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The Law of Informational Capitalism

The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power
BY SHOSHANA ZUBOFF
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Between Truth and Power: The Legal Constructions of Informational Capitalism
BY JULIE E. COHEN
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ABSTRACT. Over the past several decades, our capacity to technologically process and exchange data and information has expanded dramatically. An early sense of optimism about these developments has given way to widespread pessimism, in the wake of a wave of revelations about the extent of digital tracking and manipulation. Shoshana Zuboff's book, *The Age of Surveillance Capitalism*, has been hailed by many as the decisive account of the looming threat of private power in the digital age. While the book offers important insights, Zuboff's account is too narrow: it fixates on technological threats to our autonomy and obscures the relationship between technology and the problems of monopoly, inequality, and discriminatory hierarchy that threaten our democracy. Zuboff's book also fails to appreciate the critical role that law plays in the construction and persistence of private power. Julie Cohen's book, *Between Truth and Power: The Legal Constructions of Informational Capitalism*, gives us a much better framework to comprehend intensifying forms of private power today and the role that law has played in supporting them. Drawing on Cohen's insights, I construct an account of the "law of informational capitalism," with particular attention to the law that undergirds platform power. Once we come to see informational capitalism as contingent upon specific legal choices, we can begin to consider how democratically to reshape it. Though Cohen does not emphasize it, some of the most important legal developments—specifically, developments in the law of takings, commercial speech, and trade—are those that encase private power from democratic revision. Today's informational capitalism brings a threat not merely to our individual subjectivities but to equality and our ability to self-govern. Questions of data and democracy, not just data and dignity, must be at the core of our concern.

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INTRODUCTION

Over the past several decades, a series of extraordinary technological developments has drastically expanded human capacities to store, exchange, and process data and information. Early attempts to understand this phenomenon were often optimistic in tone. In our new information age, influential voices argued, we could live more freely and with less scarcity, leveraging the nonrivalry of information, innate human tendencies to create,[1] and the wisdom of crowds.[2] Digital networks were celebrated for empowering sharing and new forms of creative production,[3] and information technologies were commonly described as enabling—if not guaranteeing—a more empowering workplace and higher living standards for all.[4]

Today's mood about these technological developments is decidedly darker, filtered through a myriad of recent revelations. Facebook has experimented on us to influence our emotional states.[5] Cambridge Analytica sought to mobilize

1. *See, e.g.*, John Perry Barlow, *A Declaration of the Independence of Cyberspace*, ELECTRONIC FRONTIER FOUND. (Feb. 8, 1996), https://www.eff.org/cyberspace-independence [https://perma.cc/9DVN-R4F6]; John Perry Barlow, *Selling Wine Without Bottles: The Economy of Mind on the Global Net*, ELECTRONIC FRONTIER FOUND., https://www.eff.org/pages/selling-wine-without-bottles-economy-mind-global-net [https://perma.cc/ERN4-NP9W]; Eben Moglen, *The dotCommunist Manifesto* (Jan. 2003), http://emoglen.law.columbia.edu/publications/dcm.html [https://perma.cc/ZRW4-N4A3]; *see also* RICHARD STALLMAN, *The GNU Manifesto*, *in* FREE SOFTWARE, FREE SOCIETY: SELECTED ESSAYS OF RICHARD STALLMAN 33, 41 (Joshua Gay ed., 2002) (arguing that computer programming, managed according to free software principles, would allow us to take "a step toward the post-scarcity world, where nobody will have to work very hard just to make a living"). All of these writers understood these possibilities as contingent upon legal and policy choices,and therefore as possible rather than inevitable. They argued that pervasively networked digital technologies would dramatically enhance freedom and production, if the new modalities of production that were emerging were freed from overaggressive assertions of intellectual property rights.

2. CLAY SHIRKY, HERE COMES EVERYBODY: THE POWER OF ORGANIZING WITHOUT ORGANIZATIONS (2008); JAMES SUROWIECKI, THE WISDOM OF CROWDS (2004).

3. YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM 3 (2006); LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 120-41 (2001). These accounts, too, noted that the potential for sharing and distributed production were contingent in important ways on law.

4. *See, e.g.*, ERIK BRYNJOLFSSON & ANDREW MCAFEE, THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES (2014).

5. *See, e.g.*, Vindu Goel, *Facebook Tinkers with Users' Emotions in News Feed Experiment, Stirring Outcry*, N.Y. TIMES (June 29, 2014), https://www.nytimes.com/2014/06/30/technology/facebook-tinkers-with-users-emotions-in-news-feed-experiment-stirring-outcry.html [https://perma.cc/5NL6-2QYB].

surreptitiously harvested Facebook data to influence elections.[6] Trolls and bots—some independent, others backed by governments—use social-media platforms deliberately to sow discord and spread misinformation.[7] Evidence has emerged that click-driven social media may have polarizing effects.[8] Employers are using digital technologies to watch and manipulate workers.[9] We have begun to worry that these new capabilities are changing who we are—that our relationships, sleep, concentration, and even our humanity are being unraveled by our compulsive relationships to computers, apps, and social networks.[10]

Enter *The Age of Surveillance Capitalism*, by Harvard Business School Professor emerita Shoshana Zuboff.[11] A nearly 700-page indictment of the business model of most top internet firms, it has been compared to the works of Adam

6. *See, e.g.*, Carole Cadwalladr & Emma Graham-Harrison, *Revealed: 50 Million Facebook Profiles Harvested for Cambridge Analytica in Major Data Breach*, THE GUARDIAN (Mar. 17, 2018, 6:03 PM EDT), https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election [https://perma.cc/554Q-J3BK]; Paul Chadwick, *How Many People Had Their Data Harvested by Cambridge Analytica?*, THE GUARDIAN (Apr. 16, 2018, 2:00 AM EDT), https://www.theguardian.com/commentisfree/2018/apr/16/how-many-people-data-cambridge-analytica-facebook [https://perma.cc/P5VY-G6XW].

7. *See, e.g.*, Chris Baraniuk, *How Twitter Bots Help Fuel Political Feuds*, SCI. AM. (Mar. 27, 2018), https://www.scientificamerican.com/article/how-twitter-bots-help-fuel-political-feuds [https://perma.cc/YY6W-QNGT]; Amanda Robb, *Anatomy of a Fake News Scandal*, ROLLING STONE (Nov. 16, 2017, 3:07 PM ET), https://www.rollingstone.com/politics/politics-news/anatomy-of-a-fake-news-scandal-125877 [https://perma.cc/GMP5-G39P]; Tim Starks, Laurens Cerulus & Mark Scott, *Russia's Manipulation of Twitter Was Far Vaster Than Believed*, POLITICO (June 5, 2019, 6:00 AM EDT), https://www.politico.com/story/2019/06/05/study-russia-cybersecurity-twitter-1353543 [https://perma.cc/PL9Y-DT97].

8. *See, e.g.*, YOCHAI BENKLER ET AL., NETWORK PROPAGANDA: MANIPULATION, DISINFORMATION, AND RADICALIZATION IN AMERICAN POLITICS 281-86 (2018); Zeynep Tufekci, Opinion, *YouTube, the Great Radicalizer*, N.Y. TIMES (Mar. 10, 2018), https://www.nytimes.com/2018/03/10/opinion/sunday/youtube-politics-radical.html [https://perma.cc/KE3A-HZPN].

9. *See* Brishen Rogers, *Worker Surveillance and Class Power*, LAW & POL. ECON. (July 11, 2018), https://lpeblog.org/2018/07/11/worker-surveillance-and-class-power [https://perma.cc/CCC9-M5PA].

10. *See* ADAM ALTER, IRRESISTIBLE: THE RISE OF ADDICTIVE TECHNOLOGY AND THE BUSINESS OF KEEPING US HOOKED (2017); NICHOLAS CARR, THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS (2010); SHERRY TURKLE, ALONE TOGETHER: WHY WE EXPECT MORE FROM TECHNOLOGY AND LESS FROM EACH OTHER (2011); Nellie Bowles, *A Dark Consensus About Screens and Kids Begins to Emerge in Silicon Valley*, N.Y. TIMES (Oct. 26, 2018), https://www.nytimes.com/2018/10/26/style/phones-children-silicon-valley.html [https://perma.cc/X94K-ELNM].

11. SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER (2019).

Smith, Max Weber, Karl Polanyi, Thomas Piketty, and Karl Marx.[12] It also has been dubbed the *Silent Spring* of the information age.[13] Zuboff's argument is structured as an urgent call to action: we have entered a new era of "surveillance capitalism," she contends, that operates by "unilaterally claim[ing] human experience as free raw material for translation into behavioral data," and processing that data to "anticipate what you will do now, soon, and later."[14] Companies operating in this mode seek not just to predict but to "*shape* our behavior at scale."[15] Companies like Google and Facebook possess, she declares, a new species of "instrumentarian power," the power to "shape[] human behavior toward others' ends."[16] The result: an economic system that "will thrive at the expense of human nature and will threaten to cost us our humanity."[17]

I describe the core of Zuboff's account in Part I—and its virtues. The book is extraordinarily acute in its grasp of the business models and aspirations of the largest internet firms and describes in exquisite detail why they are deeply troubling. And while overwritten and overlong, the account is also strikingly accessible. In an age of information glut, where so much private power is accumulated

12. *See, e.g.*, Sam Biddle, "*A Fundamentally Illegitimate Choice": Shoshana Zuboff on the Age of Surveillance Capitalism*, INTERCEPT (Feb. 2, 2019, 8:00 AM), https://theintercept.com/2019/02/02/shoshana-zuboff-age-of-surveillance-capitalism [https://perma.cc/8BH9-5YNJ] (noting that Zuboff's book "is already drawing comparisons to seminal socioeconomic investigations like . . . Karl Marx's 'Capital'"); Nicholas Carr, *Thieves of Experience: How Google and Facebook Corrupted Capitalism*, L.A. REV. BOOKS (Jan. 15, 2019), https://lareviewofbooks.org/article/thieves-of-experience-how-google-and-facebook-corrupted-capitalism [https://perma.cc/DRG4-4YP5] ("Like another recent masterwork of economic analysis, Thomas Piketty's 2013 *Capital in the Twenty-First Century*, the book challenges assumptions, raises uncomfortable questions about the present and future, and stakes out ground for a necessary and overdue debate."); John Naughton, *'The Goal Is to Automate Us': Welcome to the Age of Surveillance Capitalism*, THE GUARDIAN (Jan. 20, 2019, 2:00 AM EST), https://www.theguardian.com/technology/2019/jan/20/shoshana-zuboff-age-of-surveillance-capitalism-google-facebook [https://perma.cc/V3C7-GGNK] (noting that Zuboff's "vast . . . book is a continuation of a tradition that includes Adam Smith, Max Weber, Karl Polanyi and—dare I say it—Karl Marx").

13. Biddle, *supra* note 12 (likening Zuboff's book to Rachel Carson's *Silent Spring*, in that both are "alarming exposé[s] about how business interests have poisoned our world"); Jeff vonKaenel, Opinion, *Big Tech vs. 7.5 Billion Earthlings*, SACRAMENTO NEWS & REV. (Mar. 28, 2019), https://www.newsreview.com/sacramento/big-tech-vs-7-5-billion/content?oid=27927700 [https://perma.cc/2BLX-K6ZD] (arguing that Zuboff's book "provides a similar intellectual framework from which to launch a tech regulation movement" as Rachel Carson's *Silent Spring* did "to launch the environmental movement").

14. ZUBOFF, *supra* note 11, at 8.

15. *Id.*

16. *Id.*

17. *Id.* at 11-12.

in secret, it is no small thing to break through the noise to articulate complex problems and ideas. But by this same token, it is of real significance if the account is partial or misleading. And in important ways, it is.

Zuboff is right that our autonomy and individuality are today at risk in new ways. But she has little to say about the monopoly power of new platforms, or about their role in reshaping labor markets and intensifying forms of inequality. She ignores the fact that we are not all equally vulnerable to these new forms of power. Part of the problem, as I will describe, is her relentless focus on individual autonomy and her cheery attitude toward all forms of capitalism that are not organized around surveillance. Given the manifesto-like quality of the book, it is something of a shock when you realize that Zuboff's dream is a world dominated by firms like Apple, instead of firms like Google.[18] That view, once uncovered, has little appeal, nor does it help us think about many of the extraordinarily important modes of private power facilitated by information technologies today.

Zuboff also claims at several points that surveillance capitalism is built on "lawlessness."[19] In her account, markets in data exist beyond law and operate by their own rules. It is not hard to see where she gets this view: dip into legal scholarship and you will quickly learn that no one owns data.[20] But the view that the operations of Google and Facebook occur in a law-free zone—or even that those companies would so desire—is wrong. It conceals the degree to which these companies rely upon law for their power and the many legal decisions that could be altered to enhance public power. If we are to intervene to democratize the forms of private power Zuboff describes, we must understand how law helps to construct them.

Fortunately, Julie Cohen has written a book that gives us a better, broader framework through which to understand private power in the information age and that also does superb work to trace how law has shaped (and been shaped by) that power. In *Between Truth and Power: The Legal Constructions of Informa-*

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18. Zuboff celebrates the "unprecedented magnitude of Apple's accomplishments," which she attributes to the firm's ability to "tap[] into a new society of individuals and their demand for individualized consumption," for example, by creating iTunes and the iPod. *Id.* at 30; *see also infra* text accompanying note 26 (describing Zuboff's enthusiasm for the "advocacy-oriented capitalism" model that she associates with Apple).

19. *See, e.g.*, ZUBOFF, *supra* note 11, at 103 ("A key element of Google's freedom strategy was its ability to discern, construct, and stake its claim to unprecedented social territories that were not yet subject to law."); *id.* at 104 ("[L]awlessness has been a critical success factor in the short history of surveillance capitalism.").

20. *See, e.g.*, Lothar Determann, *No One Owns Data*, 70 HASTINGS L.J. 1, 5 (2018); Mark A. Lemley, *Private Property*, 52 STAN. L. REV. 1545, 1547 (2000); Pamela Samuelson, *Privacy as Intellectual Property?*, 52 STAN. L. REV. 1125, 1129 (2000).

tional Capitalism, Cohen argues that we live not in an age of "surveillance" capitalism—which trains our focus on dynamics of surveillance and behavioral control—but in an age of "informational capitalism"—which focuses our attention on informationalism as a broader mode of development in the contemporary political economy.[21] Her broader framework captures transformations across a much wider range of settings and calls attention not only to Zuboff's instrumentarian power but also to rising platform power, monopoly power, and the power that technology can give capital over workers and governments over the governed. She also shows how these changes are mediated at every moment by law: for example, law has enabled de facto property regimes in both data and algorithms, although neither are formally property.[22]

Cohen's account is complex and extremely dense: it demands patience of the reader and requires some elaboration, which I undertake in Part II. The reward is substantial: Cohen allows us sophisticated insight into the law and political economy of the reigning productive paradigm.[23] Building upon it in Part III, I aim to sketch what we might call the "law of informational capitalism" and add an account of the conceptual moves that have helped bring this law about.

How do allegedly assetless wonders like Uber and Airbnb mobilize capital and extract profits? They rely upon laws that have been transformed to enable the creation and accumulation of immaterial capital. These include changes across a wide range of fields such as trade secrecy, contract, intermediary immunities, privacy, and the First Amendment. Historians of capitalism and neoliberalism have emphasized how both systems have enacted not just laws that enable markets but also laws that *protect* them from democratic majorities that might remake them. Informational capitalism, I show, is no different. Three moves are critical here: the attempt to absorb trade secrets and data as forms of property protected from "takings" and from government disclosure; the attempt to insulate the activities of data brokers and software companies by claiming that they are purveyors of speech protected by the First Amendment; and the attempt to insulate markets from domestic control by internationalizing key components of the law of informational capitalism. All three could be mobilized to make the

21. JULIE E. COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM 5 (2019); *see infra* Part II; *see also infra* text accompanying note 40 (defining surveillance capitalism more fully); *infra* text accompanying notes 132-144 (defining informational capitalism more fully). Cohen relies on Manuel Castells's influential definition of informational capitalism. *See* MANUEL CASTELLS, THE RISE OF THE NETWORK SOCIETY 21 n.31 (2d ed. 2010).

22. COHEN, *supra* note 21, at 44.

23. Cohen's account, as I will describe, self-consciously joins a field of emerging "law and political economy" scholarship. *See infra* text accompanying note 127.

building of democratic power over informational capitalism difficult, and all three will be the terrain of significant struggle as such efforts unfold.

These three forms of encasement are evidence that informational capitalism brings a threat not merely to our individual subjectivities but to our ability to self-govern. Questions of data and democracy, not just data and dignity, must be at the core of our concern today. By mapping the law of data capitalism as a series of doctrines, statutes, and underlying logics, we can begin to see how law, legal thought, and technical systems have worked together to enable substantial new forms of private power. We can also explore the levers we have to tame them.

Legal scholarship has an important role to play here. Cohen's book shows that law and legal thought have played key facilitating roles in these developments. The wave of legal changes required to enable today's extreme concentrations of private power were ushered in by ideas and tropes distinctive to our neoliberal era.[24] The "open access" movement, and the publicly minded intellectual-property scholars who influenced its shape (of which I am one), as I will describe, did not escape the gravity exerted by this era. Though we did not wish it, our ideas have helped consolidate, or at least have not adequately contested, these vast new forms of private power. Today, we need a new departure for legal scholarship in this domain and a more serious engagement with the political economy of data, grounded in the recognition that data is a social relation—an artifact not only of human cognition but also of legal structures.[25]

I. THE POWER AND LIMITS OF SURVEILLANCE CAPITALISM

A. The Rise of Surveillance Capitalism

Zuboff develops her definition of surveillance capitalism substantially through a close analysis of one trailblazing firm: Google. In the beginning, Google was just an ordinary capitalist firm working under a model that Zuboff calls "advocacy-oriented capitalism." This was a virtuous form, exemplified by Apple and its iPod, that fused digitization and capitalism to better serve users and provide a more individuated, less "mass" consumer experience.[26] Google was born in this era, and originally followed its pattern: it used our online "data

24. *See infra* text accompanying note 126. For a definition of neoliberalism, see *infra* Section II.C.

25. *See infra* Section III.A.

26. ZUBOFF, *supra* note 11, at 29-30.

exhaust" to turn its "search engine into a recursive learning system that constantly improved search results."[27] Our online traces were, it realized, a "broad sensor of human behavior," which when combined and analyzed could yield extraordinary insights.[28] By feeding data about website links, click-through rates, and revealed interests into its Page Rank algorithm, Google could provide us with more accurate search results.[29] This lesson was soon applied to other "product innovations such as spell check, translation, and voice recognition."[30]

To understand the story here, it helps to know a little about recent technological developments in data processing. Decades of developments in computer processing power and the connection of processors in digital networks have allowed information to be gathered and exchanged in new ways. Over time, advances in computer processing speed and storage, the development of pervasively distributed sensors, and advances in machine-learning techniques have ushered in what some call the "second machine age," enabling quantitative shifts in how we know and act.[31] While early computers were very good at rule-following, they were poor at pattern recognition and adapting to changing environments.[32] Machine-learning techniques now allow machines to "learn" by extracting patterns from massive datasets. While this is decidedly less than real intelligence, it has enabled significant new forms of technological power. It allowed computers to master humankind's most difficult strategy game, Go, which has more possible moves than atoms in the observable universe.[33] It is what companies hope will soon allow computers to outstrip radiologists in interpreting mammograms.[34] It is also the technology behind self-driving cars, Google's Page Rank, and Google Translate.

It was in 2002, Zuboff argues, that everything changed. This was the year that Google discovered what she calls "behavioral surplus"—forms of data useful

27. *Id.* at 68.

28. *Id.*

29. *Id.* at 69.

30. *Id.* at 68.

31. BRYNJOLFSSON & MCAFEE, *supra* note 4, at 11-12; *see also* VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK 6-7 (2013) (describing similar developments as the "big data" revolution).

32. BRYNJOLFSSON & MCAFEE, *supra* note 4, at 16-18.

33. ANDREW MCAFEE & ERIK BRYNJOLFSSON, MACHINE, PLATFORM, CROWD: HARNESSING OUR DIGITAL FUTURE 2-6 (2017).

34. *See, e.g.*, Ziad Obermeyer & Ezekiel J. Emanuel, *Predicting the Future—Big Data, Machine Learning, and Clinical Medicine*, 375 NEW ENG. J. MED. 1216, 1218 (2016); Alejandro Rodriguez-Ruiz et al., *Stand-Alone Artificial Intelligence for Breast Cancer Detection in Mammography: Comparison with 101 Radiologists*, 111 J. NAT'L CANCER INST. 916 (2019).

for something *other* than improving products and services. In Google's case, the purpose was to generate its first profitable business model: the sale of behaviorally targeted ads.[35] Google's profits today are almost exclusively from such advertising[36] and the market it has constructed to sell these ads is mind-boggling. In order to maximize the value of the ad space it sells, Google mobilizes its vast troves of data to profile each user with increasing granularity. In early versions, this meant evaluating previous websites we had visited, ads we had seen before, and feedback on how we reacted to them to try to predict whether we would be lured in by a particular product or ad.[37]

The truth is, we do not know exactly what inputs Google uses these days, any more than we can accurately describe its data holdings. But Zuboff pieces together an outline of the evolution through patents, press releases, statements by employees, and news coverage. As the advertising model became more embedded at Google, the company realized that better predictions led to better click-through rates, and this generated a demand for ever-more comprehensive data on Google users (which is effectively all of us, since Google captures about 92% of *worldwide* search engine traffic and 95% of searches on mobile phones).[38] It then matched its data holdings with a virtual auction house, enabling bidders to consider how likely the user is to click on the ad. Google now conducts trillions of these auctions simultaneously, every day.[39]

It is by generalizing from Google's trajectory that Zuboff derives her definitions of surveillance capitalism. In this new mode, people are not users whom companies seek to serve but "*objects* from which raw materials are extracted and expropriated."[40] Our data is then fed into "prediction factories" to monetize a guess about our desires and what we will do—or can be subtly pressed to do—next. The need for ever-more data to increase the accuracy of these predictions has led data hunters from the online world to the offline world. As Zuboff puts it, "If Google is a search company, why is it investing in smart-home devices, wearables, and self-driving cars? If Facebook is a social network, why is it developing drones and augmented reality?"[41] In fact, she argues, they are driven "to

35. ZUBOFF, *supra* note 11, at 75-76.

36. *Id.* at 93.

37. *Id.* at 80.

38. *Search Engine Market Share Worldwide, Sept. 2018-2019*, STATCOUNTER (Feb. 2020), http://gs.statcounter.com/search-engine-market-share [https://perma.cc/288G-J7VP].

39. ZUBOFF, *supra* note 11, at 82.

40. *Id.* at 94.

41. *Id.* at 129.

hunt and capture raw material," and the key move today is off the internet.[42] She quotes Google's former CEO, Eric Schmidt:

> The internet will disappear. There will be so many IP addresses . . . so many devices, sensors, things that you are wearing, things that you are interacting with, that you won't even sense it. It will be part of your presence all the time. Imagine you walk into a room and the room is dynamic.[43]

First, companies tracked our searches. Then they correlated that tracking with data gathered from our browsers and phones. Companies learned that apps were powerful sensors too, gleaning information about our habits, our health, our friends.[44] Apps frequently access one another's information, and Google and Facebook can do the same. With GIS and mobile payment systems attached to our devices, integrating other datasets with the data on our phones generated still more value for advertisers.[45]

As Zuboff describes, there is now a wave of new products "from smart vodka bottles to internet-enabled rectal thermometers, and quite literally everything in between" that are designed to sense our activities and transmit this behavioral data for unknowable future uses.[46] Companies tout their "interactive denim" that can detect your "contextual activity, health and emotional state."[47] The market in healthcare apps has exploded, providing a means to combine data that users provide with other information on their phones to generate profiles rich with highly sensitive information.[48] Internet-enabled Smart TVs—present in almost half of U.S. homes as of 2017—constantly track what users are watching and relay it back to enable targeted advertising.[49]

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42. *Id.*

43. *Id.* at 199.

44. *Id.* at 249.

45. *Id.* at 134.

46. *Id.* at 238.

47. *Id.* at 246-47.

48. *Id.* at 248; *see* Lori Andrews, *A New Privacy Paradigm in the Age of Apps*, 53 WAKE FOREST L. REV. 421, 426 (2018).

49. Sapna Maheshwari, *How Smart TVs in Millions of U.S. Homes Track More Than What's on Tonight*, N.Y. TIMES (July 5, 2018), https://www.nytimes.com/2018/07/05/business/media/tv-viewer-tracking.html [https://perma.cc/D2PE-A7E4].

All of this, Zuboff argues, enables "instrumentarianism," a new form of power that allows firms to control us in machinic ways.[50] She quotes a software engineer: "The new power is *action* . . . . [S]ensors can also be *actuators* . . . . It's no longer simply about ubiquitous computing. Now the real aim is ubiquitous intervention, action, and control. The real power is that now you can *modify* real-time actions in the real world."[51]

One expression of this is what Zuboff calls the "uncontract"—the ability of firms, through software, to enforce contractual terms immediately and nonnegotiably.[52] When combined with new surveillance power, this ability to act at a distance takes on some undeniably inhumane qualities. Your car can be disabled, perhaps at a stoplight or on your way to the hospital, if you fail to make a car payment.[53] Health-insurance companies can ask that you comply with exercise regimes and use sensors and digital networks to be sure you do. Smart machines inserted into our daily lives have ways of governing us—not by manipulating our minds but by defining our options in binary code. In a simple way, this was the point of Lawrence Lessig's influential 1999 book *Code and Other Laws of Cyberspace*.[54] Code could work like a kind of law, Lessig wrote, because it could create the parameters of action.[55] And as Mireille Hildebrandt recently pointed out, technological regulation is different from legal regulation in several important ways: it is not democratically authored; it rules out disobedience in a technical, material sense; and it is often practically impossible to contest because its operations are largely invisible and beyond the reach of any court.[56]

This kind of algorithmic control, though, is of secondary concern for Zuboff. It is psychic control that she most fears. Today, Zuboff argues, firms can "herd," "tune," and "condition" us via digital action.[57] She offers two signal examples. One is Pokémon Go, the game craze that led millions of people to reorganize how they moved through physical space (sometimes visiting stores that paid to

50. ZUBOFF, *supra* note 11, at 8 (defining instrumentarian power as power that "knows and shapes human behavior toward others' ends," and that "works its will through the automated medium of an increasingly ubiquitous computational architecture of 'smart' networked devices, things, and spaces").

51. *Id.* at 293.

52. *Id.* at 218-21.

53. *Id.* at 215; *see also* Rebecca Crootof, *The Internet of Torts: Expanding Civil Liability Standards to Address Corporate Remote Interference*, 69 DUKE L.J. 583 (2019) (describing how advances in technology allow companies to remotely interfere with products).

54. LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999).

55. *Id.* at 77-78.

56. MIREILLE HILDEBRANDT, SMART TECHNOLOGIES AND THE END(S) OF LAW 12 (2015).

57. ZUBOFF, *supra* note 11, at 294.

serve as a destination) in an effort to catch virtual creatures.[58] The other is Facebook's study showing it could increase voter turnout by manipulating messages on the feeds of millions of users.[59] As this illustrates, and as Google's chief economist argued long ago, the ubiquity of computer interfaces has enabled new forms of corporate experimentation.[60] With continuous data flows, networks, and surveillance capacities, companies like Google and Facebook now can run millions of secret tests a day to optimize their profitability. This creates significant new potential for these firms to probe us and alter what we do. Zuboff's account is at its most chilling when she quotes executives themselves. Here, for example, is the CEO of an "emotion scanning" firm: "[I]n the future, we'll assume that every device just knows how to read your emotions."[61] Once our devices know our emotions, they will be able, Zuboff assures us, to fine-tune their ability to profit from us and to keep us jacked into the networks like so many brains in a Matrix vat. At the core of Zuboff's concern is not surveillance or capitalism, but this new threat of a machine-driven "collectivism."[62]

Zuboff's account is important. It offers an extraordinary and vivid account of the power that private actors, mobilizing vast and interactive troves of data, may soon have to influence our behavior, and it shows how the business models of some of the world's most dynamic and valuable firms are fundamentally misaligned with our interests in control over our lives. She lays bare dynamics that are deliberately obscured from most of us, and convincingly situates the rise of this power in incentives and business models, as well as the weak regulatory culture that has characterized the last two decades (particularly in the United States). But the book, ultimately, is not the guide to the problem of private power in the digital age that we need today.

B. The Limits of Zuboff's Account

Zuboff makes a convincing case that technologies of the present facilitate a new paradigm of private power—one that appropriates our data for profit, dominated by a few companies that create significant new threats to our autonomy. But is it really the case that surveillance, the sale of predictions about human

58. *Id.* at 315-16.

59. *Id.* at 299.

60. *Id.* at 64.

61. *Id.* at 289.

62. Zuboff also spends pages on the strange rhetoric of Alex Pentland, an influential engineer who apparently would like to organize all of human life for everyone else, and whom she treats as emblematic of Silicon Valley as a terrifying "collectivist" whole. *See id.* at 416-19, 426-44.

behaviors, and engineering of behavioral responses will be the core value proposition in the global economy going forward?[63] As others have pointed out, Zuboff declares rather than defends the claim.[64]

The existing evidence suggests that until behavioral advertising becomes much more sophisticated, it will have at most a small impact on behavior.[65] In example after example, celebrated AI-driven projects also have fallen short of their billing.[66] There is good reason to treat with caution claims made by executives and engineers about the vast new powers that lie just around the bend. Still,

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63. *Id.* at 11 (arguing that ownership of the means of behavioral modification will be "the fountainhead of capitalist wealth and power in the twenty-first century").

64. *See* Evgeny Morozov, *Capitalism's New Clothes*, BAFFLER (Feb. 4, 2019), https://thebaffler.com/latest/capitalisms-new-clothes-morozov [https://perma.cc/B2CY-R46T].

65. *See* BENKLER ET AL., *supra* note 8, at 276-79. The most significant study purporting to show a positive effect of behavioral advertising showed that the effect size on behavior (in that study, for instance, purchasing after clicking through an ad) was very small. *Id.* at 277 (reporting results of S.C. Matz et al., *Psychological Targeting as an Effective Approach to Digital Mass Persuasion*, 114 PROC. NAT'L ACAD. SCI. U.S.A. 12714, 12715-16 (2017)). For example, for about every 7,700 people targeted, only one additional purchase was achieved. *Id.* In an election, even if every voter could be targeted, effects of this size would impact "a few hundred voters across an entire state." BENKLER ET AL., *supra* note 8, at 278. Recent assessments suggest that even these small effect sizes may be overestimates, given certain methodological complexities. *See, e.g.*, Dean Eckles, Brett R. Gordon & Garrett A. Johnson, *Field Studies of Psychologically Targeted Ads Face Threats to Internal Validity*, 115 PROC. NAT'L ACAD. SCI. U.S.A. E5254, E5254 (2018) (highlighting limitations of the experimental methodology used, including that it did not randomize subjects to different ads and so may have been picking up confounders, such as differences in age or gender correlated with the personality types they were keyed to); Byron Sharp, Nick Danenberg & Steven Bellman, *Psychological Targeting*, 115 PROC. NAT'L ACAD. SCI. U.S.A. E7890, E7890 (2018) (noting that the Matz study showed positive results in only two of the five experiments, and did not control for the differing creative quality of advertisements, and suggesting that the impact of the psychologically targeted advertisement was the result of "the creative quality of these ads . . . not their targeting"). Companies spend substantial sums on online marketing, of course, and this might count as evidence that it has an impact. For an argument that this investment reflects agency problems and the difficulty of producing good effects data (given, for example, selection effects), see Jesse Frederick & Maurits Martijn, *The New DotCom Bubble Is Here: It's Called Online Advertising*, CORRESPONDENT (Nov. 6, 2019), https://thecorrespondent.com/100/the-new-dot-com-bubble-is-here-its-called-online-advertising/13228924500-22d5fd24 [https://perma.cc/RCA7-T2MY].

66. The latest reports are that self-driving cars are far further off than recently predicted by companies and may never materialize in the form they were promised. *See* Neal E. Boudette, *Despite High Hopes, Self-Driving Cars Are 'Way in the Future*,' N.Y. TIMES (July 17, 2019), https://www.nytimes.com/2019/07/17/business/self-driving-autonomous-cars.html [https://perma.cc/U3BF-YRWX]. Obstacles are both technical and sociolegal. *See, e.g.*, Michael A. Alcorn et al., Strike (with) a Pose: Neural Networks Are Easily Fooled by Strange Poses of Familiar Objects 1 (Apr. 18, 2019) (unpublished manuscript), https://arxiv.org/pdf/1811.11553.pdf [https://perma.cc/9KTP-R93V] (describing problems that current image classifiers have in recognizing "out-of-distribution" poses and events, such as a school bus

it would be foolish to dismiss the concerns Zuboff raises, because studies of the impact of behavioral marketing are still few and limited, and because these powers will grow as analytics, digital profiles, and processing become more sophisticated.

The bigger problem with Zuboff's account is that her fixation on threats to our autonomy screens out broader and arguably more important problems of private power in the information age—for example, the ways in which network effects feed platform power, informationalism generates winner-take-all dynamics, and digital technology has impacted labor.

This is in part a product of Zuboff's underlying attitude toward capitalism. As Evgeny Morozov has pointed out in an insightful review, Zuboff's favored alternative to capitalism is not socialism, but "advocacy-oriented" capitalism, which deploys technologies to better improve services.[67] This is capitalism as

flipped on its side as opposed to a front view of the same object); Jeremy Kahn, *To Get Ready for Robot Driving, Some Want to Reprogram Pedestrians*, BLOOMBERG: HYPERDRIVE (Aug. 16, 2018, 6:00 AM EST), https://www.bloomberg.com/news/articles/2018-08-16/to-get-ready-for-robot-driving-some-want-to-reprogram-pedestrians [https://perma.cc/E9TJ-X5VA] (discussing the difficulties created by unpredictable pedestrian interactions with self-driving cars). Google's celebrated "Flu Tracker," a common example of the supremacy of big data and AI over conventional modes of scientific knowing, failed so spectacularly in 2013 that it was shut down. *See* David Lazer et al., *The Parable of Google Flu: Traps in Big Data Analysis*, 343 SCI. MAG. 1203, 1203 (2014), https://science.sciencemag.org/content/sci/343/6176/1203.full.pdf [https://perma.cc/KPA3-CUGD]; David Lazer & Ryan Kennedy, *What We Can Learn from the Epic Failure of Google Flu Trends*, WIRED (Oct. 1, 2015, 7:00 AM), https://www.wired.com/2015/10/can-learn-epic-failure-google-flu-trends [https://perma.cc/S8BS-GHXR]. IBM's recent Watson project with Memorial Sloan Kettering Hospital was supposed to revolutionize cancer care by ingesting real-world data and the expertise of world-class doctors to hone treatment recommendations. In reality, the program had to be built on a backbone of synthetic data because of a raft of problems with data interoperability and quality. *See* Casey Ross & Ike Swetlitz, *IBM's Watson Supercomputer Recommended 'Unsafe and Incorrect' Cancer Treatments, Internal Documents Show*, STAT (July 25, 2018), https://www.statnews.com/2018/07/25/ibm-watson-recommended-unsafe-incorrect-treatments [https://perma.cc/DJ6G-9A9F]. Years after its launch, there is widespread disappointment with its algorithm, which at times spits out dangerous recommendations. *See id.*; *see also* Casey Ross & Ike Swetlitz, *IBM Pitched Its Watson Supercomputer as a Revolution in Cancer Care. It's Nowhere Close*, STAT (Sept. 5, 2017), https://www.statnews.com/2017/09/05/watson-ibm-cancer [https://perma.cc/JH3L-2KN9] (reporting that the program has recently had difficulty finding buyers); Eliza Strickland, *How IBM Watson Overpromised and Underdelivered on AI Health Care*, IEEE SPECTRUM (Apr. 2, 2019, 3:00 PM GMT), https://spectrum.ieee.org/biomedical/diagnostics/how-ibm-watson-overpromised-and-underdelivered-on-ai-health-care [https://perma.cc/Q8TN-C5CC]. IBM also scaled back Watson's drug-discovery service. *See* Casey Ross, *IBM Halting Sales of Watson AI Tool for Drug Discovery amid Sluggish Growth*, STAT (Apr. 18, 2019), https://www.statnews.com/2019/04/18/ibm-halting-sales-of-watson-for-drug-discovery [https://perma.cc/BU7R-CF5C].

67. Morozov, *supra* note 64.

populated by companies not like Google, but like Apple (which has eschewed the data-harvesting model and does more to protect privacy). Its embodiment in Zuboff's book is Apple's iPod, which she argues "*rescue*[d]" trapped assets—songs—and helped "connect[] us to what we really want in exactly the ways that we choose."[68] Though it is hard to believe given the book's many citations to Marx, this move from mass to more individual consumerism is one that Zuboff views as profoundly freeing: she credits it with "confirm[ing] . . . our inner sense of dignity and worth, ratifying the feeling that we matter."[69] She notes only in passing that Apple has been criticized for "missteps" such as "extractive pricing policies, offshoring jobs, exploiting its retail staff, abrogating responsibility for factory conditions, colluding to depress wages via illicit noncompete agreements in employee recruitment, institutionalized tax evasion, and a lack of environmental stewardship"—but apparently sees these as having no deep relation to the advocacy-capitalist order she celebrates.[70]

Zuboff longs not for any fundamental reworking of our market order, but for a capitalism with the humanity of old. In one of the more astonishing passages in the book, Zuboff waxes lyrical about what it was like when the "repo man" was a human. She tells the story of Jim Ford, who came to repossess a car from an elderly couple and learned that they were being "forced to choose between buying medicine and making their car payments."[71] Ford was so moved by their story that he paid their debt himself. Then a crowdfunding effort was launched, enabling the couple not only to pay off their car but also to buy a Thanksgiving turkey.[72] It is unclear how many readers will find this story as heartwarming as Zuboff does. It says quite a lot about her comfort with the basic assumption that our economic order will put people to devastating choices and that help, if it comes, will not be something anyone can count upon.

Problems of monopoly and inequality also make scant appearance in Zuboff's account.[73] What of the power Amazon has over its workers, or over local

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68. ZUBOFF, *supra* note 11, at 29-30.

69. *Id*.

70. *Id*. at 46-47.

71. *Id*. at 335.

72. *Id*.

73. There are a few references to Thomas Piketty, deployed to explain the frustration that many consumers feel with the neoliberal age. *See, e.g.*, *id.* at 43-44, 518-19. Zuboff does also note that there are "vital" issues raised by corporate operations that are not reducible to surveillance capitalism, including the "monopolistic and anticompetitive practices" of Amazon and the "pricing, tax strategies, and employment policies at Apple." *Id.* at 23. But she clearly views these issues as less important than those raised by surveillance capitalism, and her analysis gives us no purchase upon them.

businesses, or over those who sell on its marketplace while Amazon watches and tries to outcompete them? This form of private power, too, is nearly absent in Zuboff's account. These are no small things. American industry has grown more concentrated in recent decades,[74] and recent studies suggest that concentration is hurting both wages[75] and investment.[76] Notably, concentration in the U.S. economy is especially high in the telecommunications and IT sectors.[77] In the United States today, for example, Google governs 89% of all internet searches.[78] Almost all young adults use a Facebook product.[79] Duopolies are also common: Google and Facebook received 63% of online ad spending in 2017.[80] Google and Apple command 99% of the mobile-phone market, and Apple and Microsoft dominate a similar share of the desktop-computing market.[81] There are in fact

74. David Leonhardt, *The Monopolization of America*, N.Y. TIMES (Nov. 25, 2018), https://www.nytimes.com/2018/11/25/opinion/monopolies-in-the-us.html [https://perma.cc/7F7M-K55U] (reporting data showing that "[b]ig companies are much more dominant than they were even 15 years ago" across a range of industries, including hardware, tobacco, pharmacies, meat packing, and car rentals); Gustavo Grullon et al., *Are US Industries Becoming More Concentrated?*, 23 REV. FINANCE 697, 697 (2019) (showing that "over the last two decades the Herfindahl–Hirschman index (HHI) [of concentration] has systematically increased in more than 75% of US industries" and "that firms in concentrated industries are becoming more profitable predominantly through higher profit margins, rather than via greater efficiency"); *The Problem with Profits*, ECONOMIST (Mar. 26, 2016), https://www.economist.com/news/leaders/21695392-big-firms-united-states-have-never-had-it-so-good-time-more-competition-problem [https://perma.cc/QM2M-QU73] (providing evidence that "two-thirds of the [U.S.] economy's 900-odd industries have become more concentrated since 1997").

75. *See* David Autor et al., The Fall of the Labor Share and the Rise of Superstar Firms 36 (Oct. 2019) (unpublished manuscript), https://economics.mit.edu/files/12979 [https://perma.cc/P4KP-J34F].

76. *See* Germán Gutiérrez & Thomas Philippon, *Declining Competition and Investment in the U.S.* 14-31 (Mar. 2017) (unpublished manuscript), https://www8.gsb.columbia.edu/faculty-research/sites/faculty-research/files/finance/Macro%20Lunch/IK_Comp_v1.pdf [https://perma.cc/D3Z9-ALGZ]. The authors attribute concentration to winner-take-all effects as well as regulation that raises barriers to entry. *See id.* at 33.

77. *Too Much of a Good Thing*, ECONOMIST (Mar. 26, 2016), https://www.economist.com/news/briefing/21695385-profits-are-too-high-america-needs-giant-dose-competition-too-much-good-thing [https://perma.cc/SFE3-2HKD].

78. Greg Ip, *The Antitrust Case Against Facebook, Google and Amazon*, WALL ST. J. (Jan. 16, 2018, 11:52 AM EST), https://www.wsj.com/articles/the-antitrust-case-against-facebook-google-amazon-and-apple-1516121561 [https://perma.cc/C8JL-VZGM].

79. *Id.*

80. *Id.*

81. *Id.*

plausible reasons to think that information-intensive markets may incline toward concentration: information is often characterized by high average cost and low marginal costs, and digital networks exhibit network effects.

The corporate sector also exhibits its own "one-percent" problem today: among all American firms, the top five hundred account for nearly half of the profits.[82] Information technologies plausibly accelerate such winner-take-all dynamics. The informational sector is highly scalable, particularly as digital technologies reduce the cost of reproducing and disseminating information. This enables providers with small advantages to capture larger shares of the market.[83]

Income inequality is also on the rise, particularly in the United States,[84] and median wages for American workers have stagnated for the last four decades.[85] A robust economics literature associates technological change in recent decades with widespread wage stagnation and winner-take-all dynamics that provide extraordinary returns to those at the top.[86] As Yochai Benkler has shown, it would be wrong to see these effects as preordained by information technologies, because technological developments are endogenous, and both technology and markets are shaped by social forces and law.[87] Nonetheless, as he also describes, we can see technologies as embedding social forces in ways that can have their own influence and affordances, so it is coherent to ask about the way that information technologies in their current form are bound up in dynamics of increasing inequality, stagnation, and market concentration.[88]

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82. *See Too Much of a Good Thing*, *supra* note 77.

83. As Nassim Nicholas Taleb puts it, J.K. Rowling (the author of the wildly popular Harry Potter series) "does not have to write each book again every time someone wants to read it," unlike a baker, who must "bake every single piece of bread in order to satisfy each additional customer." NASSIM NICHOLAS TALEB, THE BLACK SWAN 28 (2007).

84. THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY 294 (Arthur Goldhammer trans., 2014); *see also* Thomas Piketty et al., *Distributional National Accounts: Methods and Estimates for the United States* 23 (Nat'l Bureau of Econ. Research, Working Paper No. 22945, 2016) (showing that, in 1980 in the United States, the top 1% earned twenty-seven times more than the bottom 50%, and that in 2014 they earned eighty-one times more).

85. *See, e.g.*, LAWRENCE MISHEL ET AL., THE STATE OF WORKING AMERICA 5 (12th ed. 2012).

86. *See, e.g.*, CLAUDIA GOLDIN & LAWRENCE F. KATZ, THE RACE BETWEEN EDUCATION AND TECHNOLOGY 2-3 (2008) (associating technological change with increased inequality, if education is held constant); Robert H. Frank & Philip J. Cook, *Winner-Take-All Markets*, 1 STUD. MICROECONOMICS 131, 132 (2013).

87. *See* Yochai Benkler, *A Political Economy of Oligarchy: Winner-Take-All Ideology, Superstar Norms, and the Rise of the 1%* (Sept. 2017) (unpublished working paper), http://www.benkler.org/Political%20economy%20of%20oligarchy%2001.pdf [https://perma.cc/8FVU-24BS].

88. *Id.*

Zuboff's relentlessly individualistic account of the problem of private power also obscures an important social reality: we will not all be impacted by the rise of big data and surveillance in the same way.[89] Capitalism evolves in history, in civilizations replete with many forms of hierarchy.[90] Modern tools of surveillance and prediction are being deployed against a background of material, embedded inequality; and some of the most devastating human implications will not be for suburban teenagers lost in an Instagram cloud but for the disabled cut off from support by automated programs and for the accused caught up in flawed bail algorithms.[91] Digital profiles will produce new stratifications of their own—for example, dividing people into "high-value" and "high-risk" categories, so that marketers can reach lucrative groups and exclude undesired groups from their offers.[92] Palantir sells its services to police, government agencies, and private companies that can pay for its costly predictive profiling tools and not to the defendants or community-based groups that cannot.[93] Algorithms that are trained on historical data can be expected to reproduce and even entrench forms of bias, whether because of bias in datasets, in algorithmic design, or simply in the embedded social structures that algorithms code as inputs.[94] These forms of bias will be difficult to address in courts that have been hostile to expansive dis-

89. Part of what is disappointing here is that Zuboff's earlier work showed more appreciation for this fact. *See* SHOSHANA ZUBOFF, IN THE AGE OF THE SMART MACHINE: THE FUTURE OF WORK AND POWER 58-96 (1988) (describing the differential impact of computerization in a pulp and paper mill on workers and management).

90. *See, e.g.*, CEDRIC J. ROBINSON, BLACK MARXISM: THE MAKING OF THE BLACK RADICAL TRADITION 2 (1983) (providing an account of the "racialist" hierarchies that preexisted the rise of capitalism in the West, and arguing that "[a]s a material force, then, it could be expected that racialism would inevitably permeate the social structures emergent from capitalism").

91. *See* VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR (2018); *cf.* ROBERTO MANGABEIRA UNGER, THE KNOWLEDGE ECONOMY (2019) (arguing that the current "knowledge economy" is highly unevenly distributed around the world).

92. *See* COHEN, *supra* note 21, at 70.

93. *See* Peter Waldman et al., *Palantir Knows Everything About You*, BLOOMBERG (Apr. 19, 2018), https://www.bloomberg.com/features/2018-palantir-peter-thiel [https://perma.cc/Q2U2-LW3A].

94. *See* Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. L. REV. 671, 677-93 (2016) (describing the factors that contribute to algorithmic discrimination); Sandra G. Mayson, *Bias In, Bias Out*, 128 YALE L.J. 2218, 2224 (2019) (noting that all modes of predictive judgment draw on the past and so can be expected to reproduce past hierarchies); *see also* Batya Friedman & Helen Nissenbaum, *Bias in Computer Systems*, 14 ACM TRANSACTIONS ON INFO. SYS. 330 (1996) (providing an analytic framework for understanding bias in computing).

parate-impact claims and that think about discrimination in increasingly formalistic terms.[95] Just beyond this horizon looms a climate catastrophe, which will also be dramatically differentially distributed. Though not often noted, AI is extraordinarily energy intensive: training just one machine-learning model to process natural language requires as much energy as the production and use of one U.S. car over its lifetime.[96] Freeing some people up to find TV shows exquisitely mapped to their taste—all else equal, and without dramatic change—means putting other people up to their necks in water. Totalizing narratives of "us" and "we" will have trouble engaging the critical distributive stakes of our deeply stratified societies.

Finally, to understand and react to private power, we need a secure grasp of what sustains it. Here, too, Zuboff's account falls short. In her telling, markets in data exist beyond law and operate by their own rules. She describes Google as operating in a manner similar to British capitalists in far-flung colonies, where "lawlessness" reigned.[97] At several other points in the book, Zuboff similarly insists that surveillance capitalism demands, or is sustained by, lawlessness.[98] We might read this as a reference to the fact that data is unowned, and so free for the taking—but as we will see in a moment, there are important ways in which data can be subject to property-like rights. As the legal realists showed, too, it is deeply misleading to describe modern markets as in any sense operating outside of law. One of the great challenges of understanding the new concentrations of corporate power in the informational age is mapping the laws that help sustain them, precisely because this is a domain that is commonly seen as operating beyond law. While Zuboff does in passing point to a few aspects of the legal regime that have helped surveillance capitalist firms consolidate their power,[99] her account does little to help us with this task. And because she has little interest in

95. *See* Barocas & Selbst, *supra* note 94, at 694-714.

96. *See* Cory Doctorow, *Training a Modest Machine-learning Model Uses More Carbon Than the Manufacturing and Lifetime Use of Five Automobiles*, BOINGBOING (June 7, 2019, 1:02 PM) https://boingboing.net/2019/06/07/extinction-by-nlp.html [https://perma.cc/MY3T-6NCV] (citing Emma Strubell et al., Energy Policy Considerations for Deep Learning in NLP (June 5, 2019) (unpublished working paper), https://arxiv.org/abs/1906.02243 [https://perma.cc/PT7C-9SJN]).

97. ZUBOFF, *supra* note 11, at 104.

98. *See id.* at 101. Cohen, in a short review of Zuboff's book, notes the problem too. *See* Julie E. Cohen, *Surveillance Capitalism as Legal Entrepreneurship*, 17 SURVEILLANCE & SOC'Y 240, 240 (2019) (reviewing ZUBOFF, *supra* note 11, and calling "[t]he relationship between surveillance capitalism and law . . . both far more complex and far more productive than either that characterization or Zuboff's subsequent analysis suggests").

99. ZUBOFF, *supra* note 11, at 108-12 (describing the role of First Amendment doctrine and Section 230 of the Communications Decency Act, 97 U.S.C. § 230 (2018)).

how law structures the social relations at the heart of surveillance capitalism (and indeed, all forms of capitalism), she cannot give us a map that can orient efforts at change. Instead, Zuboff leaves us with vague bromides—asking us, for example, to "rekindle a sense of outrage and loss over what is being taken from us."[100] We need a different kind of account to channel outrage into a platform for democratic change.

II. PRIVATE POWER IN AN AGE OF INFORMATIONAL CAPITALISM

Julie Cohen's new book gives us the beginnings of just such an account. It brings together a more convincing and capacious understanding of the "informational" mode of development of capitalism today and develops a dense and rich account of the shifts in law and political economy that have constituted it. To understand her broader framing of the dynamics of what she calls "informational" capitalism today and the role law has played in this process, it helps to begin with an articulation of the nature of capitalism itself and of its relationship to law.

A. Capitalism and Its Laws

As David Grewal describes, it was Karl Marx and his successors who first popularized the term "capitalism," to denote "modern societies in which the majority of the population meets its needs through specialized production in a complex division of labor determined through commercial exchange."[101] In a capitalist society, both workers and producers "depend on the market" for access to the means of production.[102] Appropriation of surplus depends critically on the mechanisms of the market—it occurs predominantly through the "purely 'economic' mechanisms of the market," rather than "on 'extra-economic' powers of appropriation by means of direct coercion—such as the military, political, and judicial powers that enable feudal lords to extract surplus labour from peasants."[103]

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100. *Id.* at 521.

101. David Singh Grewal, *The Legal Constitution of Capitalism*, *in* AFTER PIKETTY 471, 475 (Heather Boushey et al. eds., 2017).

102. ELLEN MEIKSINS WOOD, THE ORIGIN OF CAPITALISM: A LONGER VIEW 2 (2017).

103. *Id.*; *cf.* CASTELLS, *supra* note 21, at 16 (contrasting capitalism, defined as a mode of production oriented toward "increasing the amount of surplus appropriated by capital on the basis of the private control over the means of production and circulation" with its modern alternative, "statism," oriented toward maximizing the power of the state, and under which "the control

Capitalism has a history: it originated in Western Europe in the modern era, following the enclosure movement and the end of feudalism.[104] Part of that history, though, is a just-so story that treats it as "the natural realization of ever-present tendencies."[105] Accounts prior to Marx described the evolution of capitalism as the emergence of "commercial society,"[106] ordered not by the state but by a kind of natural or divine law.[107] The ordering of commercial society responded to a set of assumptions about human nature that are often associated with the work of Adam Smith.[108] Smith argued, famously, that man possessed a natural tendency to "truck, barter, and exchange."[109] The mechanisms of modern commercial society that created an advanced division of labor allow each individual in pursuit of their own selfishness to produce a good society through the invisible hand of the marketplace, which encourages ever more productive uses of resources.[110]

This idea of market autonomy—indeed, the very idea of a separate realm called "the economy"—is rooted in a series of powerful conceptual distinctions that were encoded in legal systems as capitalism emerged. One is the distinction between "private" and "public" realms, the former denoting the realm of the "economy" and the latter of "politics."[111] In legal orders, these distinctions are encoded in rules that construct distinct realms of private power (for example, through rules of property and contract) and a separate, insulated realm of state or public power.[112] As Grewal writes,

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of surplus is external to the economic sphere"). The complex interdependence between capitalism and the carceral state is an important feature of contemporary capitalism especially in the United States, but the relation is not primarily one oriented toward direct extraction of surplus. *See, e.g.*, RUTH WILSON GILMORE, GOLDEN GULAG: PRISONS, SURPLUS, CRISIS, AND OPPOSITION IN GLOBALIZING CALIFORNIA (1st ed. 2007).

104. *See* WOOD, *supra* note 102, at 3; *see also* KARL POLANYI, THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME 71-80 (2d ed. 2001) (describing the rise of market society and locating its origins in Great Britain); Grewal, *supra* note 101, at 475-77 (describing aspects of the intellectual history of the rise of capitalism or "commercial society").

105. WOOD, *supra* note 102, at 3.

106. *Id.* at 4; Grewal, *supra* note 101, at 465.

107. Grewal, *supra* note 101, at 476.

108. *Id.* at 477; WOOD, *supra* note 102, at 5.

109. ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 17 (Edwin Cannan ed., 1976) (1776).

110. Grewal, *supra* note 101, at 477-78.

111. *Id.* at 482-83.

112. *Id.* at 483.

> [C]apitalism is not (or not merely) a socioeconomic system. It is a juridical regime. It is a form of the modern "rule of law." It is legitimated through constitutional ratification by an ultimate popular sovereign that then rules in theory, without in practice surrendering governmental administration to ongoing popular control. The effect of this regime is that emanation of commercial sociability we now call "the economy." It is produced as the outworking of legal rights and duties that offer special protections to asset-holders legitimated through a constitutional order.[113]

Property and contract are among the foundational legal techniques that create a "market" that can operate to allocate factors of production. Another distinction that emerged at the origins of capitalism, between the sovereignty of the people and the government, enabled the emergence of legal orders that could claim a democratic warrant, while also ensuring that "the entrenched legal rules underlying commercial society [could be] given effect through ongoing governmental operations."[114]

These distinctions, along with the hypostatization of a "natural" market order, found powerful expression at the turn of the twentieth century in the doctrine of laissez-faire.[115] Written into the U.S. Constitution in the *Lochner* decision,[116] the doctrine held that the state could not interfere with natural rights to contract and property, eventually provoking the great constitutional crisis of 1937.[117] Legal realism, formulated in response to laissez-faire, powerfully repudiated its description of the relationship between law and markets. There was a lie at the heart of laissez-faire: markets do not exist outside of law, so as to make state regulation an unjust incursion into a natural order. Rather, as Robert Hale and his contemporaries described, coercion is "present in the private sphere as

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113. *Id.* at 485.

114. *Id.* at 484.

115. Advocates of this doctrine drew on marginal productivity theory, which dictated that all factors of production were paid their marginal product in a competitive market, to argue that government could not justly interfere with markets via regulation. *See* BARBARA H. FRIED, THE PROGRESSIVE ASSAULT ON LAISSEZ FAIRE: ROBERT HALE AND THE FIRST LAW AND ECONOMICS MOVEMENT 2 (1998).

116. Lochner v. New York, 198 U.S. 45 (1905).

117. After President Franklin D. Roosevelt threatened to pack the courts in 1937, one Justice switched his vote, leading the Court to a new accommodation with the modern regulatory state and to modern theories of constitutionalism and judicial review. *See* United States v. Carolene Prods. Co., 304 U.S. 144 (1938); West Coast Hotel Co. v. Parrish, 300 U.S. 379 (1937); FRIED, *supra* note 115, at 31-32.

well," because in acts of market exchange each side "coerce[s] the other to relinquish its property or services by a (legally sanctioned) threat to withhold its own property or services if the demanded terms [are] not obtained in exchange."[118] Coercion is thus ubiquitous in markets, and markets rely on law for their "nature."[119]

The realist critique helped bring about an end to laissez-faire as a reigning constitutional ideology, but the division between politics and the economy has reappeared in new guises. This is not, in fact, surprising, given the centrality of the idea of a distinct "economy" that follows its own rules to capitalist order. As colleagues and I describe in a forthcoming *Yale Law Journal* Feature, the intellectual tradition of law and economics has helped to reconstruct the distinction on new normative terrain.[120] In laissez-faire, the mandate of noninterference was described as an expression of natural-law principles of liberty, rooted in conceptions of the divine. The realists showed that modern markets are shot through with the coercive power of the state and that the legitimate use of the state—whether through enforcement of market rules or others—required "some normative theory of what forms of coercive constraints society wished to prohibit and what forms to allow."[121] Law and economics reconstructed the politics/economy distinction through precisely such a normative theory—the appeal to "efficiency."

Efficiency here is described as a virtue because it provides a technical, neutral means to improve wealth in the economic sector, which (it is posited) can be later redistributed to address other normative goals, such as fairness.[122] Efficiency in this rubric is typically defined through the "Kaldor-Hicks" criteria, recommending any action that would increase overall consumer and producer surplus, so that in theory the winner could compensate the loser. If a city park has to be located, it should be located where it will be "valued" the most—with value typically measured in dollar-denominated demand. If a rich neighborhood values it more, because residents pay more for leisure services, the park should be sited there and any compensation undertaken in the political system.[123] Critics

118. FRIED, *supra* note 115, at 17; *see* Robert L. Hale, *Coercion and Distribution in a Supposedly Non-Coercive State*, 38 POL. SCI. Q. 470, 472-73 (1923).

119. FRIED, *supra* note 115, at 18.

120. Jedediah Britton-Purdy et al., *Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. (forthcoming 2020).

121. FRIED, *supra* note 115, at 18.

122. *See* Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667, 667-68 (1994).

123. Zachary Liscow, *Is Efficiency Biased?*, 85 U. CHI. L. REV. 1649, 1650-53 (2018).

of Kaldor-Hicks efficiency, particularly when expressed as "wealth maximization" as I have described it, have decisively refuted its moral appeal, so much so that its leading proponents purported to abandon it.[124] Nevertheless, efficiency as a value has persisted, alongside a broader set of arguments emanating from Chicago School economics that suggested that we would all be better off (read: the world would be more efficient) if markets were maximally left alone and freed from intrusive regulation.[125]

As my coauthors and I have argued, this revised vision of the autonomous economy found expression not only in common law or "private" law domains, but also in "public" law domains, such as constitutional law. For example, increasingly conservative courts have revised free speech law to frustrate democratic regulation of both firms and money in politics and have retreated from any view of fundamental rights that recognized the interconnection between our economic and political orders.[126] The result is a new "Twentieth-Century Synthesis" that has revived and transmuted the spirit of laissez-faire, with similarly problematic results. One is a set of legal fields and concepts that create the appearance of an "independent" market that follows its own rules. Another is the

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124. For the critiques, see generally Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509 (1980); Ronald M. Dworkin, *Is Wealth a Value?*, 9 J. LEGAL STUD. 191 (1980); Anthony T. Kronman, *Wealth Maximization as a Normative Principle*, 9 J. LEGAL STUD. 227 (1980). For the abandonment, see LOUIS KAPLOW & STEVEN SHAVELL, FAIRNESS VERSUS WELFARE 458-61 (2006), which embraces Kaldor-Hicks "welfare" and not "wealth" maximization; and Richard A. Posner, *The Problematics of Moral and Legal Theory*, 111 HARV. L. REV. 1637, 1670 & n.62 (1997), which calls attempts to "make economics a source or moral guidance by proposing . . . that the goal of a society should be to maximize . . . wealth" a "doomed effort[]." *See also* KAPLOW & SHAVELL, *supra* note 124, at 32 n.34 (noting that law-and-economics analysis frequently uses money as a common denominator in which costs and benefits are expressed); DOUGLAS A. KYSAR, REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY 14-16, 101-04 (2010) (pointing out and providing examples to show that in practice, welfare-maximization accounts collapse back into wealth-maximization accounts because of the tractability associated with the use of markets and transactions to measure preferences).

125. *See, e.g.*, JAMES M. BUCHANAN & GORDON TULLOCK, THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY 7-10 (3d ed. 1999). The reasons efficiency as a value, and the insulation of the economy as a technocratically managed domain, have succeeded (despite the power of the normative critique) are complex. We attribute them to developments in courts, law schools, and the world of foundation funding, as well as in the broader political economy of the time. Britton-Purdy et al., *supra* note 120 (manuscript at 39-40) (describing, for example, the appeal of the claimed "neutrality" of efficiency as a value at a time of intense contestation around race and gender, as well as the seeming plausibility in a period of strong economic growth of the "tax-and-transfer" move upon which the appeal of Kaldor-Hicks efficiency is based).

126. Britton-Purdy et al., *supra* note 120 (manuscript at 17).

curtailing of democratic authority over the economy, and over many supporting institutions (such as the carceral state) that undergird our capitalist order.

Emerging "law and political economy" approaches such as these seek to make sense of how we have arrived at a new apparent division between economy and politics and to develop critiques and visions of transformative legal reforms that can help bring about a deeper and more genuine democracy, including a democracy of the economy. Cohen's book is self-consciously engaged in this new approach.[127] It begins with a set of trenchant insights about how capitalism has been modified by the developmental mode of informationalism, facilitated by key conceptual and legal developments.

B. Informational Capitalism and the Rise of Platform Power

Cohen sets forth the core argument of her book in the first paragraph: as the political economy of our informational age changes, "our legal institutions too are undergoing transformation, and the two sets of processes are inextricably related."[128] As Cohen describes, her aim is to problematize any simple optimism about new information technologies that presents them as inherently "technologies of freedom" and any simple pessimism that sees in them the end of "more humane traditions of governance."[129] Whatever our fate—and Cohen resists the pressure to prognosticate—the premise from which both camps begin is wrong:

> Information technologies are highly configurable, and their configurability offers multiple points of entry for interested and well-resourced parties to shape their development. To understand what technology signifies for the future of law, we must understand how the design of networked information technologies within business models reflects and reproduces economic and political power.[130]

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127. COHEN, *supra* note 21, at 8 (noting that "law is not simply superstructure but rather the means through which expressions of economic rationality and governmentality become specific, detailed, and actionable") (citing David S. Grewal et al., *Law and Political Economy: Toward a Manifesto*, LAW & POL. ECON. (Nov. 6, 2017), https://lpeblog.org/2017/11/06/law-and-political-economy-toward-a-manifesto [https://perma.cc/5RWQ-KEQE].

128. *Id.* at 1.

129. *Id.*

130. *Id.*

At the core of Cohen's method, then, is a commitment to analyzing the reproduction of power.[131] Law, ideologies, and technical constraints work together to map and remap power. The book's opening undersells the real value of Cohen's project, though. It lies not in these basic methodological points, which have been made before, but in her analysis of how law, technology, and ideas have worked together to generate growing power for those in command of the informational economy.

Cohen's object of study is "informational capitalism."[132] Capitalism, here, "'is oriented toward profit-maximizing, that is, toward increasing the amount of surplus appropriated by capital on the basis of the private control over the means of production and circulation,' while informationalism 'is oriented . . . toward the accumulation of knowledge and towards higher levels of complexity in information processing.'"[133] She advocates for this organizing concept over narrower formulations such as surveillance capitalism because it trains our focus on "the underlying transformative importance of the sociotechnical shift to informationalism as a mode of development."[134] She owes the formulation to Manuel Castells and his influential book, *The Rise of the Network Society*.[135] How much surplus the capitalist mode of production produces, Castells argues, depends on productivity levels, which in turn respond to "modes of development"—meaning "the technological arrangements through which labor works on matter."[136] In different eras, different modes of development have prevailed: in the agricultural era, most important was the use of land and labor.[137] In the industrial era,

131. Cohen does not offer a definition of power, but her usage is similar to that of Manuel Castells, whose account of informational capitalism she relies upon. Castells says:

> *Power* is that relationship between human subjects which, on the basis of production and experience, imposes the will of some subjects upon others by the potential or actual use of violence, physical or symbolic. Institutions of society are built to enforce power relationships existing in each historical period, including the controls, limits, and social contracts achieved in the power struggles. . . . Power is founded upon the state and its institutionalized monopoly of violence, although what Foucault labels the microphysics of power, embodied in institutions and organizations, diffuses throughout the entire society, from workplaces to hospitals, enclosing subjects in a tight framework of formal duties and informal aggressions.

CASTELLS, *supra* note 21, at 15.

132. COHEN, *supra* note 21, at 5-6.

133. *Id.* (quoting CASTELLS, *supra* note 21, at 14-18).

134. *Id.* at 6.

135. CASTELLS, *supra* note 21.

136. *Id.* at 16.

137. *Id.*

productivity gains were centrally keyed to the uses and distribution of new energy sources.[138] In our informational mode of development, "the source of productivity lies in the technology of knowledge generation, information processing, and symbol communication."[139] It is thus "the action of knowledge upon knowledge itself [that is] the main source of productivity."[140]

Today, a country's productivity and place in the global economy relate centrally to its ability to produce and process knowledge, information, and data.[141] Via a detailed empirical analysis of the rise and fall of different sectors in the global economy, Castells shows that in the world's core economies, the service sector has taken preeminence over manufacturing, and an increasing percentage of jobs can be defined as involving "information processing."[142] Examples include software programming, advertising, healthcare, and finance.[143] Even manufacturing has become more information-intensive, as techniques such as just-in-time production and branding become key determinants of profitability among leading firms.[144]

Cohen's account builds on Castells's, beginning with three overarching structural shifts that she argues enabled the transition to an informational economy: the enclosure of intangible resources, the "datafication of the basic factors of industrial production," and the embedding of patterns of exchange within "information platforms."[145] As law evolved to create more property or property-like protection for information, information became an increasingly viable and

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138. *Id.* at 16-17.

139. *Id.* at 17.

140. *Id.*

141. *See id.*; *id.* at 224-31.

142. *Id.* at 224-31; *id.* at 225 ("For all [G7 countries except Japan] there has been a trend toward a higher percentage of information-processing employment."). In Castells's terms, societies have become "informational" because "they organize their production system around the principles of maximizing knowledge-based productivity through the development and diffusion of information technologies, and by fulfilling the prerequisites for their utilization (primarily human resources and communications infrastructure)." *Id.* at 219-20. For early accounts of this shift in the United States, see DANIEL BELL, THE COMING OF POST-INDUSTRIAL SOCIETY 129 (1973), which notes that at the turn of the twentieth century, only three in every ten U.S. workers were employed in the service industries but that by 1980, close to seven in ten would be; and FRITZ MACHLUP, THE PRODUCTION AND DISTRIBUTION OF KNOWLEDGE IN THE UNITED STATES (1962).

143. CASTELLS, *supra* note 21, at 238-40.

144. *See* COHEN, *supra* note 21, at 6 ("In an information economy, information technology assumes an increasingly prominent role in the control of industrial production and in the management of all kinds of enterprises.").

145. *Id.* at 15.

valuable form of capital. Finance was "datafied" or "dematerialized" as technologies and law coevolved to enable instantaneous transactions in global markets, exotic forms of securitization, and demonetization (or the increasing reliance on cashless payment systems and now cryptocurrencies).[146] Labor, another key factor of production, also became "datafied" via platforms like TaskRabbit and Uber that fragment the workplace, and by the use of digital networks to informationalize, deterritorialize, and fissure production.[147] Even the value and workings of land as a resource were altered by informational dynamics. New information technologies have enabled the emergence of complex instruments such as credit-default swaps and derivatives that are increasingly important to the functioning of land as capital.[148] Such changes turned not just on technology but on law. Complex derivatives, for example, would not have been possible without developments in the 1800s that made it possible to "own" debt as an asset[149] and in the late 1900s that loosened recording requirements to make rapid transactions of mortgage liabilities possible.[150]

Cohen argues that the datafication and reintermediation enabled by information technologies has also fundamentally altered the organizational terrain of informational capitalism, as the locus of barter, exchange, and appropriation is increasingly shifted to "platforms."[151] Platforms are intermediaries organized through the logic of networks that provide "would-be counterparties with *access* to one another and techniques for rendering users *legible* to those seeking to market goods and services to them."[152] The Sears Roebuck catalog and Shoprite are old platforms; Google, Amazon, and Uber are new platforms. Digital networks enable a greater role for platforms and for bigger and more centrally organized platforms. Amazon can replace the local bookstore—and then the clothing store, the toy store, and soon, perhaps, the local grocery store. As Cohen points out, platforms can be understood simply as points of "friction" in networks—points

146. *See id.* at 26. Cohen is referencing Karl Polanyi's idea, which she describes as "patterns of barter and exchange bec[oming] detached from local communities and re-embedded in the constructed mechanism of 'the market.'" *Id.* at 15.

147. *See id.* at 31-33.

148. *See id.* at 34.

149. *Id.* at 35 ("The idea of negotiability has roots in the earlier practice of assigning debts to third parties for collection, but with an important difference: the purchaser of a negotiable instrument can lay claim to the payment stream without regard to the nature of the underlying agreement that generated the debt.").

150. *See id.* at 35-37 (describing the Mortgage Electronic Recordation System, now called the Mortgage Electronic Registration System).

151. *See id.* at 46.

152. *Id.* at 38.

through which parties must pass and where control can therefore be exerted. Platforms need not be profitable, but they can be. As early platforms like Google took hold, venture capitalists demanded revenues, in turn "driv[ing] platform design" toward strategies like data harvesting and behavioral advertising.[153]

This is the same story told by Zuboff but with a much broader frame of reference. As a result, Cohen's account connects informationalism with the rise of many forms of private power beyond simple "instrumentarianism." Cohen's structural focus on platforms, for example, allows her to trace how these networks (not just Google but also Amazon, Uber, and Airbnb, which receive little attention in Zuboff's account) are reshaping economic exchange. Networks generate network effects: the value of networks increases as more users are added. This creates tendencies toward monopoly that can be exploited because both buyers and sellers become increasingly dependent upon the marketplace of the platform.[154] Platforms are "two-sided" markets that serve buyers and sellers both, creating other opportunities for abuse—and making it difficult for traditional tests of market power, such as price-effect inquiries, to get much purchase on these new forms of power.[155]

As Google's chief economist noted many years ago, in the digital age, if you own the servers through which transactions are occurring (monetized or not), you have enormous power to collect data, craft and extract value from personalization, experiment on users, and enforce new modalities of contracts.[156] We now can see Zuboff's concerns in broader perspective: private control of platforms enables not merely behavioral surplus capture and behavioral modification but a host of other new forms of power subject to abuse. Monopoly power is one, and in our informational age, it has expanded not only in the internet realm but also in ordinary commercial markets.[157] There are also distributive issues: platforms follow "winner-take-all" dynamics and enable vast new powers to price discriminate using tailored offers and contract terms.[158] If Amazon can determine who among us is willing to pay more for a new album or audiobook, it can charge us more and extract consumer surplus. There is good reason to

153. *Id.* at 41.

154. *Id.* at 42-43.

155. *Id.* at 42-44.

156. *See* ZUBOFF, *supra* note 11, at 64-65 (discussing Hal Varian's scholarship on "computer-mediated transactions").

157. See *supra* note 74.

158. *See* Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1035, 1095 (2019).

think that a significant reason firms are so hungry for data is not to modify behavior but instead to extract as much profit from each consumer as they can.[159]

C. Neoliberalism and the Construction of Private Power

Cohen's argument is not simply that law and technology coevolve: it is that both coevolve in interaction with our reigning ideological framework for governance.[160] This framework is "neoliberalism," or the view that "human well-being can best be advanced by the maximization of entrepreneurial freedoms within an institutional framework characterized by private property rights, individual liberty, unencumbered markets, and free trade."[161] Associated with the work of market-fundamentalist economists like F.A. Hayek and Milton Friedman, neoliberal thought demands not only that markets be given free rein to govern the economic sphere but also that other domains, including government, be increasingly ordered like a market, "incorporating and responding to marketized feedback about efficacy and value."[162] This reflected an attempt to resolve a contradiction in neoliberal governance foreshadowed by the realists: there was no market that did not rely on government. To protect efficiency, then, law and regulation themselves had to be "infus[ed] . . . with a competitive and capitalist ethos."[163]

Neoliberalism became the idiom of governance in the 1980s and 1990s in Europe, the United States, and beyond, underlying the antiregulatory, antilabor, anti-welfare-state, and market-mimicking policy approaches of Ronald Reagan, Margaret Thatcher, and the "Washington Consensus."[164] It also deeply shaped the approaches offered by "third-way" liberals like Tony Blair and Bill Clinton, evidenced in commitments to welfare state retrenchment and a corporate-oriented model of trade liberalization.[165]

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159. Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 1007 (2012) ("The impulse toward price discrimination is in tension with informational privacy for a simple reason: Personal information is critical to the ability to cheaply and accurately price discriminate.").

160. COHEN, *supra* note 21, at 7.

161. *Id.* (quoting David Harvey, *Neoliberalism as Creative Destruction*, 610 ANNALS AM. ACAD. POL. & SOC. SCI. 21, 22 (2007)).

162. *Id.*

163. *Id.*

164. *See* JAMIE PECK, CONSTRUCTIONS OF NEOLIBERAL REASON (2010); David Singh Grewal & Jedediah Purdy, *Introduction: Law and Neoliberalism*, 77 LAW & CONTEMP. PROBS., no. 4, 2014, at 1, 1-9, 19 (2014).

165. PECK, *supra* note 164, at xvi, 239.

Cohen is particularly attuned to how this mode of thought affected the regulatory state: it ushered in regulatory approaches that are "procedurally informal," standards-based, "mediated by expert professional and technical networks," and "increasingly financialized."[166] Intended to introduce flexibility and speed into the regulatory process, these changes also made processes more opaque and proliferated "new points of entry for economic power."[167] They tended to assume markets were characterized by healthy competition and that the value of regulation could be measured through market-denominated cost-benefit analysis.[168] The increasing information intensity in industry and commerce today creates vast and undeniable challenges for regulators. How do you detect discrimination, manipulative marketing, or regulatory evasion when so much is buried in intricate decisions made by data-gatherers, software, and hardware?[169] The "paranoid style" in regulatory reform[170] has not helped matters: it has downplayed concerns about private power and focused obsessively on state coercion—failing to recognize the threats that private power can create and the central role that regulators have played in the emergence of robust modern informational industries.[171]

Also key to the rise of informational power in the economy, Cohen argues, were two other logics that have quintessentially neoliberal features: one that celebrates and naturalizes "innovation" and the other that analogizes between information and "speech."[172] Both work to immunize platforms and other information-intensive firms from regulation.

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166. COHEN, *supra* note 21, at 186.

167. *Id.* at 173.

168. *Id.*

169. *Id.* at 185.

170. *See* Jodi L. Short, *The Paranoid Style in Regulatory Reform*, 63 HASTINGS L.J. 633 (2012); *see also* COHEN, *supra* note 21, at 187 (invoking Short).

171. The drug industry is a good example here: one of the earliest information-intensive industries, the drug industry has been shaped since the 1960s by regulations that require companies to produce data before marketing products. The industry, and neoliberals like Thomas Friedman, long have resisted this regulatory role. Yet under such regulations, pharmaceutical markets have thrived, because regulators were able to solve information problems that the unregulated market could not. *See* Amy Kapczynski, *The Lochnerized First Amendment and the FDA: Toward a More Democratic Political Economy*, 118 COLUM. L. REV. F. 179, 189 (2019) (on Friedman and the evolution of the FDA); Amy Kapczynski, *Dangerous Times: The FDA's Role in Information Production, Past and Future*, 102 MINN. L. REV. 2357 (2018) (describing the FDA's role in encouraging information production and the benefits that this provides to the public and industry).

172. COHEN, *supra* note 21, at 90-95.

Why insulate the information economy and its most advanced and powerful firms from the reach of regulators? It does not do today to argue that market freedom is ordained by God or nature. Instead, new justifications for market insulation have emerged. One is the valorization of "innovation" as an "autonomous and inevitably beneficial process that is the natural result of human liberty" and that is incompatible with regulation.[173] As Cohen describes, industry, along with right-wing think tanks and blogs, furthered this narrative, which has had a powerful impact on legal discourse.[174] As many in the field of science studies and the history of science have shown, technological development is not autonomous.[175] Innovation is also not risk-free or inevitably beneficial.[176] But the fetish for innovation in contemporary policy and legal thought has had enormous power, and it has helped forestall regulatory adaptations to address systemic threats associated with informational infrastructures.[177] It has also propelled stronger exclusionary rules. If innovation is prioritized in itself, then perfectly coherent statements from the perspective of welfare economics or fairness that might support weaker intellectual property can be ignored. Take, for example, the argument that strong, exclusive intellectual property rights do harm because the gains associated with the incentivized innovations are less than the losses imposed by price increases on goods that would have been created anyway.[178] Antiregulatory claims were also advanced via an analogy between data and "speech" that courts have embraced.[179] As Cohen notes, industry and think tanks

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173. *Id*. at 91.

174. *Id.*

175. *See, e.g.*, BRUNO LATOUR & STEVE WOOLGAR, LABORATORY LIFE: THE CONSTRUCTION OF SCIENTIFIC FACTS (1979); PHILIP MIROWSKI, SCIENCE-MART: PRIVATIZING AMERICAN SCIENCE (2011).

176. COHEN, *supra* note 21, at 91; *see also* Paul A. David, *The Innovation Fetish Among the* Economoi*: Introduction to the Panel on Innovation Incentives, Institutions, and Economic Growth*, *in* THE RATE AND DIRECTION OF INVENTIVE ACTIVITY REVISITED 509, 511 (Josh Lerner & Scott Stern eds., 2012).

177. Some threats Cohen names are "to the security of data transmission protocols and data reservoirs, predatory pricing and discrimination in markets for financial services and consumer goods, large-scale manipulation of electoral processes, amplification of junk science, organized hate, and virulent nationalism, and a more basic and pervasive corruption of public discourse." COHEN, *supra* note 21, at 92.

178. *See, e.g.*, Oren Bracha & Talha Syed, *Beyond the Incentive-Access Paradigm? Product Differentiation & Copyright Revisited*, 92 TEX. L. REV. 1841, 1855-56 (2014) (specifying the tradeoff between inframarginal and supramarginal innovations).

179. COHEN, *supra* note 21, at 261; *see also* Julie E. Cohen, *The Zombie First Amendment*, 56 WM. & MARY L. REV. 1119 (2015).

have promoted these ideas, and they have been successfully mobilized to serve forms of intermediary immunity.[180]

Cohen also gestures, subtly, to another critical fact: arguments coming from "copyleft" scholars and other progressives skeptical of strong intellectual-property law and who celebrated "peer-to-peer" production helped further some of these same ideas, though with no intention to bolster the corporate power that has benefitted from them (in fact quite the opposite). Some of the most influential voices valorizing and naturalizing innovation were left-libertarian tech utopians. Eben Moglen, a law professor at Columbia and an important theorist of free software, famously insisted that human creativity, like electrons, simply flowed anytime people were connected in networks.[181] It reflected a broader move at the time by many like Moglen: they hailed the creative potential unleashed by innovation and pivoted to a demand for simple openness, because at the time the most important obstacle to creativity and flourishing to many appeared to be overly restrictive intellectual-property law.

As Yochai Benkler described it recently, the most ambitious version of this argument suggested that "winning political battles over free software or open source hardware could make people better able to live independent lives than winning political battles over labor or employment law."[182] The dream that open software could free us all and that one could "hack" the broader sociopolitical system by demanding openness at a certain technological layer, now seems painfully, obviously wrong.[183] Today, for example, open-source software is fully integrated into Google's Android phones.[184] The volunteer labor of thousands thus helps power Google's surveillance-capitalist machine. As Cohen has pointed out, freedom at one layer in the stack often ends up meaning that control

180. COHEN, *supra* note 21, at 93-94 (discussing free speech); *id*. at 97 (discussing intermediary liability, as constructed by Section 230 of the Communications Decency Act).

181. Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright*, FIRST MONDAY (1999), http://moglen.law.columbia.edu/publications/anarchism.html [https://perma.cc/9ZNV-8B7N].

182. Yochai Benkler, *The Role of Technology in Political Economy: Part 2*, LAW & POL. ECON. (July 26, 2018), https://lpeblog.org/2018/07/26/the-role-of-technology-in-political-economy-part-2 [https://perma.cc/XC7X-XLXR].

183. Benkler has suggested as much. *See* Yochai Benkler, *A Political Economy of Utopia?*, 18 DUKE L. & TECH. REV. 78, 81-82 (2019).

184. Ron Amadeo, *Google's Iron Grip on Android: Controlling Open Source by Any Means Necessary*, ARS TECHNICA (July 21, 2018, 9:56 AM), https://arstechnica.com/gadgets/2018/07/googles-iron-grip-on-android-controlling-open-source-by-any-means-necessary [https://perma.cc/9H3D-6F6N].

is simply exerted elsewhere, with "free" inputs subsumed into a broader apparatus of control.[185]

One important task for legal scholars of information today, then, is to unpack how demands for "openness," "sharing," and "freedom" in the internet age helped enable—or at least did not stand in the way of—the development of troubling forms of private power. As Cohen describes, the argument for "commons-based production" on digital networks proved perfectly compatible with the emergence of platforms, including those like Google that offer much for free.[186] Many of the most powerful advocates for immunizing internet platforms, arguing against any kind of property right in data and equating software with speech, were academic theorists hailing the importance of the public domain and cultures of sharing.[187] Nonprofit groups like the Electronic Frontier Foundation (EFF) also argued vigorously for a free internet and free coding in the same spirit—translating these into demands for First Amendment protection for software and the rejection of regulation of internet intermediaries, that over time proved to be remarkably consistent with what Google also wanted.[188]

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185. Email from Julie Cohen, Mark Claster Mamolen Professor of Law & Tech., Georgetown Univ. Law Center, to author (Nov. 8, 2019, 10:53 AM) (on file with author); *cf.* Yochai Benkler, *Degrees of Freedom, Dimensions of Power*, DAEDALUS, Winter 2016, at 18, 20-21 (arguing that emerging "control points" are facilitating the concentration of power over the internet in the hands of "a relatively small set of influential state and nonstate actors"); Tiziana Terranova, *Red Stack Attack! Algorithms, Capital, and the Automation of the Common*, EURONOMADE (Mar. 8, 2014), http://www.euronomade.info/?p=2268 [https://perma.cc/YM5R-HVDE] (developing the idea of a "red stack" that would exert commons-based control over different "levels of socio-technical innovation," so as to create "a machinic infrastructure of the common").

186. COHEN, *supra* note 21, at 252 ("Platform protocols invite commons-based production arrangements and commons-based production arrangements in turn reinforce platform logics of datafication, data harvesting, and proprietary, algorithmic knowledge production.").

187. *See* Brief Amicus Curiae of Intellectual Property Law Professors in Support of Defendants-Appellants, Supporting Reversal at 20-30, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-9185) (submitted by Julie E. Cohen and James S. Tyre) (arguing that a law banning the manufacture, importation, and distribution of software capable of circumventing technological protections on copyrighted works imposed restrictions on speech, deserved strict scrutiny, and violated the First Amendment); Samuelson, *supra* note 20 (arguing against property rights in data).

188. For example, EFF brought the first case in which a court concluded that software was speech under the First Amendment, in an attempt to protect an academic coder from government restrictions on the export of encryption software. *See* Alison Dame-Boyle, *EFF at 25: Remembering the Case that Established Code as Speech*, ELECTRONIC FRONTIER FOUND. (Apr. 15, 2015), https://www.eff.org/deeplinks/2015/04/remembering-case-established-code-speech [https://perma.cc/8HFJ-XMPK]. EFF regularly takes positions today that are fully aligned with Google. It opposed Europe's delinking law (known as the "right to be forgotten"), which it described as "commandeer[ing]" "private companies like Google," although it remained critical of the company for its lack of transparency regarding how it executes requests under

Simple arguments for "freedom" made possible by an unregulated internet seem naïve today, given the manipulation, extremism, and harassment that have flourished there.[189] I say this not to assign blame, for I, like Cohen, traveled in these same circles and at times trafficked in the same language.[190] Even at the time, though, some of us worried about its entailments. Almost ten years ago, I described a series of questions that I believed we, as advocates of open access, the commons, and the public domain, had to answer. Was the freedom we demanded in simple opposition to control, or were control and freedom "instead

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the law. *See* Katitza Rodriguez & Sarah Myers West, *Google to France: We Won't Forget It for You Wholesale*, ELECTRONIC FRONTIER FOUND. (Aug. 3, 2015), https://www.eff.org/deeplinks/2015/08/google-france-we-wont-forget-it-you-wholesale [https://perma.cc/LD95-WPQZ] ("Google's done the right thing by pushing back against the CNIL. We hope they also press for sharing more info with the public, so that we can have a grounded debate about the real, global, [sic] effect of the rise of the Right to be Forgotten."); *see also* David Greene et al., *Rights at Odds: Europe's Right to Be Forgotten Clashes with U.S. Law*, ELECTRONIC FRONTIER FOUND. 6 (Nov. 2016), https://www.eff.org/files/2016/11/29/rtbf-us_law_legal_background.pdf [https://perma.cc/3CVT-LQLM] (detailing conflicts between Europe's delinking law and First Amendment law). EFF also mirrored Google's position on key copyright fights. *Compare SOPA/PIPA: Internet Blacklist Legislation*, ELECTRONIC FRONTIER FOUND., https://www.eff.org/issues/coica-internet-censorship-and-copyright-bill [https://perma.cc/W5E3-SRK6], *with Don't Censor the Web*, GOOGLE OFFICIAL BLOG (Jan. 17, 2012), https://googleblog.blogspot.com/2012/01/dont-censor-web.html [https://perma.cc/GWA9-N6V5] (arguing that the PROTECT IP Act and Stop Online Piracy Act would censor the web without stopping piracy). Recently, there has been substantial attention to Google as a funder of academic work. *See* COHEN, *supra* note 21, at 105-06 (describing the issue); *Google Academies Inc. Update*, GOOGLE TRANSPARENCY PROJECT (July 14, 2017), https://googletransparencyproject.org/articles/google-academics-inc-update [https://perma.cc/5RK2-KBSA]; Brody Mullins & Jack Nicas, *Paying Professors: Inside Google's Academic Influence Campaign*, WALL ST. J. (July 14, 2017), https://www.wsj.com/articles/paying-professors-inside-googles-academic-influence-campaign-1499785286 [https://perma.cc/MUN5-DXKK]; Adam Rogers, *Google's Academic Influence Campaign: It's Complicated*, WIRED (July 14, 2017, 7:00 AM), https://www.wired.com/story/googles-academic-influence-campaign-its-complicated [https://perma.cc/MP36-RRKG]. Cohen argues, persuasively in my view, that these interconnections are less evidence of a crass exchange of academic prestige for money than of a far deeper process of "cultural conditioning." COHEN, *supra* note 21, at 106.

189. *See* COHEN, *supra* note 21, at 253 ("[N]etworked, massively intermediated communication technologies are crowd enhancers—they amplify whatever the crowd wants, while at the same time making the crowd easier to manipulate. Under such conditions, power from below becomes power directed toward whatever purpose its organizers want to advance, and crowdsourcing strategies for political consciousness-raising and political action lend themselves to actors pursuing a wide variety of ends. One result is that platform-based, massively intermediated environments have become fertile breeding grounds for virulent forms of ethnic nationalism and ideological extremism.").

190. Cohen was a lead professor on the brief in *Corley* described above. Brief Amicus Curiae of Intellectual Property Law Professors in Support of Defendants-Appellants, Supporting Reversal, *supra* note 187, at 1.

intimately interconnected and interdependent in the age of digital networks?"[191] Could we call the internet "free" if it lacked formal constraints on participation, or did we need a more affirmative vision of participation and access that addressed the deep, prevailing subordinations of our time?[192] What was our relationship to markets—did we want spaces free *from* markets or free *for* markets, and could the same domain be both?[193] Could advocates for access and openness "build a theory of freedom . . . based upon the radical political possibilities of the immaterial while also accounting for the crucial moment when the informational intersects with the material in the places that we create and communicate, that we live and die?"[194]

These questions still resonate today. As Cohen hints, some of what was claimed in the name of a more democratic internet likely helped facilitate the ferocious new form of private power that dominates it today. How exactly did this work, and could it have been otherwise? Perhaps this is just a refrain of an old story: powerful actors can appropriate liberatory language for their own aims because legal doctrines and abstract arguments are malleable.[195] I suspect that there is more at stake in the example, however, particularly for those interested in building a more democratic political economy—lessons, perhaps, about the limits of "hacks" to the property system in the absence of more transformative changes to our market society; about the need to more deeply theorize the relationships we envision among freedom, markets, the state, and society; and about the importance of incorporating not only an analytic of power but of market society and capitalism, that is sensitive to how spaces that in one register appear free and neutral nonetheless can be primed to reproduce the hierarchies of old.[196]

III. THE LAW OF INFORMATIONAL CAPITALISM

How do firms engaged in modes of informational extraction of surplus use the law to fortify their control? Cohen's account helps point us to some of the

191. Amy Kapczynski, *Access to Knowledge: A Conceptual Genealogy*, *in* ACCESS TO KNOWLEDGE IN THE AGE OF INTELLECTUAL PROPERTY 17, 40 (Gaëlle Krikorian & Amy Kapczynski eds., 2010).

192. *Id.* at 41.

193. *Id.* at 40.

194. *Id.* at 44.

195. *See, e.g.*, J.M. Balkin, *Some Realism About Pluralism: Legal Realist Approaches to the First Amendment*, 1990 DUKE L.J. 375, 423 (discussing the "ideological drift" of free speech values).

196. For one example of an analytic of labor and labor value online that appears remarkably prescient today, that was constructed via a broader theory of the nature of capitalism, see Tiziana Terranova, *Free Labor: Producing Culture for the Digital Economy*, 18 SOC. TEXT 33 (2000).

key elements but requires some clarification and development, particularly to illuminate the ways that law has helped not just to create private power but to insulate it from popular control. But the end result is a profoundly important correction to legal scholarship to date, which has made it hard to see the legal substrates of private power in this domain—for example, because data is not property.[197] Cohen is not operating alone, of course. Many others are also mapping how law helps to construct private power in the political economy: scholars like Frank Pasquale,[198] Yochai Benkler,[199] Lina Khan,[200] K. Sabeel Rahman,[201]

197. *See infra* text accompanying note 223.

198. FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION 191-281 (2016) (describing the problem of privatized algorithmic control and describing ways that law and public options might provide remedies); *see also* Frank Pasquale, *Data Nationalization in the Shadow of Social Credit Systems*, LAW & POL. ECON. (June 18, 2018), https://lpeblog.org/2018/06/18/data-nationalization-in-the-shadow-of-social-credit-systems [https://perma.cc/H87D-LVKV] (discussing strategies to confront the "fraught" political economy of digitization).

199. Yochai Benkler, *The Role of Political Economy in Technology*, *Part I*, LAW & POL. ECON. (July 25, 2018), https://lpeblog.org/2018/07/25/the-role-of-technology-in-political-economy-part-1 [https://perma.cc/UBL4-X4AH] (discussing the relationship between technology, political economy, and rising inequality).

200. Lina M. Khan, *Sources of Tech Platform Power*, 2 GEO. L. TECH. REV. 325, 333 (2018) (noting legal determinants of platform power including the relative lack of consumer privacy protections); Khan, *supra* note 158 (offering an account of platform power and how and why structural separations have been used historically to combat similar private power).

201. K. Sabeel Rahman, *The New Utilities: Private Power, Social Infrastructure, and the Revival of the Public Utility Concept*, 39 CARDOZO L. REV. 1621, 1668-69 (2018) (similarly describing platform power as legally conditioned); *see also* K. Sabeel Rahman, *Artificial Sovereigns: A Quasi-Constitutional Moment for Tech?*, LAW & POL. ECON. (June 15, 2018), https://lpeblog.org/2018/06/15/a-quasi-constitutional-moment-for-tech [https://perma.cc/PFW2-M7C4] (discussing different forms of "anti-dominating institutional design" that could counter rising techno-power).

Anupam Chander,[202] Veena Dubal,[203] Brishen Rogers,[204] and Elizabeth Joh.[205] Cohen's account, though, is the most panoptic that we have, and the most useful tool so far to construct an accurate picture of the role of law in the creation and extension of new forms of private power in the digital age. Below, I aim to do this, pulling from Cohen and others a set of insights about how law constructs informational capitalism and later showing how law works to insulate the market order it has constructed from democratic reorganization.

A. How Law Empowers Informational Capitalists

What role does law itself play in constituting the "capital" of informational capitalism? Data alone, after all, is not capital. A deeper point is at stake here. You cannot wade far into the literature on our data-intensive age without encountering the pervasive metaphor of data as "the new oil." But as Jathan Sodowski recently pointed out, "Data is not out there waiting to be discovered . . . like crude oil and raw ore. Data is a recorded abstraction of the world created and valorised by people using technology."[206] To exist as data, an input must be put into a schema, sensed or processed in some fashion. Much like the proverbial fallen tree in the forest, neither a drop of water nor a wish can be "data" until it is perceived and processed. Data is a social product, one that can be transformed into a commodity but that does not exist in the world without

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202. Anupam Chander, *How Law Made Silicon Valley*, 63 EMORY L.J. 639, 645 (2014) (describing, for example, how legislative action in the 1990s aimed at "encourag[ing] new Internet enterprises" dramatically impacted the future development of the platform economy).

203. Veena Dubal, *Rule-Making as Structural Violence: From a Taxi to Uber Economy in San Francisco*, LAW & POL. ECON. (June 28, 2018), https://lpeblog.org/2018/06/28/rule-making-as-structural-violence-from-a-taxi-to-uber-economy-in-san-francisco [https://perma.cc/F943-JM49] (criticizing the regulatory response to ridesharing companies such as Uber and Lyft).

204. *See* Rogers, *supra* note 9; Brishen Rogers, *The Law and Political Economy of Workplace Technological Change*, 55 HARV. C.R.-C.L. L. REV. (forthcoming 2020), https://papers.ssrn.com/abstract=3327608 [https://perma.cc/ WR6F-XD6H].

205. Elizabeth Joh, *Police Surveillance Machines: A Short History*, LAW & POL. ECON. (June 13, 2018), https://lpeblog.org/2018/06/13/police-surveillance-machines-a-short-history [https://perma.cc/7J2N-DN59] (canvassing the history of police surveillance machines).

206. Jathan Sadowski, *When Data Is Capital: Datafication, Accumulation, and Extraction*, 6 BIG DATA & SOC'Y 1, 2 (2019) (citation omitted). Common dictionary definitions affirm the social nature of data. *See Data*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/data [https://perma.cc/ZEN7-94NT] (defining data as "factual information (such as measurements or statistics) used as a basis for reasoning, discussion, or calculation," "information in digital form that can be transmitted or processed," and "information output by a sensing device or organ that includes both useful and irrelevant or redundant information and must be processed to be meaningful").

us, waiting for collection and exchange. Control over data and its production is socially and also legally determined.

The tendency instead to see data as a thing that springs from a person and that enters the world as a transcendent object misapprehends what data is and obscures how it came to serve as a critical form of capital in the current age.[207] This view of data—rather like the view of commodities of which Marx once wrote—imbues it with a kind of religious aura, treating "productions of the human brain" as if they are "autonomous figures endowed with a life of their own, which enter into relations both with each other and with the human race."[208] If we are to intervene to democratize private power today, we must instead understand data (and by extension, information and knowledge) as the product of social relations and so properly the object of social interest. And we must understand how law helps to construct data, and data as capital, by shaping these social relations.

Where do information capitalists get their power? One source, as Cohen notes, is immaterial property rights. The "grandest" among these, patent and copyright, emerged over the last few centuries but were notably strengthened and expanded in recent decades.[209] In a superbly subtle account, Cohen draws attention to the myriad changes—beyond simple expansion of scope or term—that helped facilitate the industrial organization of scientific and artistic production.

For example, U.S. law shifted to allow corporations to own patents and copyrights, to control their employees' creations, and to claim follow-on or derivative creations and innovations as new forms of property.[210] The purported aim of these laws also shifted over time from the advancement of learning and the arts, which gave significant priority to the diffusion of knowledge, to an emphasis on innovation incentives, which prioritized the perspective of producers.[211]

Trademark law creates key assets for the informational economy as well, anchoring processes of branding and advertising. This area of law also expanded in the 1990s, moving beyond the protection of consumers from confusion to create a more robust and property-like entitlement to the goodwill associated

207. For more on data as capital, see Sadowski, *supra* note 206, at 5-8.

208. 1 KARL MARX, CAPITAL 165 (Ben Fowkes trans., Penguin Books 2d ed. 1979) (1867).

209. *See* COHEN, *supra* note 21, at 16-18. Both patent and copyright doctrine have expanded in scope and duration, for example. *Id.*

210. *Id.* These incremental innovations are critical to the profitability of industrial labs, as well as the publishing and movie industries.

211. *Id.* at 18.

with a brand, especially for famous marks.[212] The Chicago School made its mark here too, theorizing that trademarks did not just protect from confusion but minimized "search costs," a rationale that enabled companies to claim far more capacious rights in marks.[213] Other economic theories redescribed corporate marketing and branding activities not as unsavory or wasteful attempts at mind control but as signals of "quality," reasoning that only well-capitalized firms could afford to invest in their brands.[214] Law changed to relax restrictions on "naked licensing" of trademarks, enabling forms of franchising that permitted corporations like McDonald's to formally disavow employee relationships with hundreds of thousands of people whose work they intricately controlled.[215] This enabled the creation of the informational service sector, where franchisors could both exert networked control over franchisees and avoid the strictures of labor law.[216]

Many of the most intensely informational industries rely heavily on these forms of intellectual property. The pharmaceutical industry and Hollywood are perhaps the leading examples. But traditional forms of intellectual property are only a small part of the story for powerhouse platforms like Google, Facebook, Uber, and Airbnb.[217] Trademark law is omnipresent in commercial settings, and internet companies do take out patents: Google secured one on PageRank and Amazon famously on "one-click" shopping.[218] But the most critical technological inputs and outputs of the data-driven algorithmic age are unowned, if ownership means exclusive rights that carry a "good-against-the-world" quality.

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212. *Id*. at 20-21.

213. *Id*. at 21; *see* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 167-68 (2003); Nicholas S. Economides, *Trademarks*, *in* 3 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 602 (Peter Newman ed., 1998).

214. *See, e.g.*, Richard E. Kihlstrom & Michael H. Riordan, *Advertising as a Signal*, 92 J. POL. ECON. 427, 427 (1984).

215. Cohen describes the issue of "naked licensing." *See* COHEN, *supra* note 21, at 22. The relationship among franchising, control, and the evasion of labor law is described in Brian Callaci, *Control Without Responsibility: The Legal Creation of Franchising 1960-1980* (Wash. Ctr. for Equitable Growth, Working Paper, 2018).

216. *See* Callaci, *supra* note 215, at 5.

217. Cohen argues that copyrights play a "secondary" role in efforts to propertize data, working as "sources of leverage that can be invoked to channel would-be users toward entering the access-for-data bargain on the platform's terms and/or to prevent would-be competitors from gaining access to information stored on the platform by other means." COHEN, *supra* note 21, at 45. She sees a somewhat greater role for patents, citing their importance to processes of standard setting that help to shape platforms. *Id*. at 46.

218. Method for Node Ranking in a Linked Database, U.S. Patent No. 6,285,999 B1 (filed Jan. 9, 1998); Method and System for Placing a Purchase Order via a Communications Network,

Algorithms and machine learning are hard to protect with patent law, for example. Algorithms per se are excluded subject matter,[219] and machine-learning techniques are arguably discovering patterns in nature that cannot be propertized.[220] Nor are these techniques readily protectable via copyright. They may be protectable by trade-secret law, but trade secrecy is a right that arguably more resembles tort or contract than exclusive property.[221]

Data is the other central resource in the age of algorithms and machine learning, and it is famously unowned in intellectual-property terms. Copyright law does not cover facts, and databases can only be protected in very narrow circumstances.[222] Intellectual-property scholars have, for the most part, argued vociferously against any form of property protection in personal data for a variety of reasons, including concerns about transaction costs and innovation.[223]

What are the primary sources of economic power for Google, Facebook, the algorithmic financial sector, and the projected new data overlords that will revolutionize medical care, the criminal-justice system, education, and more? Two key sources are trade-secret rights and contract law.[224] Trade-secrecy law has long been a backwater in intellectual-property scholarship. It is still largely governed by state law, and few scholars focus on it. Contract law has often been discounted as a source of power over information because it generally does not bind third parties.[225] Both, however, are key modalities of the protection of data

U.S. Patent No. 5,960,411 (filed Sept. 12, 1997); *see also Why Amazon's '1-Click' Ordering Was a Game Changer*, U. PENN. WHARTON (Sept. 14, 2017), https://knowledge.wharton.upenn.edu/article/amazons-1-click-goes-off-patent [https://perma.cc/CW84-E97T] (describing the importance of Amazon's patent).

219. *See* Bilski v. Kappos, 561 U.S. 593, 611-12 (2010).

220. *Cf.* Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66, 72 (2012) (holding that natural correlations are unpatentable subject matter).

221. COHEN, *supra* note 21, at 45 (describing trade secrecy law as a "shifting and uncertain hybrid between property and contract").

222. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 344, 348 (1991) (requiring "original selection or arrangement" for factual compilations to be protectable).

223. *See, e.g.*, Lemley, *supra* note 20, at 1547 (arguing that "creating an intellectual property right in individual data is a very bad idea"); Jessica Litman, *Information Privacy/Information Property*, 52 STAN. L. REV. 1283, 1301 (2000) ("The market in personal data is the *problem*. Market solutions based on a property rights model won't cure it; they'll only legitimize it."); Samuelson, *supra* note 20, at 1135, 1139 (critiquing intellectual property rights in individual data).

224. COHEN, *supra* note 21, at 63 ("[A]lthough intellectual property theory places 'facts' permanently in the public domain, intellectual property practice traditionally has recognized a need for gap-filling protection in certain industries, and has looked to trade secrecy and contract law to fulfill that need.").

225. *See, e.g.*, Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239, 1286 (1995) ("Intellectual property is only marginally susceptible to protection by contract

and informational techniques. As Cohen describes, "[r]ealizing the profit potential of commercial surveillance activity requires practices that mark data flows with indicia of ownership."[226] That phrase—the "indicia of ownership"—is well chosen: what matters to the construction of power is not the legal category but its practical effect. Contracts, for example, can create property-like rights if the group of relevant parties is small enough to contract with.[227]

As Cohen notes, "[p]articipants in data-intensive industries, including both platforms and data brokers, routinely deploy trade-secrecy law and contract to achieve a measure of exclusive control over the data that they collect."[228] How do they deploy these weaker legal forms to exact control? They begin with a technical advantage: the operations of the big information intermediaries and the new disruptors of the service economy are rarely visible to outsiders who are not granted permission. The techniques that give them competitive advantages, whether in ranking web pages, serving ads, or identifying tumors, are unlikely to be as well-documented as, say, the chemical formulation of a new medicine, or the "formula" for a Hollywood blockbuster. Being an Uber driver or a rider gives you few insights into the precise ways in which Uber's algorithms operate. Reverse engineering these insights—and even understanding their basis—is difficult and costly, where it is not impossible.

Contractual and trade-secrecy claims work in conjunction with firms' technical control over the network.[229] Platforms can deploy contracts with their vendors, customers, and collaborators that require data and algorithms to be kept secret or not shared because they inhabit privileged technical positions at the nodes of networks that millions of people want to access.[230] These contracts deny users control over their data or any access to the companies' valuable secrets. They are "boilerplates" that cannot in practice be amended by users, making

alone, because it is very easy for third parties to duplicate an idea once it has become public. . . . Patent and copyright law both impose liability on third parties who could not have been expected to contract with intellectual property owners *ex ante*.").

226. COHEN, *supra* note 21, at 62.

227. *See* Amy Kapczynski, *Order Without Intellectual Property Law: Open Science in Influenza*, 102 CORNELL L. REV. 1539, 1608-09 (2017).

228. COHEN, *supra* note 21, at 63.

229. *Id.* at 45 (noting that trade secrecy, contract, and platform protocols work in tandem to create "de facto" property arrangements).

230. *Id.* (noting that Facebook allows advertisers to precisely target users but not access their trove of data and that Google does not share data or algorithms with customers or app developers).

them a "powerful tool both for private ordering of behavior and for private reordering of even the most bedrock legal rights and obligations."[231] Some firms use terms-of-use agreements that also forbid users from undertaking research that might disclose aspects of their platform's functioning.[232] The impact of these contracts is dramatically amplified by overbroad laws like the federal Computer Fraud and Abuse Act, which render certain violations of such terms-of-use agreements criminal.[233]

Although Cohen does not discuss it, changes in contract and trade-secrecy law were essential to platforms' ability to anchor this new power. Without changes in the law of contracts that blessed digital "click-wrap" agreements, platform power could not have evolved as it has.[234] The subject matter of trade-secret law has also expanded dramatically over the decades, from a narrow tort-based right to prevent competitors from stealing formulas and employees to an expansive property-like right to any valuable and secret commercial information. No one has yet written a full history of these developments that situates them in the rise of incentive-based accounts of IP and corporate efforts to expand their protection over data. But evidence of key inflection points can be found in the expansions in the types of information protectable as trade secrets: from the early 1939 Restatement (First) of Torts definition of trade secrets, to the notably

231. *Id.* at 44; *see also* MARGARET JANE RADIN, BOILERPLATE: THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW 7-9, 12-15 (2013) (describing the prevalence of boilerplate agreements, the magnitude of their legal effects, and their dissimilarity to binding contracts as traditionally conceived); Julie E. Cohen, *Law for the Platform Economy*, 51 U.C. DAVIS L. REV. 133, 154-55 (2017) (describing the importance of boilerplate agreements for private power in the digital context).

232. *See* Letter from Jameel Jaffer et al., Knight First Amendment Inst. at Columbia Univ., to Mark Zuckerberg, Chief Exec. Officer, Facebook (Aug. 6, 2018), https://knightcolumbia.org/sites/default/files/content/Facebook_Letter.pdf [https://perma.cc/Q6YL-G7F9].

233. *See* Orin S. Kerr, *Norms of Computer Trespass*, 116 COLUM. L. REV. 1143, 1145-46 (2016).

234. BRETT FRISCHMAN & EVAN SELINGER, RE-ENGINEERING HUMANITY 62-67 (2018).

broader definitions in the Uniform Trade Secrets Act of 1979 and the Restatement (Third) of Unfair Competition of 1995,[235] and then to the federalization of trade-secrets law in the Defend Trade Secrets Act of 2016.[236]

Through the interaction of these various background entitlements, platforms today enjoy rights to seize data flows. Google and Facebook—but also apps, smart appliances, medical intermediaries, and so forth—occupy particularly powerful nodes in networks that permit them to harvest data in a manner that others cannot. Does that mean that this is a "lawless" domain? Hardly. Since at least the time of Wesley Newcomb Hohfeld, it has been understood that a

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235. The Restatement (First) of Torts defined a "trade secret" as

> any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers.

RESTATEMENT (FIRST) OF TORTS § 757 cmt. b (AM. LAW INST. 1939). It also specified that a "trade secret is a process or device for continuous use in the operation of the business." *Id.* The Uniform Trade Secrets Act (UTSA) adopted a notably broader definition of scope:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

UNIF. TRADE SECRETS ACT § 1(4) (1985). For example, it deliberately broadened the definition of trade secrets by removing a "continuous use" requirement in the Restatement, protecting even "single-event" information and protecting "negative information that has commercial value," such as the results of lengthy and expensive research which prove that a certain process will not work. *See* MELVIN F. JAGER, TRADE SECRETS LAW § 3:34 (2019). The Restatement (Third) of Unfair Competition sought to integrate the UTSA and notes that

> [a] trade secret can consist of a formula, pattern, compilation of data, computer program, device, method, technique, process, or other form or embodiment of economically valuable information. A trade secret can relate to technical matters such as the composition or design of a product, a method of manufacture, or the know-how necessary to perform a particular operation or service. A trade secret can also relate to other aspects of business operations such as pricing and marketing techniques or the identity and requirements of customers . . . .

RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. d (AM. LAW INST. 1995). Trade secrets were deleted from the Restatement (Second) of Torts because the ALI no longer considered trade secrets a branch of tort law. *See* Ramon A. Klitzke, *The Uniform Trade Secrets Act*, 64 MARQ. L. REV. 277, 283 (1980). The topic was instead included by the ALI in the Third Restatement of Unfair Competition. RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39-45 (AM. LAW INST. 1995).

236. Defend Trade Secrets Act of 2016, 18 U.S.C. §§ 1831-1840 (2018).

regime that permits first-comers to seize an asset is also a regime of law.[237] The coding of data as free for the gathering is just as much a rule of law as a property regime in data would be. Cohen likens this regime to the legal construction of the public domain—a place defined by the "absence of prior claims to the resource in question."[238] She also notes that the public-domain treatment of data works alongside other legal rules that protect platforms (contract law, intermediary immunity, and the like), making the conventional refrain of intellectual-property scholars that there is no property in data formally true but practically false.[239]

With this in mind, we can return to cases like *Moore v. Regents of California*, typically only discussed in property or health-law contexts, and reread them as canonical cases shaping the information economy.[240] John Moore was a patient under treatment for hairy-cell leukemia at the UCLA Medical Center whose cells were harvested—unbeknownst to him—as part of a surgery to which he consented.[241] The cells were turned into a cell line, which was then patented as a means to produce certain proteins potentially worth billions of dollars as treatments.[242] Moore argued that the cells were his property and had been taken from him in violation of the tort of conversion.[243] The tort, which as the court wryly noted, evolved to "determine whether the loser or finder of a horse had the better title," might have covered Moore's cells, had he been understood to have "possessory or ownership" interests in them.[244] And what could be more one's *own* than one's cells? People in California have a property-like right to the far less tangible interest in their own likenesses, under the "publicity" tort, Moore argued.[245] Why give him the right to control his likeness but not his body? Noting that Moore did have the right to refuse or accept treatment and to be appropriately informed by interests that might have impacted the doctor's medical judgment, the court dismissed any autonomy interests he might have had and treated

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237. *See* Wesley Newcomb Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 26 YALE L.J. 710, 710 (1917).

238. COHEN, *supra* note 21, at 50.

239. *Id.* at 44 ("One important byproduct of the access-for-data arrangement is a quiet revolution in the legal status of data and algorithms as (de facto if not de jure) proprietary information property.").

240. 793 P.2d 479 (Cal. 1990).

241. *Id.* at 480-81.

242. *Id.* at 481-82.

243. *Id.* at 487.

244. *Id.*

245. *Id.* at 489-90; *see, e.g.*, Lugosi v. Universal Pictures, 603 P.2d 425, 431 (Cal. 1979).

the central question of the case as one about the viability of industrial biotechnology.[246] Scientific research might be impeded if researchers or companies had uncertain title over cells and the patents that derived from them.[247] Moore's argument, the court concluded, "threatens to destroy the economic incentive to conduct important medical research."[248] It was a logic of "productive appropriation" that decided the question, as Cohen points out.[249]

Cohen gestures toward something that the scholarly literature has failed to reckon with: *Moore* was not an "anti-commodification opinion" as sometimes described.[250] Rather, it favored corporate extraction and accumulation over an individual entitlement to transact for ones' valuable cells and data. Were the arguments in favor of research indeed sufficiently compelling to override any claim Moore might have had? As a dissenting justice noted, the conversion tort is flexible, and it might have been interpreted to exclude actions against unknowing third-party researchers (or anyone not aware of the value of cells who extracted them for that reason without notice, as Moore's doctors allegedly were).[251] Damages awards also could have been adjusted to address the equities of each parties' contributions.[252] What decided the matter for the majority was less the necessary implications for health research than the power of the innovation narrative and an incomprehension of the distributive claim at the heart of Moore's case.[253]

Though Cohen does not discuss it, *Moore* should be read alongside cases where individuals were denied the recourse of tort law when seeking to exert control over how their personal data was used. Consider *Nader v. General Motors Corp.*, an influential case holding that the privacy tort of intrusion upon seclusion is not implicated by the gathering of public data about an individual.[254] Cases like these, too, are key building blocks of the public domain of personal

246. *Moore*, 793 P.2d at 493-95.

247. *Id.* at 494.

248. *Id.* at 495.

249. COHEN, *supra* note 21, at 72.

250. *Id.*

251. *Moore*, 793 P.2d at 504 (Broussard, J., concurring in part and dissenting in part).

252. *Id.* at 505.

253. *Id.* (noting that the majority "fails even to mention the patient's interest in obtaining the economic value, if any, that may adhere in the subsequent use of his own body parts"); *see also id.* at 506 ("Far from elevating these biological materials above the marketplace, the majority's holding simply bars *plaintiff*, the source of the cells, from obtaining the benefit of the cells' value, but permits *defendants*, who allegedly obtained the cells from plaintiff by improper means, to retain and exploit the full economic value of their ill-gotten gains free of their ordinary common law liability for conversion.").

254. 255 N.E.2d 765, 770 (N.Y. 1970).

data. They "legitimate[] a pattern of appropriation by some, with economic and political consequences for others."[255]

We can cull from Cohen's account a raft of other laws and policy choices that also helped to shape the freedom of platform and informational appropriation. The Federal Trade Commission enabled personal-data capture by deciding to apply only a thin conception of "unfair trade practices" that authorized data harvesting wherever notice and contractual consent could be shown.[256] The fact that a privacy statement ran into the thousands of pages made no difference.[257] Consent, though, is an impossible rubric through which to justify these practices. As Cohen notes, in the age of the sensing net and the internet of things, we have no idea really what data is being collected, what it might mean to those who deploy it, nor what will be done with it.[258]

Changes in antitrust law in the 1980s and 1990s were important because they narrowed the field's focus to price effects, making the power of platforms hard to see and challenge.[259] The power of platforms was also enhanced by internet intermediary law and the lack of meaningful consequences for data or other security breaches that threaten users.[260] These forms of immunity have broad consequences, but it is worth noting that there are other, more specific immunities that are critical to the emergence of data extraction and processing models in each industry. For example, there is now a vast market in the sale and processing of electronic health records.[261] Healthcare is an area unusually well

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255. COHEN, *supra* note 21, at 72.

256. *Id.* at 56.

257. *Id.*

258. *Id.* at 58.

259. Lina M. Khan, Note, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 737 (2017) ("The current framework in antitrust fails to register certain forms of anti-competitive harm and therefore is unequipped to promote real competition — a shortcoming that is illuminated and amplified in the context of online platforms and data-driven markets. This failure stems both from assumptions embedded in the Chicago School framework and from the way this framework assesses competition."); *id.* at 743 ("[F]ocusing on consumer welfare disregards the host of other ways that excessive concentration can harm us — enabling firms to squeeze suppliers and producers, endangering system stability (for instance, by allowing companies to become too big to fail), or undermining media diversity, to name a few." (footnotes omitted)).

260. *See* COHEN, *supra* note 21, at 101-02.

261. For example, the company Flatiron Health was founded by two former Google employees in 2012 to "pool[] patient data from electronic health records in a way that could answer scientific questions and improve medicine." Matthew Herper & Ellie Kincaid, *At 24, Two Entrepreneurs Took on Cancer. At 32, They're Worth Hundreds of Millions*, FORBES (Nov. 14, 2018, 6:00 AM), https://www.forbes.com/sites/matthewherper/2018/11/14/at-24-two-entrepreneurs-took-on-cancer-at-32-theyre-worth-hundreds-of-millions [https://perma.cc/7ZVR-JZRH]. Six

protected by privacy laws. But the reigning federal statute, the Health Insurance Portability and Accountability Act of 1996 (HIPAA),[262] imposes no restrictions on the disclosure or exchange of so-called "de-identified" data, which does not provide a "reasonable basis" for identifying an individual.[263] As long as identifying information is redacted, holders of these valuable records can exchange them as they wish—unbeknownst to the individuals whose data comprises the records, or to the health professionals whose labor creates the records.

B. The Encasement of Informational Capitalism

By extracting and building on Cohen's account, we can begin to see how law constructs private economic power in the informational age. But the picture is incomplete: legal ordering is being used not simply to help generate and sustain private power but to *insulate it from democratic control.* A key feature of the juridical construct of capitalism, as described above, is the insulation of the market from political control. In the early modern era, this meant creating and then constitutionalizing private property rights. In the neoliberal era, the "encasement" of markets from democratic control has taken on new forms, as Quinn Slobodian's excellent recent book describes.[264] The Geneva School neoliberals, in particular, sought not markets freed from the state but markets protected by the state from popular interference. The World Trade Organization (WTO) and other trade pacts like the North American Free Trade Agreement (NAFTA) were shaped to deliver precisely this kind of containment of democratic control: they place the rights of parties such as intellectual property holders or foreign investors beyond the reach of local democratic control, in order to reward foreign investment and protect market access.[265]

Three legal moves are critical to understanding how private economic power over informational regimes is insulated from democratic control today, and none

years later, their company was sold for $1.9 billion to the pharmaceutical company Roche, which already owned a $200 million stake in it. *Id.*

262. Pub. L. No. 104-191, 110 Stat. 1936.

263. 45 C.F.R. §§ 164.502(d)(2), 164.514(a)-(b) (2019).

264. QUINN SLOBODIAN, GLOBALISTS: THE END OF EMPIRE AND THE BIRTH OF NEOLIBERALISM 5-7 (2018). Slobodian's "encasement" names a specific form of a more general phenomenon that Paul Starr, in a recent book, describes as "entrenchment", or change that is difficult for opponents to undo. PAUL STARR, ENTRENCHMENT: WEALTH, POWER, AND THE CONSTITUTION OF DEMOCRATIC SOCIETIES 1-5 (2019). Encasement is entrenchment of market entitlements and market ordering to protect these from democratic renegotiation or redistribution.

265. SLOBODIAN, *supra* note 264, at 4-5, 8-12.

receives much attention in Cohen's account.[266] First, in a case called *Ruckelshaus v. Monsanto Co.*, the Supreme Court held that trade secrets constituted property that could be protected by the Takings Clause,[267] and that compensation could be required if there was also interference with "investment-backed expectations."[268] Precisely what would constitute such interference was left unclear—the Court merely concluded that where data was covered by state trade-secret law and made public after the government expressly promised to keep it secret, compensation was due.[269] Lower courts, however, have read the decision more broadly. One shows the radical implications that could follow if trade secrets are treated broadly as property subject to the Fifth Amendment: in *Philip Morris, Inc. v. Reilly*, the First Circuit struck down a Massachusetts law that required disclosure of all cigarette ingredients to state regulators, who were then empowered, if they found that public health could benefit, to make them public.[270] The court dismissed the idea that the state's public-health interest in disclosure justified the move without compensation, holding that "the fact that the public interest can sometimes override private property interests does not establish that the tobacco companies have *no* cognizable property interest when a state decides that publication of their trade secrets will further public health."[271] Rather, the public-health benefits were but one consideration in the takings analysis and were here deemed insufficiently weighty to overcome tobacco companies' investment-backed expectations in secrecy.[272]

On this theory, trade-secrets law stands as a profound impediment to democracy. Trade secrecy's subject matter is vast: it can encompass any kind of information or data held by a private actor as long as it has "independent economic value" derived from its secrecy, is not "readily ascertainable by proper means,"

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266. Though each is mentioned, none is the focus of sustained attention or articulated as examples of "encasement" as I describe here. *See* COHEN, *supra* note 21, at 24, 45 (trade secrecy); *id.* at 93-95 (First Amendment); *id.* at 205-07 (international trade agreements).

267. 467 U.S. 986, 1003 (1984).

268. *Id.* at 1005 (quoting PruneYard Shopping Ctr. v. Robins, 447 U.S. 74, 83 (1980)). The Court also suggested that other aspects of the *Penn Central* test were relevant but focused on investment-backed expectations because they were dispositive in that case. *See id.* (citing Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978)).

269. *Ruckelshaus*, 467 U.S. at 1010-11.

270. 312 F.3d 24, 28-29 (1st Cir. 2002). The statute also required, before disclosure, that the Massachusetts Attorney General find that disclosure would not constitute an unconstitutional taking. *Id.* at 29.

271. *Id.* at 31.

272. *Id.* at 45. The court was skeptical that the disclosure substantially advanced public health, applying something akin to a narrow tailoring test and citing the lack of evidence that the secret ingredients were harmful. *Id.* at 44.

and is subject to reasonable efforts to maintain its secrecy.[273] In the wake of these takings decisions, companies have begun to argue that a wide range of laws that seek to disclose corporate information would violate takings law. They have argued against proposals to disclose the chemicals being injected into groundwater in hydraulic fracking, the workings of voting machines, and the prices of medicines, for example.[274] Companies like Google, Facebook, and Palantir will surely argue that their data, algorithms, and processing techniques used by companies qualify as trade secrets, meaning that any attempt to render them public, or to give access to competitors, will likely face a constitutional challenge.

Recent Supreme Court cases have also reshaped the First Amendment, giving firms a powerful new tool to strike down legislation that seeks to govern how they buy and sell data, fund candidates for office, and commercialize their products.[275] A series of software cases show the stakes for regulation in an age of informational capitalism, as courts have been persuaded that software is "speech" for the purposes of the First Amendment. In one, a website sued Google for tortious interference, alleging that Google had maliciously demoted it in search rankings.[276] The court sided with Google, judging its rankings to be corporate "opinions" entitled to First Amendment protection.[277] Google has invested heavily in the argument that the results of its searches are Google's own speech, funding academics to write papers on the topic and making the point regularly in court.[278] When the FBI ordered Apple to assist it in breaking into a suspect's

273. UNIF. TRADE SECRETS ACT § 1(4) (1985). On the expanding definition of trade secrets, see also *supra* note 235.

274. *See* John Craven, *Fracking Secrets: The Limitations of Trade Secret Protection in Hydraulic Fracturing*, 16 VAND. J. ENT. & TECH. L. 395, 401 (2014) (discussing trade secret practices and fracking); David S. Levine, *The Impact of Trade Secrecy on Public Transparency*, *in* THE LAW AND THEORY OF TRADE SECRECY: A HANDBOOK OF CONTEMPORARY RESEARCH 406, 419-23 (Rochelle C. Dreyfuss & Katherine J. Strandburg eds., 2011) (discussing the voting example); Aaron Berman et al., *Curbing Unfair Drug Prices: A Primer for States*, YALE GLOBAL HEALTH JUST. PARTNERSHIP (Aug. 2017) (describing the drug pricing example), https://law.yale.edu/sites/default/files/area/center/ghjp/documents/curbing_unfair_drug_prices-policy_paper-080717.pdf [https://perma.cc/BNM4-F6RZ].

275. *See, e.g.*, Sorrell v. IMS Health Inc., 564 U.S. 552 (2011) (on buying and selling data); Citizens United v. Fed. Election Comm'n, 558 U.S. 310 (2010) (on funding candidates for office); United States v. Caronia, 703 F.3d 149 (2d Cir. 2012) (concluding that *Sorrell* prevented the criminalization of off-label drug marketing as such).

276. Search King, Inc. v. Google Tech., Inc., No. CIV-02-1457-M, 2003 WL 21464568, at *1 (W.D. Okla. May 27, 2003).

277. *Id.* at *4.

278. *See* Langdon v. Google, Inc., 474 F. Supp. 2d 622, 629-30 (D. Del. 2007) (holding that an order to improve a website's place in the rankings would infringe Google's speech); Eugene Volokh & Donald M. Falk, *Google: First Amendment Protection for Search Engine Search Results*, 8 J.L.

iPhone after a terrorist attack in San Bernardino, Apple mounted a First Amendment defense, arguing that requiring it to write code and "sign" it "cryptographically . . . using its own proprietary encryption methods . . . amounts to compelled speech and viewpoint discrimination in violation of the First Amendment."[279] Courts have concluded that software itself is "speech" subject to First Amendment protection,[280] and have applied intermediate scrutiny to laws that regulate computer code.[281]

Absurd results follow if we treat all code as speech protected by the Constitution. Volkswagen would have a constitutional argument if it were asked to write a patch to fix the diesel models it designed surreptitiously to exceed emissions limits. Medical-device companies would be able to argue that the state had to overcome First Amendment scrutiny before requiring security measures to prevent hacking of implanted digital devices. The risk is not hypothetical. When the State Department recently sought to restrict the distribution of CAD files for 3D-printed machine-gun parts, the company (Defense Distributed) argued in court that its free speech rights were being violated.[282] Though the case was mooted before it was resolved, the court seemed to countenance the argument.[283] The First Amendment has, remarkably, become a powerful constitutional weapon against the regulation of software and data.

The basic move is on shaky constitutional ground. It has never been the case that everything that qualifies as "speech" in the colloquial sense has been entitled to the protection of the First Amendment.[284] We do not treat the rules of evi-

ECON. & POL'Y 883, 883 (2012) (noting that the article "is the published version of a White Paper commissioned by Google").

279. Apple Inc's Motion to Vacate Order Compelling Apple Inc. to Assist Agents in Search, and Opposition to Government's Motion to Compel Assistance at 32, *In re* Search of an Apple iPhone, 2016 WL 2771267 (C.D. Cal. Feb. 25, 2016) (No. 5:16-CM-00010-SP). The FBI dropped the request, so the court did not rule on the issue.

280. Universal City Studios, Inc. v. Corley, 273 F.3d 429, 449 (2d Cir. 2001); *see also* Bernstein v. U.S. Dep't of Justice, 176 F.3d 1132, 1141-42 (9th Cir. 1999), *opinion withdrawn and en banc rehearing granted*, 192 F.3d 1308 (9th Cir. 1999) (holding that encryption source code is expressive speech under the First Amendment).

281. *Corley*, 273 F.3d at 450.

282. Defense Distributed v. U.S. Dep't of State, 838 F.3d 451 (5th Cir. 2016). The case was mooted when the Trump Administration decided to drop the attempt to restrict the file's dissemination.

283. *Id.* at 458-61.

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

dence, or doctors' advice to patients, or lawyers' advice to clients as constitutionally protected speech.[285] Whether something is speech turns on whether it furthers the core purpose of the First Amendment: to enable us to be, and experience ourselves as, authors of our own government.[286] The notion that software as such should be protected by the First Amendment has little to recommend it, once we understand this. A program that operates antilock brakes has nothing to do with the formation of public opinion. Google's search rankings are a closer case, but search engines are fundamentally about delivering users what *they* are looking for.[287] This makes implausible the claim that Google is the speaker that needs protecting. As a modality to encase the power of informational capitalists from democratic authority, however, the doctrine works very well.

International law provides another means of encasement. At its inception, the WTO bound its members—today almost all countries in the world—to adopt strong intellectual property rights.[288] Member countries were required, for example, to provide a minimum of twenty years of protection for patents,[289] and to allow patents on technologies like medicines and food, which many countries did not do at the time.[290] They were required to permit copyrights on software, and to protect "compilations of data" where these were "intellectual creations."[291] These commitments were thrust into the trading regime by the concerted efforts of a relatively small group of informational industries based in the United States and Europe—drug companies, Hollywood, publishers, and the like.[292] They are written in a manner that gives states no general discretion to

285. *See* Robert Post & Amanda Shanor, *Adam Smith's First Amendment*, 128 HARV. L. REV. F. 165, 178 (2015).

286. *See* ROBERT POST, DEMOCRACY, EXPERTISE, AND ACADEMIC FREEDOM: A FIRST AMENDMENT JURISPRUDENCE FOR THE MODERN STATE 17-21 (2012).

287. James Grimmelmann, *Listeners' Choices*, 90 U. COLO. L. REV. 365, 379 (2019) (noting that "[s]earch engines are highly listener directed").

288. Agreement on Trade-Related Aspects of Intellectual Property Rights arts. 9, 10, 27, 33, Apr. 15, 1994, 1869 U.N.T.S. 299 [hereinafter TRIPS].

289. *Id.* art. 33.

290. *Id.* art. 27.1; Carlos M. Correa, *Patent Rights*, *in* INTELLECTUAL PROPERTY AND INTERNATIONAL TRADE: THE TRIPS AGREEMENT 227, 229 (Carlos M. Correa & Abdulqawi A. Yusuf eds., 2d ed. 2008).

291. TRIPS, *supra* note 288, art. 10.

292. *See* SUSAN K. SELL, PRIVATE POWER, PUBLIC LAW: THE GLOBALIZATION OF INTELLECTUAL PROPERTY RIGHTS 75-76 (2003).

adapt their laws to meet democratic demands for public health or security.[293] And while the agreement has "flexibilities," they are difficult to use in practice.[294]

In the early 1990s, when the WTO's intellectual property agreement was drafted, the first web browser had just been created, and Google and Facebook were still years in the future. As informational capital and data have grown in value, multinational firms have pressed for and received stronger rights in new international agreements.[295] Google has lobbied vigorously for new commitments in international law, for example for establishing a "presumption that governments may not restrict online information flows" and forbidding countries from adopting data-localization rules.[296] Recent trade agreements have included new commitments of this sort, constricting the options that national governments have to regulate.[297] These provisions have significant implications for

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293. The GATT, in contrast, has such provisions in Articles XX & XXI. General Agreement on Tariffs and Trade arts. XX, XXI, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194.

294. For a case study describing the difficulty making use of the flexibilities in TRIPS to protect access to medicines, see Amy Kapczynski, *Harmonization and Its Discontents: A Case Study of TRIPS Implementation in India's Pharmaceutical Sector*, 97 CALIF. L. REV. 1571 (2009).

295. *See, e.g.*, *id*. at 1640; Peter K. Yu. *The Non-Multilateral Approach to International Intellectual Property Normsetting*, *in* INTERNATIONAL INTELLECTUAL PROPERTY: A HANDBOOK OF CONTEMPORARY RESEARCH 83 (Daniel J. Gervais ed., 2015).

296. *See, e.g.*, *Enabling Trade in the Era of Information Technologies: Breaking Down Barriers to the Free Flow of Information*, GOOGLE 14-16 (2010), https://static.googleusercontent.com/media/www.google.com/en//googleblogs/pdfs/trade_free_flow_of_information.pdf [https://perma.cc/A7RJ-2G3A].

297. For several trade agreements that discuss cross-border data flows, see, e.g., Agreement Between the United States of America, the United Mexican States, and Canada (USMCA), art. 19.11(1), Dec. 13, 2019, Off. U.S. Trade Representative, https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between [https://perma.cc/EYE6-Y4BC] ("No party shall prohibit or restrict the cross-border transfer of information, including personal information, by electronic means if this activity is for the conduct of the business of a covered person."); Korea-U.S. Free Trade Agreement, S. Kor.-U.S., art. 15.8, June 30, 2007, 46 I.L.M. 642, https://www.ustr.gov/trade-agreements/free-trade-agreements/korus-fta/final-text [https://perma.cc/SU6V-84RA] ("Recognizing the importance of the free flow of information in facilitating trade, and acknowledging the importance of protecting personal information, the Parties shall endeavor to refrain from imposing or maintaining unnecessary barriers to electronic information flows across borders."); *see also* USMCA, *supra*, art. 19.11(2) (providing an exception when the measure is "necessary to achieve a legitimate public policy objective" so long as the measure is not discriminatory or a "disguised restriction on trade" and "does not impose restrictions on transfers of information greater than are necessary to achieve the objective"). On data localization rules, see *id.* art. 19.12, which prescribes that "[n]o Party shall require a covered person to use or locate computing facilities in that Party's territory as a condition for conducting business in that territory." For more on how international agreements incorporate protection for data, see Mira

the adjudication of public interests. For example, many countries, including Canada, have required that companies store certain sensitive data (such as health information) on local servers, so that local law can more readily be applied—but such provisions are forbidden in the revised NAFTA text.[298] Investor protections included in many trade agreements have also been used by information-intensive firms to contest local interpretations of intellectual property law, as in a 2017 NAFTA case in Canada where the drug company Eli Lilly sought to overturn the Canadian Supreme Court's interpretation of its patent law because it undermined the company's profit expectations.[299] Data flows have not yet been the subject of claims under such treaty provisions but, as Cohen points out, cases making such claims are likely only a matter of time.[300]

CONCLUSION

We live today in a rapidly changing age of platforms, algorithmic power, and informational capitalism. Zuboff's book forcefully and convincingly shows one result: a new kind of business enterprise, oriented to extract massive amounts of data, with the ability to analyze and experiment upon us at such a grand scale that it makes dramatic new modalities of behavioral control thinkable. The existing evidence casts doubt on Zuboff's claim that surveillance capitalist firms in fact can program us for profit. More problematically, her account screens from view some of the most important stakes of the new forms of power being enabled by contemporary data gathering and processing techniques.

Cohen's book provides a better view of the dynamics of the "informational" mode of development that underlies new or intensifying forms of private and public power. As Cohen shows, it is the law and political economy of the informational age that we must study if we are to understand and shape this new form of power. Private power in the informational economy has not been produced by "lawlessness." Instead, under the influence of a historical paradigm of thought that has centered efficiency as a goal and treated market supremacy and

Burri, *The Governance of Data and Data Flows in Trade Agreements: The Pitfalls of Legal Adaptation*, 51 U.C. DAVIS L. REV. 65 (2017).

298. Michael Geist, *How the USMCA Falls Short on Digital Trade, Data Protection and Privacy*, WASH. POST (Oct. 3, 2018), https://www.washingtonpost.com/news/global-opinions/wp/2018/10/03/how-the-usmca-falls-short-on-digital-trade-data-protection-and-privacy [https://perma.cc/3KS2-VNHG]; *see also id.* ("The data localization and data transfer rules may erode efforts to safeguard privacy, and many other provisions represent a lost opportunity to establish higher standards."). Data-localization rules also have national security implications. *See, e.g.*, John Selby, *Data Localization Laws: Trade Barriers or Legitimate Responses to Cybersecurity Risks, or Both?*, 25 INT'L J.L. & INFO. TECH. 213 (2017).

299. Eli Lilly & Co. v. Canada, ICSID Case No. UNCT/14/2, Final Award (Mar. 16, 2017).

300. COHEN, *supra* note 21, at 237.

innovation as unquestionable goods, a wave has rippled through our law. The law of intellectual property and trade secrets, of internet immunity and free speech, and of trade and contracts morphed to enable the capture of information and data as corporate capital, and to allow their deployment to extract surplus in new ways. Our legal order, intertwined with the architecture of digital networks, has enabled the creation of vast new firms that wield new forms of surveillance and algorithmic power, but it also has delivered us a form of neoliberal capitalism that is inclined toward monopoly, concentrated power, and inequality. Most troubling are the developments in takings law, free speech law, and free trade law that are working to insulate growing private economic and surveillance power from democratic control.

Can public power sufficient to govern this private power be built? With what laws, ideas, and technologies? Questions of data and democracy, not just data and dignity, must be at the core of our concern today and are among the most important questions of our time, for reasons both books amply show. Cohen's account suggests, importantly, that there will be no magic bullet. Just as there is no single law that constructs private power in the digital age, there will be no single law to democratize it. Data is not oil but a product of social and legal creation. As Cohen and Zuboff show, it is a product of ours that is also remaking us. It is time now that we return the favor.