against-discrimination-in-ads/?ref=FBBlog_UpdatesToHousing; *Updates to Housing, Employment and Credit Ads in Ads Manager*, FACEBOOK (Aug. 26, 2019), <https://www.facebook.com/business/news/updates-to-housing-employment-and-credit-ads-in-ads-manager>; Tom Simonite, *When It Comes to Gorillas, Google Photos Remains Blind*, WIRED (Jan. 11, 2018), <https://www.wired.com/story/when-it-comes-to-gorillas-google-photos-remains-blind/>.

58. *See, e.g.*, Ava Kofman & Ariana Tobin, *Facebook Ads Can Still Discriminate Against Women and Older Workers, Despite a Civil Rights Settlement*, PROPUBLICA (Dec. 13, 2019), <https://www.propublica.org/article/facebook-ads-can-still-discriminate-against-women-and-older-workers-despite-a-civil-rights-settlement>; Jeremy B. Merrill, *Does Facebook Still Sell Discriminatory Ads?*, THE MARKUP (Aug. 25, 2020), <https://themarkup.org/ask-the-markup/2020/08/25/does-facebook-still-sell-discriminatory-ads>; Piotr Sapiezynski, Avijit Ghosh, Levi Kaplan, Alan Mislove & Aaron Rieke, *Algorithms that "Don't See Color": Comparing Biases in Lookalike and Special Ad Audiences*, (arXiv, Working Paper No.1912.07579, 2019), <https://arxiv.org/pdf/-1912.07579.pdf>; Simonite, *supra* note 57. *See generally* David Lehr & Paul Ohm, *Playing with the Data: What Legal Scholars Should Learn about Machine Learning*, 51 U.C. DAVIS L. REV. 65 (2017); Andrew D. Selbst & Solon Barocas, *The Intuitive Appeal of Explainable Machines*, 86 FORDHAM L. REV. 1085 (2018).

not technical, requires different types of intervention in the design of data-driven algorithmic processes—and ensuring efficacy requires the ability to audit those processes, even when their operators would prefer to keep them proprietary. Generally speaking, the dominant technology firms have resisted granting the sorts of access that would enable researchers to hold them accountable, and some have taken aggressive steps to block researchers from collecting such information on their own.⁵⁹

Unlike denial and anger, bargaining under conditions that guarantee failure has some salutary uses. It underscores power disparities, and it highlights the information deficits that prevent good-faith negotiation and foreclose mutually acceptable compromise. Unless those pathologies can be addressed, however, that is all it is good for. Bargaining remains, at best, a way station in the process of reckoning with bereavement.

D. THE UNBEARABLE LIGHTNESS OF DEVOLUTION

The fourth stage of grief is depression. Those who have been bereaved begin to acknowledge a future indelibly stamped with loss but remain unable to envision anything other than emptiness and absence. Like anger in scholarly work about techlaw, depression is often sublimated. Unlike scholarly anger, which finds its outlet in rejection of imposed legal constraints, scholarly depression masquerades as cheerful optimism about law's increasing marginality. Techlaw scholarship in the depressive mode frames the initial, powerfully self-interested governance formations that have begun to emerge—often, governance formations resulting from the lopsided bargaining described above—as both inevitable and inevitably beneficial.

The wish to put a bright face on corporate performances of accountability did not begin with techlaw; rather, it is broadly reflective of the devolution of governance in an era of ascendant neoliberalism and extractive capitalism. As private economic power increasingly has succeeded at placing itself beyond the reach of law both domestically and globally, lawyers and policymakers have fallen back on optimistic exhortations about corporate social responsibility,

59. See Issie Lapowsky, *Platforms vs. PhDs: How Tech Giants Court and Crush the People Who Study Them*, PROTOCOL (Mar. 19, 2021), <https://www.protocol.com/nyu-facebook-researchers-scraping>. See generally Thomas Kadri, *Digital Gatekeepers*, 99 TEX. L. REV. 951 (2020). A notable exception, so far, is The Markup's Citizen Browser Project. See, e.g., Alfred Ng & Corin Faife, *Facebook Pledges to Remove Discriminatory Credit and Loan Ads Discovered by The Markup*, THE MARKUP (May 4, 2021), <https://themarkup.org/citizen-browser/2021/05/04/facebook-pledges-to-remove-discriminatory-credit-and-loan-ads-discovered-by-the-markup>.

often set forth as nonbinding statements of “principles” and “best practices” designed to serve as fulcrum points for assertions of moral authority.⁶⁰

The very earliest developments in the policy discourse around online content moderation followed this pattern. The Global Network Initiative, a voluntary association of global information businesses formed in 2008, promulgated principles that were intended to empower its members to resist authoritarian states’ demands for censorship, and the United Nations released a series of special reports on the protection of fundamental human rights in networked digital environments.⁶¹

But depressive celebrations of private authority over content moderation also have attached themselves to more concrete forms of privatized governance. The 2018 Santa Clara Principles for Accountability and Transparency in Content Moderation set forth recommendations that included publication of statistics about complaint resolution and provision of notice and appeal rights.⁶² Many social media companies have adopted the recommendations, and some have gone further, publishing information about their criteria for complaint resolution.⁶³

Some legal scholars and tech activists have celebrated these developments while downplaying the fact that the transparency afforded into private content governance *operations* remains relatively low and that public accountability for the design of such systems—and of the content recommendation systems that are their operational counterparts—is essentially nonexistent.⁶⁴ Some embrace

60. See John Ruggie (Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises), *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*, Human Rights Council, U.N. Doc. A/HRC/17/31 (Mar. 21, 2011); *The Ten Principles of the UN Global Compact*, UNITED NATIONS GLOB. COMPACT, <https://www.unglobalcompact.org/what-is-gc/mission/principles> (last visited Jan. 20, 2022).

61. *The GNI Principles*, GLOB. NETWORK INITIATIVE, <https://globalnetworkinitiative.org/gni-principles/>. For the most recent United Nations Report, see David Kaye, Report of the Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression, Human Rights Council, U.N. Doc. A/HRC/38/35 (Apr. 6, 2018), <https://www.undocs.org/A/HRC/38/35>; Michael Blowfield & Jędrzej George Frynas, *Setting New Agendas: Critical Perspectives on Corporate Social Responsibility in the Developing World*, 81 INT’L AFF. 499 (2005).

62. ACCESS NOW ET AL., *The Santa Clara Principles on Transparency and Accountability in Content Moderation*, <https://santaclaraprinciples.org/>.

63. See, e.g., Casey Newton, *Facebook Makes its Community Guidelines Public and Introduces an Appeals Process*, THE VERGE (Apr. 24, 2018), <https://www.theverge.com/2018/4/24/17270910/facebook-community-guidelines-appeals-process>.

64. See, e.g., Hannah Bloch-Wehba, *Global Platform Governance: Private Power in the Shadow of the State*, 72 SMU L. REV. 27, 72–74 (2019); Kate Klonick, *The New Governors: The People, Rules, and Processes Governing Online Speech*, 131 HARV. L. REV. 1598 (2018); Jillian C. York, *The Santa*

the flowering of private governance in ways that also reflect the lingering influences of denial and anger; for these authors, the assertion of public governance authority is unlikely to improve matters and is far more likely to introduce unacceptable risks.⁶⁵

Both reactions ensure that new ventures in private governance are heralded even as other possible institutional settlements remain underexplored. So, for example, the Facebook Oversight Board, a body of legal and human rights experts constituted by Facebook (on the advice of an eminent Harvard constitutional law professor) to undertake “review” of selected content moderation decisions, has received breathless coverage in the media and praise from some academic commentators, even though it has very little actual authority.⁶⁶ It accepts very few cases and can recommend action only on the particular content that is before it. It is not charged to recommend more sweeping changes to Facebook’s content moderation policies and practices. It also lacks authority to review the policies and practices that drive content *amplification* or the processes by which Facebook recommends its Groups and

Clara Principles During COVID-19: More Important Than Ever, ELEC. FRONTIER FOUND. (May 11, 2020), <https://www.eff.org/deeplinks/2020/05/santa-clara-principles-during-covid-19-more-important-ever>; see also Marianna B. Ganapini, Camylle Lanteigne & Abhishek Gupta, REPORT PREPARED BY THE MONTREAL AI ETHICS INSTITUTE FOR THE SANTA CLARA PRINCIPLES FOR CONTENT MODERATION (2020), <https://arxiv.org/pdf/2007.00700.pdf> (characterizing the principles as valuable baseline obligations and identifying additional needs); Spandana Singh & Leila Doty, *The Transparency Report Tracking Tool: How Internet Platforms are Reporting on the Enforcement of Their Content Rules*, NEW AMERICA (Apr. 8, 2021), <https://www.newamerica.org/oti/reports/transparency-report-tracking-tool/>; Daphne Keller & Paddy Leerssen, *Facts and Where to Find Them*, in SOCIAL MEDIA AND DEMOCRACY: THE STATE OF THE FIELD, PROPSECTS FOR REFORM 220 (Nathaniel Persily & Joseph A. Tucker ed., 2020); Nicolas P. Suzor, Sarah Myers West, Andrew Quodling & Jillian York, *What do we Mean When we Talk About Transparency? Toward Meaningful Transparency in Commercial Content Moderation*, 13 INT’L J. COMM’CN 1517 (2019).

65. See, e.g., Bloch-Wehba, *supra* note 64; Eric Goldman, *Content Moderation Remedies*, 28 MICH. TECH. L. REV. 1 (2021); DAPHNE KELLER, INTERNET PLATFORMS: OBSERVATIONS ON SPEECH, DANGER, AND MONEY (Hoover Working Grp. Nat’l Sec., Tech., & L. Aegis Series Paper No. 1807, 2018), https://www.hoover.org/sites/default/files/research/docs/keller_webreadypdf_final.pdf.

66. See, e.g., Kate Klonick, *Inside the Making of Facebook’s Supreme Court*, THE NEW YORKER (Feb. 12, 2021), <https://www.newyorker.com/tech/annals-of-technology/inside-the-making-of-facebooks-supreme-court>; Kate Klonick, *The Facebook Oversight Board: Creating an Independent Institution to Adjudicate Online Free Expression*, 129 YALE L. J. 2418 (2020); Steven Levy, *Why Mark Zuckerberg’s Oversight Board May Kill His Political Ad Policy*, WIRED (Jan. 28, 2020), <https://www.wired.com/story/facebook-oversight-board-bylaws/>; Mark Sullivan, *Exclusive: The Harvard Professor Behind the Facebook Oversight Board Defends Its Role*, FAST COMPANY (July 8, 2019), <https://www.fastcompany.com/90373102/exclusive-the-harvard-professor-behind-facebooks-oversight-board-defends-its-role>.

Pages.⁶⁷ Scholarly explorations of the prospects for systematic, public oversight of the data-driven, algorithmic processes that amplify hate and disinformation remain relatively rare.⁶⁸

The growing body of literature about the processes and mechanisms of privacy governance supplies additional examples of techlaw scholarship in the depressive mode. As described in Part II, the two decades-long push to institute appropriate oversight of collection, processing, and use of personal information has produced vast new compliance industries dedicated to the pursuit, perfection, and legitimation of self-governance. As Ari Waldman documents, the processes of compliance are performative—they have as both their clear purpose and their undeniable effect the legitimation of existing practices that serve tech industry interests while allowing individuals very little informational self-determination and regulators very little direct authority to shape industry behavior.⁶⁹ Many privacy scholars put a bright face on these developments, using terms like “coregulation” and “collaborative governance” to describe practices that involve almost no collaboration and produce even less accountability.⁷⁰ Others praise the California Consumer Privacy Act (CCPA) for its boldness, choosing not to dwell on the fact that the CCPA’s principal governance mechanism—post hoc individual assertion of control

67. See evelyn douek, “What Kind of Oversight Board Have You Given Us?,” 2020 U. CHI. L. REV. ONLINE 1 (2020); Rebecca MacKinnon, *The Facebook Oversight Board Did the Best it Could on the Trump Decision*, SLATE (May 5, 2021), <https://slate.com/technology/2021/05/trump-facebook-ban-ruling-oversight-board-power.html>; Siva Vaidhyanathan, *Facebook and the Folly of Self-Regulation*, WIRED (May 9, 2020), <https://www.wired.com/story/facebook-and-the-folly-of-self-regulation/>; see also evelyn douek, *Facebook’s Oversight Board: Move Fast with Stable Infrastructure and Humility*, 21 N.C. J.L. & TECH. 1 (2019) (attempting to define a more realistic and constructive path for the board’s possible interventions).

68. For preliminary discussions, see Cohen, *supra* note 38; evelyn douek, *Verified Accountability*, THE HOOVER INST. (Sept. 17, 2019), <https://www.hoover.org/research/verified-accountability>; evelyn douek, *Second Wave Content Moderation Institutional Design: From Rights to Regulatory Thinking* (Jan. 10, 2022) [hereinafter douek, *Second Wave Content Moderation*], https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4005326.

69. See generally Ari Ezra Waldman, *Privacy, Practice, and Performance*, 110 CALIF. L. REV. (forthcoming 2021); Ari Ezra Waldman, *Privacy Law’s False Promise*, 97 WASH. U. L. REV. 773 (2020).

70. See, e.g., KENNETH A. BAMBERGER & DEIRDRE K. MULLIGAN, *PRIVACY ON THE GROUND: DRIVING CORPORATE BEHAVIOR IN THE UNITED STATES AND EUROPE* (2015); Dennis D. Hirsch, *The Law and Policy of Online Privacy: Regulation Self-Regulation, or Co-Regulation?*, 34 SEATTLE U. L. REV. 439, 465–66 (2011); Margot Kaminski, *Binary Governance: Lessons from the GDPR’s Approach to Algorithmic Accountability*, 92 S. CALIF. L. REV. 1529, 1557–77 (2019).

rights—largely reinforces private authority over the mechanisms and patterns of data collection and use.⁷¹

To be fair, the urge to sublimate depression about the shortcomings of privatized governance solutions also reflects the fact that many other approaches to governing information-economy activities seem to be worse. In particular, authoritarian states have developed a suite of strategies for weaponizing social media, coercing platform compliance with content removal mandates, and extending and enforcing surveillance mandates, and those strategies are manifestly antidemocratic.⁷² If the only alternative to private ordering is authoritarianism, private ordering doesn't seem so bad. That proposition, however, tends to be assumed rather than proved, and it has become a favorite tech industry talking point. U.S.-based information technology firms have worked to position global governance debates as zero-sum games in which the reigning U.S. deregulatory ethos is the only serious alternative to authoritarian rule more broadly.⁷³ The result has been a steady downward spiral toward a future in which effective *democratic* governance of the control revolution seems increasingly out of reach.

E. SO NOW WHAT?

After depression comes acceptance. Unlike depression, however, acceptance does not simply entail resignation to a “new normal” consisting of continuing absence. It also represents an opportunity for new beginnings. If the legacy organizational models underpinning legal institutions have changed beyond recognition, making it infeasible simply to reassert their continuing primacy, perhaps it is time to envision new ones. And if the new, largely privatized governance formations emerging at the intersection of law and technology are not producing the sorts of governance that we want or need, perhaps other kinds of change are now in order. Part IV suggests ways for techlaw scholarship to structure those lines of inquiry.

71. See, e.g., Anupam Chander, Margot Kaminski & William McGeeveran, *Catalyzing Privacy*, 105 MINN. L. REV. 1733; Margot Kaminski, *A Recent Renaissance in Privacy Law*, 63 COMM'N ACM 24 (2020).

72. See, e.g., Rebecca Hamilton, *Governing the Global Public Square*, 62 HARV. INT'L L.J. 117 (2021); Min Jiang, *Authoritarian Informationalism: China's Approach to Internet Sovereignty*, 30 SAIS REV. INT'L AFF. 71, 71–89 (2010); MARGARET ROBERTS, *CENSORED: DISTRACTION AND DIVERSION INSIDE CHINA'S GREAT FIREWALL* (2019); ZEYNEP TUFECKI, *TWITTER AND TEAR GAS: THE POWER AND FRAGILITY OF NETWORKED PROTEST* (2017).

73. See, e.g., Kim Lyons, *Mark Zuckerberg 'Worried' about China's Influence on Internet Regulation*, THE VERGE (May 18, 2020), <https://www.theverge.com/2020/5/18/21262707/zuckerberg-china-regulation-privacy-facebook>; Nitasha Tiku, *Big Tech; Breaking us up will Only Help China*, WIRED (May 23, 2019), <https://www.wired.com/story/big-tech-breaking-will-only-help-china/>.

IV. THE RULE OF LAW AFTER THE CONTROL REVOLUTION

If the project of techlaw is not to wither into irrelevance as it enters its second quarter century, its core research agenda must concern new organizational forms for legal institutions—organizational forms that are optimized to networked information and communication geographies while reasserting the centrality of public, political authority. As a way of framing that agenda, it is useful to recall Langdon Winner’s important meditation on the possibility of inherently political technologies, which identified nuclear power as a technology that uniquely required authoritarian chains of control.⁷⁴ In her powerful new book, Kate Crawford extends Winner’s point about politics to political economy and to the processes that constitute “artificial intelligence.” She argues that those processes are both inherently authoritarian, because they rely on imposed classification and sorting, and inherently extractive, because of the natural and human resources they demand and consume.⁷⁵ From a lawyer’s perspective, however, Winner’s conclusion about nuclear power was incomplete because authoritarian control processes still might be situated within and subjected to forms of oversight by larger and more democratically accountable institutions. By analogy, it is important to consider not only the modes of control and resource extraction that data-driven, algorithmic processes seem to require in their current implementations, but also whether it might be possible to reconfigure such processes in ways that constrain them to serve democratic, human, and planetary needs.

A. NETWORKED GEOGRAPHIES: MAPPING FLOWS, CONTROL POINTS AND FAILURE MODES

Designing governance institutions capable of subjecting the networked information processes of the control revolution to effective, democratically accountable oversight requires attention to their distinctive geographies—to the patterns of flow they enable, the points of control they offer, and the failure modes they present. The problems that have seemed most unruly when considered from traditional legal-institutional perspectives can help us to surface deeply-rooted assumptions about how a functioning system of legal institutions ought to work, and to define new research agendas that do not take those assumptions as givens.

74. See LANGDON WINNER, *THE WHALE AND THE REACTOR: A SEARCH FOR LIMITS IN AN AGE OF HIGH TECHNOLOGY* 19–39 (1986).

75. See *generally* KATE CRAWFORD, *ATLAS OF AI: POWER, POLITICS, AND THE PLANETARY COSTS OF ARTIFICIAL INTELLIGENCE* (2021).

The first and most basic difficulty that networked information processes have been thought to present for legal institutions is the decentralized, nonhierarchical structure of networks themselves. Networks are not ungovernable, however; they are just governed differently, via the standards that bind participants together and that work—more or less effectively—to prevent defection and alternative network-making.⁷⁶ Standard-based governance mechanisms present distinctive failure modes, some of which relate to hegemonic power, others to defects in mechanisms for inclusion and participation, and others to moral hazard.⁷⁷ Preexisting rule-based legal institutions can amplify the failures. In particular, dominant information platform firms can and do leverage contract, trade secrecy, and intellectual property rights to control access to and uses of their networks.⁷⁸ Legal institutions for the control revolution need not take any of those arrangements for granted, but law- and policymakers must be willing to revise their own assumptions about the primacy and sanctity of contract and property rules designed for an earlier era.

A second set of problems concerns the interdependence of actors and regulatory objects within networked ecosystems. Data-driven predictions derive from and operate on population aggregates, and the scope of effective protection for private information typically depends on the behaviors of relatives, friends, and other members of one's professional and social networks.⁷⁹ Networked information and communication tools have similarly broad affordances and effects.⁸⁰ Legal theories of causation and duty handle such network effects poorly, framing them as externalities and sharply limiting opportunities to impose corrective obligations on those whose conduct creates diffuse external harms. Grants of regulatory jurisdiction designed for a

76. For a useful summary of the different ways that networks reflect and reproduce power, see MANUEL CASTELLS, *COMMUNICATION POWER* 45–46 (2nd ed. 2011).

77. See COHEN, *supra* note 8, at 217–37. See generally THE LAW, ECONOMICS, AND POLITICS OF INTERNATIONAL STANDARDIZATION (Panagiotis Delimatsis ed., 2015); Melissa J. Durkee, *International Lobbying Law*, 127 *Yale L.J.* (2018); Ruth W. Grant & Robert O. Keohane, *Accountability and Abuses of Power in World Politics*, 99 *AM. POLIT. SCI. REV.* 29 (2005); Hans Krause Hansen & Tony Porter, *What Do Numbers Do in Transnational Governance?*, 6 *INT'L POL. SOCIO.* 409 (2012); DAVID SINGH GREWAL, *NETWORK POWER: THE SOCIAL DYNAMICS OF GLOBALIZATION* 25–43, 193–214 (2008).

78. See COHEN, *supra* note 8, at 40–46.

79. See generally Solon Barocas & Karen Levy, *Privacy Dependencies*, 95 *WASH. L. REV.* 555 (2020).

80. See generally Seda Gürses & Joris van Hoboken, *Privacy after the Agile Turn*, in *CAMBRIDGE HANDBOOK OF CONSUMER PRIVACY* 579 (Evan Selinger, Jules Polonetsky & Omer Tene eds., 2018); Karen E.C. Levy, *The User as Network*, 20 *FIRST MONDAY* (2015), <https://doi.org/10.5210/fm.v20i11.6281>.

previous era (and often further constrained by insistently deregulatory approaches to cost-benefit analysis) do not perform much better.⁸¹ Governance institutions for the control revolution require more sophisticated understandings of collective harm and obligation, and of the ways that design interventions can protect both individual and collective values.⁸²

Third and relatedly, as described in Section III.C, digital processes that operate via machine learning detect preexisting patterns in the data upon which they rely and, unless constrained to behave differently, will reproduce those patterns along with whatever biases and systemic injustices they encode. If such processes are not merely to be mechanisms for further entrenching inequality and injustice, law- and policymakers will need to learn to make different uses of what they reveal and must stand ready to reconsider the law's relationships to a wide variety of institutions and practices, many of which are decades and even centuries old.⁸³

A fourth set of problems revolves around the fact that access to networked processes and services is unavoidably mediated in ways designed and controlled by others. Even technically trained experts cannot fully access the details of complex machine learning processes that operate in real time over very large, heterogeneous data sets. The rest of us experience such processes and services (and can hold them accountable) only via interfaces, indicators, and dashboards that communicate selected items of information about how they operate. The traditional criteria relied on by regulators and judges tend not to make sense in such environments—information is always imperfect, choices are always imposed by others, and autonomy is always only partial. Interfaces, indicators, and dashboards also have distinctive failure modes. These range from dark patterns deliberately designed to deceive users to interface conventions designed for their addictive properties to simplifying conventions that reflect incomplete and self-interested perceptions of relevancy and risk.⁸⁴ Governance institutions for the control revolution will

81. See COHEN, *supra* note 8, at 146–54, 173–85.

82. See generally Salomé Viljoen, *A Relational Theory of Data Governance*, 131 YALE L.J. 573 (2021).

83. For three very different approaches to questions involving the legitimate design of predictive algorithmic tools, see Crystal S. Yang & Will Dobbie, *Equal Protection Under Algorithms: A New Statistical and Legal Framework*, 119 MICH. L. REV. 291 (2020); Pauline Kim, *Race-Aware Algorithms: Fairness, Nondiscrimination, and Affirmative Action* (May 2021) (unpublished manuscript) (on file with author); and Deborah Hellman, *Big Data and Compounding Injustice*, 18 J. MORAL PHIL. (forthcoming 2021).

84. On dark patterns, see generally WOODROW HARTZOG, *PRIVACY'S BLUEPRINT: THE BATTLE TO CONTROL THE DESIGN OF NEW TECHNOLOGIES* (2018); Arunesh Mathur, Gunes Acar, Michael J. Friedman, Elena Lucherini, Jonathan Mayer, Marshini Chetty & Arvind Narayanan, *Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites*, 3 PROC. ACM

need to speak the relevant technical and design languages and to open underlying design and optimization processes to appropriately structured forms of public scrutiny.

A final and enormously important cluster of problems involves scale and amplification. Networked digital processes operate and are designed to operate at scale, and their dysfunctions also scale up commensurately. Existing legal institutions do not adequately reckon with scale-based effects or the processes of data-driven intermediation that produce and entrench them. So for example, doctrinal frameworks for common carriage and contributory liability remain tethered to outdated notions of neutrality and fault, but data-driven algorithmic processes chart a middle path, rearranging online interactions in ways that are neither neutral nor intentional but rather driven by instrumental considerations and optimization parameters.⁸⁵ First Amendment doctrine presumes listener rationality and holds that the costs of mistakenly suppressing protected speech outweigh those of mistakenly allowing unprotected speech to spread, but data-driven algorithmic processes optimized for engagement and virality short-circuit the presumptive self-correction mechanisms of hypothesized speech markets.⁸⁶ Theories of privacy oriented toward individual control rights and litigation-centered enforcement cannot constrain data harvesting and processing practices designed to operate on populations.⁸⁷ Governance institutions for the control revolution should be designed in ways that respond to these dynamics.⁸⁸

B. LEGAL NORMATIVITIES: COUNTERING SYSTEMATIC ABUSES OF POWER

One might wonder whether new forms of governance constructed along the lines sketched above still deserve to be called “legal” at all—and why that

HUM-COMPUT. INTERACTIONS 1 (2019). On addictive design, see generally ADAM ALTER, *IRRESISTIBLE: THE RISE OF ADDICTIVE TECHNOLOGY AND THE BUSINESS OF KEEPING US HOOKED* (2017); ZUBOFF, *supra* note 52, at 159–62, 457–74; Tristan Harris, *The Slot Machine in Your Pocket*, DER SPIEGEL ONLINE (July 27, 2016), <http://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

85. See generally Cohen, *supra* note 38.

86. See *id.* at 649–53; Lyriisa Barnett Lidsky, *Nobody’s Fools: The Rational Audience as First Amendment Ideal*, 2010 U. ILL. L. REV. 799 (2010); Wu, *supra* note 39; HENRY FARRELL & BRUCE SCHNEIER, *COMMON-KNOWLEDGE ATTACKS ON DEMOCRACY* (Berkman Klein Ctr. Research Publication No. 2018-7, 2018).

87. See generally Julie E. Cohen, *How (Not) to Write a Privacy Law*, KNIGHT FIRST AMENDMENT INST. (Mar. 23, 2021), <https://knightcolumbia.org/content/how-not-to-write-a-privacy-law>.

88. For preliminary explorations of topics relating to scale-based governance, see *id.*; Paul Ohm, *Regulating at Scale*, 2 GEO. L. TECH. REV. 546 (2018); Rory Van Loo, *The New Gatekeepers: Private Firms as Public Enforcers*, 106 VA. L. REV. 467 (2020).

designation might matter. According to Mireille Hildebrandt, “law,” as we have customarily understood it, is an artifact of print technologies, and especially of the fixity and the temporal rhythms that they impose.⁸⁹ If that is right, then the project of reconstructing the rule of law for the networked digital era is doomed to failure. Understood more broadly, however, “rule of law” language is intended to supply a framework for talking about power, calling it to account, and constraining its systematic abuse. Designing governance institutions for the networked information era requires new thinking about how to translate those broadly framed rule-of-law commitments into mid-level principles capable of being operationalized within networked digital environments.

Legal philosophers probing below the surface of contemporary rule of law discourses have long recognized that the “rule of law” is an essentially contested concept.⁹⁰ Three features of those debates are worth emphasizing here.

First and most important, rule of law discourses are situated in particular places and times, and so they have tended to privilege correspondingly situated institutional solutions. Hildebrandt links law’s decline to the failure of traditional legitimacy criteria such as generality, stability, and reproducibility within digital environments.⁹¹ Those criteria, however, are bound up with the organizational forms within which they have been articulated and reinforced; in particular, they are designed to privilege oversight by courts. If courts and textual fixity cannot contend with new forms of networked power and their endemic failure modes, it becomes important to consider what new organizational forms and accompanying evaluative practices might be devised. Such forms and criteria might bear only passing or partial resemblances to those with which we have been familiar, but there will be learning from other disciplines (such as information security and quality assurance) that might inform their design.⁹²

89. MIREILLE HILDEBRANDT, SMART TECHNOLOGIES AND THE END(S) OF LAW: NOVEL ENTANGLEMENTS OF LAW AND TECHNOLOGY 174–85 (2015).

90. See generally W.B. Gallie, *Essentially Contested Concepts*, 56 PROC. ARISTOTELIAN SOC. 167 (1956).

91. HILDEBRANDT, *supra* note 89, at 174–85; see also *id.* at 133–56 (discussing rule of law components). Relatedly, though with a narrower, Anglo-American focus, Lewis Kornhauser has suggested that law represents an “achievement” of governance that satisfies certain operational and evaluative criteria. See Lewis A. Kornhauser, *Law as an Achievement of Governance* (NYU Sch. L. Pub. L., Working Paper No. 21-04, 2021), <http://dx.doi.org/10.2139/ssrn.3762033>.

92. For preliminary explorations of topics relating to new governance modalities for data-driven algorithmic systems, see John Bowers, Elaine Sedenberg & Jonathan Zittrain, *Platform Accountability through Digital “Poison Cabinets”*, KNIGHT FIRST AMEND. INST. (Apr. 13,

Second, scholars have long recognized that some formulations of the rule-of-law ideal are exceedingly thin and serve as fig leaves for new concentrations of economic, authoritarian, and kleptocratic power. The mostly performative array of institutions that answer to autocrats and dictators tend to track existing, industrial-era presumptions about the form of legal institutions; it is no accident that authoritarian regimes constitute courts and appoint judges even as they withhold the authority that such entities require. (Those who conceived and designed the Facebook Oversight Board to cater to a modern-day autocrat's desire for the trappings of the rule of law could have learned a thing or two from this history.) Judged according to the traditional legitimacy criteria, however, such regimes implement the rule of law in name only. Responses to such efforts emphasize the importance of higher-level evaluative criteria such as, for example, tempering arbitrary power.⁹³ Power is resourceful, the project of tempering it is ongoing, and experiments in legal-institutional design will be more or less successful in that regard. Returning iteratively to higher-level rule of law criteria will be important in assessing the resilience and durability of new legal-institutional governance formations.

Finally, rule of law discourses can appear to sanction results that, while nonarbitrary, are nonetheless deeply unjust. Our notions of merit and fault as essentially individualized attributes have produced widespread acceptance of legal-institutional practices that satisfy the traditional criteria of regularity and publicity—and so, not coincidentally, may be consistent with fig-leaf accounts of what the rule of law requires—but that are designed to *further* and *widen* systematically unequal resource distribution. I have in mind here a wide and varied set of practices including, for example, land use and public education regulations that reinforce patterns of economic inequality; rules for conducting elections that, while formally neutral, produce systematic disparities in voter turnout and political representation; and rules regarding the imposition and enforcement of legal financial obligations that impose crushing burdens on the poor.⁹⁴ In contrast, Paul Gowder's exploration of the rule of law foregrounds an equality criterion and demands that rule-of-law institutions work to

2021), <https://knightcolumbia.org/content/platform-accountability-through-digital-poison-cabinets>; douek, *Second Wave Content Moderation*, *supra* note 68; Goldman, *supra* note 65; Paul Ohm, *Sensitive Information*, 88 S. CALIF. L. REV. 1125 (2015); Lauren E. Willis, *Performance-Based Consumer Regulation*, 82 U. CHI. L. REV. 1309 (2015).

93. See, e.g., Martin Krygier, *The Rule of Law: Pasts, Presents, and Two Possible Futures*, 12 ANN. REV. L. & SOC. SCI. 199 (2016).

94. On the term "legal financial obligations," see Monica Llorente, *Criminalizing Poverty through Fines, Fees, and Costs*, AM. BAR ASS'N (Oct. 3, 2016), <https://www.americanbar.org/groups/litigation/committees/childrens-rights/articles/2016/criminalizing-poverty-fines-fees-costs/>.

counteract strategies for hoarding perks and privileges.⁹⁵ A rule-of-law framework for a post- and decolonial era might—and, I would argue, should—give much greater weight to such considerations. A rule of law framework for the networked information era should include mid-level principles for operationalizing an equality criterion within networked digital environments. In particular, it should recognize that those with greater access to knowledge and processing power will always be able to take advantage of information gaps, and that considerations of systemic, distributive, and intergenerational justice may require leveling interventions.⁹⁶

V. CONCLUSION: WWJD?

The legal academy and the legal profession now confront a generational challenge. It is useful to begin simply by recognizing as much. In the context of this symposium, it is also both fitting and instructive to return, once again, to “Lex Informatica” and to Joel Reidenberg. What would Joel do?

That question is easy to answer: Look past overly reductive models and pat solutions. Center legal institutions as necessary sites of innovation. Consult technologists, but don’t conflate their particular expertise with wisdom about how to run a just, inclusive, and democratically-accountable society.⁹⁷ Consult industry, but don’t confuse its self-interested, ideologically overdetermined positionings about “progress” and “innovation” with the demands of human flourishing more broadly understood.⁹⁸ Design processes that prioritize *public* accountability.⁹⁹ Especially, prioritize accountability to communities that have borne the brunt of legally- and technologically-facilitated abuses.¹⁰⁰ Bring

95. See generally PAUL GOWDER, *THE RULE OF LAW IN THE REAL WORLD* (2016).

96. On the consequences of differential access to information and processing power, see generally MARK ANDREJEVIC, *INFOGLUT: HOW TOO MUCH INFORMATION IS CHANGING THE WAY WE THINK AND KNOW* (2013); Hellman, *supra* note 83. For preliminary explorations of topics relating to leveling interventions in systems design, see Julie E. Cohen, *Turning Privacy Inside Out*, 20 *THEOR. INQ. L.* 1 (2019); Mireille Hildebrandt, *Privacy as Protection of the Incomputable Self: From Agnostic to Agonistic Machine Learning*, 20 *THEOR. INQ. L.* 83 (2019); Paul Ohm & Jonathan Frankle, *Desirable Inefficiency*, 70 *FLA. L. REV.* 777 (2018); Paul Ohm, *Forthright Code*, 56 *HOUS. L. REV.* 471 (2018).

97. See Joshua A. Kroll, Joanna Huey, Solon Barocas, Edward W. Felten, Joel R. Reidenberg, David G. Robinson & Harlan Yu, *Accountable Algorithms*, 165 *U. PA. L. REV.* 633, 695–99 (2017).

98. See Joel R. Reidenberg & Thomas H. Davenport, *Should the U.S. Adopt European-Style Data-Privacy Protections?*, *WALL. ST. J.* (Mar. 18, 2013), <https://www.wsj.com/articles/SB10001424127887324338604578328393797127094>.

99. See Kroll et al., *supra* note 97, at 702–05.

100. See *id.* at 678–95; N. Cameron Russell, Joel R. Reidenberg, Elizabeth Martin & Thomas B. Norton, *Transparency and the Marketplace for Student Data*, 22 *VA. J.L. & TECH.* 107 (2018).

everyone to the table, and treat everyone with generosity and respect.¹⁰¹ Above all, remember that law is a means to an end and that denial, defeatism, arrogance, and entitlement undermine that end utterly.

101. See Steve Bellovin, *In Memoriam: Joel Reidenberg*, SMBLOG (Apr. 22, 2020), <https://www.cs.columbia.edu/~smb/blog/2020-04/2020-04-22.html>; Omer Tene, *A Farewell to Joel Reidenberg: Mentor, Scholar, Mensch*, IAPP.ORG (Apr. 23, 2020), <https://iapp.org/news/a/a-farewell-to-joel-reidenberg-mentor-scholar-mensch/>.