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Will the "Legal Singularity" Hollow Out Law's Normative Core?

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WILL THE “LEGAL SINGULARITY” HOLLOW OUT LAW’S NORMATIVE CORE?

Robert F. Weber*

ABSTRACT:

This Article undertakes a critical examination of the unintended consequences for the legal system if we arrive at the futurist dream of a legal singularity—the moment when predictive, mass-data technologies evolve to create a perfectly predictable, algorithmically-expressed legal system bereft of all legal uncertainty. It argues that although the singularity would surely enhance the efficiency of the legal system in a narrow sense, it would also undermine the rule of law, a bedrock institution of any liberal legal order and a key source of the legal system’s legitimacy. It would do so by dissolving the normative content of the two core pillars of the rule of law: the predictability principle and the universality principle, each of which has traditionally been conceived as a bulwark against arbitrary government power.

The futurists heralding the legal singularity privilege a weak-form predictability principle that emphasizes providing notice to legal subjects about the content of laws over a strong-form variant that also emphasizes the prevention of arbitrary governmental action. Hence, an inattentive and hurried embrace of predictive technologies in service of the (only weak-form) predictability principle will likely attenuate the rule of law’s connection to the deeper (strong-form) predictability principle. The legal singularity will also destabilize law’s universality principle, by reconceiving of legal subjects as aggregations of data points rather than as individual members of a polity. In so doing, it will undermine the universality principle’s premise that the differences among legal subjects are outweighed by what we—or, better still, “We the People” who are, as Blackstone put it, the “community in general”—have in common. A cautionary directive emerges from this analysis: that lawyers should avoid an uncritical embrace of predictive technologies in pursuit of a shrunken ideal of predictability that might ultimately require them to throw aside much of the normative ballast that has kept the liberal legal order stable and afloat.

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*The big challenge is, if eventually we do get to the point where the numbers do the predicting, do you start to short-circuit the [legal] process?*¹

Edward Bird,
Chief Revenue Officer of a
predictive legal analytics firm

*[T]he proposition that tools are prolongations of human organs can be inverted to state that the organs are also prolongations of the tools.*²

Max Horkheimer

I. INTRODUCTION

This Article will analyze the implications for the rule of law if the technological advances in the field known as predictive legal analytics evolve to such a degree that they are able to create a legal system bereft of all legal uncertainty. The term “predictive analytics” describes a wide-ranging assemblage of techniques and tools that learn from historical data to predict future behavior in order to drive better decisions and outcomes. Predictive analytics is part of a broader field of data science research. It applies new computational power, especially in connection with machine-learning, to obtain actionable insights from the massive amounts of stored data that only relatively recently became subject to programmatic analysis. Predictive *legal* analytics consists of applications of predictive analytics to settings within the legal system.

According to some legal futurists, predictive legal analytics will soon result in a “legal singularity”—a moment when the legal system finally overcomes the problem of legal uncertainty. The legal system will emerge as a completely specified, seamless legal order, accessible to all in real time. With the arrival of the legal singularity, anyone interested in exploring how the legal system bears on any completed or contemplated action will simply feed inputs into an algorithm that will produce law’s answer. These legal futurists maintain further that predictive analytics, in ushering in the legal singularity, will also empower legislatures, regulators, and transacting

1. Barney Thompson, *Big Data: Lawyers Play “Moneyball”*, FIN. TIMES (Feb. 5, 2019), <https://www.ft.com/content/ca351ff6-1a4e-11e9-9e64-d150b3105d21> (quoting Edward Bird, Chief Revenue Officer of a legal analytics firm).

2. MAX HORKHEIMER, *Traditional Theory and Critical Theory*, in CRITICAL THEORY: SELECTED ESSAYS 188, 201 (Matthew J. O’Connell et al. trans., 1972).

commercial parties of the future to draft completely specified statutes, rules, regulations, and contracts, all enforced by digital judges.

What would be the implications for the rule of law if the legal singularity arrives—that is, when it becomes possible to predict with certainty how the law applies to any and all persons in any and all circumstances? This Article invites the reader to a thought experiment that elucidates some implications of a potential legal singularity. Specifically, it asks the reader to imagine a world in which all relevant legal data are impounded into a constantly updating algorithmic machine-learning software system that enables users to predict how the legal system will respond to any particular legal event. Such a technology will be computationally irreducible, meaning that the only way to obtain legal answers will be to run the algorithm.³ It will be an inscrutable black box that legal subjects can only experience through what computer scientists refer to as sensory interfaces—in this case, its concrete answers to legal questions—and we will find ourselves unable to apply our design intuitions to the improvement of its inner workings.⁴ One can think of it as law on autopilot.

Some legal futurists assure us of the eventual rollout of just such a predictive analytic technology. This Article grants the futurists the factual premise that such a technology is on the horizon, although it does so only to explore the consequences of that result rather than to weigh in on its likelihood.⁵ It treats the singularity as an edge case scenario that sheds light on the possible consequences for law if predictive legal analytics reaches its apogee. To some extent, the mere fact that such an extraordinary scenario is up for discussion is just as important as the question of the likelihood of whether it will or will not actually materialize, and in exploring its implications the Article also implicitly sheds light on techno-futurist orientations to law more generally.

There are two distinct ways of analyzing a potential legal singularity. The first perspective—the *optimization perspective*—focuses on the singularity as an efficiency-enhancing, problem-solving, instrumental technology. For instance, the legal singularity would reduce costs associated with the legal system by making many traditional modes of lawyering obsolete. It would forever change the nature of legal work, which would transform from

3. Stephen Wolfram, *Computational Law, Symbolic Discourse, and the AI Constitution*, in DATA-DRIVEN LAW: DATA ANALYTICS AND THE NEW LEGAL SERVICES 103, 115 (Edward J. Walters ed., 2018).

4. See Steve Jurvetson, *Technology Design or Evolution?: The Two Processes for Building Complex Systems Are Fundamentally Different*, MIT TECH. REV., July 2006, <https://www.technologyreview.com/s/406033/technology-design-or-evolution> (making this point with respect to artificial intelligence generally).

5. The *technical* impediments to the legal futurists' predictions are probably overemphasized given the inevitable progress in reducing error rates and biased results, but the deep *theoretical* impediments are underemphasized—an imbalance that motivates, and underscores the importance of, this project.

modestly productive professional expertise to hyper-productive software management. This perspective, prevalent among the futurists, originates in a preoccupation with scarcity, and is most active when, for instance, a law firm or corporation seeks to minimize costs, or a government agency seeks to streamline its budget. Since those are precisely the settings in which the legal system operates, the singularity would understandably command attention. Even more significantly, it would allow *all legal subjects* to arrange their future affairs more efficiently, safe in the knowledge of how the law will apply to them.

Nevertheless, the optimization perspective only scratches the surface of the legal singularity’s implications for the legal system. This Article acknowledges up front that the singularity would *ceteris paribus* enhance the efficiency of the legal system. However, it distinguishes and adopts a distinct *jurisprudential perspective* on the legal singularity that explores its potential unintended consequences. Exploring these consequences reveals a messier picture than the futurists have been willing to admit—a messiness attributable to the fact that predictive analytics not only offers new and efficient tools, it also augurs an entirely new epistemology for society that will unavoidably impact the legal system.⁶

In particular, the Article explains how the legal singularity, in fully realizing the optimization objective of maximal predictability, might in the process undercut what have traditionally been the core constituents of the rule of law, thereby hollowing out much of law’s traditional normative core.⁷ Deterministic, automated, discretion-free, rule-based, predictable systems abound in modern societies, and yet we do not describe those systems as *legal* systems because they lack the normative foundation that a liberal legal

6. The Article considers whether integrating this new epistemology into the legal system might provoke effects that can be described as *reflexive* because they do not amount merely to changed practices within a largely static system, but rather they operate on the legal system itself, potentially changing what it is. In this sense, the questions examined here resonate with the line of social theoretical inquiry known as “reflexive modernization.” See generally, ULRICH BECK ET AL., REFLEXIVE MODERNIZATION: POLITICS, TRADITION AND AESTHETICS IN THE MODERN SOCIAL ORDER (1994) (describing reflexive modernization as a process whereby society attempts to control the future using existing technologies and knowledge that cause unintended side effects that compromise the ability of those technologies and knowledge to perform their intended tasks); Jennifer Cobbe, *On Legal Singularity and Legal Reflexivity*, MEDIUM (Dec. 14, 2019), <https://medium.com/@jennifercobbe/on-legal-singularity-and-legal-reflexivity-bd96bcc4cda> (explaining how “reflexive things bend back on themselves, with a circular relationship between cause and effect”). Though Horkheimer would have preferred the term *dialectic* to *reflexive*, it is in this spirit that the Article’s epigraph is intended: to raise the possibility that “tools” (e.g., predictive analytics) might reflexively act upon “organs” such that the tools are no longer suited to act on the organs, which have undergone a fundamental change.

7. As discussed below, the derivation of law’s normative legitimacy from rule of law principles is only partial; other principles, especially democratic self-government, also play important roles.

system enjoys. According to the self-description of liberal legal systems, that normative foundation depends in part on its adherence to a constellation of attributes referred to as the “rule of law.” This belief in the rule of law has august liberal roots in Locke and Rousseau, and it derives primarily from the principles of *predictability* and *universality*, both of which the singularity is likely to destabilize.

The predictability principle states that a liberal legal system must ensure that affected legal subjects can predict how the law will apply to them. But this predictability principle can be conceived of in two distinct formulations. First, a functional, instrumental *weak-form* principle, traceable to Hobbesian political theory, prizes predictability because it enables subjects to plan their affairs and thereby fosters social stability. Second, a normative *strong-form* principle, traceable to Lockean political theory, values predictability because it operates as a check on the exercise of arbitrary governmental power.

Importantly, the strong form emphasizes law’s predictability as a procedural transparency device that restricts the government from enacting arbitrary legal rules to which the citizenry did not and would not consent. It is not just that the laws must be discernible; they also must be comprehensible, intelligible, and amenable, at least in theory, to contestation. As Locke put it, the authorities must “own willingly” their exercise of governmental authority, making it possible for the citizenry to demand reasoned explanations for incursions in their otherwise natural rights to liberty.⁸ Strong-form predictability, then, is in practice a precondition of the people’s informed consent to the social contract—which, in turn, is the touchstone of a free and liberal society in which people are not subject to arbitrary rule. Moreover, the reserve power of the people to revolt, so familiar to the experience of American political theory, lurks as a threat that disciplines the government in the exercise of its powers.

However, the futurists heralding the legal singularity privilege a weak-form of predictability over its strong-form variant. Their aim is to resuscitate, and indeed fulfil, the century-old legal realist project to expose the legal system as consisting of nothing more than systematized prediction. Like the realists, they treat the legal system as any other social system, without any privileged claim to normativity. Similarly, they conceive of the legal system as a ready-formed thing that they would like to make susceptible to predictive analysis—as a data set ripe for empirical investigation, not as a social process that relies for its normative legitimacy on its scrutability and susceptibility to review and contestation.

Weak-form predictability is unobjectionable on its own. If nothing else, it facilitates efficient planning on the part of legal subjects—and that is im-

8. JOHN LOCKE, TWO TREATISES OF GOVERNMENT 360 (Peter Laslett ed., Cambridge Univ. Press 1988) (1690) [hereinafter LOCKE, TREATISES OF GOVERNMENT].

portant. But weak-form predictability has no intrinsic connection to the core liberal ideal of non-arbitrary government and the rule of law. When futurists advocate for the use of legal analytics to enhance legal predictability, we should beware of the threat that an inattentive and hurried embrace of analytics in service of (only weak-form) predictability will attenuate the rule of law’s connection to the deeper (strong-form) predictability principle and its commitment to non-arbitrary government.

As for universality, the universality principle provides that the rule of law depends in part on law’s general applicability to all legal subjects. The techno-futuristic rush to banish legal uncertainty and usher in a completely specified legal system threatens to undermine the insistence that the law applies universally. An implicit bedrock of the universality principle is that the differences among legal subjects are outweighed by what we—or, better still, “We” who are, as Blackstone put it, the “community in general”⁹—have in common. It implies a logic of political connectedness, however remote or abstract. But the new epistemology of data science implies a logic of total differentiation, with each data point, including data concerning legal subjects, being unique.

The threat here is twofold. The first will preoccupy those of a critical bent: that the software realizing the singularity, in training itself on how the legal system works, would institutionalize and reproduce algorithmically the existing inequalities in the way the legal system treats its subjects. In the process, it would also threaten to belie and demystify the idea of equal justice before the law, undercutting the normative force the rule of law idea enjoys in virtue of its general applicability. The second threat, on the other hand, strikes even deeper at the rule of law, and can be appreciated even by those disinclined to critical interpretations of the law. The problem here is not that the legal singularity cements in place an oppressive system of social relations. Instead, the issue is that the basic idea of universal rights might become unintelligible in the face of this epistemological shift that allows a newly algorithmized legal system to only see pulverized, atomized data points where it used to see integral, individual legal subjects.

The legal singularity, therefore, threatens to whittle away at the predictability and universality pillars on which the rule of law has traditionally been thought to rest. However, it would also prompt us to reassess whether the rule of law *would even matter* in a futuristic legal system. Traditionally, the rule of law was considered necessary because it operated as a check on arbitrary discretion on the part of human government actors. At first blush, the legal singularity might seem to eliminate the discretion problem altogether. Nevertheless, the price of solving law’s human discretion problem in this manner is high: casting aside, or at least fundamentally transforming, commitments to non-arbitrariness and universality. If the futurist response

9. 1 WILLIAM BLACKSTONE, COMMENTARIES *44.

to the discretion problem is to imagine an algorithmic function that abstracts away from the human element of the law, have we solved the problem, or have we created a bigger problem of potential “algocracy”?¹⁰

A critical and cautionary directive emerges from this analysis: that lawyers should remain attuned to the possibility that an uncritical embrace of predictive legal analytics in pursuit of a shrunken ideal of predictability might ultimately require them to jettison much of the normative ballast that has kept the liberal legal order stable and afloat. Rule *by* algorithmic law hardly inspires the confidence in the liberal project that the rule *of* law formerly did. The legal singularity thought experiment, with its condition of the elimination of legal uncertainty, invites consideration of just such a result, which is the endgame for a futurist conception of law.

Still, although the rule of law contributes a significant degree of legitimacy to modern liberal legal systems, that contribution is distinct from contributions made by other liberal values—including democratic self-government, civil and political rights, and popular sovereignty. Accordingly, even if the legal singularity ends up depriving the legal system of the legitimating effects that the rule of law provides, the legal system might compensate by leaning on those other sources of legitimation for support. In this way, the legal singularity could catalyze a redoubled commitment to making the algorithmizing of the legal system amenable to deliberate forms of democratic control. Confronting the possibility that a futurist legal system would undermine the rule of law as a legitimating force might help us to reinvigorate—or even help to reinvent—legal liberalism. Legal technology could thereby become a site for a more general discussion concerning the appropriate conceptual and institutional forms that should underlie a technologized, twenty-first century liberalism.

The Article begins in Part II by introducing predictive legal analytics and the idea of the legal singularity. Part III sets forth the main argument that law will emerge from the legal singularity in a shrunken form, as a predictable, but frequently arbitrary, system lacking any privileged claim to normative legitimacy. It first examines the importance of the rule of law to liberal legal theory, focusing on law’s predictability and law’s universality. Next, it argues that the legal singularity will embody the weak form of the predictability principle and fulfil the legal realist project of conceiving of legality in terms of factual prediction alone—a circumstance that will sever law’s connection to the normative reservoir provided by strong-form predictability. Finally, it explains how the legal singularity will destabilize law’s universality principle by reconceiving of legal subjects in terms of data points rather than individual members of a polity. Part IV concludes with some reflections on how the legal system might develop institutional and

10. John Danaher, *The Threat of Algocracy: Reality, Resistance and Accommodation*, 29 PHIL. & TECH. 245, 245 (2016).

doctrinal forms to recuperate the normative force it would lose if the rule of law, as traditionally conceived, disintegrates with the legal singularity. Particular attention is given to the possibility of a joint project uniting both critical scholars and traditional liberals to reinforce the legal system against the danger posed by an uncritical embrace of legal technology.

II. PREDICTIVE LEGAL ANALYTICS

This Part introduces predictive legal analytics and the idea of the legal singularity. Section A begins by introducing predictive analytics generally. Next, Section B briefly discusses how predictive analytics and data science, in addition to offering powerful new instruments to achieve objectives, are by some accounts re-constituting the epistemological foundations of much of modern social life. Section C describes several applications of predictive analytics in the legal field. It also relates some of the extraordinary expectations of some legal futurists for the technology’s future development, including the gradual evolution of a completely specified legal system that has eliminated all legal uncertainty, which some refer to as the “legal singularity.” Section D introduces a thought experiment of a hypothetical technology that embodies the legal singularity—an experiment that will allow us to explore the implications of predictive legal analytics for the rule of law in the Part that follows. Finally, Section E serves as a bridge to the next Part by distinguishing several other critical or skeptical orientations towards legal futurism from the jurisprudential critique presented here.

A. *Predictive Analytics, Generally*

The term “predictive analytics” describes a wide-ranging assemblage of techniques and tools that learn from historical data to predict future behavior in order to drive better decisions and, ultimately, outcomes.¹¹ A similar industry formulation defines predictive analytics as the “use of data, statistical algorithms and machine-learning techniques to identify the likelihood of future outcomes based on historical data.”¹² These definitions embody practical, industry-focused perspectives, and the emphasis on these perspectives is intentional and unavoidable. As discussed below, data science and predictive analytics were conceived as disciplines out of frustration with the lack of practical application of traditional statistics research.¹³ Furthermore, the focus here on predictive *legal* analytics bears this out: to study this field today is to investigate the practical application of technologies that have been

11. See ERIC SIEGEL, PREDICTIVE ANALYTICS: THE POWER TO PREDICT WHO WILL CLICK, BUY, OR DIE 15 (2016).

12. SAS INST., https://www.sas.com/en_us/insights/analytics/predictive-analytics.html (last visited Feb. 17, 2020).

13. See *infra* text accompanying note 19.

more or less untheorized.¹⁴ This Article seeks to contribute to the project of filling the gap between the legal practice and legal theory of predictive analytics.

I wish to highlight four implications of the representative definitions above. First, predictive analytics is, well, predictive. It is less concerned with understanding the causal environment out of which relevant events come to pass than it is with being able to predict what future events will come to pass.¹⁵ It is not that causal inference is irrelevant to the problems that predictive analytics seeks to solve. Rather, the exponential increase in information expands the universe of variables to explore, but it also complicates efforts to discern precise causal relationships.¹⁶ As such, the practitioner of predictive analytics focuses on predicting the future, rather than understanding the past.¹⁷

The second attribute is related to the first: predictive analytics is fundamentally *useful*. In order to appreciate the usefulness of predictive analytic techniques, it is helpful to situate them under the broader “data science” or “data analytics” umbrella. Reading through the burgeoning data science and predictive analytics texts,¹⁸ one detects instantly an instrumental ethic that pervades the literature. Hadley Wickham, the renowned developer of software packages in the open-source programming language R, attributes the development of “data science” as a recognizable field of inquiry to a failure of statistics to apply itself to real world problems:

There are definitely some academic statisticians who just don't understand why what I do is statistics, but basically I think they are all

14. Of course, physical scientists have consciously operated in a data-constrained environment for most of modern history. The Big Data revolution therefore offers to solve one of the main problems of science. Consequently, as one might imagine, the gap between theory and practice in scientific fields is less pronounced than it is in the legal arena, although it is still significant. For an example of a thoughtful and measured contribution to this literature, see Steve Kelling et al., *Data-Intensive Science: A New Paradigm for Biodiversity Studies*, 59 *BIOSCIENCE* 613 (2009).

15. See Hal R. Varian, *Big Data: New Tricks for Econometrics*, 28 *J. ECON. PERSP.* 3, 21–24 (2014).

16. Cf. NATE SILVER, *THE SIGNAL AND THE NOISE: WHY SO MANY PREDICTIONS FAIL—BUT SOME DON'T* 249–50 (2012) (explaining how “exponential growth in availability of information” simultaneously provides for more testable hypotheses and increased difficulties in individuating meaningful relationships in the data).

17. See Daniel Martin Katz, *Quantitative Legal Prediction—or—How I Learned to Stop Worrying and Start Preparing for the Data Driven Future of the Legal Services Industry*, 62 *EMORY L.J.* 909, 949–50 (2013) (“In comparing the sort of ‘mental models’ developed by human reasoners against competing algorithms, the question is simple: Can your model predict better than the leading existing approach? Whether the question is well posed or whether the causality is well understood is not particularly critical.”).

18. VINCENT GRANVILLE, *DEVELOPING ANALYTIC TALENT: BECOMING A DATA SCIENTIST 2* (2014) (“Books, certificates, and graduate degrees in data science are spreading like mushrooms after the rain.”).

wrong. What I do is fundamentally statistics. *The fact that data science exists as a field is a colossal failure of statistics.* To me, that is what statistics is all about. It is gaining insight from data using modelling and visualization.¹⁹

Another commentator compares data scientists to the paradigmatic professionals of useful problem solving: engineers.²⁰ Thus, a data scientist is someone who “finds solutions to problems by analyzing big or small data using appropriate tools and then tells stories to communicate findings to the relevant stakeholders.”²¹ Another finds that data scientists are distinguished by their emphasis on using data to extract information that leads to decisions and actions.²²

Unsurprisingly, this instrumental ethic, this drive to do something useful, sometimes assumes entrepreneurial tones. For example, one data scientist defines data science in terms of utility and value creation: “Data science is the transformation of data using mathematics and statistics into valuable insights, decisions, and products. This is a business-centric definition. It’s about a usable and valuable end product derived from data.”²³ We will see later on how this entrepreneurial focus on producing something useful, while unobjectionable or even laudable as a first-order matter, can produce blind spots that disguise second-order consequences.

The third conceptual clarification concerns the relationship between predictive analytics and “Big Data.” Big Data refers to a phase transition in society’s relationship with data marked by heightened volume, velocity, variety, and exhaustiveness of available datasets.²⁴ It is most helpful to think of the term Big Data as referring to the object on which the predictive analytic techniques are performed in order to achieve their insights, rather than to the techniques themselves.

Big Data’s relation to data science and predictive analytics is ambivalent. On the one hand, it is the fuel of predictive analytics, the source of the data on which predictive analytics acts.²⁵ It is not that we live in a more data-rich moment in history; the data have always been there. The distinctive

19. Dan Kopf, *Hadley Wickham, the Man Who Revolutionized R*, PRICEONOMICS (July 24, 2015), <https://priceonomics.com/hadley-wickham-the-man-who-revolutionized-r> (quoting Wickham).

20. See MURTAZA HAIDER, *GETTING STARTED WITH DATA SCIENCE: MAKING SENSE OF DATA WITH ANALYTICS* (2016).

21. *Id.* at 13.

22. GRANVILLE, *supra* note 18, at 11.

23. JOHN W. FOREMAN, *DATA SMART: USING DATA SCIENCE TO TRANSFORM INFORMATION INTO INSIGHT* xiv (2014).

24. Rob Kitchin, *Big Data and Human Geography: Opportunities, Challenges, and Risks*, 3 *DIALOGUES HUM. GEOGRAPHY* 262 (2013).

25. See Jack M. Balkin, *The Three Laws of Robotics in the Age of Big Data*, 78 *OHIO ST. L.J.* 1217, 1219 (2017).

“big-ness” of Big Data is that we can harness computational power and technique to store the data and subject it to analysis.²⁶ On the other hand, the sheer quantity of data—when n =all—threatens to overwhelm researchers, particularly with respect to causal investigations, as noted above.²⁷ One commentator expresses the relationship well:

Big Data and new data analytics enable new approaches to data generation and analyses to be implemented that make it possible to ask and answer questions in new ways. Rather than seeking to extract insights from datasets limited by scope, temporality and size, Big Data provides the counter problem of handling and analyzing enormous, dynamic, and varied datasets.²⁸

The fourth and final implication to note for present purposes is that the definitions of predictive analytics are framed in terms of the questions they answer rather than the instruments by which they arrive at those answers. Of course, the basic toolkit of predictive analytics—consisting of machine-learning, artificial intelligence, and natural language processing technologies—is obviously important. Nevertheless, by abstracting away from the specific analytic techniques, these definitions elucidate the *purpose* of predictive analytics. This Article, therefore, asks the reader’s indulgence to forbear an elaboration of the dizzying array of complicated statistical and computer science techniques used in connection with predictive analytics.²⁹

B. *Predictive Analytics as a New Epistemology*

Predictive analytics does not simply refer to the application of expanded computational power to generate new data sets and analyze these new data sets (as well as older ones) more powerfully, although it certainly includes that. Predictive analytics also amounts to a new epistemology. It “changes the definition of knowledge” and creates a “radical shift in how we think about research,” effectuating “profound change at the levels of epistemology and ethics.”³⁰ It “reframes key questions about the constitution of knowledge, the processes of research, how we should engage with infor-

26. See Michael L. Rich, *Machine Learning, Automated Suspicion Algorithms, and the Fourth Amendment*, 164 U. PA. L. REV. 871, 873 (2016) (noting that emerging applications of predictive legal analytics “arise from the intersection of two trends: the collection of massive troves of individualized data about people in the United States and the explosive growth of a field of computer science known as machine learning”).

27. See GRANVILLE, *supra* note 18, at 41–42.

28. Rob Kitchin, *Big Data, New Epistemologies and Paradigm Shifts*, BIG DATA & SOC’Y, APR.–JUNE 2014, at 1, 10.

29. For the curious, an excellent (but rather technical) primer is presented in KEVIN D. ASHLEY, *ARTIFICIAL INTELLIGENCE AND LEGAL ANALYTICS: NEW TOOLS FOR LAW PRACTICE IN THE DIGITAL AGE* (2017).

30. danah boyd & Kate Crawford, *Critical Questions for Big Data*, 15 INFO., COMM’N & SOC’Y 662, 665 (2012).

mation, and the nature and the categorization of reality. . . . Big Data stakes out new terrains of objects, methods of knowing, and definitions of social life.”³¹

Technology author and entrepreneur Chris Anderson famously suggested that predictive analytics embodies a new empiricist epistemology heralding the “end of theory” altogether—and along with it, methods of inquiry predicated on hypothesis and causality:

Petabytes allow us to say: ‘Correlation is enough.’ We can stop looking for models. We can analyze the data without hypotheses about what it might show. We can throw the numbers into the biggest computing clusters the world has ever seen and let statistical algorithms find patterns where science cannot The new availability of huge amounts of data, along with the statistical tools to crunch these numbers, offers a whole new way of understanding the world. Correlation supersedes causation, and science can advance even without coherent models, unified theories, or really any mechanistic explanation at all.³²

If we read through the messianic—if not perhaps equally apocalyptic—tone,³³ Anderson’s remarks testify to an excited holding-out of mere prediction as the ultimate objective of what used to be scientific, but now is purely technical, inquiry. With this new data epistemology, the need to develop, test, and understand a basic model of reality—what positivist science refers to as “theory”—disappears altogether.³⁴ We no longer need to understand; instead, we predict.³⁵ The new epistemology is a key marker of our in-

31. *Id.*

32. Chris Anderson, *The End of Theory: The Data Deluge Makes the Scientific Method Obsolete*, WIRED (June 23, 2008), <https://www.wired.com/2008/06/pb-theory>. When Anderson uses the term “theory” here, he refers to the testing of causal hypotheses predominant in empirical social scientific research. See also DAVID SPIEGELHALTER, *THE ART OF STATISTICS: LEARNING FROM DATA* (2019) (“[T]hese are technological systems that use past data to answer immediate practical questions, rather than scientific systems that seek to understand how the world works.”).

33. Julie Y. Chu, *The Noise of Data: Comments on Ewald’s “After Risk”*, 7 *CARCERAL NOTEBOOKS* 109, 114 (2011).

34. See JOSHUA PEARL & DANA MACKENZIE, *THE BOOK OF WHY: THE NEW SCIENCE OF CAUSE AND EFFECT* 30 (2018).

35. Insofar as the data epistemology entails replacing understanding and discernment with prediction, it resonates with multiple influential currents in contemporary social theory, including Ulrich Beck’s “risk society” theory and Niklas Luhmann’s “systems theory.” See ULRICH BECK, *RISK SOCIETY: TOWARDS A NEW MODERNITY* 34 (Mark Ritter trans., 1992) (“We become active today in order to prevent, alleviate or take precautions against the problems and crises of tomorrow and the day after tomorrow—or not to do so.”); NIKLAS LUHMANN, *THE DIFFERENTIATION OF SOCIETY* 349 (Stephen Holmes & Charles Larmore trans., 1982) (characterizing the organizing principle of modern societies in terms of a transition from “memory” of the past to “prognosis” of the future).

process transition from the Internet age to what Jack Balkin has labeled the “Algorithmic Society.”³⁶

French social theorist François Ewald characterizes the new data epistemology in terms of a tension that results from requiring ever greater aggregates of data while also insisting on the uniqueness of each data point:

Knowledge, in the world of data, is produced based on a twofold requirement which, in other configurations, would appear contradictory: on the one hand, we must gather the greatest amount of data (data that only exists *en masse*), the more the better; and on the other hand, they are treated one to one, without trying to erase their differences by integrating them into categories. It is a type of resolutely nominalist knowledge, which bans the universal This tension is permanent in the epistemology of data.³⁷

By banning universal concepts in favor of limitless new distinctions among social actors, this new data epistemology inevitably “opens up a new political universe” concerning how these distinctions are to be drawn.³⁸ In fact, in terms that evoke the opaque phraseology of his mentor Michel Foucault, Ewald argues that “[d]igital’ power-knowledge must be regarded as original and in the process of transforming all power relations.”³⁹

When actors within the legal system (lawyers, law firms, judges, legal software vendors) harness the powerful and useful analytics toolkit, they also participate in the same epistemological turn. And just as the data epistemology will inevitably occasion a new data politics, so too will it disturb settled theoretical and practical understanding in the legal field. Data scientists, in their role as software entrepreneurs and consultants, are hard at work in churning out practical applications of these new technologies. They are “disturbing,” in the patois of the age. As is typical, though, the technology disturbs and the law reacts,⁴⁰ both in terms of how the law responds to new technology and in terms of how the law understands itself in the light of the new technology.⁴¹ The former process has already catalyzed interesting debates about, for instance, professional responsibility in an era of arti-

36. Balkin, *supra* note 25, at 1219.

37. François Ewald, *Omnes et Singulatim: After Risk*, 7 CARCERAL NOTEBOOKS 77, 84–85 (2011).

38. *Id.* at 81.

39. *Id.*

40. See Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 CALIF. L. REV. 513 (2015).

41. This dynamic is not hard-wired into the social order. It is entirely possible to conceive of societies asserting political agency to direct the productivity gains resulting from technological development in a manner consistent with the overall interests of the citizenry, much like governments in the early twentieth century prohibited attempts by industrial capitalists to use child labor. See WILLIAM MITCHELL & THOMAS FAZI, RECLAIMING THE STATE: A PROGRESSIVE VISION OF SOVEREIGNTY FOR A POST-NEOLIBERAL WORLD 223 (2017).

ficial professionals. This Article is concerned with the latter process, which has barely begun.

C. Predictive Legal Analytics

Adding the adjective “legal” to predictive analytics appears at first straightforward: it simply signals one particular field of application for these powerful instrumental techniques. Predictive legal analytics, then, refers to the business of predicting behavior by legal practitioners, officials, and institutions so as to drive better decision-making. At the most basic level, it involves deploying algorithmic computer systems (the “machine” in machine-learning) to “train” themselves through exposure to large datasets so as to infer rules “from the patterns it observes.”⁴² It can be used by a wide array of actors who desire to predict how the legal system will impact their affairs. For instance, my own university has established a “legal analytics lab” that “analyze[s] millions of litigation filings and outcomes, corporate financial disclosures, patent applications and other legal documents to identify patterns and evaluate how the law operates to predict future outcomes.”⁴³

The aim of this Article is to reflect a bit more on what the “legal” in predictive legal analytics means—on what special implications might follow from applying predictive analytic methodologies to the discipline of the law. To explore the potential depth of those implications, it uses as a test case an admittedly hypothetical, futurist thought experiment (the legal singularity). As such, it is not necessary to set forth an extensive taxonomy of the existing applications of these technologies; able treatments appear elsewhere. Nevertheless, this Section addresses two other matters that are necessary in order to appreciate the legal singularity’s possible implications. First, for the sake of context, it highlights a few particular first-generation applications of predictive legal analytics, inviting the reader to consider their practical effects on the practice of law. Second, and more importantly, it describes the perspective of so-called legal futurists, a group that extrapolates from these first-generation technologies to imagine how predictive analytics might transform and reinvent the legal system. This Section quotes heavily from the futurists not because their voices are the most prevalent among those interested in predictive legal analytics, but rather because their project is transformational and their ideas require engagement from anyone interested in the future of the legal system.

42. Joshua A. Kroll et al., *Accountable Algorithms*, 165 U. PA. L. REV. 633, 679 (2017).

43. GA. STATE UNIV. LEGAL ANALYTICS LAB, <https://robinson.gsu.edu/academic-departments/insight/innovation-labs/legal-analytics-lab> (last visited Oct. 11, 2019).

1. First-Generation Applications

These first-generation applications open up opportunities for lawyers, judges, and regulators to better understand how the legal system actually works in practice, as well as for legal subjects to more reliably plan their affairs based on an understanding of what the law requires. Machine-learning algorithms are already outperforming humans in the task of accurately predicting Supreme Court decisions.⁴⁴ And researchers are using natural language processing and machine-learning to build successful predictive models of other courts, such as the European Court of Human Rights.⁴⁵

While many of these first-generation applications of predictive analytics focus on forecasting the outcome of court cases, they are by no means limited to that relatively narrow context. For instance, applications such as IBM's Ross are able to answer legal questions posed by users with astonishing accuracy, even providing citations and suggestions for further reading.⁴⁶ Governments have for some time used assistive, facilitative predictive analytics tools to help allocate enforcement and adjudicatory resources.⁴⁷ Some governments are even experimenting with machine-learning systems to automatically generate binding legal orders—what legal researchers Cary Coglianese and David Lehr call “rulemaking by robot.”⁴⁸ With all this technological development, futurists hypothesize that we may look back at the twentieth century and wonder how we ever found it acceptable to maintain a legal system *without* machine-learning algorithms.⁴⁹

That said, even the more modest legal technologists acknowledge how predictive legal analytics will change the practice of law. Thus, for instance, Harry Surden tells us that “statistical and other heuristic-based automated assessments of data can sometimes produce automated results in complex [legal] tasks that, while potentially less accurate than results produced by

44. See Daniel M. Katz et al., *Predicting the Behavior of the United States Supreme Court: Toward a General Approach*, PLOS ONE (Apr. 12, 2017), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0174698>.

45. Nikolaos Aletras et al., *Predicting Judicial Decisions of the European Court of Human Rights: A Natural Language Processing Perspective*, PEERJ COMPUT. SCI. (Oct. 24, 2016), <https://peerj.com/articles/cs-93>.

46. See ASHLEY, *supra* note 29, at 351–52.

47. Cary Coglianese & David Lehr, *Transparency and Algorithmic Governance*, 71 ADMIN. L. REV. 1, 8–9 (2019) (referring to “adjudication by algorithm”); see also Daniel E. Ho & David F. Engstrom, *Algorithmic Accountability in the Administrative State* 8–22 (Ctr. for the Study of the Admin. State Working Paper 19–34, 2019), <https://administrativestate.gmu.edu/wp-content/uploads/sites/29/2019/11/Engstrom-Ho-Algorithmic-Accountability-in-the-Administrative-State.pdf>.

48. See Cary Coglianese & David Lehr, *Rulemaking by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 GEO. L.J. 1147, 1171 (2017).

49. See Benjamin Alarie et al., *Regulation by Machine*, Symposium, *Machine Learning and the Law*, NEURAL INFO. PROCESSING SYS. (Dec. 8, 2016), <http://www.mlandthelaw.org/papers/alarie.pdf>.

human cognitive processes, can actually be sufficiently accurate for certain purposes that do not demand extremely high levels of precision and accuracy.”⁵⁰ And John McGinnis and Steven Wasick predict that improvements in computing power will lead to an increasing legislative preference for standards over rules, as well as “dynamic rules” that are adjusted with increasing frequency as algorithms process new information.⁵¹ These technologies have experienced uptake in private sector alternative dispute resolution settings too.⁵²

Barring an unlikely aggressive approach by state bar regulators, these changes are forthcoming no matter what the lawyers themselves have to say.⁵³ In fact, the predictive analytics turn is as much a demand-side phenomenon as it is a supply-side phenomenon. Lawyers might be prone to a little navel-gazing when they survey the innovative analytics technologies that their peers are developing in coordination with data scientists. But the fundamental marketplace reality is that clients “are increasingly asking for probability-based terms to express outcomes.”⁵⁴

What these clients are asking for, in effect, is a prediction for how the law applies to their situations. The initial forays into the predictive legal analytics world aim at forecasting the outcomes of actual disputes. Lex Machina is a big player in this arena. It touts itself as representing a “paradigm shift for lawyers.”⁵⁵ Its website tells us, “[f]or the first time, lawyers can combine insights gleaned from bottom-up data with traditional top-down controlling authority found in statutes, rules, and court opinions.”⁵⁶ Lex Machina promises to “gain actionable insights across the data that is relevant to your strategic question.”⁵⁷ These insights might pertain to judges, venues, opposing counsel, prospective counsel, adverse party strategy, and damages. It advertises its ability to instantly assess a user’s chances of win-

50. Harry Surden, *Machine Learning and Law*, 89 WASH. L. REV. 87, 115 (2014); see also Harry Surden, *The Variable Determinacy Thesis*, 12 COLUM. SCI. & TECH. L. REV. 1 (2011) (taxonomizing types of legal decision-making according to the degree of indeterminacy they entail for purposes of identifying which decision types are susceptible to computer automation).

51. See John O. McGinnis & Steven Wasick, *Law’s Algorithm*, 66 FLA. L. REV. 991, 1039–48 (2015).

52. See BENJAMIN H. BARTON & STEPHANOS BIBAS, *REBOOTING JUSTICE: MORE TECHNOLOGY, FEWER LAWYERS, AND THE FUTURE OF LAW* (2017).

53. For a thoughtful discussion of the impact of unauthorized practice of law rules on emerging legal technology (including predictive analytics), see Dana Remus & Frank Levy, *Can Robots be Lawyers? Computers, Robots, and the Practice of Law*, 30 GEO. J. LEGAL ETHICS 501 (2017).

54. Thompson, *supra* note 1, at 7.

55. *What We Do*, LEX MACHINA, <https://lexmachina.com/what-we-do> (last visited Oct. 3, 2019).

56. *Id.*

57. *What’s Different*, LEX MACHINA, <https://lexmachina.com/what-we-do/whats-unique> (last visited Oct. 3, 2019).

ning a case based on how many times the opposing lawyer has filed a certain type of lawsuit, in which court, with what success rate, whom that lawyer has represented, and which opposing counsel that attorney has faced.⁵⁸ Ravel, another predictive legal analytics provider, promises similar insights regarding the behavior of individual judges and specific courts and law firms.⁵⁹ Predictive legal analytics software for cash bail and sentencing have also already been integrated into the American lawyer's workaday toolkit.⁶⁰

Other researchers are using predictive legal analytics to improve judicial performance.⁶¹ For instance, Daniel Chen explains a new research program of "predictive judicial analytics" that aims to de-bias judicial decision-making and increase what he calls the "fairness of law."⁶² Researchers have established that machine-learning can be used to automatically detect circumstances where the decisions of judges, or even those of a particular judge, are likely to be affected by irrelevant factors. In response, targeted interventions, such as judicial education programs or automated red-flag systems alerting the judge to the potential of bias, may be designed to de-bias decisions at early stages of the proceedings. Chen's efforts here testify that computational methods can create visibility, which is required if we want to spot bias.⁶³ They also demonstrate the flexible potential for predictive legal analytics, with resources and institutional support, to promote legal values and even transformative social change as these technologies develop.

2. The Futurist Perspective

Most lawyers can grasp the feasibility of these first-generation analytics applications, as well as the evident efficiency enhancements they entail for the lawyers, organizations, citizens, courts, legislatures, and administrative agencies that would use them. But to the legal futurists, they are but a prelude to a revolutionary re-conceptualization of what it means to practice law—"a new form of law" altogether.⁶⁴ They are precursors to the apotheo-

58. See Thompson, *supra* note 1, at 7.

59. *Products and Technology*, RAVEL, <https://home.ravellaw.com/products> (last visited Oct. 3, 2019).

60. See, e.g., Alexei Koseff, *Jerry Brown Signs Bill Eliminating Money Bail in California*, SACRAMENTO BEE (Aug. 29, 2018, 12:20 PM), <https://www.sacbee.com/news/politics-government/capitol-alert/article217461380.html>.

61. See Daniel L. Chen, *Machine Learning and the Rule of Law*, in *LAW AS DATA: COMPUTATION, TEXT, AND THE FUTURE OF LEGAL ANALYSIS* 433 (Michael A. Livermore & Daniel N. Rockmore eds., 2019).

62. *Id.*

63. I owe this phrasing to my colleague Charlotte Alexander.

64. Anthony J. Casey & Anthony Niblett, *The Death of Rules and Standards*, 92 IND. L.J. 1401, 1401 (2017); see also Daniel Goldsworthy, *Dworkin's Dream: Towards a Singularity of Law*, 44 ALT. L.J. 286, 289 (2019) ("[S]ynthesizing incomprehensible volumes of

sis of law-as-prediction in the form of the “legal singularity,” or the “completely-specified” legal system, or “complete law,” or the “self-executing” legal system.

Anyone paying attention to the legal profession in recent years is familiar with pronouncements that the “practice of law is going through its most dramatic change since laws were written down.”⁶⁵ Legal futurist Richard Susskind, using only a slightly more modest look-back period, announced to fanfare that “legal institutions and lawyers are at a crossroads . . . and will change more radically in less than two decades than they have over the last two centuries.”⁶⁶ Predictive legal analytics should be thought of as a core pillar of this radically changed legal system. The physicist Max Tegmark, co-founder of the Future of Life Institute, speculates that artificial intelligence technologies might eventually bring about the full automation of the legal system:

Since the legal process can be abstractly viewed as computation, inputting information about evidence and laws and outputting a decision, some scholars dream of fully automating it with robojudges: AI systems that tirelessly apply the same high legal standards to every judgment without succumbing to human errors such as bias, fatigue or lack of the latest knowledge.⁶⁷

According to legal futurist Benjamin Alarie, rapidly evolving technological developments in predictive legal analytics will soon result in a “legal singularity.” He borrows the “singularity” term from Vernor Vinge, who used it to describe the “imminent creation by technology of entities with greater than human intelligence.”⁶⁸ The idea of the singularity is a conceptual cognate of the attainment of “general AI,” “artificial general intelligence,” or “strong AI.”⁶⁹ Whereas the singularity overcomes the limits of human intel-

judgments and theoretical analysis no longer remains an impossibility, but a technical problem to be solved.”).

65. Matthew Stubenberg, *Better Position Yourself for the Legal Technology Wave*, 23 TYL 5, 5 (2019).

66. RICHARD SUSSKIND, *TOMORROW’S LAWYERS: AN INTRODUCTION TO YOUR FUTURE* xvii (2d ed. 2016).

67. MAX TEGMARK, *LIFE 3.0: BEING HUMAN IN THE AGE OF ARTIFICIAL INTELLIGENCE* 105 (2017).

68. Vernor Vinge, *The Coming Technological Singularity: How to Survive in the Post-Human Era*, in *VISION-21: INTERDISCIPLINARY SCIENCE AND ENGINEERING IN THE ERA OF CYBERSPACE* 11, 12 (NASA Conference Publication 10129, 1993); see also Simon Deakin & Christopher Markou, *From Rule of Law to Legal Singularity* 6 (Univ. of Cambridge Fac. Rsch. Paper, Apr. 30, 2020), <https://ssrn.com/abstract=3589184> (describing the legal singularity as a “credible interpolation” of utopian AI projects).

69. See Michael Feldman, *The Singularity Is Nearer: Microsoft Places \$1 Billion Bet on Artificial General Intelligence*, THE NEXT PLATFORM (July 26, 2019), <https://www.nextplatform.com/2019/07/26/the-singularity-is-nearer-microsoft-places-1-billion-bet-on-artificial-general-intelligence>.

ligence, the *legal* singularity will overcome the problem of legal uncertainty:

The legal singularity will arrive when the accumulation of a massive amount of data and dramatically improved methods of inference make legal uncertainty obsolete. The legal singularity contemplates complete law The legal singularity contemplates . . . the emergence of a seamless legal order, which is universally accessible in real time The law will be functionally complete.⁷⁰

With the arrival of the legal singularity, anyone interested in exploring how the legal system bears on a contemplated action will simply feed variables into an algorithm that will produce law's answer. At the 2019 meeting of Stanford Law School's annual FutureLaw conference, a panel moderator framed the discussion by observing that some people think we will eventually "reach legal singularity, where we can predict every case with perfect confidence."⁷¹

Although most of the early work in predictive legal analytics repeats the seemingly ineradicable urge of lawyers to focus on litigation activity, the futurists maintain that analytics will also empower "robo-legislators,"⁷² regulators, and transacting commercial parties of the future to draft completely specified rules and contracts. We are invited to imagine the legal system as a dynamic collection of "microdirectives," where lawmakers enact a "catalog of precisely tailored laws, specifying the exact behavior that is permitted in every situation."⁷³ With the benefit of virtually unlimited data and powerful predictive technologies, legislators will "have enough information to anticipate virtually all contingencies, such that laws are perfectly calibrated to their purpose."⁷⁴ "Digital courts" running on blockchain platforms will enforce contracts without any involvement of judges.⁷⁵

Stephen Wolfram provides one of the frankest explications of the implications of futurism for the legal system. Wolfram proposes that it will be possible to develop a fully symbolic and computer programmable human language to supplant natural language. In the process, "the whole spectrum

70. Benjamin Alarie, *The Path of the Law: Towards Legal Singularity*, 66 U. TORONTO L.J. 443, 445–46 (2016).

71. Stanford Law School, *FutureLaw 2019 | The Future of Legal Tech, Civil Procedure, and the Adversarial System*, YOUTUBE (Apr. 12, 2019), <https://www.youtube.com/watch?v=bGNNiy99I7c&t=470s>.

72. TEGMARK, *supra* note 67, at 107.

73. Casey & Niblett, *supra* note 64, at 1402.

74. *Id.*

75. See Hitoshi Matsushima & Shunya Noda, *Mechanism Design with Blockchain Enforcement* (KIER Working Papers 1027, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3554512 (using mechanism design theory to theorize an algorithmic judiciary that incentivizes agents to input accurate information into smart contract computer programs to ensure optimal contract enforcement).

of activities covered by law becomes potentially accessible to structured computation.”⁷⁶ His focus is on contract, but he acknowledges that his ideas apply to public law as well. In both contexts, the law displays an algorithmic logic: “Typically a contract defines some model of the world, and specifies what should happen in different situations.”⁷⁷ He predicts a sort of return to the origins of the codex, the Latin word denoting the systematic collection of legal rules. The word code was repurposed two millennia later by computer scientists to refer to the systematic rules for operating computers. Now, the challenge is to “put all those legal codes and contracts into computational form,” using a universal, programmable symbolic discourse language—to use computer code to implement and enforce new legal codes of the future.⁷⁸ At that point, the legal system could, in principle, be governed entirely by artificial intelligence. At that point, the system would reach *computational irreducibility*, a condition obtaining when “there really isn’t any way to see what will happen much more efficiently than just by running [the machine-learning algorithm].”⁷⁹ Law will become self-executing, like a computer algorithm, across all its applications.⁸⁰

D. *Introducing the Singulatim Software as a Thought Experiment*

Imagining the legal singularity allows us to exhume an old debate about the legal order of liberalism itself.⁸¹ In the seventeenth century, advocates of the divine right of kings maintained that monarchs wrote and published general laws only because their limited attention and knowledge prevented them from writing a fully specified legal code for all of their legal sub-

76. Wolfram, *supra* note 3, at 126.

77. *Id.* at 120.

78. *Id.* at 109.

79. *Id.* at 115.

80. See Frank Pasquale, *A Rule of Persons, Not Machines: The Limits of Legal Automation*, 87 GEO. WASH. L. REV. 1, 6 (2019) (describing, but neither predicting nor advocating, this position).

81. A disclaimer is in order here: today, liberalism can be an intractably broad conceptual category. Indeed, there is some sense in which it is our *only* category. See DUNCAN BELL, *REORDERING THE WORLD: ESSAYS ON LIBERALISM AND EMPIRE* 70 (2016); Raymond Geuss, *Liberalism and Its Discontents*, 30 POL. THEORY 320, 320-21 (2002); Thomas Nagel, *Rawls and Liberalism*, in *THE CAMBRIDGE COMPANION TO RAWLS* 62 (Samuel Freeman ed., 2003). Nevertheless, all formulations of liberalism make recourse to a core set of principles—including autonomy, consent, equality, pluralism, and liberty—that distinguish liberalism from prior historical traditions predicated on inherited traditions and hierarchies. Indeed, these principles are so attractive as to be foundational to, and constitutive of, almost all perspectives on modern social and political life. As a consequence, this disclaimer, while acknowledging the importance of precision in the deployment of concepts like liberalism, also underscores the potential significance of decreased confidence in the principles (like the rule of law) that support liberalism as a political philosophy.

jects.⁸² Early liberals like John Locke were outraged by this line of argument, instead viewing the generality of law as a prerequisite for liberty and a bulwark against arbitrary government.⁸³ However, both the authoritarian monarchists and the early liberals shared an assumption that, in any event, the limits of human cognition rendered it epistemically impossible to conceive of a predictable, but not general, system of laws—a comprehensive code that always answers the question “how exactly does the law apply in these circumstances?”

Writing three centuries later but well before predictive legal analytics, Ronald Dworkin, one of the twentieth century’s preeminent legal theorists, demonstrates the persistence of this epistemic gap with a thought experiment. Dworkin asks his reader to hypothesize a mythical Justice Hercules who is finally able to overcome the cognitive limitations and time constraints of mere mortal jurists and discern the one right answer to all legal questions.⁸⁴ On this view, only a divine intervention can give us precise, accurate answers to every legal question. This view clashes with the view of those legal futurists who predict that the legal singularity will signal that the epistemic gap has finally been bridged—albeit by technological, rather than divine, means.

This Article asks the reader to participate in a counterfactual thought experiment in imagining a technology that does not yet exist, and that many believe cannot exist in the future. Nevertheless, such an exercise is fruitful because it allows us to imagine the consequences of the futurists’ announced project to create a completely specified predictive legal system. The hypothetical technology will be called the “Singulatim” software.⁸⁵ The Singulatim software would allow a user to input parameters relevant to a matter to generate a probabilistic assessment of how the legal system would be expected to apply to the problem. It would offer actionable insights to individuals, businesses, non-government organizations, legislatures, administrative agencies, and courts. Its operations would achieve a perfectly predictable legal system no longer saddled with the twin problems of discretion and uncertainty that have occupied so much energy in legal theory debate.⁸⁶

The applications of the Singulatim software would be limited only by the extent of the user’s curiosity in imagining settings in which the legal

82. See, e.g., ROBERT FILMER, PATRIARCHA AND OTHER WRITINGS 45–47 (Johann P. Sommerville ed., Cambridge Univ. Press 1991) (1680).

83. Indeed, John Locke’s *First Treatise of Government* is an express refutation of Filmer’s monarchism. See LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, *passim*.

84. See RONALD DWORKIN, LAW’S EMPIRE 239–40 (1988).

85. The name is intended to remind the reader of the legal singularity embodied in the program, as well as to invoke the word’s Latin meaning “one by one, singly, or separately,” which captures the operative logic of the new data epistemology, discussed above in Section II.B, of which the predictive legal analytics revolution is an expression.

86. See *infra* Part III.B for a discussion on the relationship between uncertainty and discretion in legal theory.

system comes into play. For example, the Singulatim software would permit an electric utility to supply details of a proposed nuclear power plant project in order to prepare a license application that will be as likely as possible to receive regulatory approval. It would empower a products liability defendant to formulate expectations concerning the extent of its potential liability for producing a product known to cause harm, both in general and with respect to specific venues to which it might credibly transfer cases. It would also allow a municipality to set an optimal speed limit, even dynamically, at a busy intersection based on data relating to driver behavior and enforcement practices. It would enable a legislature to encode a system of dynamic rules to determine whether a business’s workers are properly categorized as employees or independent contractors based on the legislature’s policy assessment of the factors that ought to govern that determination. It would allow a community non-profit to provide real-time guidance to young black men in heavily policed neighborhoods in order to limit encounters with the legal system and maximize the availabilities of defenses in the case of such encounters. In proceeding through the Article’s argument about the implications of the legal singularity, the reader is invited to think of the Singulatim software as the immaterial, institutional embodiment of the singularity.

E. *Distinguishing This Intervention from Other Critical and Skeptical Perspectives*

After introducing the prospect of such a radical technology, some clearing of the conceptual thicket is necessary in order to contextualize the argument presented in the following Part, which is the Article’s centerpiece. In particular, the argument here should be distinguished from two related but distinct reactions to the idea of legal singularity. First, some readers might advance a sensible technical objection: “but that can’t possibly happen, can it?” Indeed, some observers of legal futurism argue that important elements of legal practice will resist the analytics turn—that something like the legal singularity is unlikely to ever materialize.⁸⁷ Some of these skeptics object to such a project as naïve or ideological, as yet another example of “technochauvinism,”⁸⁸ the “California Ideology,”⁸⁹ or “technological solu-

87. See, e.g., Cobbe, *supra* note 6 (“I should say at the outset that I don’t believe in the legal singularity. Machine learning systems are too flawed for it to come about anytime soon, if ever.”); Mark K. Osbeck, *Lawyer as Soothsayer: Exploring the Important Role of Outcome Prediction in the Practice of Law*, 123 PENN. ST. L. REV. 41, 96–97 (2018) (“[I]t is premature to say that [predictive legal analytics] will replace these traditional tools in the near future; rather, predictive analytics can be expected to complement the traditional tools of outcome prediction.”); Lisa A. Shay et al., *Do Robots Dream of Electric Laws? An Experiment in the Law as Algorithm*, in *ROBOT LAW* 274 (Ryan Calo et al. eds., 2016).

88. See MEREDITH BROUSSARD, *ARTIFICIAL UNINTELLIGENCE: HOW COMPUTERS MISUNDERSTAND THE WORLD* (2018).

tionism.”⁹⁰ For others, imagining the shift from our current legal-technical ecosystem to the legal singularity requires a great deal of abstraction—so much that it might be difficult to even engage with the implications of the admittedly distant prospect of singularity.

More concretely, labor economist David Autor, a leading researcher on workplace automation, argues that the substitution process by which machines replace human workers is necessarily finite because humans (perhaps especially those performing judgment-rich tasks like lawyers) possess a significant amount of tacit knowledge that will resist codification.⁹¹ Economic historian Aaron Benanav has recently questioned the entire techno-futurist narrative depicting a process of runaway technological innovation that fuels productivity advances, revolutionizes industries, stokes economic growth, and sloughs off whole categories of workers into obsolescence. Benanav argues instead that productivity growth has *lagged* in recent decades relative to historical trends, and that the real reason for declining employment and real wages across nearly all sectors is overcapacity and slow output growth.⁹² If this general account is accurate, automation discourse exaggerates the effects of artificial intelligence and robotics, and disguises deeper structures at work in the early twenty-first century economy, including the legal sector. And yet, while these debates continue, every year legal authority is expressed increasingly in algorithmic terms,⁹³ as developers (both human and artificial) work to steadily reduce error rates and biases in predictive technologies.⁹⁴ In any event, the analysis presented here takes the stated objectives of legal futurism seriously, if for no other reason than to critique their implications.

89. Richard Barbrook & Andy Cameron, *The Californian Ideology*, 6 SCI. AS CULTURE 44, 45 (1996) (decrying naïve idealism of the “profound faith in the emancipatory potential of the new information technologies”).

90. See EVGENY MOROZOV, TO SAVE EVERYTHING, CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM 5 (2013) (adopting term “solutionism” to refer to the “ideology that legitimizes and sanctions” the “[r]ecasting [of] all complex social problems either as neatly defined problems with definite, computable solutions or as transparent and self-evident processes that can be easily optimized”).

91. See David H. Autor, *Why Are There Still So Many Jobs? The History and Future of Workplace Automation*, 29 J. ECON. PERSP. 11 (2015); David H. Autor, *Polanyi’s Paradox and the Shape of Employment Growth*, in RE-EVALUATING LABOR MARKET DYNAMICS: A SYMPOSIUM SPONSORED BY THE FEDERAL RESERVE BANK OF KANSAS CITY 129 (2014).

92. See Aaron Benanav, *Automation and the Future of Work—1*, 119 NEW LEFT REV. 5 (2019). Benanav is indebted to his adviser Robert Brenner’s work studying “overcapacity” as a prime cause of slow economic growth and innovation in the world economy. See Robert Brenner, *What Is Good for Goldman Sachs Is Good for America: The Origins of the Current Crisis*, UCLA Center for Soc. Theory and Comp. Hist. (2009), <http://www.sscnet.ucla.edu/issr/cstch/papers/BrennerCrisisTodayOctober2009.pdf>.

93. See FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND SOCIETY 8 (2015).

94. See Cobbe, *supra* note 6.

Second, some readers might advance a political objection: “but what about the power dynamics at play?”⁹⁵ These critics do not dispute that legal futurism will work; rather, they bemoan that it will work altogether too well. The legal singularity, in eliminating legal uncertainty, would bring obvious efficiencies in terms of cost reduction.⁹⁶ Other things being equal, cost reduction is at worst neutral, and at best a clear improvement. That said, other things are rarely equal. Frank Pasquale is right when he observes that while “cost savings are a powerful argument in an era of increasing competition and declining state revenues,” in many cases the automation of the legal system “hides the externalization of cost and risk to customers, citizens, and business rivals.”⁹⁷ Other commentators draw attention to the fact that predictive analytic tools are rolling out into an existing system of institutions and social relations, focusing attention on who is writing algorithms and to what ends.⁹⁸ There are many canaries in this coal mine already. To take just one example, in 2013 the State of Michigan replaced four hundred state employees with an algorithmic tool known as the Michigan Data Automated System (known as “MIDAS”) to process unemployment insurance claims. The MIDAS program flagged over 90 percent of unemployment claims as fraudulent, triggering an intense wave of wage and tax garnishments targeted at the most economically vulnerable Michiganders: those applying for unemployment insurance benefits.⁹⁹ The errors resulted in a predictable cascade of defaults, evictions, credit impairments, bankruptcies, foreclosures, evictions, substance abuse problems, and family dissolutions.

The apt critical perspectives bringing attention to these and similar dysfunctions are focused on how deploying predictive analytic technologies in

95. See Pasquale, *supra* note 80, at 14; cf. David Lazer et al., *Computational Social Science*, 323 *SCIENCE* 721 (2009).

96. See Darrell M. West & John R. Allen, *How Artificial Intelligence Is Transforming the World*, BROOKINGS INST. (Apr. 23, 2018), <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world>.

97. Pasquale, *supra* note 80, at 18.

98. See, e.g., SHOSHANA ZUBOFF, *THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER* (2019); RUHA BENJAMIN, *RACE AFTER TECHNOLOGY: ABOLITIONIST TOOLS FOR THE NEW JIM CODE* (2019); VIRGINIA EUBANKS, *AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR* (2018); SAFIYA UMOJA NOBLE, *ALGORITHMS OF OPPRESSION: HOW SEARCH ENGINES REINFORCE RACISM* (2018); ASTRA TAYLOR, *THE PEOPLE’S PLATFORM: TAKING BACK POWER AND CULTURE IN THE DIGITAL AGE* (2014); cf. BROUSSARD, *supra* note 88.

99. See Stephanie Wykstra, *How the Government’s Use of Algorithm Serves up False Fraud Charges*, SALON (June 15, 2020), https://www.salon.com/2020/06/14/how-the-governments-use-of-algorithm-serves-up-false-fraud-charges_partner; Sam Bell, *Pushing Back Against Harmful AI*, MEDIUM (Oct. 10, 2019), <https://medium.com/swlh/pushing-back-against-harmful-ai-4af0265a15a2>; Ryan Felton, *Michigan Unemployment Agency Made 20,000 False Fraud Accusations*, GUARDIAN (Dec. 18, 2016), <https://www.theguardian.com/us-news/2016/dec/18/michigan-unemployment-agency-fraud-accusations>.

the legal system can provoke effects that are largely *external* to the legal system—effects on economic security, personal liberty, privacy, and so forth. However, starting with the next Part, this Article explores the legal singularity's *internal* effects on the legal system—in particular, its impact on law's continued ability to claim normative force and validity through the rule of law principle. Stated another way, the Article inquires into the *jurisprudential* ramifications of the legal singularity on the law itself—namely, how the legal singularity is likely to complicate the self-definition of the liberal legal order. It is less concerned, therefore, with the important *technical* complications that might (or might ultimately not) inhibit, delay, or prevent the singularity, or even the *political* complications attending the power dynamics that are undeniably at play.

III. THE IMPLICATIONS OF THE LEGAL SINGULARITY ON THE RULE OF LAW

In modern societies, law enjoys a special claim to legitimacy and normative validity. Legal subjects do not mold their behavior according to the legal system simply because they fear the coercive power of the state.¹⁰⁰ Instead, law draws its binding force from what Jürgen Habermas—one the most important philosophers and social theorists of the past half century—referred to as the “alliance that the facticity of law forms with the claim to legitimacy.”¹⁰¹ The “facticity of law” here refers to the coercive force of duly promulgated standards and rules. If a government audit reveals you have misstated your income tax liability, it will be difficult to evade the plain facticity of civil enforcement, and perhaps criminal punishment, by the authorities. However, it is law's special *claim to legitimacy* that causes many people to consider lawbreaking simply inconceivable, irrespective of the contours of the coercive sanctions regime.¹⁰² This is not to say that everyone molds their behavior to the shape of the law at all times,¹⁰³ particularly when

100. For an influential empirical exploration of how law achieves normative legitimacy, see TOM R. TYLER, *WHY PEOPLE OBEY THE LAW* (2d ed. 2006).

101. JÜRGEN HABERMAS, *BETWEEN FACTS AND NORMS: CONTRIBUTIONS TO A DISCOURSE THEORY OF LAW AND DEMOCRACY* 38–39 (William Rehg trans., 1996).

102. The incremental causal impact of legitimacy perception on law-abidingness contradicts the classic economics models. See, e.g., Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 176 (1968) (“[T]he economists’ usual analysis of choice . . . assumes that a person commits an offense if the expected utility to him exceeds the utility he could get by using his time and other resources at other activities.”); Louis Kaplow & Lucian Bebchuk, *Optimal Sanctions and Differences in Individuals’ Likelihood of Avoiding Detection*, 13 INT’L REV. L. & ECON. 217, 219 (1993) (“Individuals will choose to act whenever their benefit exceeds their expected sanction.”).

103. See Sanford Levinson, *Escaping Liberalism: Easier Said Than Done*, 96 HARV. L. REV. 1466, 1472–73 n.25 (1983) (cautioning legal profession against overstating the legitimating effects of law); E.P. THOMPSON, *WHIGS AND HUNTERS: THE ORIGIN OF THE BLACK*

no one is watching, but only that our empirically observable behavior is consistent with some respect for the legitimacy of law—that law’s command is different than that of a gun-toting robber (who might inflict harm by shooting you) or an imperious boss (who might inflict harm by depriving you of your means of subsistence).

The sources of law’s legitimacy and normative force are multiple, and this Article only focuses on one, albeit an important one: adherence to the *rule of law* principle. The rule of law can be thought of as a condition precedent for any legitimate liberal social order.¹⁰⁴ Hence Voltaire’s exaggerated quip, which nevertheless reflects the basal association between liberty and law in the liberal imagination: “freedom means dependence on nothing other than law.”¹⁰⁵ And Tom Paine’s invocation of the law as a replacement for arbitrary monarchical will: “But where is the King of America? . . . [I]n America, THE LAW IS KING. For as in absolute governments the King is law, so in free countries the law *ought* to be King; and there ought to be no other.”¹⁰⁶ This sentiment also figured prominently in the writings of John Locke, widely regarded as the father of liberalism,¹⁰⁷ who wrote that “*the end of Law* is not to abolish or restrain, but to *preserve or enlarge Freedom*.”¹⁰⁸

This Article focuses on the rule of law principle because when legal futurists trumpet the impending elimination of legal uncertainty and the creation of a completely predictable legal system, they are drawing from themes that legal and political theorists have traditionally considered to be constituents of the rule of law. We have already seen how legal futurism promises enhanced efficiency of the market for legal services, not to mention the likely benefits to economic and other social actors more generally, flowing from perfect knowledge of how the law will apply. This Part assumes that all this is true, and against that background sets forth the Article’s main claim and contribution: that legal futurism, in providing those apparent benefits, might

ACT 262 (1975) (“[P]eople are not as stupid as some structuralist philosophers suppose them to be. They will not be mystified by the first man who puts on a wig.”).

104. See, e.g., PAUL STARR, FREEDOM’S POWER: THE TRUE FORCE OF LIBERALISM 21 (2007); Nicola Lacey, *The Jurisprudence of Discretion: Escaping the Legal Paradigm*, in THE USES OF DISCRETION 361, 369 (Keith Hawkins ed., 1992).

105. VOLTAIRE, PENSÉES SUR LE GOUVERNEMENT (1752), reprinted in OEUVRES COMPLÈTES DE VOLTAIRE 523, 526 (Louis Moland ed., 1883) (“La liberté consiste à ne dépendre que des lois.”) (translation provided by author).

106. THOMAS PAINE, COMMON SENSE 98 (Penguin Books 1976) (1776).

107. See, e.g., MICHAEL P. ZUCKERT, LAUNCHING LIBERALISM: ON LOCKEAN POLITICAL PHILOSOPHY (2002).

108. LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 306. The basic idea can be traced even further back to ancient Rome. Cicero argued that the rule of law was the “foundation of our liberty” in the following terms: “[t]he ministers of the law are the magistrates; the interpreters of the law are the judges; lastly, we are all servants of the laws, for the very purpose of being able to be freemen.” See 2 MARCUS TULLIUS CICERO, THE ORATIONS OF MARCUS TULLIUS CICERO 164 (C. D. Yonge trans., 1856).

strip some or all of the normative legitimating force the legal system enjoys in virtue of the rule of law principle. Put bluntly, the concern is that the legal system, as we understand it, might not survive attempts to make it more efficient and effective.¹⁰⁹

Fundamentally, the argument presented here amounts to a warning about unintended consequences. The analysis draws force from technology writer Adam Greenfield's counsel to insist on grounded, analytical rigor in the face of the "rhetoric of transcendence"¹¹⁰ with which technologies are often described:

[W]hat is salient is not anything their visionary designers may have had in their mind in imagining them, but what states of being they are actually seen to enact. . . . The most misleading aspect of this body of rhetoric perennially resides in the gulf between technoutopian claims about what some emergent innovation "might" or "could" give rise to, on the one hand, and anything that it has actually been seen to do on the other. . . . This is why I repress a shudder whenever someone speaks of the emancipatory or liberatory "potential" of some technology under discussion. To have hope and to nurture it in others doesn't need to mean that we let go of rigor.¹¹¹

This Part is the centerpiece of the Article, confronting the legal futurist rhetoric of transcendence with the possibility of serious unintended consequences.

It begins in Section A with an introduction to the basic idea of the rule of law, explaining its association with non-arbitrariness in government, and identifying its two fundamental pillars: predictability and universality. Next, Section B situates the futurist project to achieve maximal predictability and eliminate legal uncertainty in the debates about legal discretion and arbitrariness that generally attend the rule of law concept. It cautions that while fu-

109. The Article focuses on the rule of law, but legal futurism has potential implications for other core legal concepts, such as legal regulation and legal reform. Both legal regulation and legal reform only make sense in an environment structured by cause and effect. Legal regulatory interventions have intended effects, and legal reform efforts conceive of the law as a transformative causal agent. To the extent that legal futurism follows Anderson's example and abandons efforts to understand causation in preference for correlation data alone, we should expect destabilization of our current modes of understanding legal regulation and legal reform. *See supra* text accompanying notes 32–35 (discussing Anderson's remarks on the "end of theory").

110. ADAM GREENFIELD, *RADICAL TECHNOLOGIES: THE DESIGN OF EVERYDAY LIFE* 314 (2017); *see also* Deakin & Markou, *supra* note 68, at 3 (warning against the "intoxicating 'new government smell' and techno-utopian visions" frequently accompanying technological development).

111. GREENFIELD, *supra* note 110, at 302–03.

turism might solve the problem of human discretion in the law, it does not necessarily solve the problem of arbitrary government.

Section C and Section D take up the predictability principle and the universality principle, respectively. With regard to predictability, Section C will argue that the futurists are privileging a weak form of functional predictability over a strong form of normative predictability that is rooted in liberty and non-arbitrary government power. Weak-form predictability is unobjectionable on its own, since it facilitates efficient planning on the part of legal subjects. But weak-form predictability—again, on its own—has no intrinsic connection to the rule of law and the ideal of non-arbitrary government. When futurists advocate for the use of legal analytics to enhance legal predictability, we should beware of the threat that an inattentive and hurried embrace of analytics in service of (only weak-form) predictability will attenuate the rule of law’s connection to the deeper (strong-form) predictability principle and its commitment to non-arbitrary government.

As for universality, Section D will argue that the futurists’ rush to banish legal uncertainty and usher in a completely specified legal system also threatens to undermine the rule of law’s insistence that the law applies generally. The threat here is twofold. The first will resonate with readers inclined to critical interpretations of law: that predictive analytics software and code eventually embodying the legal singularity, in learning from how the legal system works, would institutionalize algorithmically the existing inequalities in the way the legal system treats its subjects, demystifying the ideas of legal universality and equality.¹¹² The second threat, on the other hand, strikes even deeper at the rule of law. The problem here is not that the legal singularity cements in place some extra-legal hierarchy; instead, the issue is that the basic terms of universal rights might cease to make sense in the face of an epistemological shift that allows the law to only see atomized data points where it used to see integral, individual legal subjects.

A. *The Idea of the Rule of Law*

The rule of law is a protean concept.¹¹³ Legal theorist Brian Tamanaha clarifies the term by helpfully distinguishing between a “thick” interpretation of the rule of law and a “thin” interpretation of the concept.¹¹⁴ Some theorists adopt a thick, capacious formulation of the rule of law that associ-

112. In this sense, the critic would say that the legal singularity is “stamped with the birth marks of the old [legal] system from whose womb it emerged.” KARL MARX, *Critique of the Gotha Program*, in THE MARX-ENGELS READER 525, 529 (Robert C. Tucker ed., 2d ed. 1978).

113. See Jeremy Waldron, *Is the Rule of Law an Essentially Contested Concept (in Florida)?*, 21 L. & PHIL. 137, 138–40 (2002); Paul P. Craig, *Formal and Substantive Conceptions of the Rule of Law: An Analytical Framework*, 1997 PUB. L. 467.

114. BRIAN Z. TAMANAHA, ON THE RULE OF LAW: HISTORY, POLITICS, THEORY 3, 91 (2004).

ates it with a broad constellation of liberal values, such as justice, transparency, rationality, due process, fairness, human and civil rights, and democratic self-government. However, others prefer a thinner conception of the rule of law, warning that the tendency towards a “promiscuous” interpretation of the term to include a laundry list of other ideals would deprive it of any useful function.¹¹⁵

Political philosopher Henry Richardson has written about the relationship between the rule of law and the deeper reservoir of liberal values. He espouses a thin, but still substantial, conception of the rule of law, while also registering the difficulty of completely severing any connection between the rule of law, on the one hand, and legitimacy, popular democracy, and freedom, on the other:

On certain conceptions of legality, the rule of law and democracy are inherently connected, perhaps because legality is thought of as intimately tied to legitimacy, and legitimacy, in turn, depends on democracy. As I will be using the term “rule of law,” however, the question of the relation between the rule of law and democracy is more open than this. While the legitimacy of laws does depend on democracy, there is a thinner understanding of the rule of law that does not carry with it all of the commitment of legitimate legality. This narrower, traditional interpretation of the rule of law may be summed up under three headings: generality, predictability, and regular process.¹¹⁶

Even if the rule of law lacks the deep normative power of democratic self-government, it nevertheless “bears an obvious connection with the ideal of freedom and the way it puts all lawmaking under a burden of legitimation.”¹¹⁷ After all, a “basic respect for their freedom demands that citizens be able to discern [the laws], that they be able to take them into account in planning their activities, and that they not be imposed arbitrarily.”¹¹⁸

Thus, we see that, for Richardson, even the thin conception puts lawmaking under a burden of legitimation to protect against arbitrary government power. This Article largely follows Richardson’s lead in opting for a modest conception of the rule of law, while still acknowledging the rule of law’s connections to other liberal values. It will focus in particular on the

115. JOSEPH RAZ, *THE AUTHORITY OF LAW: ESSAYS ON LAW AND MORALITY* 211 (1979). John Rawls also inclined towards this narrow formulation. For Rawls, the rule of law is only one of many settings that give institutional form to the deeper principle of equal liberty, the first (in both sequence and importance) of his two foundational principles of a just society. See JOHN RAWLS, *A THEORY OF JUSTICE* 52–53, 179–80 (rev. ed. 1999).

116. HENRY S. RICHARDSON, *DEMOCRATIC AUTONOMY: PUBLIC REASONING ABOUT THE ENDS OF POLICY* 216 (2002).

117. *Id.* at 217.

118. *Id.*

two core pillars of the rule of law: *predictability* and *universality*.¹¹⁹ These two principles reciprocally reinforce one another¹²⁰ in their shared project to limit arbitrary government impingement of freedom.¹²¹

In summary, the rule of law contributes a significant degree of legitimacy to modern liberal government though its commitment to non-arbitrary government, but that contribution is specific to the rule of law and is analytically distinct from contributions made by other liberal values such as democratic self-government, due process, civil and political rights, and popular sovereignty. Accordingly, as discussed in greater detail later, if the legal singularity ends up weakening the rule of law, the legal system would lose the legitimating effects the rule of law provides, requiring it to lean on those other sources of legitimation for support.¹²² An opportunity thus might open up for a joint project to reconceptualize how law becomes legitimate by

119. These core pillars can be traced back at least as far as early republican Rome, which published a legal code in the Fifth Century B.C.E.—the so-called “Twelve Tables”—that was both predictable, because it was published and accessible to all, and universal, because it included the prohibition *privilegia ne irroganto*—that is, “no laws shall be passed affecting an individual only.” THE INSTITUTES OF GAIUS AND JUSTINIAN, THE TWELVE TABLES 588 (T. Lambert Mears ed., 1882).

120. For instance, a law that is general but not predictable—as with, for example, the infamous Nazi statute providing for punishment of anyone who “performs an act . . . which is deserving of punishment according to the healthy racial feeling”—cannot be consonant with the rule of law. See FRANZ NEUMANN, BEHEMOTH: THE STRUCTURE AND PRACTICE OF NATIONAL SOCIALISM: 1933–1944 441–42 (2d ed. 1944). Conversely, a law that is predictable but not general—as with, for example, a law barring from public office any person who has appeared on the membership rolls of a certain disfavored political organization—would suffer a similar fate. Frequently, both principles animate core liberal-constitutional rules, such as the prohibition on retroactive legislation. Straightforwardly, the prohibition fosters law’s predictability. But it also promotes law’s universality, inasmuch as a retroactive law is objectionable in part because it applies exclusively to a definite subset of the citizenry—those who have committed the conduct the new law prohibits.

121. See, e.g., Jeffrey Jowell, *The Rule of Law*, in THE CHANGING CONSTITUTION 13, 21–22 (Jeffrey Jowell et al. eds., 8th ed. 2015) (listing “certainty” and “equality” as core requirements of the rule of law); Stephen Holmes, *Lineages of the Rule of Law*, in DEMOCRACY AND THE RULE OF LAW 19 (José María Maravall & Adam Przeworski eds., 2003) [hereinafter DRL] (referring to “equality” but in substance meaning what is intended by “universality” and “generality” here); LON L. FULLER, THE MORALITY OF LAW 210 (1969) (emphasizing “the twin principles of generality and of faithful adherence by government to its own declared rules”).

122. A reader inclined to accept capacious and “promiscuous” definitions of the rule of law will read this statement as a tautology. If the legal system’s legitimacy depends on the rule of law, which includes not just predictability and universality but also the kitchen sink, then of course the kitchen sink becomes more important as predictability and universality disappear. However, such a reader will also likely fail to take account of the dynamic discussed here concerning the narrower definition of the rule of law.

joining liberals eager to replace the rule of law and radical lawyers who have always been keen to scrap the artifact altogether.¹²³

B. *A Prefatory Note on the Rule of Law's Treatment of Arbitrariness and Discretion*

Thus far, the discussion has linked the rule of law to the problem of arbitrary government power but has omitted any mention of the problem of *legal discretion*. This omission is perhaps surprising, since A.V. Dicey, the first legal theorist to formally elaborate the notion of the rule of law, posited a fundamental antithesis between the rule of law and discretion.¹²⁴ According to Dicey, where there was discretion, there was room for arbitrariness, and the rule of law was not present.

We have seen how the futurists claim that the legal singularity will *eliminate* the discretion problem from the legal system altogether. Indeed, many proponents of predictive legal analytics advocate for these new technologies by touting their potential to minimize discretion on the part of lawmakers and lawyers.¹²⁵ When framing the issue in terms of discretion, the futurists sometimes use the familiar standards-rules dichotomy, touting their newfound abilities to “turn standards into rules” and thereby eliminate the quantum of brute discretion that the former inevitably entail.¹²⁶ A legal system without discretion used to be, at most, a formalistic thought experiment.¹²⁷ Now, at least for the futurists, it is a commonplace.

In a world before predictive legal analytics (let alone something like the legal singularity), it made sense for lawyers to collapse the notions of dis-

123. Cf. Daniel H. Cole, “*An Unqualified Human Good*”: *E.P. Thompson and the Rule of Law*, 28 J.L. & SOC’Y 177 (2001) (promoting efforts “to marry radical and liberal theories of law”).

124. A. V. DICEY, INTRODUCTION TO THE STUDY OF THE LAW OF THE CONSTITUTION 110 (8th ed. 1915) (“[W]herever there is discretion there is room for arbitrariness, and that in a republic no less than under a monarchy discretionary authority on the part of the government must mean insecurity for legal freedom on the part of its subjects.”); see also TAMANAHA, *supra* note 114, at 67.

125. See David Engstrom & Jonah Gelbach, *Legal Tech, Civil Procedure, and the Future of Adversarialism*, 169 U. PA. L. REV. (forthcoming 2020) (manuscript at 7), <https://law.stanford.edu/wp-content/uploads/2020/05/SSRN-id3551589-Legal-Tech-Civil-Procedure-and-the-Future-of-Adversarialism.pdf> (describing the futurists).

126. See, e.g., Benjamin Alarie, *Turning Standards into Rules—Part 5: Weighing the Factors in Capital Gains vs. Ordinary Income Decisions*, BLOOMBERG DAILY TAX REP. (Jan. 14, 2019), <https://news.bloombergtax.com/daily-tax-report/insight-turning-standards-into-rules-part-5-weighing-the-factors-in-capital-gains-vs-ordinary-income-decisions>.

127. See Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667, 1675–76 (1975) (discussing the “transmission belt” theory of administrative law, according to which the agency automatically implements legislative directives with no room for discretion); Woodrow Wilson, *The Study of Administration*, 2 POL. SCI. Q. 197, 214 (1887) (analogizing implementing authorities to a cook to whom the housekeeper has delegated the task of “manag[ing] the fires and the ovens”).

cretion and arbitrariness.¹²⁸ As noted earlier, Dicey believed that discretion on the part of government officials was *necessarily* arbitrariness.¹²⁹ For him, arbitrariness was a human problem; it was always possible to identify the government actors who were acting arbitrarily. The paradigm of arbitrary government was monarchy, which inevitably entailed, following Tom Paine, “arbitrary power *in an individual person*; in the exercise of which, himself, and not the *res publica*, is the object.”¹³⁰ This sense is captured by the rule of law maxim that we are subject to a “government of laws, and not of men.”¹³¹

Arbitrariness is a difficult concept to specify in the abstract, although any conception of non-arbitrary power would seem to require that laws serve the welfare, or otherwise respond to the preferences, of the public.¹³² Paine again is relevant: the kernel of non-arbitrariness is that the laws are directed in the interest of the *res publica*, and not the king—or anyone, or anything, else.¹³³ And so too is Locke, who wrote that non-arbitrary legislation was always “designed *for* no other end ultimately but *the good of the People*.”¹³⁴ Moreover, the liberal tradition requires not only that government action be motivated by a conception of the public welfare, but also that the motivations could credibly claim the consent of those to whom the action applies.¹³⁵ To be sure, political pluralists, civic republicans, deliberative democrats, and others surely will disagree about the proper institutional matrix for producing and enforcing laws, but they all can agree, *pace* public choice theorists and autocrats, that laws are arbitrary if they do not bear a firm relation to the public’s interest and a credible claim to the public’s consent.

On the other hand, if the software and code embodying the legal singularity abstracts the legal system away from human discretion altogether, is

128. To be sure, a more modern view of governmental discretion does not see discretion as inimical to the rule of law, but rather seeks to require discretion to be exercised within the scope of legality. See Jowell, *supra* note 121, at 20–21.

129. See *supra* note 124 and accompanying text.

130. THOMAS PAINE, RIGHTS OF MAN (1791), *reprinted in* THE COLLECTED WRITINGS OF THOMAS PAINE 243, 369 (Philip S. Foner ed., 1945) (emphasis added).

131. *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 163 (1803).

132. See PHILIP PETTIT, REPUBLICANISM: A THEORY OF FREEDOM AND GOVERNMENT 56 (1997); see also RAZ, *supra* note 115, at 220 (“Since it is wrong to use public powers for private ends, any such use is in itself an instance of arbitrary use of power.”).

133. See *supra* note 130 and accompanying text.

134. LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 363; see also JOHN LOCKE, *A Third Letter for Toleration*, in LOCKE ON TOLERATION 123, 142 (Richard Vernon ed., 2010) (“The power that is in the civil sovereign is the force of all the subjects of the commonwealth, which supposing it sufficient for other ends, than the preserving the members of the commonwealth in peace from injury and violence: yet if those who gave him that power, limited the application of it to that sole end, no opinion of any other benefits attainable by it can authorize him to use it otherwise.”).

135. See *infra* text accompanying notes 143–145.

there still an arbitrariness problem for the rule of law to fix? While reducing human discretion seems a necessary part of any legal system administered by *persons*, does its importance fade, if not disappear altogether, in a legal system governed by *algorithms*? Is human discretion a problem in and of itself that, if counteracted, simply disappears? Or is it an epiphenomenal sign of a deeper problem that legal subjects have not consented to the design of the rules that bind them—that the legal rules do not depend for the existence on the welfare of the *res publica*? And if that is the case, wouldn't the legal singularity set this arbitrary machine on autopilot?

In other words, if the futurist response to the discretion problem is to imagine an algorithmic function that abstracts away from the human element of the law, have we solved the problem, or have we created an equally vexing, if not bigger, problem? Our answers to these questions will depend on how we conceptualize arbitrariness as a problem that the rule of law counteracts. Whether or not we remain in the world of Paine and Dicey, where the threat of arbitrary rule takes the form of a disconnect between the human government actors and the *res publica*, or whether we should update our concepts to accommodate the possibility of arbitrary algorithmic rule, is a question that runs throughout the Article.

How we view this relationship between discretion and arbitrariness will determine how concerned we should be about the potential normative ramifications of the algorithmizing of the legal system. Most obviously, those inclined to conceive of arbitrariness as a human problem will be disinclined to worry about these implications. For them, eliminating arbitrary human discretion is an unalloyed good. Conversely, those who consider the real problem with arbitrariness to be the lack of connection between the *res publica* and the laws that govern it will view the legal singularity with apprehension, if not horror. They will worry that the futurist emphasis on the elimination of discretion might disguise an algorithmic institutionalization of arbitrariness in the form of an “algocratic” legal system disconnected from legal subjects. For them, a de-personalized arbitrariness is just as much to fear as a personalized human arbitrariness. In the end, the question is whether the rules (and algorithms) that govern have been promulgated in their interest, with their consent, and perhaps even with their input.

If we do believe the problem is arbitrariness and not human discretion as such, then we should be concerned about the legal singularity's effects on the rule of law. After all, the purpose of the rule of law is to protect against arbitrary government. The following two Sections suggest that the legal singularity would undermine the rule of law by abandoning the commitment to universality and privileging a thin, weak conception of predictability committed to efficiency over a more robust, strong conception committed to non-arbitrariness.

This discussion concerning the possibility of replacing human discretion with algorithmic certainty allows us to foreground the Article's main

argument: namely, that solving the problem of human discretion by enhancing the predictability of the legal system has the twofold consequence of (1) creating a new problem in the form of possibly arbitrary rule by algorithm and (2) sapping the rule of law construct of the normative force to combat that new problem. In the process, it also brings us back to the ambiguous relationship between the rule of law and self-government, discussed earlier in reference to Richardson’s formulation of the rule of law.¹³⁶ For those who remain troubled by the prospect of a non-democratic rule of algorithmic law, notwithstanding its elimination of the *human* discretion problem, the legal singularity would seem to heighten the need to look for forms of legitimation beyond the rule of law.¹³⁷

C. *The Legal Singularity and the Predictability Principle*

A basic tenet of any formulation of the liberal rule of law is that a legal system must be roughly predictable. This is the rule of law’s “predictability principle.” The predictability principle is taken up first here because it is the *raison d’être* of the entire predictive legal analytics program.¹³⁸ The central promise of the legal futurists is that predictive legal analytics will make the legal system more predictable, finally solving the twin problems of uncertainty and discretion that plague legal systems.

The predictability principle requires that a liberal legal system must provide its legal subjects with guidance about how the law applies to them and their affairs. In so doing, measures that foster predictability can limit the ability of governments to exercise discretion arbitrarily. Moreover, when law is predictable, legal subjects are able to form expectations and plan their future affairs, as well as make credible and binding commitments to one another. Nevertheless, the predictability principle’s virtue of promoting non-arbitrariness should be distinguished from its virtue of promoting expectations.

1. Strong-Form Predictability

The idea that there exists an association between the rule of law and predictability traces its origins to the birth of liberalism as a political philosophy. The cornerstone of political liberalism is the social contract idea that the government’s authority derives from the consent of the governed.¹³⁹ For

136. See *supra* Section III.A.

137. See *supra* text accompanying note 122.

138. See *supra* Section II.C.

139. Jeremy Waldron, *Theoretical Foundations of Liberalism*, 37 PHIL. Q. 127, 140 (1987) (“The thesis that I want to say is *fundamentally* liberal is this: a social and political order is illegitimate unless it is rooted in the consent of all those who have to live under it; the consent or agreement of these people is a condition of its being morally permissible to enforce.”); see also JOHN RAWLS, *POLITICAL LIBERALISM* 224 (1993) (noting that “the principle

Locke, the social contract was the embodiment of the consent of the governed to form a polity with authority to promulgate legislative decrees. Nevertheless, that consent did not extend to unjust, unnatural legislation that unduly limited liberty.¹⁴⁰ Most relevant for present purposes, Locke believed further that predictability was a necessary condition of any such legislation: “whoever has the legislative or supreme power of any commonwealth, is bound to govern by established standing laws, promulgated and known to the people, and not by extemporary decrees.”¹⁴¹

But why did the threat of unpredictable and “extemporary” legal decrees so offend Locke? And why did he maintain that the laws must be “known to the people”? To answer these questions, it is helpful to distinguish two perspectives on the importance of a predictable legal system. First, a *strong form* of the predictability principle maintains that the law must be predictable to limit the arbitrary exercise of government power. Because the core idea of liberalism is that people consent to surrendering their natural freedoms only for the purpose of protecting their freedoms in greater measure, we can think of the strong form as a cornerstone of the entire liberal project.¹⁴² Locke himself espoused this strong-form theory, believing that predictable rules would circumscribe arbitrary power:

freedom of men under government is, to have a standing rule to live by, common to every one of that society, and made by the legislative power erected in it; a liberty to follow my own will in all things, where the rule prescribes not; and not to be subject to the inconstant, uncertain, unknown, arbitrary will of another man.¹⁴³

For Locke, all collective power exists only for the good of the society, and as such its exercise “ought not to be arbitrary and at [the] pleasure” of the rulers. Predictable laws not only let people know their duties and their liberties, they also ensure that the rulers avoid the temptation to employ collective power in service of purposes of which the public would not approve:

of political legitimacy” requires that the “basic structure [of government] and its policies are to be justifiable to all citizens”); THOMAS NAGEL, EQUALITY AND PARTIALITY 33 (1991) (“The task of discovering the conditions of [political] legitimacy is traditionally conceived as that of finding a way to justify a political system to everyone who is required to live under it.”).

140. See LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 358–59.

141. *Id.* at 353.

142. See *id.* at 306, 357; PATRICK J. DENEEN, WHY LIBERALISM FAILED 48–49 (2018); DECLARATION OF THE RIGHTS OF MAN AND OF THE CITIZEN art. 2 (Fr. 1789) (“The aim of all political association is the preservation of the natural and imprescriptible rights of man.”); THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776) (declaring that “Governments are instituted among Men, deriving their just powers from the consent of the governed” in order to “secure . . . rights”).

143. LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 284.

[A]ll the power the government has, being only for the good of the society . . . it ought to be exercised by established and promulgated laws; that both the people may know their duty, and be safe and secure within the limits of the law; and the rulers too *kept within their bounds, and not be tempted, by the power they have in their hands, to employ it to such purposes, and by such measures, as they would not have known, and own not willingly.*¹⁴⁴

In this manner, law’s predictability is a procedural transparency device that restricts the government from enacting arbitrary legal rules to which the polity did not and would not consent. To appreciate the importance of predictability of a legal system, it is necessary to consider the citizenry’s ongoing consent to, and opinion of, that system. It is not just that the laws must be discernible; they also must be comprehensible, intelligible, and amenable, at least in theory, to contestation. The authorities must “own willingly” their exercise of governmental authority, making it possible for the citizenry to demand reasoned explanations for incursions in their otherwise natural rights to liberty and autonomy.

Predictability, then, is in practice a precondition of the people’s informed consent—which, in turn, is the touchstone of a free and liberal polity not subject to arbitrary rule.¹⁴⁵ Moreover, the reserve power of the people to revolt, so familiar to the experience of American political theory, lurks in the shadows as a vagrant threat that disciplines the government in the exercise of its delegated powers.¹⁴⁶ This potential revolutionary subject is always on the other side of the strong-form predictability coin. Even if in the form of this negative potential political energy, predictability and notice ensure that the citizenry is at least a partial author of the laws that apply to them. Hence, some element of democratic process, sufficient to underwrite a notion of consent, is responsible for the normative force of law in the Lockean conception. In contemporary political and social theory, Habermas expresses this idea perhaps most clearly, noting that a legal system providing for liberal individual rights (of property, of expression, etc.) requires meaningful recourse of the citizens to some democratic process that can serve as the legitimate basis for their consent.¹⁴⁷

John Rawls also invokes the Lockean, strong-form association of legal predictability with liberty and non-arbitrary government power, arguing that the purpose of law is to “organize social behavior by providing a basis for

144. *Id.* at 360 (emphasis added).

145. *See supra* note 139.

146. *See* RICHARD ASHCRAFT, REVOLUTIONARY POLITICS AND LOCKE’S TWO TREATISES OF GOVERNMENT 484 (1986); LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 406–28 (concluding chapter of Second Treatise devoted to “dissolution of the government”).

147. *See* HABERMAS, *supra* note 101, at 32–33.

legitimate expectations,”¹⁴⁸ so as to make the “boundaries of our liberty,”¹⁴⁹ more certain. A predictable legal order, therefore, protects our liberties from arbitrary intrusions and can be distinguished from, as Rawls would put it, a “collection of particular orders designed to advance the interests of a dictator or the ideals of a benevolent despot.”¹⁵⁰ When we say we are a “government of laws, and not of men,”¹⁵¹ or when we, following Madison, emphasize the urgency of the need to oblige the government to “control itself,”¹⁵² we are invoking this strong form of the predictability principle and its Lockean objective of non-arbitrary government power underwritten by consent.¹⁵³

2. Weak-Form Predictability

In contrast to the strong-form conception of predictability as an antidote to arbitrariness in government, a *weak form* of the predictability principle maintains simply that the law must be predictable so that legal subjects can form expectations about how the law will affect them. For weak-form theorists, the rule of law requires laws to be predictable so that law absorbs uncertainty and guarantees order.¹⁵⁴

Thomas Hobbes is the classical expositor of the weak form. Writing a half-century before Locke published his *Second Treatise*, Hobbes approached the issue of predictability from the perspective of social order. He wrote that governments could only ensure peace—or, in his words, “prevent brawls from arising”—if they:

make some common rules for all men, and *to declare them publicly*, by which every man may know what may be called his, what another’s, what just, what unjust, what honest, what dishonest, what

148. RAWLS, *supra* note 115, at 209.

149. *Id.* at 210.

150. *Id.* at 208.

151. *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 163 (1803).

152. THE FEDERALIST NO. 51, at 372 (James Madison) (Cynthia Johnson ed., 2004).

153. Similarly, American constitutional law privileges strong-form predictability over weak-form predictability. For instance, the Due Process Clause imposes no meaningful constraints on the legislature’s freedom to unravel expectations (and thereby violate the weak-form predictability principle). Instead, the strong-form principle emerges as the only limiting principle, restricting the legislature from acting in an “arbitrary” manner. *See* *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 15 (1976) (“It is by now well established that legislative acts adjusting the burdens and benefits of economic life come to the Court with a presumption of constitutionality, and that the burden is on one complaining of a due process violation to establish that the legislature has acted in an arbitrary and irrational way.”).

154. JÜRGEN HABERMAS, LEGITIMATION CRISIS 99 (Thomas McCarthy trans., 1975) (noting how legal positivists, as weak-form theorists, see law’s fundamental function as uncertainty absorption).

good, what evil, that is summarily, what is to be done, what to be avoided in our common course of life.¹⁵⁵

In Hobbesian government, legal subjects promise obedience to an absolute authority in order to preserve themselves from the violent uncertainty and chaos of nature. The absolute sovereign then commands with the force of law and legal subjects respond with mechanistic automaticity.¹⁵⁶

The consent to obey, the formulation of legal rules, and the public declaration of those rules all serve the purpose of maintaining a government that is effective at guaranteeing social order. In this way, Hobbesian rule of law, buttressed by predictability, provides a sort of equilibrium manual for society.¹⁵⁷ Whereas Locke’s overriding preoccupation was securing natural rights of liberty and limiting arbitrariness on the part of a regrettably necessary government, Hobbes’s focus was on the social stability that only an absolute sovereign could secure.¹⁵⁸

The legal-political philosophy of Friedrich Hayek is a modern variation on the weak-form theme, and it illustrates the danger of equating the rule of law with mere weak-form predictability.¹⁵⁹ Hayek echoes Hobbes when he writes that “government in all its actions is bound by rules fixed and announced beforehand—rules which make it possible to foresee with fair certainty how the authority will use its coercive power in given circumstances, and to plan one’s individual affairs on the basis of this knowledge.”¹⁶⁰ A closer look reveals that Hayek’s conception of the role of law in the emer-

155. THOMAS HOBBS, *DE CIVI: OR, THE CITIZEN* 74 (Sterling P. Lamprecht ed., Appleton-Century-Crofts 1949) (1647) (emphasis added).

156. THOMAS HOBBS, *LEVIATHAN* 389 (Richard Tuck ed., Cambridge Univ. Press 1996) (1651).

157. José María Maravall & Adam Przeworski, *Introduction*, in *DRL*, *supra* note 121, at 1, 5.

158. While Hobbes believed that social stability depended entirely on a sovereign state with the power to make binding decisions, at times he acknowledges, without fully developing his analysis, that natural law also requires spheres of liberty into which the state cannot intrude. *See, e.g.*, HOBBS, *supra* note 156, at 151 (“If the sovereign command a man (though justly condemned[]) to kill, wound, or mayme himselfe; or not to resist those that assault him; or to abstain from the use of food, ayre, medicine, or any other thing, without which he cannot live; yet hath that man the Liberty to disobey.”); HOBBS, *supra* note 155, at 157 (“That which is prohibited by the divine law, cannot be permitted by the civil, neither can that which is commanded by the divine law, be prohibited by the civil.”).

159. At first blush, Hayek might be thought of as an inverted Hobbesian. After all, Hobbes famously viewed the natural state of human relations to be characterized by violence and discord; the state and political life saved mankind from itself. Hayek, in sharp contrast, viewed these institutions with hostility, associating them with central planning and Stalinism. In his estimation, human societies, left to their own devices, evolve towards forms of cooperation for mutual advantage; social order therefore emerges from voluntary, cooperative interactions. *See* Eric Mack, *Friedrich Hayek on the Nature of Social Order and Law*, in *POLITICAL PHILOSOPHY IN THE TWENTIETH CENTURY: AUTHORS AND ARGUMENTS* 129, 138–40 (Catherine H. Zuckert ed., 2011).

160. FRIEDRICH A. HAYEK, *THE ROAD TO SERFDOM* 72 (1944) (emphasis added).

gent social order is peculiar, particularly in the way he distinguishes the rule of law from the rule of legislation. For him, law is historically and conceptually antecedent to the state and its legislative power.¹⁶¹ Law consists of the set of norms and rules that happen to facilitate the types of coordination that emerge among members of society. Hence the rule of law is present where the key constitutive fibers holding a society together—which, again, are analytically distinct from and, in fact, prior to, any legislation or judicial pronouncement—are respected and enforced.

For Hayek, the cooperative institutions that hold society together are those, like rules of property and contract, that facilitate mutual economic advantage. Consequently, Hayek's conception of the rule of law is a thin one, shrunken to the idea that government would not interfere with individual *economic* freedoms.¹⁶² Hayek is transparent about this: according to him, arbitrariness in the exercise of government power consists only of interference with the market pricing mechanism.¹⁶³ The resulting economic freedom produces a spontaneous social order, which he referred to as *catallaxy*, "brought about by the mutual adjustment of many individual economies in a market."¹⁶⁴ Social, collective order thus emerges out of a multiplicity of individual egoists.¹⁶⁵ And a minimalist rule of law principle guarantees the basic framework within which markets can aggregate individual knowledge to produce this order.¹⁶⁶ Here, Hayek followed his mentor Ludwig von Mises, who believed that social order would emerge not from central planning but from a "consumers' democracy" in which price signals, produced in conditions of competition, would align productive activity to satisfy human desires.¹⁶⁷ In this way, these Austrian School authors planted the intellectual

161. Mack, *supra* note 159, at 138.

162. In this respect, it is doubly thin: not only is it purely negative and not positive, but it is also concerned exclusively with market transactions and not with rights of political participation or any non-market intrusions of coercive power.

163. See FRIEDRICH A. HAYEK, *THE CONSTITUTION OF LIBERTY* 227–28 (1960) (defining as "arbitrary" government power any action that interferes with the market price mechanism); DUNCAN K. FOLEY, *ADAM'S FALLACY: A GUIDE TO ECONOMIC THEOLOGY* 208 (2006) (characterizing as "rather implausible" Hayek's claim that "government intervention to stabilize and regulate the capitalist economy represented as much a threat to the freedom and dignity of the individual as totalitarian dictatorships did").

164. 2 FRIEDRICH A. HAYEK, *LAW, LEGISLATION, AND LIBERTY: A NEW STATEMENT OF THE LIBERAL PRINCIPLES OF JUSTICE AND POLITICAL ECONOMY* 108–09 (1982).

165. See ANTHONY GIDDENS, *IN DEFENCE OF SOCIOLOGY: ESSAYS, INTERPRETATIONS & REJOINDERS* 243 (1996).

166. See CHRISTINE SYPNOWICH, *THE CONCEPT OF SOCIALIST LAW* 62–63 (1990).

167. See LUDWIG VON MISES, *SOCIALISM: AN ECONOMIC AND SOCIOLOGICAL ANALYSIS* 21, 443 (Jacques Kahane trans., Yale Univ. Press 1951) (1922). It bears mention that von Mises, like Hayek, ultimately embraced fascism, noting in the aftermath of the Italian fascists marching on Rome, that "[i]t cannot be denied that Fascism and similar movements aiming at the establishment of dictatorships are full of the best intentions and that their intervention has, for the moment, saved European civilization. The merit that Fascism has thereby won for itself will live on eternally in history." LUDWIG VON MISES, *LIBERALISM: IN THE*

and ideological roots of neoliberalism¹⁶⁸ as a reactionary outgrowth of classical liberalism arising in a particular historical context: as a response to the perceived threats of central planning (as with most versions of socialism) and state intervention (as with post-war Keynesian economic policy), seeking to preserve a particular notion of economic freedom.¹⁶⁹

This reductionist position, which entails a thin conceptualization of freedom and non-arbitrary government, is what made it possible for Hayek to applaud Augusto Pinochet of Chile as a “liberal dictator”¹⁷⁰ and to affirm that “you can have economic freedom without political freedom, but you cannot have political freedom without economic freedom.”¹⁷¹ Milton Fried-

CLASSICAL TRADITION 51 (Ralph Raico trans., 3d ed. 1985). Resolving the question whether the relationship between Austrian political-economic theory and fascism was one of convenience resulting from their mutual opposition to socialism, or whether there is a historical, immanent relationship between late liberalism and fascism, need not be taken up here. For those interested in exploring the latter possibility, see MITCHELL & FAZI, *supra* note 41, at 98–106; HERBERT MARCUSE, *The Struggle Against Liberalism in the Totalitarian View of the State, in NEGATIONS: ESSAYS IN CRITICAL THEORY* 1, 5–19 (Jeremy J. Shapiro trans., 1968); KARL POLANYI, *THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME* 257–58 (1944).

168. Neoliberalism is a contested term, but it is best to conceive of the intellectual roots of neoliberalism (including, most prominently, von Mises, Hayek, and Milton Friedman) as a subset of modern heirs of the liberal tradition, invoking liberal ideas of freedom to rebut economic arguments in favor of intervention, regulation, and socialism in the context of post-war industrial capitalism. Neoliberal politics and institutions, on the other hand, frequently violated these roots in the most flagrant manner. See MITCHELL & FAZI, *supra* note 41, at 106 (arguing that “not only does neoliberal economic policy require the presence of a strong state, but it requires the presence of an authoritarian state”). While outside the scope of the analysis here, taking care to distinguish the theory of neoliberalism from the actual practice of neoliberal government underscores the flexibility of the former (including its commitment to only weak-form predictability and its concomitant minimization of the traditional liberal notion of consent) to accommodate the latter.

169. See MICHAEL HARTD & ANTONIO NEGRI, *ASSEMBLY* 155–56 (2017); DAVID HARVEY, *A BRIEF HISTORY OF NEOLIBERALISM* 20–21 (2005).

170. See John M. Geddes, *New Vogue for Critic of Keynes*, N.Y. TIMES, May 7, 1979, at D1, D7 (interviewing Hayek). A possible contemporary example of the liberal dictatorship model is Jair Bolsonaro’s Brazil, where a government with autocratic inclinations embraces both the legacy of military dictatorship and putatively liberal economic policies. See Anthony Boadle, *Chile’s ‘Chicago Boys,’ a Model for Brazil Now?*, REUTERS (Jan. 4, 2019), <https://www.reuters.com/article/us-brazil-politics-chicagoboysexplainer/explainer-chiles-chicago-boys-a-model-for-brazil-now-idUSKCN1OY1OU>.

171. Geddes, *supra* note 170, at D7; see also George Monbiot, *Neoliberalism: The Ideology at the Root of All Our Problems*, GUARDIAN (Apr. 15, 2016), <https://www.theguardian.com/books/2016/apr/15/neoliberalism-ideology-problem-george-monbiot> (quoting Hayek as having said “my personal preference leans toward a liberal dictatorship rather than toward a democratic government devoid of liberalism”); EDMUND FAWCETT, *LIBERALISM: THE LIFE OF AN IDEA* 324–25 (2d ed. 2018) (“Hayek stressed that liberalism neither required nor opposed democracy. Liberalism’s foes were totalitarianism and central control of life. Democracy’s foe was autocracy, which was compatible with liberty.”); Neil Davidson & Richard Saull, *Neoliberalism and the Far-Right: A Contradictory Embrace*, 43 *CRITICAL SOCIO.* 707, 716 (2017) (“Neoliberalism was always suspicious of democracy and, above all, of interventions by institutions reflecting the collective will of democratic citi-

man, the standard bearer for the other tradition of neoliberal economic thought repudiating mid-twentieth century Keynesian compromises (the Chicago School), largely shared this perspective.¹⁷²

Having defined arbitrary government in terms of interference with market prices, Hayekian legal theory confronts a problem: its weak conceptualization of the predictability principle leaves ample room for what most observers would characterize as arbitrary, even dictatorial, government. Its spirit is legalistic and formalist more than authentically liberal, recalling de Tocqueville's famous description of lawyers as primarily concerned with orderliness: "although [lawyers] value liberty, they generally rate legality as far more precious; they are less afraid of tyranny than of arbitrariness, and provided that it is the lawgiver himself who is responsible for taking away men's independence, they are more or less content."¹⁷³ The rule of law becomes "law and order," which is revealed to entail a twofold connotation: on the one hand, as a catallactic economic-social *order* that emerges from a shrunken, formalized system of predictable *law*; and on the other hand, its common understanding as a message of indifference about coercive police states, like Chile's dictatorship, provided that they purport to guarantee economic freedoms.¹⁷⁴

Another weak-form theorist, the legal positivist Joseph Raz, helps us to understand why the Hayekian rule of law confronts this problem. Raz considers the rule of law to refer to the attribute of a legal system that makes it "capable of guiding the behavior of its subjects."¹⁷⁵ In other words, the rule of law is present whenever the law is predictable, full stop. Raz, while ultimately espousing a weak-form version of the predictability principle,

zens on the operation of the market economy."); FREDRIC JAMESON, AN AMERICAN UTOPIA: DUAL POWER AND THE UNIVERSAL ARMY 42 (2016) (observing that for Hayek, "capitalism was incompatible with genuine mass democracy"); HARDT & NEGRI, *supra* note 169, at 156 ("One standard neoliberal tactic is to . . . de-democratize the state.").

172. MILTON FRIEDMAN, CAPITALISM AND FREEDOM 10 (1962) ("History suggests only that capitalism is a necessary condition for political freedom. Clearly it is not a sufficient condition. . . . It is therefore clearly possible to have economic arrangements that are fundamentally capitalist and political arrangements that are not free.").

173. ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 266 (J.P. Mayer ed., George Lawrence trans., Doubleday & Company 1969) (1835).

174. Foucault makes this point in his late lectures on neoliberalism. MICHEL FOUCAULT, THE BIRTH OF BIOPOLITICS: LECTURES AT THE COLLÈGE DE FRANCE 1978–1979 174 (Michel Senellart et al. eds., Graham Burchell trans., 2008).

175. RAZ, *supra* note 115, at 214. In a later essay, Raz moves in the direction of a strong-form formulation. See JOSEPH RAZ, *The Politics of the Rule of Law*, in ETHICS IN THE PUBLIC DOMAIN: ESSAYS IN THE MORALITY OF LAW AND POLITICS 370, 377 (1995) ("In curtailing arbitrary power, and in securing a well-ordered society, subject to accountable, principled government, lies the value of the rule of law."). Nevertheless, he is careful to specify that the essay's argument is confined to the narrow context of Britain, or jurisdictions with political-legal cultures. See *id.* at 370. He acknowledges that such a specification in effect presupposes democratic participation in government, due process during bureaucratic encounters, and a strong and independent judiciary. See *id.* at 376–77.

acknowledges upfront that the rule of law is no guarantee of non-arbitrary governmental force and power. Whereas Hayek advocated for a narrow form of legal predictability as an instrument in service of the objective of a thoroughly privatized society, Raz neither embraces nor rejects predictability and the rule of law as such. While law’s predictability might occasion a general tendency to non-arbitrariness on the part of governmental officials, Raz believes that “many forms of arbitrary rule are compatible with the rule of law.”¹⁷⁶ Here, he is imagining a government akin to Hayek’s “liberal dictatorship”—a regime in which the ruler promulgates rules “based on whim or self-interest, etc., without offending against the rule of law.”¹⁷⁷ A predictable legal system largely in conformity with the rule of law might, holding all else equal, increase freedom and dignity, but, as Raz points out, “other things are rarely equal.”¹⁷⁸

Instead, Raz describes the rule of law as an “instrumental” and “subservient” idea with “no more than *prima facie* force.”¹⁷⁹ In this respect, it is comparable to a sharp knife. The knife’s sharpness is neither inherently good nor evil, and can be used with equal effectiveness to slice a mango or deprive a robbery victim of his wallet. Raz continues in terms that echo Hobbes’s emphasis on the importance of the rule of law as a guarantee of social order:

Regarding the rule of law as the inherent or specific virtue of law is a result of an instrumental conception of law. The law is not just a fact of life. It is a form of social organization which should be used properly and for the proper ends. It is a tool in the hands of men differing from many others in being versatile and capable of being used for a large variety of proper purposes Like other instruments, the law has a specific virtue which is morally neutral in being neutral as to the end to which the instrument is put. It is the virtue of efficiency; the virtue of the instrument as an instrument.¹⁸⁰

We could make law as predictable as possible, but Raz expects that we should frequently prefer a “lesser degree of conformity” to the rule of law in order to use the legal system to promote other social goals. Indeed, he continues, “sacrificing too many social goals on the altar of the rule of law may make the law barren and empty.”¹⁸¹ In other words, the rule of law is not a maximand; even if we could maximally promote predictability by hypostatizing the law as it presently exists, we would do so at the cost of depriving the law of its organic ability to evolve and preserve its claim to the consent

176. RAZ, *supra* note 115, at 219.

177. *Id.*

178. *Id.* at 228.

179. *Id.* at 226–29.

180. *Id.* at 226.

181. *Id.* at 228–29.

of the governed that mattered so much to Locke. Raz might have added that the law might, in the process, compromise its claim to normative validity. So, whereas Hayek embraces weak-form predictability despite its possible side effects, Raz warns against those side effects and the danger of a unitary, uncritical pursuit of predictability in the first place.¹⁸²

Thus, we can individuate two related, but distinct, animating perspectives concerning predictability and the rule of law.¹⁸³ Simplifying only somewhat, strong-form theorists pose the question “*does the legal system protect against arbitrary government power and thereby promote liberty?*” while weak-form theorists ask “*does the legal system promote and maintain social order by guaranteeing expectations?*” Both perspectives assign a vital role to the predictability of law in answering these related, but ultimately distinct, questions. The strong-form perspective is oriented toward liberty and counteracts the exercise of arbitrary governmental power, whereas the weak-form perspective sees law in instrumental terms and has an ambiguous

182. Other important weak-form theorists include Raz’s mentor Herbert Hart and Justice Antonin Scalia. Each emphasized law’s ability to set expectations and provide for certainty concerning the conflicts and disputes that inevitably arise in modern life. Hart conceived of his “rule of recognition” concept, the linchpin of his entire positivist jurisprudence, as a “remedy for the uncertainty” pervading modern legal systems, comprised as they were of indeterminate and potentially conflicting rules. H.L.A. HART, *THE CONCEPT OF LAW* 94 (2d ed. 1994). Rules of recognition were “procedures for settling doubts”; indeed, they were the “proper way of disposing of doubts.” *Id.* at 92–95. Justice Scalia, a more contemporary and applied standard-bearer of this positivist tradition, advocated for his textualist method of statutory interpretation on the grounds that it provided for predictability and thereby promoted the rule of law: “textualism will provide greater certainty in the law, and hence greater predictability and greater respect for the rule of law.” ANTONIN SCALIA & BRYAN A. GARNER, *READING LAW: THE INTERPRETATION OF LEGAL TEXTS* xxviii–xxix (2012); *see also* Antonin Scalia, *The Rule of Law as a Law of Rules*, U. CHI. L. REV. 1175, 1179 (1989) (“[U]ncertainty has been regarded as incompatible with the Rule of Law.”).

183. The distinction between the strong form and the weak form of the predictability principle is a conceptual tool rather than an empirical observation. While their differences as ideal types are apparent, the weak form and the strong form frequently coexist in a wide array of legal regimes, and the strong-form usually (but not necessarily) includes the weak-form. The below passage from Locke’s *Second Treatise* captures the two sides of the predictability coin:

[A]ll the power the Government has, being only for the good of the society, as it ought not to be *Arbitrary* and at Pleasure, so it ought to be exercised by *established and promulgated Laws*: that both the People may know their Duty, and be safe and secure within the limits of the Law, and the Rulers too kept within their bounds, and not to be tempted, by the Power they have in their hands, to [e]mploy it to such purposes, and by such measures, as they would not have known, and own not willingly.

LOCKE, *TREATISES OF GOVERNMENT*, *supra* note 8, at 360. Hence, governmental power is only legitimate if it is not “[a]rbitrary and at [the] [p]leasure” of the rulers—only where the rulers are “kept within their bounds.” The solution is for government to “establish and promulgate laws,” which, in turn, also allows citizens to “know their [d]uty, and be safe and secure within the limits of the [l]aw.” *Id.*

relationship to liberty. To better appreciate the distinction between these two perspectives, consider the following contrasting examples of hypothetical legal regimes.

A legal regime comprised of periodically published compendia of properly noticed directives reflecting the whims of a dictator would be both entirely arbitrary and entirely predictable.¹⁸⁴ Such a regime—we could call it Hayek’s “liberal dictatorship,”¹⁸⁵ provided it did not disturb market institutions—would satisfy the weak-form condition, but not the strong-form condition. It would also plainly contravene most robust conceptions of a liberal government. From the strong-form perspective, such a regime would perhaps qualify as rule *by* law (or “law and order”), but certainly not as rule *of* law.¹⁸⁶

Conversely, a regime in which legislation is nearly universally perceived to be non-arbitrary, but which occasionally alters some legal subjects’ expectations in non-trivial ways, would satisfy the strong-form condition, but not the weak-form condition. Moreover, few would hesitate to describe such a strong-form predictable regime as basically liberal, notwithstanding the occasional predictability shortfalls. Clearly, the liberal rule of law draws normative force from the strong form, but not the weak form. It is, therefore, not surprising that the strong form of the predictability principle, deriving as it does from liberty interests, influences U.S. constitutional law doctrine.¹⁸⁷

By contrast, the weak-form principle is functional and instrumental, but not normative. For Hobbes, the desideratum is not Lockean liberty, but social order—ensuring that legal subjects act in a manner that is consistent with the sovereign’s will, however arbitrary that might be. In fact, the normative force of the weak-form predictability principle is *always* derivative of some other substantive principle.¹⁸⁸ If it is property rights for Hayek, it could just as easily be utilitarianism, market formation, clean air, or religious virtue for another theorist. Following Raz, the key point is that weak-

184. Arbitrary here is used to refer to laws that are crafted to promote any purpose not ostensibly in the interest of the subjects of those laws. *See supra* text accompanying notes 130, 132, and 134.

185. *See supra* note 170 and accompanying text.

186. *See* Mark Tushnet, *Rule by Law or Rule of Law?*, 22 ASIA PAC. L. REV. 79 (2014); *see generally* RULE BY LAW: THE POLITICS OF COURTS IN AUTHORITARIAN REGIMES (Tom Ginsburg & Tamir Moustafa eds., 2008).

187. *See supra* note 153.

188. Weberian sociology provides a helpful frame here. Weak-form predictability might give the appearance of being based in pure formal-instrumental rationality, but it also necessarily disguises a substantive-value rationality foundation. *See* 1 MAX WEBER, *ECONOMY AND SOCIETY: AN OUTLINE OF INTERPRETIVE SOCIOLOGY* 24–25, 85–86 (Guenther Roth & Claus Wittich eds., Ephraim Fischhoff trans., 1968) (elaborating related distinctions of instrumental rationality versus value rationality and formal rationality versus substantive rationality).

form predictability sees the legal system *as an instrument* that, if it is to achieve any normative force, must borrow it from somewhere else.¹⁸⁹ But therein lies the rub; weak-form predictability can be an instrument for any number of ends, none of which has any *necessary* connection to the principles of freedom and non-arbitrariness on which a liberal legal order is thought to depend. As Mark Tushnet worries, when the constituents of the rule of law become “only a requirement of justification according to some substantive ideological narrative, the rule of law is thinned down yet further—perhaps almost to the vanishing point.”¹⁹⁰

In summary, when considering the important predictability principle of the rule of law, we should distinguish between a strong form of the principle and a weak form of the principle. The former takes aim at arbitrary power and has august normative roots in Lockean liberal political theory. On the other hand, the latter lacks any normative pretensions and represents instead an instrumental attribute of the legal order that accommodates and promotes ends that are supplied exogenously. It will struggle to summon the normative strength to muster a counterargument in the face of a predictable, but ultimately arbitrary, legal system.¹⁹¹

3. A Brief Excursus: The Legal Singularity as Belated Fulfillment of the Legal Realist Project

By this point, readers versed in American legal theory will have appreciated how predictive legal analytics calls to mind the jurisprudential perspective of legal realism. The legal realists merit special attention here because today’s futurists should be thought of as carrying forward the oncemoribund project of yesterday’s realists. Without acknowledging it expressly, they are purporting to resuscitate legal realism using the tools of predictive legal analytics. By taking note of the similarities and differences between the futurist and realist treatments of the predictability principle, we can better appreciate the jurisprudential significance of legal futurism and the legal singularity.¹⁹²

In the early- to mid-twentieth century, the legal realists depicted the legal system as a regime that was shot through with unacknowledged arbitrar-

189. See *supra* text accompanying notes 179–180.

190. Mark Tushnet, *Critical Legal Studies and the Rule of Law*, in *THE CAMBRIDGE COMPANION TO THE RULE OF LAW* (Jens Meierhenrich & Martin Loughlin eds., forthcoming July 2021).

191. Here, Habermas’s critique of pure-form legal positivism as being indifferent even to a “voluntarism of pure enactment” captures this threat of a coercive legal system resulting from nothing more than the formal translation, or enactment, of a lawmaker’s arbitrary will, or *voluntas*, into law. HABERMAS, *supra* note 101, at 38.

192. In their insightful introduction to their new edited volume, Simon Deakin and Christopher Markou trace the intellectual forebears of the legal singularity and computational law further back—to Hobbes, Bacon, and Leibniz. See Deakin & Markou, *supra* note 68.

iness, but which nevertheless remained largely predictable. In other words, they advanced the theory that the legal system might be susceptible to predictive analysis, but only in the weak form. They remained conspicuously disinterested in questions concerning the source of law’s normative force, content to posit instead the empirical reality of law as a social phenomenon.

Justice Oliver Wendell Holmes, the great proto-realist, believed that legal doctrine was nothing more than “systematized prediction.”¹⁹³ Unlike the strong-form liberals, though, his vision of a predictable legal system was shrunk and stripped of any normative foundation of liberty and non-arbitrariness. According to Holmes, we could begin to understand the law only if we put ourselves in the shoes of a “bad man” who “cares only for the material consequences [that] knowledge [of the law] enables him to predict.”¹⁹⁴ Holmes’s bad man “does not care two straws for . . . axioms or deductions,” but “he does want to know what the Massachusetts or English courts are likely to do in fact.”¹⁹⁵ Holmes would go on to famously announce that “[t]he prophecies of what courts will do in fact, and nothing more pretentious, are what I mean by the law.”¹⁹⁶

Several decades later, Karl Llewellyn carried the Holmesian project forward, broadening the basic insight to apply not only to judges but any other officials acting to quell disputes, such as administrators and legislators. Llewellyn regarded the law as the discipline of discerning the “regularity which makes possible prediction of what [legal] officials are about to do tomorrow.”¹⁹⁷ Other realists expressed the same basic idea.¹⁹⁸ They attributed a functional role to the rule of law, focusing on law as a sort of anticipa-

193. Oliver Wendell Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 458 (1897).

194. *Id.* at 459.

195. *Id.* at 460–61.

196. *Id.* at 461.

197. KARL N. LLEWELLYN, *THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY* 13 (3d ed. 1960).

198. Jerome Frank, following Holmes, claimed that the law was simply probable guesses as to the future decisions of judges. See JEROME FRANK, *LAW AND THE MODERN MIND* 50–51 (Anchor Books ed. 1963). The following passage from Walter Wheeler Cook succinctly summarizes the legal realist method of legal analysis:

As lawyers we are interested in knowing how certain officials of society—judges, legislators, and others—have behaved in the past, in order that we may make a prediction of their probable behavior in the future. Our statements of the ‘law’ . . . are therefore ‘true’ if they accurately and as simply as possible describe the past behavior and predict the future behavior of these societal agents. . . . ‘Right,’ ‘duty,’ and other names for legal relations are therefore not names of objects or entities which have an existence apart from the behavior of officials in question, but merely terms by means of which we describe to each other what prophecies we make as to the probable occurrence of a certain sequence of events—the behavior of officials.

Walter Wheeler Cook, *The Logical and Legal Bases of the Conflict of Laws*, 33 YALE L.J. 457, 475–76 (1924).

tory social emollient.¹⁹⁹ With the realists, we see the inner operations of the Hobbesian weak-form predictability at work, anticipating how legal rules apply consequences in order to preemptively “prevent brawls.”²⁰⁰

Legal realism saw law as a social science without any privileged normative perch. It invited the naïve doctrinaires to investigate and uncover that disguised “something else,” beyond the rules, that is “at work helping the doctrine out.”²⁰¹ The aim of the realists was to demystify the rigid formalisms and conceptual apparatuses that operated as the “basic myth” of the legal system, the “stubborn illusion” that the law could banish arbitrariness and discretion.²⁰² They sought to interrogate the “hidden regularities that lie below the doctrinal surface,” frequently using empirical social science.²⁰³ Their mission was to master weak-form predictability, and they implicitly rejected strong-form predictability as yet another example of the “transcendental nonsense” stultifying law as it really existed—that is, as an irreducibly social, and frequently arbitrary, process.²⁰⁴

Nevertheless, by the end of World War II, much of the vigor of legal realism appeared to have been sapped. Thurman Arnold pronounced around this time that the critical methods of the realists had revealed themselves not to be “sustaining food for a stable civilization.”²⁰⁵ But why not? Perhaps such a fate awaits all critical projects, even those, like legal realism, whose acts of negation are fundamentally an invitation at reinvention and reconceptualization.²⁰⁶ Or perhaps there is some factor that makes law, an inherently normative discipline, especially resistant to critical projects.²⁰⁷

To be clear, Arnold did not claim that realism was rejected as invalid, or that realism did not exercise an enduring influence over legal theory throughout the twentieth century. At the time he made his observation, the other two pillars of mid-twentieth century jurisprudence—legal positivism and the legal process school—were responding directly to legal realism,

199. LLEWELLYN, *supra* note 197, at 22 (“[Law] ceases to be merely a regulation of actual disputes and becomes a regulation, and if all goes well, an anticipation and prevention, of potential disputes vastly greater in number than the actual.”).

200. See *supra* text accompanying note 155 (quoting Hobbes).

201. KARL N. LLEWELLYN, *JURISPRUDENCE: REALISM IN THEORY AND PRACTICE* 135 (1962).

202. FRANK, *supra* note 198, at 3, 14.

203. Anthony Kronman, *Jurisprudential Responses to Legal Realism*, 73 *CORNELL L. REV.* 335, 337 (1988).

204. See Felix S. Cohen, *Transcendental Nonsense and the Functional Approach*, 35 *COLUM. L. REV.* 809 (1935).

205. Thurman Arnold, *Judge Jerome Frank*, 24 *U. CHI. L. REV.* 633, 635 (1957).

206. See Seyla Benhabib, *Modernity and the Aporias of Critical Theory*, 49 *TELOS* 39, 44 (1981); ROGER COTTERRELL, *LAW’S COMMUNITY: LEGAL THEORY IN SOCIOLOGICAL PERSPECTIVE* 207–08 (1997).

207. After all, a similar fate would await the critical legal studies program of the 1980s and 1990s. See ROBERTO MANGABEIRA UNGER, *THE CRITICAL LEGAL STUDIES MOVEMENT: ANOTHER TIME, A GREATER TASK* 15 (2015).

seeking to recover law’s normative equilibrium from the blows inflicted by realism.²⁰⁸ Today, all American lawyers are, to a significant degree, intellectual descendants of Holmes and the realists, and have internalized their preference for description over prescription.²⁰⁹ Nevertheless, the stickiness of normativity in the law is equally obvious. Lawyers might tell their clients “This is what the judge *will do*,” but they tell the judge “This is what you *should do*, your honor.” The normative validity of law persists, notwithstanding the accompanying residuum of discretion on the part of government officials, and lawyers understand that legal practice entails something more than weak-form prediction. But this appeal to normativity is required, in part, because the realists failed to provide clear indications for how to eliminate legal uncertainty. They failed to demonstrate that legal practice could be nothing more than applied weak-form prediction.

Today’s legal futurism makes the legal realist project ripe and relevant again. The tantalizing possibility dancing in the eyes of the futurists is the fulfilment of the realist project. If the realists failed to discover the predictive keys to unlock the secrets of the legal machine through meticulous social scientific research, perhaps the legal futurists of today can cut the key more precisely through the use of better data and algorithmic learning.

4. How the Legal Singularity Would Compromise the Strong-Form Predictability Principle—and with It, the Rule of Law

The legal futurists describe the legal singularity in terms that emphasize weak-form predictability alone. Their project is to eliminate legal uncertainty. They, like the legal realists, have jettisoned any commitment to strong-form predictability and the values of liberty and non-arbitrariness it promotes. Consequently, they have shed the normative ballast of the rule of law and sail on new and choppy waters. However, whereas the realists, who were equally excited about predictive inquiry, were fundamentally engaged in a radically *critical* project, defining their work in distinction to the normative consensus of their times in order to overcome it and imagine a richer account of law, the legal futurists justify their project in terms of a rather

208. More recently, Habermas’s later work is devoted to exploring this very phenomenon, which he discusses as the immanent “facticity-validity tension” in contemporary legal systems. HABERMAS, *supra* note 101, at 38–41. What explains how law enjoys a special validity claim sufficient to legitimate, without recourse to force, the imposition of all manner of duties and restrictions? Furthermore, how does it do so even in a desacralized, differentiated, pluralistic society?

209. See Jack M. Balkin, *The Path of Robotics Law*, 6 CAL. L. REV. CIR. 45, 46 (2015). U.S. law schools waste no time in indoctrinating students into the legal realist method. First-year law school curricula almost invariably require students to compose memoranda predicting what judges will do, and almost never require students to create prescriptive norms by drafting contracts or legislation.

vulgar logic of optimization and rationalization.²¹⁰ They frequently write in term of efficiencies, streamlining, and cost-reduction, with little regard for the normative fallout of their project.²¹¹ They tend to conceive of legal subjects, including people, as mere means to pre-specified institutional ends.²¹² In one striking example, a pair of economists with futurist sympathies recently justified their proposal to replace all human judges with “digital courts” by citing “high judicial cost.”²¹³ To be clear, the proposal is to eliminate human judges from the administration of justice in order to save the costs of administering the judicial system. For perspective, the budget for the federal judiciary last year was 0.033% of national gross domestic product.²¹⁴

Of course, there is nothing intrinsically objectionable about optimization and efficiency—who would object to getting better answers to legal questions at less cost? Still, most futurists remain troublingly silent concerning whether—and, if so, in what form—the legal system will even survive if it is reduced to mere weak-form prediction. Instead, the futurists approach the legal system as a ready-formed thing²¹⁵ that they would like to understand better and, ultimately, to make susceptible to predictive analysis. They see law only as an empirical fact, and not as a social process.²¹⁶ In Haber-

210. See Charles M. A. Clark & Aleksandr V. Gevorkyan, *Artificial Intelligence and Human Flourishing*, 79 AM. J. ECON. & SOC. 1307, 1336 (2020) (“Optimization programs are based on neoclassical economic theory and the ‘rational economic person’ model, so only quantitative variables (such as profits) are deemed important.”); William H. Simon, *Optimization and Its Discontents in Regulatory Design: Bank Regulation as an Example*, 4 REG. & GOV. 3, 4–5 (2009) (describing a reductionist “vulgar optimization” approach to management and governance that privileges cost minimization at the expense of concerns about reliability of dynamic and complex systems).

211. See Cobbe, *supra* note 6 (“Through quantification and rationalization, through the replacement of traditional, fundamental legal values with logics of cost-saving, speed, and efficiency prioritized through automation, these market logics are brought into the heart of law.”).

212. See Ian Kerr, *Prediction, Pre-emption, Presumption: The Path of Law After the Computational Turn*, in PRIVACY, DUE PROCESS AND THE COMPUTATIONAL TURN 91, 112 (Mireille Hildebrandt & Katja de Vries eds., 2013).

213. See Matsushima & Noda, *supra* note 75, at 2.

214. See THE ADMIN. OFF. OF THE U.S. CT., THE JUDICIARY FISCAL YEAR 2020 CONGRESSIONAL BUDGET SUMMARY 1 (2020) (listing the 2019 federal judiciary budget as \$7.3 billion); BUREAU OF ECON. ANALYSIS, BEA 20–04, GROSS DOMESTIC PRODUCT, FOURTH QUARTER AND YEAR 2019 (ADVANCE ESTIMATE) (2020), <https://www.bea.gov/news/2020/gross-domestic-product-fourth-quarter-and-year-2019-advance-estimate#:~:text=Current%2Ddollar%20GDP%20increased%204.1,table%201%20and%20table%203> (listing 2019 U.S. gross domestic as \$21.43 trillion).

215. In this respect, their approach is fundamentally positivist in that it *posits* the legal system as it is as an object of scientific inquiry.

216. On this point, consider the possibility that stripping the rule of law down to weak-form prediction, and consequently losing much of law’s normative force, might produce cascading complexities in the legal system that frustrate the very efforts on the part of the predictive software to predict what the law is. In other words, are we taking for granted embedded,

masian terms, they seek to achieve unprecedented insights into the facticity of law, with little regard for preserving the sources of the legitimacy of law.²¹⁷

All this is to raise the possibility of arbitrary algorithmic rule. For instance, if law is just weak-form prediction, will the legal system be able to summon the rule of law principle to mount a normative challenge to a Hayekian “liberal dictatorship” in algorithmic form? If the post-singularity legal system starts to resolve legal disputes and provide advance legal guidance in ways that are arbitrary in the liberal sense described above—that is, they lack any publicly-minded rationale and cannot credibly maintain the appearance of enjoying the public’s consent—what, if any, of the normative force of law will remain? And if a normatively grounded rule of law principle can no longer play a role in that project, must we then look to other sources of legitimation outside of the rule of law to resist arbitrary algorithmic rule—such as democracy, due process, fairness, rationality—even revolution?²¹⁸

If we return to the earlier discussion concerning the relationship between the rule of law and the problem of government discretion,²¹⁹ we can better appreciate the problem. We have already seen how the legal singularity will banish human discretion from the legal system altogether. However, we have also seen how that result will only satisfy those for whom arbitrariness in government is only a matter of human error. But even if we imagine a post-singularity world where human governmental actors no longer wield discretion to apply governmental power over others, is there some deeper normative kernel of non-arbitrariness that we would prefer to nevertheless survive? Certainly, anyone who believes the law expresses structural economic forces that impede human freedom—if true, a gross arbitrary imposition of power—will answer this question in the affirmative.²²⁰ But so too

structural checks and balances in the legal system (*qua* a social process embedded in institutions) that repel arbitrary government, but which only work in an environment where law’s legitimacy is largely a taken-for-granted fact? And if we remove that condition, is the system even susceptible to prediction? The futurists leave these questions unresolved—indeed, unexamined and unacknowledged.

217. See *supra* text accompanying note 101 (using Habermas’s distinction between the “facticity” (positive empirical validity) of law and the legitimacy of law to frame the Article’s main argument).

218. See, e.g., Danielle Keats Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249 (2008) (developing notion of “technological due process” to meet new challenges of algorithmic governance).

219. See *supra* Part III.B.

220. See Julieta Lemaitre, *Legal Fetishism at Home and Abroad*, 3 UNBOUND 6, 8 n.9 (2007) (“Legal fetishism masks a reality not just in the sense that it hides the human origin of law, or its substantive partiality to dominant interests, but in that it hides power differentials in legal relationships through the form of the ‘natural’ legal subject.”). For three classic accounts, see EVGENY B. PASHUKANIS, *SELECTED WRITINGS ON MARXISM AND LAW* 78–79 (Piers Beirne & Robert Sharlet eds., Peter B. Maggs trans., 1980); NICOS POULANTZAS,

should anyone who values the Lockean precept that legal authorities—including, in the future, algorithms—that make the law should legislate and regulate in a manner that does not impose upon legal subjects restrictions to which they would not agree.²²¹

If we maintain that algorithmic governance can also produce arbitrary laws, even despite the absence of identifiable human legislators, then the same problems remain. John Danaher has referred to this problem as the threat of “algocracy.”²²² Scholars are busily producing excellent work documenting how predictive analytic technologies are being deployed in an existing system of institutions and social relations, focusing attention on who is writing algorithms and to what ends.²²³ The human actors exercising discretion might eventually disappear, but on their way out they are going to shape the institutional and computational environment out of which the legal singularity will emerge. Here, the issue is that the omnipresent problem of arbitrariness in the law is woven algorithmically into the law just as the last vestiges of human responsibility and blame dissolve, leaving the legal system insusceptible to review and contestation. The rule of law cannot be said to obtain where a system of predictable but arbitrary laws governs legal subjects powerless to check the arbitrariness of those rules. This is where the prospect of regimes like Hayekian “liberal dictatorship” should caution the futurists and embolden their critics.

To further clarify the powerlessness of legal subjects, it is helpful to recall the earlier discussion concerning the condition of computational irreducibility—which, again, will entail autonomous black-boxing of the entire legal system.²²⁴ By definition, irreducibility will prevent legal subjects from understanding the “why” behind any predictive judgment about the law. The power of strong-form, Lockean predictability is that it operates as a procedural transparency mechanism, forcing the government to make its exercise of coercive power not just discernible, but also contestable and amenable to demands for justification.²²⁵ If the legal singularity results in an opaque, but predictable, legal system that never makes itself susceptible to critique and revision by legal subjects, it will fall well short of that standard.

Instead, a shrunken rule of law predicated on weak-form predictability will be powerless to counteract governmental arbitrariness. The law will emerge as a form of technical or instrumental rationality geared toward calculation and prediction, but incapable of engaging with consideration of the

STATE, POWER, SOCIALISM 86–92 (Patrick Camiller trans, 2014); LOUIS ALTHUSSER, ON THE REPRODUCTION OF CAPITALISM: IDEOLOGY AND IDEOLOGICAL STATE APPARATUSES 59 (G. M. Goshgarian trans., 2014).

221. See *supra* text accompanying notes 145–146.

222. Danaher, *supra* note 10.

223. See *supra* note 98.

224. See *supra* text accompanying note 79 (discussing computational irreducibility).

225. See *supra* text accompanying notes 144–146.

ends of law and policy,²²⁶ let alone the welfare of the polity.²²⁷ The German legal and political theorist Otto Kirchheimer, writing at the outset of World War II, described the legal order of National Socialism in terms that resonate with the description of weak-form predictability presented here:

In short, the idea of technical rationality which underlies the new governmental organization actually finds its nearest approximation in a *perfectly running, though complicated, piece of machinery. Nobody save the owners is entitled to question the meaningfulness of the services which the machine performs*: the engineers who actually operate it have to content themselves with producing immediate reactions to the owners’ changing commands. They may be ordered to change some technical processes and to attain some variations in output. *The purport of the results achieved lies beyond this kind of rationality*, which is aimed only at the certainty that every order will produce an exactly calculable reaction.²²⁸

To be clear, the argument is hardly that the path of predictive legal analytics will lead to totalitarianism. Nevertheless, it is difficult to observe in real time the social ramifications of the erosion of important institutions like the rule of law, and the totalitarian experience of the twentieth century provides a limiting case for what happens when the rule of law disintegrates completely. Legal theorists wishing to reckon with the implications of rule by algorithmic arbitrariness would do well to review the deep engagement of post-war legal theory with the disintegration of the rule of law during totalitarian regimes.²²⁹ Bearing in mind the hypothetical nature of the thought experiment motivating this Article, these sources are not just fair game, they are also important reference points.

226. This theme of a pervasive technical rationality that overwhelms the ability of human reason to determine the aims of social action is one of the foundational ideas of the Frankfurt Institute for Social Research, with which Kirchheimer (quoted here just below) was associated. See, e.g., MAX HORKHEIMER, *ECLIPSE OF REASON* 1–39 (Bloomsbury Acad. 2013) (1947).

227. See *supra* text accompanying notes 132–134 (explaining non-arbitrariness in government in terms of actions that are both motivated by concern for the polity and capable of credibly claiming the polity’s consent).

228. OTTO KIRCHHEIMER, *The Legal Order of National Socialism*, in *POLITICS, LAW AND SOCIAL CHANGE: SELECTED ESSAYS OF OTTO KIRCHHEIMER* 88, 101 (Frederic S. Burin & Kurt L. Shell eds., 1969) (1941) (emphasis added).

229. See William E. Scheuerman, *Introduction*, in *THE RULE OF LAW UNDER SIEGE: SELECTED ESSAYS OF FRANZ L. NEUMANN AND OTTO KIRCHHEIMER* 1, 2 (1996) (“Whereas many contemporary radical legal scholars suggest that we should welcome [the undermining of the rule of law], Neumann and Kirchheimer powerfully argue that we very much need to acknowledge its ambivalent and in many ways truly worrisome implications.”).

D. *The Legal Singularity and the Universality Principle*

The other core pillar of the liberal rule of law is that the law must be universal; it must apply generally to all.²³⁰ The rule of law's "universality principle," just like the strong form of the predictability principle, promotes the liberal legal order's commitment to avoiding arbitrary exercises of government power. And just as the legal singularity sacrifices much of the rule of law's normative force by privileging weak-form predictability over a deeper commitment to non-arbitrary government, it concedes further normative ground by both exposing how, and aggravating the extent to which, law falls short of achieving the universality principle.

1. The Universality Principle

As with predictability, the association of the rule of law with universality traces back to early liberal thought.²³¹ For example, Locke considered universality to be a precondition of any lawful legislation, requiring that laws not "be varied in particular cases, but to have one rule for rich and poor, for the favorite at court, and the country man at plough."²³² In another passage, Locke noted that laws should be "common to every one of that society."²³³

Nearly a century later, Blackstone made the same point, describing law in the following terms:²³⁴

[F]irst, [law] is a rule; not a transient sudden order from a superior, to or concerning a particular person; but *something permanent, uniform and universal*. Therefore a particular act of the legislature to confiscate the goods of Titius, or to attain him of high treason, does not enter into the idea of a municipal law; for the operation of this act is spent upon Titius only, and has no *relation to the community in general*; it is rather a sentence than a law. But an act to declare that the crime of which Titius is accused shall be deemed

230. The idea of equality is a conceptual cognate, although equality is a broader term than universality in some respects. Laws apply generally, and are therefore universal in this sense, if they are consistent with the condition that is sometimes referred to as procedural equality or formal equality. Defined this way, the concept is relieved of the weightier burden of satisfying objectives relating to substantive equality.

231. Indeed, it traces back further, at least to Ancient Rome. Tacitus despaired that in the waning years of the Republic, "bills began to pass, not only of national but of purely individual application, and when the state was most corrupt, laws were most abundant." See III THE ANNALS OF TACITUS 567 (Loeb Classical Library ed. 1931).

232. LOCKE, TREATISES OF GOVERNMENT, *supra* note 8, at 363.

233. See *supra* note 143 and accompanying text.

234. In this quoted passage, Blackstone discusses "municipal law," a category that applies not only to what we would recognize today as local government law, but also "to any one state or nation, which is governed by the same laws and customs." BLACKSTONE, *supra* note 9.

high treason; this has permanency, uniformity, and universality, and therefore is properly a rule.²³⁵

Hence, the rule of law is present where a legal system has “one rule for rich and poor” and directs itself to the “community in general” in terms that are “uniform” and “universal.”

Rousseau was the greatest classical expositor of the importance of universality to the rule of law. Rousseau insisted that “the object of the laws is always general,” and added that:

the law considers the subjects as a body, and their actions in the abstract, never any man as an individual or any particular action. Thus the law can very well enact that there will be privileges, but it cannot confer them on any one by name . . . [I]n a word, any function that relates to an individual object does not fall within the province of the legislative power.²³⁶

The rule of law can only be present when law applies to an abstract and never particularized legal subject. In this way, the law “combines the universality of the will with that of the object.”²³⁷ Here, “universality of will” refers to Rousseau’s notion of the “general will” embodied in his idea of social contract, but the relevant part of the passage for present purposes is his notion of law’s “universality of object.” The law can only embody the general will if it is directed to the general public. Otherwise, the laws amount only to “iniquitous decrees with no other end in view than private interest[,] falsely passed under the name of Laws.”²³⁸ In those circumstances, the legal system is better characterized—much like the state of affairs described by the weak-form predictability principle—as rule *by* law, not rule *of* law.²³⁹

This Rousseauian conception of the universality principle underlies twentieth century accounts of the rule of law as well. For his part, Rawls believed that a core constituent of the rule of law was that a legal system’s statutes “be general both in statement and intent.”²⁴⁰ Hayek distinguished laws from mere commands on account of their “generality and abstractness.”²⁴¹

We must nevertheless acknowledge—in response to Locke, Blackstone, and Rousseau—that a society can still participate in the liberal rule of law even if that society does not treat *all* citizens equally. Rousseau recognized

235. *Id.* (emphasis added).

236. JEAN-JACQUES ROUSSEAU, *THE SOCIAL CONTRACT AND OTHER LATE POLITICAL WRITINGS* 69 (Victor Gourevitch ed. & trans., Cambridge Univ. Press 2d ed. 2018) (1762).

237. *Id.*

238. *Id.* at 125.

239. *See supra* text accompanying note 186.

240. RAWLS, *supra* note 115, at 209.

241. HAYEK, *supra* note 163, at 149.

the tension between his normative conception of universal law arising from the general will and the empirical reality of the interest group power dynamics at play in government.²⁴² The universality principle must tilt, at least a little, in the wind of interest politics, or otherwise risk irrelevance as a description of actual liberal societies.²⁴³ Thus, universality is to be approximated rather than fulfilled, and the degree to which a legal system can credibly describe itself as being consistent with the rule of law depends in large part on the degree to which it approximates this universality ideal.

The implicit bedrock of the universality principle is that the differences among legal subjects are outweighed by what they—“we” or, better still, “We” who are the “community in general”—have in common. The rule of law requires that government must direct its action generally and in the interest of the polity, and it also must restrain its natural inclination to favor its members or associated social classes or groups.

Our local constitutional expressions of the universality principle are the Equal Protection Clause²⁴⁴ and the Bill of Attainder Clause.²⁴⁵ The universality principle also underlies the Free Exercise Clause’s prohibition of government singling out religious groups for disparate treatment.²⁴⁶ It also motivates the Madisonian system of checks and balances, which protects against targeted, faction-fomented oppression of minorities and individuals.²⁴⁷ Further, the Separation of Powers principle prevents the legislature from passing draconian laws that are expected to be executed and applied to others, but not to them.²⁴⁸ The principle also animates state constitutional prohibitions on “special legislation” or “private laws.”²⁴⁹

242. See ROUSSEAU, *supra* note 236, at 125 (describing how, even in liberal states, the “basest interest brazenly assumes the sacred name of public good” while the “general will grows mute”); JEAN-JACQUES ROUSSEAU, *ÉMILE, OR EDUCATION* 197–98 (Barbara Foxley trans., 1911) (1762) (decrying the “vain and chimerical equality of right” in liberal states in light of the “inevitable” reality that the “universal spirit of the laws of every country is always to take the part of the strong against the weak”).

243. See Holmes, *supra* note 121, at 22 (“Even the most advanced *Rechtsstaat* remains to some extent a *Doppelstaat*.”).

244. U.S. CONST. amend. XIV, § 1 (“nor shall any State . . . deny to any person within its jurisdiction the equal protection of the laws”).

245. *Id.* art. I, § 9, cl. 3 (“No Bill of Attainder . . . shall be passed”); *id.* art. I, § 10, cl. 1 (No State shall . . . pass any Bill of Attainder”).

246. See, e.g., *Church of the Lukumi-Babalu Aye, Inc. v. City of Hialeah*, 508 U.S. 520 (1993).

247. See Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentation*, 98 COLUM. L. REV. 267, 276 (1998); JERRY L. MASHAW, *GREED, CHAOS, AND GOVERNANCE: USING PUBLIC CHOICE TO IMPROVE PUBLIC LAW* 4–6 (1997).

248. See THE FEDERALIST NO. 47, at 344 (James Madison) (Cynthia Johnson ed., 2004); MONTESQUIEU, *THE SPIRIT OF LAWS* 157 (Anne M. Cohler et al. eds. & trans., 1989) (1748) (“When legislative power is united with executive power in a single person . . . there is no liberty, because one can fear that the same monarch or senate that makes tyrannical laws will execute them tyrannically.”).

249. See FULLER, *supra* note 121, at 47 n.4.

2. How the Legal Singularity Would Compromise the Universality Principle—and with It, the Rule of Law

The legal singularity could undercut the universality principle in two ways. First, by cementing algorithmically any existing inequalities in the application of law, it might unveil systemic, if not structural, divergences between law’s universalistic self-description and its empirical realities. Second, and even more fundamentally, the arrival of the legal singularity would announce the dissolution of the basic categories from which the universality of law achieves its normative force. As to this latter point, the epistemology of data analytics can only make sense of pulverized, atomistic bits of data, which undermines the status of—indeed, arguably makes unintelligible—any universal groupings of legal subjects.

First, the singularity might unveil the extent to which law falls short of the universality principle, thereby undercutting claims of normative force that rely on it. The idea that the legal system might result in the systemic exploitation of classes of citizens preoccupied political theorists as diverse as Marx and Madison.²⁵⁰ To abide by the rule of law, a liberal legal system must avoid that fate. With the legal singularity, users of software could obtain precisely tailored answers to any legal questions. If it turns out that embedded inequalities in the practical application of enacted laws abound, then they would be cemented into the software’s algorithmic structure.²⁵¹ Examples of this dynamic outside the legal context already abound. For example, an algorithm for picking beauty contestants recently revealed itself to prefer whiteness.²⁵² Similarly, a healthcare algorithm using healthcare expenditures as a proxy for health directed resources away from black patients and towards white patients on the grounds that the former used fewer medical resources—a circumstance attributable entirely to their relative lack of access to care.²⁵³

The software might tell us that a black victim of overzealous police pursuit should expect dismissal of a civil rights lawsuit that an otherwise identically situated white victim could successfully pursue. Or that an Ivy League graduate from Connecticut turns out to have a greater empirical entitlement to a banking charter than an otherwise identically situated public university graduate from Montana. Or that persons with bona fide psychological disabilities should expect less solicitous treatment from courts decid-

250. Marx worried about the exploitation of the proletariat by the bourgeoisie, while Madison worried about the exploitation of unpopular minorities by “factions.”

251. See generally Sandra G. Mayson, *Bias In, Bias Out*, 128 *YALE L.J.* 2218 (2019).

252. Sam Levin, *A Beauty Contest Was Judged by AI and the Robots Didn’t Like Dark Skin*, *GUARDIAN* (Sept. 8, 2016), <https://www.theguardian.com/technology/2016/sep/08/artificial-intelligence-beauty-contest-doesnt-like-black-people>.

253. Ziad Obermeyer et al., *Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations*, 366 *SCIENCE* 447, 450 (2019).

ing ADA cases than plaintiffs with much less debilitating physical conditions. Or that otherwise objectionable authoritarian policies are made less susceptible to effective judicial restraint if they are accompanied by pro forma language announcing the policies. Or that criminal sentence imprisonment terms are partially a function of the extent to which defendant first names are perceived to be traditional. Or that it is possible to predict the likelihood of success on the merits of one's employment discrimination claim by inputting one's race, income tax bracket, 401(k) balance, zip code, and last name into the software. Or, more troubling still, it might enable a company's management to track the same parameters for use in setting ceilings for maximally permitting workplace discrimination without fear of enforcement. The software could churn out similar predictive insights with respect to enforcement patterns. Thus, for instance, we might discover that the protective force of the Fourth Amendment depends more on one's voting precinct than on the conduct of the suspect or the police.

Before the legal singularity, these questions would amount to empirical inquiries for social scientists that might or might not attract interest from legal authorities. However, the idea of the legal singularity, which invites us to imagine a legal system on autopilot, would seemingly entrench these patterns as structural facts to which we must resign ourselves, rather than empirically revealed biases we might endeavor to fix. Indeed, machine-learning algorithms tend to accelerate these effects, so that the legal singularity will not only reflect and reproduce existing hierarchies and inequalities,²⁵⁴ it will further embed and normalize them.²⁵⁵

Of course, these are all hypothetical findings to which the legal singularity could possibly open our eyes; some of them may strike readers as more plausible than others. They are intended only as possible examples of how predictive legal analytics *might* reveal divergences between law's claim to universality and its actual operative distinctions. Nevertheless, any empirically observable systemic divergences from the universality principle would threaten to demystify the idea of equal justice before the law. It would confirm with empirical validity and institutionalize with algorithmic automaticity what had previously amounted only to a political rallying cry: that the legal system applies differently to different people.²⁵⁶

254. Mayson, *supra* note 251, at 2227.

255. Adrian Mackenzie, *The Production of Prediction: What Does Machine Learning Want?*, 18 EUR. J. CULT. STUD. 429, 442 (2015) ("The more effectively the models operate in the world, the more they tend to normalize the situations in which they are entangled.").

256. Note that the legal singularity's relationship with unequal application of the laws would pose two related threats. On the one hand, the legal singularity might cement the perverse social effects resulting from unequal application of law referred to above in Section II.E. On the other hand, as discussed here, exposing the unequal application of law might also undercut the legal system's pretensions of universality and, with that, it might strip the system of the normative weight provided by the rule of law.

In the lead-up to the legal singularity, it might be possible to correct for shortfalls in the legal system’s pretensions of universality revealed by earlier-stage predictive analytic tools.²⁵⁷ These ameliorative efforts apply not only to the human-centered legal system, but also to the artificial intelligence underlying the newer predictive legal analytic technologies.²⁵⁸ However, the point of the singularity thought experiment is that at some point the humans will need to relinquish control to the algorithms, even with respect to these ad hoc corrective adjustments. At that point, legal systems face two alternatives that are equal parts daunting and improbable: either remedy all of the ways that legal systems fall short of the universality ideal before the singularity occurs or embed a universality principle in software that is up to the task of instantiating algorithmically the ideal of universal justice.

Having said all that, lawyers should only worry about this problem if it turns out that the law is *in fact* systematically unequal in its application. If, on the other hand, the legal singularity does not turn out to cement systemic exploitation of classes of citizens, then there is no need to fear that an algorithmic installation of arbitrary inequality in the law will undermine the rule of law.

Nevertheless, the legal singularity would inflict a second, and more mortal, wound to the normative pretensions of a rule of law predicated on universality. To situate this deeper dilemma, consider the following description of a latent tension in the self-description of the legal systems of modern liberal societies. As discussed at length earlier, liberal legal systems insist that the central attributes of the rule of law are predictability and universality. However, there is something peculiar about saying that the normative force of law depends on *general* and *universal* applicability, all the while emphasizing how important it is for the law to allow for predictive judgments about how it will apply to *particular* persons and cases.

The tension is obscured in the ordinary course by the unstated epistemological assumption that it is simply impossible to predict with certainty the outcome of any particular legal matter. Hence the familiar care with which lawyers couch their conclusions in legal memoranda and opinion letters, cabining them delicately to a hypothetical, formalistic scenario that cannot, in fact, exist: “assuming these facts alone,” “we have only reviewed these materials,” “a court would likely,” and so forth. The lawyerly cliché of

257. See, e.g., text accompanying notes 61–62.

258. In the meantime, we should expect calls for developing predictive legal analytics technologies to be made subject to the emerging subfield of computer science known as “fairness, accountability, and transparency in machine learning” (improbably acronymized as “FAT ML”), which aims to adopt quality control and audit-style institutional norms for machine-learning and artificial intelligence. See generally MICHAEL KEARNS & AARON ROTH, THE ETHICAL ALGORITHM: THE SCIENCE OF SOCIALLY AWARE ALGORITHM DESIGN (2019); GARY MARCUS & ERNEST DAVIS, REBOOTING AI: BUILDING ARTIFICIAL INTELLIGENCE WE CAN TRUST (2019).

starting every answer with “it depends” derives from the same source. More substantively, the concept of the burden of proof, so important to the law, always carries a qualified grammar. The law never requires *certainty* in its determinations, instead requiring fact finders to make determinations by, e.g., a “preponderance of evidence.” By using these devices, the legal system implicitly acknowledges its indeterminacy and disguises the universality-particularity tension. The legal singularity thought experiment allows us to remove that epistemological assumption, and to imagine a legal system scrubbed of messy uncertainties.

Earlier in the Article, we explored how predictive analytics should be thought of not merely as a new technological tool, but also an expression of a new epistemological reality—a new way that society produces and understands knowledge.²⁵⁹ We noted how François Ewald has described a deep tension embedded in this new epistemology between an imperative to collect and analyze *universally*, all the while embracing a “type of resolutely nominalist knowledge” that *bans all universal categories* and instead treats all data “one to one, without trying to erase their differences by integrating them into categories.”²⁶⁰

Notwithstanding the massive *aggregation* of data, predictive analytics obeys a logic of *differentiation*:

The data is . . . a very powerful tool for analysis . . . and each element of data must be treated for itself in its relations with others, as something unique, according to a logic of differentiation. . . . The isolated individual is not singular, every element is treated in relation to other elements. And the more elements, the more opportunities to identify its uniqueness, and therefore also to anticipate future behavior within a set. The largest mass goes along with the greatest differentiation.²⁶¹

Ewald identifies some obvious threats posed by this new epistemology of differentiated data, including social stigmas, discrimination in employment and insurance, and differential access to insurance and healthcare.²⁶² The destabilizing effects of these phenomena on existing legal doctrines are already the subject of study.²⁶³

But Ewald digs even deeper, warning that the new data epistemology might also destabilize our ideas about universal rights altogether:

259. See *supra* Section II.B.

260. Ewald, *supra* note 37, at 84–85.

261. *Id.* at 85.

262. *Id.* at 89.

263. See, e.g., Anya Prince & Daniel Schwarcz, *Proxy Discrimination in the Age of Artificial Intelligence and Big Data*, 105 IOWA L. REV. 1257 (2020); Ifeoma Ajunwa, *Age Discrimination by Platforms*, 40 BERKELEY J. EMP. & LAB. L. 1 (2019); Pauline T. Kim, *Data-Driven Discrimination at Work*, 58 WM. & MARY L. REV. 857 (2017).

[These threats] could introduce the idea that we are all so different that there would be little sense in aligning us, in identifying us all in such general categories as "Man" or "Humanity." Do our differences outweigh what we have in common? For example, doesn't genetics teach us that our fates are no longer common in so far as we do not run the same risks? The threat here is not eugenics (it is not about selecting some as better than others), it is about the coherence of concepts like "human rights."²⁶⁴

One of the key themes of social theory for the past quarter century has been the so-called "death of the social"—the diminishing socio-political relevance of the social insurance, social security, social work, social policy, and social welfare concepts by which twentieth century government justified, explained, and measured itself.²⁶⁵ Ewald is implicitly invoking the death-of-the-social literature; in fact, he expressly contrasts the epistemology of data with the epistemology of social insurance.²⁶⁶ Still, it is significant that his illustrative example of the epistemological shift (universal rights) is drawn not from insurance, but from an attribute of the legal system that has always been at the core of the rule of law. The data epistemology threatens the legal system with a special injury because the legal system, concerned as it is with individual rights rather than social aggregates, has for the most part operated without threat of disruption from the death of the social. If the death of the social entails abstraction away from social aggregates, the analytics revolution zooms in even further, abstracting away from individual subjects, instead training its attention exclusively on subatomic, electronic bits of data.

At this point, the implications for the rule of law are apparent. The problem is not so much that the legal system is exposed as not abiding by the universality principle because it discriminates among races, classes, or factions, but rather that this new data epistemology—the ultimate expression of which in the legal field is the legal singularity—requires an atomistic pulverization of groups in general, including the citizenry, the polity, the

264. Ewald, *supra* note 37, at 89.

265. See, e.g., NICHOLAS GANE, *THE FUTURE OF SOCIAL THEORY* 178–79 (2004); Nikolas Rose, *The Death of the Social?: Re-figuring the Territory of Government*, 25 *ECON. & SOC'Y* 327 (1996); but cf. MITCHELL DEAN, *GOVERNMENTALITY: POWER AND RULE IN MODERN SOCIETY* 175–203 (2010) (arguing that the social has not so much died as it is simply in the process of being "reconfigured").

266. The first English translation of Ewald's history of the French welfare state, originally published in France in 1986 as *L'État Providence*, has just been published. In that text, he relies heavily on the concept of insurance to thematize and frame the development of twentieth century government. See FRANÇOIS EWALD, *THE BIRTH OF SOLIDARITY: THE HISTORY OF THE FRENCH WELFARE STATE* 116 (Melinda Cooper ed., Timothy Scott Johnson trans., 2020) ("A more general philosophy could be drawn from the technique of insurance, a political philosophy from which we would derive the necessity of reforming the state and governmental practices.").

“We the People,” Blackstone’s “community in general,” and so forth. The result is a perverse type of equality that promises only that the law would apply differently to each of us. Law would no longer entail abstract equality; it would entail particularistic inequality. As happens with the weak form of the predictability principle, the potential demise of law’s universality gives rise to the specter of arbitrary rule *by* law. It is unlikely that the rule of law would be able to survive such a development as a cognizable concept.

IV. CONCLUDING REMARKS ON RECOMMITTING TO NON-ARBITRARINESS AFTER THE SINGULARITY

This Article has argued that the legal singularity, if it were to occur, would likely disintegrate the two pillars that have historically buttressed the rule of law as a bulwark against arbitrary government—the predictability principle and the universality principle. The precise contours of this post-singularity, algorithmic legal system (rule-*by*-law rather than rule-*of*-law) are outside the Article’s scope, except to the extent that the Article sounds a cautionary alarm that the system will likely come to resemble an “algocracy” composed of arbitrary rules bearing little or no relationship to the consent or welfare of legal subjects.²⁶⁷ This concluding Part introduces some considerations for addressing the normative gap that the singularity would open up. The analysis presented to this point has amounted to a critique of legal futurism and the idea of the legal singularity, elucidating the ultimate tendency for the futurist perspective on legal technology to overwhelm and corrode the rule of law and, with it, liberal legalism itself. Nevertheless, this critique also points the way to a curious, but constructive, opportunity to steer the algorithmizing of law in a manner more consonant with our aspirations for nonarbitrary, democratic self-government, as well as political and social justice.²⁶⁸ Importantly, this opportunity might even facilitate a rapprochement between traditional liberals and those professing more radical and critical perspectives on law, joining them in a joint project to preserve the legal system against the unintended consequences of uncritical techno-futurist enthusiasm.

The reflections sketched out here heed the call of progressive legal theorists like Roberto Unger and Jack Balkin, who emphasize that twenty-first century critical projects in legal theory must not only critique the normative deficit between law’s self-description and its empiric realities, but also build

267. See Danaher, *supra* note 10, at 252–55.

268. As used here, the terms “social justice” and “political justice” are intended to parallel Erik Olin Wright’s helpful definitions of those terms. See ERIK OLIN WRIGHT, ENVISIONING REAL UTOPIAS 12 (2010) (defining social justice in terms of “broadly equal access to the necessary material and social means to lead fulfilling lives” and political justice as “broadly equal access to the necessary means to participate meaningfully in decisions about things which affect their lives”).

new institutions and models that reduce that deficit.²⁶⁹ In that spirit, it would not be sufficient to simply elucidate the immanent contradictions between legal futurism and the liberal rule of law. It would be far better to use the uncovering of those contradictions as an opportunity to create new strategic partnerships among otherwise divergent perspectives and traditions in an effort to expand the horizon of achievable emancipatory reform of legal technology.²⁷⁰ From the perspective of left legal and political thought, such a project would contribute to the broader project to redeem and realize liberal ideals of substantive freedom, moving beyond both the hoary formalisms of bygone centuries and the real (and frequently racialized and gendered) legacies of domination in putatively liberal societies.²⁷¹

For their part, the classical liberals who prize the rule of law as a bulwark against arbitrariness in government would lament the singularity for obvious reasons: their admiration for Locke, Rousseau, Blackstone, and the like leaves them no other option.²⁷² However, we should not assume that the universe of people preoccupied by the potential demise of the rule of law is limited to those with traditional liberal sympathies. To more fully appreciate the dilemma that the legal singularity would pose for the legal system, it is helpful to also look briefly to the writings of radical legal theorists writing

269. See UNGER, *supra* note 207, at 26–32 (advocating for an “institutionalist” approach that uses legal reform to imagine and build alternative institutional arrangements for society); Jack Balkin, *Critical Legal Theory Today*, in ON PHILOSOPHY IN AMERICAN LAW 64, 67 (Francis J. Mootz III ed., 2009) (arguing that law even though law can “disguise, mystify, and legitimate great injustices,” it can also help us to create new “discursive and institutional tools to talk back to power” and to imagine “finer, better visions of human association”).

270. See WRIGHT, *supra* note 268, at 24–25 (arguing that developing achievable alternative social forms and institutions “depends upon the extent to which it is possible to formulate coherent, compelling strategies which both help create the conditions for implementing alternatives in the future and have the potential to mobilize the necessary social forces to support the alternative when those conditions occur”).

271. See IGOR SHOIKHEBROD, *REVISITING MARX’S CRITIQUE OF LIBERALISM: RETHINKING JUSTICE, LEGALITY AND RIGHTS* 6 (2019) (reminding that even the seemingly anti-liberal Marx regarded liberal rights “as a historical achievement” and a necessary precondition to a future, more just society); CHARLES W. MILLS, *BLACK RIGHTS/WHITE WRONGS: THE CRITIQUE OF RACIAL LIBERALISM* 13 (2017) (arguing in favor of an “emancipatory, radical liberalism” premised on the belief that shortcomings of liberal institutions are not immanent features of the conceptual logic of political liberalism). Habermas felicitously described such a critical project as “suing” the real “normative content of bourgeois ideals.” JÜRGEN HABERMAS, *THE PHILOSOPHICAL DISCOURSE OF MODERNITY* 282 (Frederick J. Lawrence trans., 1990).

272. For neoliberals in the Hayekian tradition, the situation is more complicated. It is by no means clear that neoliberals would reject the legal singularity on rule of law grounds, especially if it left intact market pricing mechanisms. Their categorical privileging of market price clearing as a social coordination device and their ambiguous, if not outright hostile, attitude toward democratic self-government mark a sharp fault line between them and writers in the classical liberal tradition. See *supra* text accompanying notes 162–174.

in the critical tradition.²⁷³ In fact, it is precisely in these writers that the normative force of the rule of law, and the potential impact of its dissolution, are most apparent. Very broadly speaking, authors in this tradition share an instinctual aversion to law's purported universal and abstract quality—the precise virtues the liberal tradition prizes.²⁷⁴ Instead, they argue that law's universality is a mystification that naturalizes an underlying system of exploitative social relations.²⁷⁵ Christine Sypnowich summarizes this perspective well: “the role of law under capitalism . . . is the conception of law as a set of rules which, in their claim to devolve upon society a measure of formal impartiality, equality, and freedom, serve to mystify the substantive unfairness, inequality, and alienation inherent in capitalist economic relations.”²⁷⁶

We might expect that if anyone would be sanguine, if not enthusiastic, about the possibility of exposing the universality and predictability of law as problematic categories, it would be these writers. Nevertheless, the totalitarian experience of the twentieth century compelled many critics of law to adopt a more ambivalent, even conciliatory, posture towards the rule of law, seeing it as a bulwark protecting legal subjects from arbitrary state violence.²⁷⁷ All the while maintaining that the rule of law does frequently oper-

273. The use of the phrase “critical tradition” is complicated by the fact that there are many critical traditions in legal theory. See RICHARD NOBLES & DAVID SCHIFF, *A SOCIOLOGY OF JURISPRUDENCE* 163 (2006). As used here, the term is intended to refer to efforts to engage in a normative emancipatory critique, grounded in human reason, that seeks to overcome the law in its present instantiation and replace it with something better. In this respect, it is not intended primarily to capture most legal realist critique (which concentrated its battle against what it perceived as formalistic reasoning that disguised law's ineradicable indeterminacy), nor post-modern critiques of law (which tend to eschew emancipatory narratives and the centrality of human-centered reason and subjectivity).

274. See *supra* note 220 (citing several sources for this proposition).

275. See, e.g., HUGH COLLINS, *MARXISM AND LAW* 139 (1982) (“[I]t is the principle of the Rule of Law itself which is the chief obstacle in the development of class consciousness.”).

276. SYPNOWICH, *supra* note 166, at 8. It should be noted, however, that Sypnowich herself insists that socialist conceptions of law must leave room for certain liberal values. See *id.* at 26.

277. In addition to the authors discussed here in the text, Jürgen Habermas fits this description well. While his relationship to Marxism is complicated, his work as a social theorist arose out of and speaks most directly to the political left. See Terry Eagleton, *In the Twilight Zone*, LONDON REV. OF BOOKS, May 12, 1994, <https://www.lrb.co.uk/the-paper/v16/n09/terry-eagleton/in-the-twilight-zone>; Agnes Heller, *Habermas and Marxism*, in HABERMAS: CRITICAL DEBATES 21 (1982). The trajectory of his thought, culminating in its latest systematic exposition *Between Facts and Norms*, ended up embracing a reinvigorated liberal legalism as the solution by which to realize emancipated forms of social life about which citizens themselves must first reach an understanding. See HABERMAS, *supra* note 101, at xli; cf. also HERBERT MARCUSE, *THE ESSENTIAL MARCUSE: SELECTED WRITINGS OF PHILOSOPHER AND SOCIAL CRITIC HERBERT MARCUSE* 33–59 (Andrew Feenberg & William Leiss eds., 2007) (famous essay *Repressive Tolerance*, in which the leader of the 1960s American New Left argues in favor of realizing the unachieved potential of liberal ideals of tolerance and free

ate as the instrument or expression of dominant class interests, they acknowledged an unalloyed core of the rule of law to which all legal systems should aspire.²⁷⁸

Franz Neumann, one of Europe’s greatest twentieth century political and legal theorists,²⁷⁹ provides one such example. He discussed the danger of underestimating the importance of law’s universality in *Behemoth*, his magisterial analysis of Nazi ideology, politics, and law.²⁸⁰ To him, the rule of law entailed, above all else, an embrace of the universality principle, which he referred to as the “general character of law” and “equality before the law.”²⁸¹ His discussion of the rule of law emphasizes liberty as something above and beyond economic freedom:

Equality before the law is merely formal or negative, to be sure, but it does contain a minimum guarantee of freedom and must not be discarded. Both functions of the generality of law, calculability of the economic system and *guarantee of a minimum of freedom and equality*, are equally important; not the first alone, as the theories of the totalitarian state maintain. If one accepts their view that the generality of law is nothing more than a way of satisfying the needs of free competition, then the conclusion is inevitable that the substitution of organized state capitalism for free competition requires the substitution of the command of the Leader or the general principle for the general law, the independent judiciary, and the separation of powers.²⁸²

Importantly, Neumann sees the rule of law as a fundamentally negative, or “formal,” concept. Despite his radical political bona fides,²⁸³ his post-war

speech, albeit leading to an ultimately unsatisfying conclusion concerning how to distinguish between liberating tolerance and repressive tolerance).

278. See Scheuerman, *supra* note 229, at 2.

279. The clarification made with respect to Kirchheimer and law’s predictability is equally applicable here with respect to Neumann and law’s universality. The point is hardly that predictive legal analytics will lead to totalitarianism, but that these post-war writers reflected extensively on the complete erosion of rule of law principles, making their writings key reference points for the hypothetical thought experiment motivating the discussion here. See *supra* text accompanying notes 228–229.

280. To be sure, Neumann’s ultimate conclusion was that Nazi Germany was not governed by any system that could be described as law. See NEUMANN, *supra* note 120, at 467. The reader is invited to imagine how Neumann would characterize a purely algorithmic, post-singularity legal system.

281. See *id.* at 441.

282. *Id.* at 444–45.

283. Neumann was affiliated with the Frankfurt Institute for Social Research, a highly influential interdisciplinary research center with Marxist roots, and was considered by many of his Frankfurt associates to harbor more traditional Marxist views. See MARTIN JAY, *THE DIALECTICAL IMAGINATION: A HISTORY OF THE FRANKFURT SCHOOL AND THE INSTITUTE OF SOCIAL RESEARCH, 1923–1950* 145 (rev. ed. 1996). For instance, in his pre-war writings Neumann argued in favor of a “social rule of law” that transcended the inherent limitations of

conception of the rule of law does not entail a positive commitment to achieve any particular system of social relations.²⁸⁴ In the wake of the war, Neumann, a committed pre-war Marxist, trumpets the importance of negative liberty and describes the rule of law in terms of individual freedom and autonomy. In another passage, he notes that “the limited, formal, and negative generality of law under liberalism not only permits capitalist predictability, but also guarantees a minimum of freedom.”²⁸⁵ So emphatic was Neumann’s association of the universal rule of law with freedom that, in his last book, he describes the rule of law as possessing a “moral” character that “transcends” any of its other roles.²⁸⁶

English historian E.P. Thompson, like Neumann a twentieth-century intellectual positioned markedly to the left of what passes for polite politics today, made a similarly full-throated defense of the rule of law.²⁸⁷ To Thompson, the rule of law, which he associated above all with the universality principle,²⁸⁸ was much more than an instrumental tool of the dominant class:

I am insisting only upon the obvious point . . . that *there is a difference between arbitrary power and the rule of law*. We ought to expose the shams and inequities which may be concealed beneath this law. But the rule of law itself, the imposing of effective inhibitions upon power and the defence of the citizen from power’s all-intrusive claims, seems to me to be *an unqualified human good*. To deny or belittle this good is, in this dangerous century when the resources and pretensions of power continue to enlarge, a desperate error of intellectual abstraction.²⁸⁹

Thompson—again, like Neumann—valorizes the rule of law specifically in the context of the “dangerous century,” acknowledging the ominous legacy of twentieth century authoritarian governments that dissolved the rule of

bourgeois liberal conceptions of legality, adequate to promote autonomous political and social life in mass industrial democracies. *See, e.g.*, Franz Neumann, *The Social Significance of the Basic Laws in the Weimar Constitution*, 10 J. ECON. & SOC’Y 329 (1981) (originally published in 1930).

284. In this respect, Neumann shares with Richardson and Raz a narrow conception of the rule of law. *See supra* Part III.A.

285. NEUMANN, *supra* note 120, at 451; *see also* Scheuerman, *supra* note 229, at 16.

286. *See* FRANZ NEUMANN, *THE DEMOCRATIC AND THE AUTHORITARIAN STATE: ESSAYS IN POLITICAL AND LEGAL HISTORY* 170 (1957).

287. At the time they were published, Thompson’s comments were highly controversial among left-leaning legal theorists. *See* Morton J. Horowitz, *The Rule of Law: An Unqualified Human Good?*, 86 YALE L.J. 561, 566 (1977) (“I do not see how a Man of the Left can describe the rule of law as ‘an unqualified human good!’”).

288. *See* THOMPSON, *supra* note 103, at 262 (defining the legal system in broad strokes as a body of rules and procedures applied logically with reference to standards of universality).

289. *Id.* at 266 (emphasis added).

law. The passage also harkens back to the earlier discussion linking the rule of law to non-arbitrariness; if nothing else, the rule of law demands reasoned explanations from government, articulated in a manner that makes them susceptible to contestation.²⁹⁰

Mere legal predictability, without this moral guarantee of equal treatment, without this unqualified human good, would never definitively protect institutions and societies, whether putatively liberal or socialist, from arbitrary government. The danger, all too real for Neumann and his contemporaries, was that an autocratic or totalitarian regime might use the revelation of the incompleteness of the liberal rule of law not to better achieve universal law, but to eliminate whatever residual normative force that the rule of law retains. Indeed, in Neumann’s own time, Carl Schmitt, the “crown jurist of the Third Reich,”²⁹¹ helped justify arbitrary authoritarian government by pointing out the inability of liberalism to live up to its ideals in modern, industrial societies.²⁹² Will the acknowledgement that the legal singularity might destabilize the liberal rule of law give rise to calls to reinforce the legitimacy of the liberal legal order by other means, or to a Schmittian “realism” that resolves or resigns itself to fill the vacuum left by the rule of law with something perhaps more arbitrary—and perhaps more sinister?

All this is to say that lawyers and legal theorists, whatever their prior conceptions of rule-of-law discourse, should be acutely concerned about the dangers legal futurism poses to the rule of law. Broadly speaking, the possible responsive strategies fall into two non-mutually exclusive categories.²⁹³ The first is to fight a *defensive campaign* in the realms of culture, media, politics, and, most obviously, within the legal system itself, to resist the unchecked development of predictive legal technologies. Contrary to the futurists’ prognostications about the unavailability of technological advance, the steady march to a singularity is not a foreordained result. Technologies are always embedded in social institutions that have power to redirect technological change in the pursuit of social goals. An obvious possible response

290. See Tushnet, *supra* note 190, at 2.

291. Charles E. Frye, *Carl Schmitt’s Concept of the Political*, 28 J. POL. 818, 818 (1966).

292. See RENATO CRISTI, CARL SCHMITT AND AUTHORITARIAN LIBERALISM: STRONG STATE, FREE ECONOMY 1–24 (1998); NEUMANN, *supra* note 120, at 42–45; cf. UNGER, *supra* note 207, at 57 (characterizing Schmitt as an heir of Hobbes, the original weak-form rule of law theorist).

293. John Danaher, who coined the term “algocracy,” describes the two strategic postures as “resistance” and “accommodation.” See Danaher, *supra* note 10. The technology critic Astra Taylor has used a similar formulation in her interview with former Google executive (and fellow technology critic) Meredith Whittaker, contrasting “abolitionist” tactics with “reformist” tactics in confrontations with technological practices that are injurious to social well-being. *Demystifying Big Tech with Meredith Whittaker*, THE DIG, at 1:58:00 (Sept. 25, 2020), <https://www.thedigradio.com/podcast/demystifying-big-tech-with-meredith-whittaker>; cf. BENJAMIN, *supra* note 98, at 109 (referring to “abolitionist tools” to curb socially harmful technologies).

here would be to exercise the powers of unauthorized practice of law statutes to restrict the usage of predictive legal analytics tools. State bar associations could also play a defensive role by strategically restricting the usage of technologies by licensed lawyers to protect the rule of law. Debates about the advisability and feasibility of efforts to restrict legal technology have been ongoing for the better part of a decade by now, although their focus has been on traditional legal ethics²⁹⁴ and the problem of bias.²⁹⁵ To date, however, these debates have yet to acknowledge the endgame of the legal singularity, much less the ramifications thereof on the rule of law and the normative force of the legal order.

The second strategy is to make a tactical concession by accepting the demise of a certain conception of the rule of law, and focus instead on the *reinforcement* of other values and institutions that might lend normative force to the legal order. This Article has emphasized this theme throughout: the rule of law, while obviously important, is not unique in investing the legal system with normative validity. Other values—including democratic self-government, political and social justice, transparency, rationality, due process, and human and civil rights—underwrite the normative foundations for existing and possible future institutional and doctrinal forms within the legal system. Earlier, we followed Richardson and Raz in adopting a narrow formulation of the rule of law, specifying that the rule of law’s importance as an antidote to arbitrary government was primarily attributable to the values of predictability and universality. In doing so, we rejected those more capacious accounts of the rule of law, which Raz referred to as “promiscuous,” that include other liberal and democratic values. In the meantime, however, we preserved those values as a reserve resource from which we could draw later if necessary.

The reinforcement tactic referred to here could be conceptualized as an effort to replace the rule of law concept with new institutional and doctrinal forms founded on these other values. Ultimately, whether the normative validity of futurist law comes to depend on re-investing the rule of law with supplemental values or jettisoning the concept altogether in favor of building a new normative foundation for law oriented around those same values is a question of more theoretical than practical importance. Whatever its theoretical justification, a strategy of reinforcement will require scholars and lawyers working at the intersection of law and technology, whether they are inclined to critique or liberalism, to consider whether and how technological developments in the area of predictive legal analytics might catalyze a re-

294. See Josh Blackman, *The Path of Big Data and the Law*, in *BIG DATA, BIG CHALLENGES IN EVIDENCE-BASED POLICYMAKING* (H. Kumar Jayasuriya ed., 2015) (discussing ethical dilemmas posed by predictive legal technologies relating to client confidences, conflicts of interest, and the difficulty in assessing zealous representation).

295. See *supra* text accompanying notes 251–256.

doubled commitment to making the algorithmizing of the legal system—which, as even those readers skeptical of the singularity’s eventuality should recognize, is proceeding apace—amenable to deliberate forms of democratic control. Indeed, these efforts are already underway. The argument presented here about the rule of law simply underscores the urgency of those efforts. In this way, it becomes possible to imagine a future—perhaps even a bona fide futurist—legal system that, all the while attenuating the traditional rule of law as a legitimating force, might counterintuitively reinvigorate, or even help to reinvent, legal liberalism. Even critics of law and liberalism should find something worthwhile in this project.

