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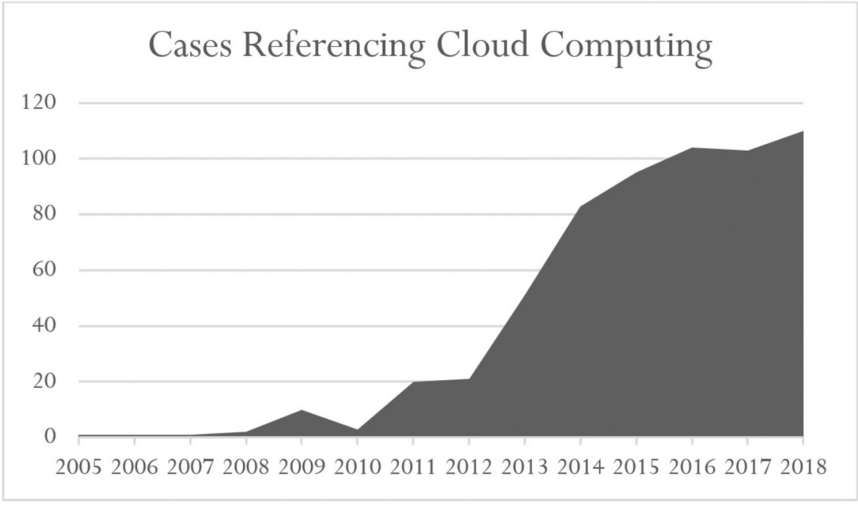

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About the cover

By Adam Aft. As we have done in past issues,[1] we thought it would be interesting to see how technological developments have percolated through the courts — if a technology is worth a lawsuit or relates to an individual's liberty, it must be more than a passing fad. We searched in Lexis's "All jurisdictions/courts" database for references to cloud computing.[2] We then reviewed the cases and omitted false positives.[3] The result was a trend that started in 2005 with an injunction specifically referencing "cloud storage,"[4] and 2008 with a denial of a motion to dismiss related to "software as a service."[5] The last decade has seen a substantial increase in cloud computing references in the courts as seen on the chart on our cover. As part of this continuing trend, the federal courts have started to adopt the cloud. In its 2018 Annual Report, the Administrative Office of the U.S. Courts announced that it had begun the process of using an online web-based collaboration and communication platform.[6] Although PACER and CM/ECF remain hosted by the federal government, it will be interesting to watch the continued impact of cloud computing both on the courts and the cases they hear.

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[1] *See* Adam Aft, Tom Cummins & Joshua Cumby, *Web 2.0 Citations in the Federal Courts*, 3 J.L. (2 J. LEGAL METRICS) 31 (2013).

[2] For our readers that cannot get enough legal-research syntax, we used "(cloud /s comput!) or ("software as a service" or "software-as-a-service") or SaaS or XaaS" as our search string.

[3] The courts sure used to do a lot of computing damages after resolving clouded titles. *See, e.g.*, Whittier v. Gormley, 3 Cal. App. 489 (Dist. Ct. App. 1906). There are also far more litigants with the surname Saas than we would have ever anticipated. *See, e.g.*, Great W. Stock Co. v. Saas, 24 Ohio St. 542 (1874). Perhaps our favorite false positive was the court's discussion in *Caldera, Inc. v. Microsoft Corp.* of the blue cloud image that used to be presented to computer users in DOS to obscure boot noise, the "series of confusing messages that appear on the screen during the DOS boot-up sequence." 72 F. Supp. 2d 1295, 1326 (D. Utah 1999).

[4] Le & Assocs. v. Diaz-Luong, 2005 Wash. Super. LEXIS 120.

[5] Al-Bawaba.com, Inc. v. Nstein Tech. Corp., 2008 NY Slip Op 50853(U), 19 Misc. 3d 1125(A), 862 N.Y.S.2d 812 (Sup. Ct.).

[6] www.uscourts.gov/statistics-reports/information-systems-and-cybersecurity-annual-report-2018.

CONTENTS

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THE CASE FOR BAYESIAN JUDGES

F.E. Guerra-Pujol[†]

Do not become an artist; be a Bayesian, [there is] much more scope for the imagination![1]

INTRODUCTION

In their thought-provoking article "The Votes of Other Judges,"[2] Eric Posner and Adrian Vermeule present a theory of interdependent judicial voting and make a compelling argument for why judges on collegial, multi-member panels should engage in informal Bayesian updating when they vote on issues of law or questions of interpretation. Specifically, they propose a two-stage method of judicial voting: "in the first stage, each judge votes; in the second stage, the judges may change their votes in light of what they learned from the first stage."[3]

This paper responds to Posner and Vermeule's proposal in three ways. Part I of the paper explains why their proposal is too crude and too short on specifics. Next, Part II presents a workable method for Bayesian voting: replace the existing system of binary or "up or down" judicial voting with a new method in which judges numerically rate or score the strength of the legal arguments of the parties. This proposed Bayesian method of appellate voting is easy to operationalize and provides more information than the existing method of binary voting does: the judges' confidence levels or degrees of belief in the proper outcome. Part III then

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[†] University of Central Florida, fegp@ucf.edu. JD, Yale Law School. BA, UC Santa Barbara. I wish to thank Eric Posner and Adrian Vermeule for their comments and suggestions, as well as the participants of the Eighth Annual Constitutional Law Colloquium at Loyola University (Chicago) School of Law, where I presented a previous draft of this paper. All errors are mine alone.

[1] Unattributed quotation in Brani Vidakovic, *Bayesian Fun*, https://www2.isye.gatech.edu/~brani/isyebayes/jokes.html (last visited Sept. 8, 2019).

[2] Eric A. Posner & Adrian Vermeule, *The Votes of Other Judges*, 105 GEO. L.J. 159 (2016).

[3] *Id.* at 189.

anticipates and responds to several potential objections to this proposed method of Bayesian voting by appellate judges.

I. A CRITIQUE OF POSNER AND VERMEULE'S APPROACH

Posner and Vermeule's Bayesian approach to judging offers valuable insights, but their two-stage voting proposal is short on specifics. After presenting a plethora of *ad hoc* examples and writing up many dense pages devoted to peer disagreement and interdependent voting, Posner and Vermeule fail to provide us with a theory of Bayesian voting by judges that is capable of being operationalized. Instead, they just offer a general exhortation: judges should be willing to change their votes in light of the way their fellow judges have voted. The problem with this exhortation, however, is that Posner and Vermeule neglect to specify the precise conditions under which a judge should actually change his or her vote.

Consider, by way of example, the internal voting procedures of the Supreme Court of the United States. At the end of a week in which the Court has heard oral arguments, the Justices hold a conference to discuss the week's cases.[4] Each judge, beginning with the Chief Justice, states the basis on which he or she would decide the case, and after all the justices have spoken, a preliminary vote is taken. If Posner and Vermeule could have their way, the justices would then take a second vote, this time taking into account how their colleagues voted the first time and changing their votes when warranted. But when would a change in one's vote be warranted?

Posner and Vermeule present several hypothetical cases in which a Justice might be warranted in changing his or her vote. Suppose, for example, five of the Justices say that the ordinary meaning of the statute is clearly X, while four say that it is clearly Y. In the words of Posner and Vermeule: "Shouldn't all nine update their views and learn from the aggregate information contained in the votes of colleagues? Shouldn't all entertain the possibility that despite their confident certainty that the statute is clear, the vote reveals the statute to be ambiguous?"[5]

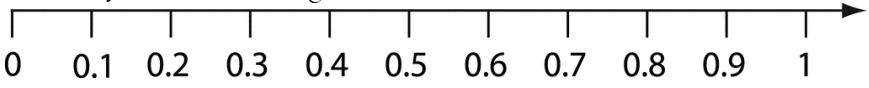
In the alternative, what if five Justices say that the statute clearly means X, while four say that it is ambiguous as between X and Y. "Should the five

[4] WILLIAM H. REHNQUIST, THE SUPREME COURT 252-66 (2d ed. 2001).
[5] Posner & Vermeule, *supra* note 2, at 163.

obtain some information from the votes of the four, albeit not as much as in the previous case? . . . And how about vice-versa—should the four update their own views, in light of the views of the five?"[6] But what if the vote was six to three or seven to two? The main reason why Posner and Vermeule's exhortation and two-stage model of voting are too crude to be of much practical use is that their model retains the traditional method of binary voting: a judge must still either vote all or nothing, either "for" or "against" the moving party.[7]

II. BAYESIAN JUDGING: DEGREES OF BELIEF

Broadly speaking, Posner and Vermeule are on the right track, for they are right to point out that a judge's vote contains information (independent of whatever reasons the judge may give to justify his or her vote), and they are also right to suggest that judges should update their initial positions before casting their final and decisive votes, especially in close cases. But is there any way of operationalizing Posner and Vermeule's theory of interdependent voting? There is: "Bayesian voting." Under this method of voting, appellate judges would not only state the reasons for their votes but also express their degrees of belief in their votes.[8] How? By rating or scoring the strength of the legal arguments of the parties, assigning a numerical score reflecting their confidence levels or relative degrees of belief in what the proper outcome of an issue or case should be (depending on whether the judge is engaged in outcome-voting or issue-voting).[9] One's degree of belief could be expressed in numerical terms anywhere in the range from 0 to 1:



[6] *Id.* at 165.

[7] For a critique of binary voting in law, see F.E. Guerra-Pujol, *The Turing Test and the Legal Process*, 21 INFO. & COMM. TECH. L. 113, 119 (2012).

[8] Ironically, Posner and Vermeule discuss the importance of degrees of belief (or "confidence levels") in their paper, *see* Posner & Vermeule, *supra* note 2, at 177-80, yet their two-stage model of judicial voting makes no use of degrees of belief or confidence levels.

[9] For an extended discussion of issue voting versus outcome voting by courts, see David Post & Steven C. Salop, *Rowing Against the* Tidewater*: A Theory of Voting by Multijudge Panels*, 80 GEO. L.J. 743 (1992).

The higher the score, the greater the judge's degree of belief. A score below 0.5, for example, would mean that the party with the burden of persuasion is not expected to prevail. A score above 0.5, by contrast, indicates that the party is expected to prevail, while a score of 0.5 means the judge is undecided about which party should prevail. Bayesian voting thus recognizes the subjective as well as the interdependent nature of law and legal interpretation.

This method of voting goes by various names, including range voting,[10] utilitarian voting,[11] score voting,[12] point voting,[13] and cardinal voting,[14] just to name a few variants. I, however, prefer the term "Bayesian voting," not only because judicial decision-making in close cases is ultimately a subjective exercise in legal reasoning, but also to emphasize the close connection between my proposed method of judicial voting and the theory of subjective probability developed by such giants as Frank P. Ramsey and Bruno de Finetti.[15] In brief, Ramsey and de Finetti were the first theorists to propose a *subjective* definition of probability, now referred to as "Bayesian probability."[16] According to this Bayesian or subjective view of probability, probabilities are not an objective property of the real world. Instead, probabilities are simply the subjective expression of one's personal view of the world.

On this subjective view of probability, the probability of a particular proposition being true is just a particular individual's degree of belief in the truth of that proposition. Accordingly, even if two people's subjective judgments about the probability of a proposition are vastly different at time t_1, after evidence for (or against) the statement/hypothesis is introduced at time t_2, rational individuals should then revise their initial degrees of beliefs. Moreover, according to the subjective view, their degrees

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[10] *See* Warren D. Smith, *Range Voting* (Nov. 28, 2000) (unpublished manuscript), http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.32.9150 (on file with the author).

[11] *See* Claude Hillinger, *The Case for Utilitarian Voting* (Dep't of Econ., Univ. of Munich, Munich Discussion Paper No. 2005-11, 2005), https://epub.ub.uni-muenchen.de/653/1/thecaseforutilitarianvoting.pdf (on file with the author).

[12] *See* Score Voting, THE CENT. FOR ELECTION SCI., https://electology.org/score-voting (last visited Sept. 9, 2019).

[13] *See* Aanund Hylland & Richard Zeckhauser, *A Mechanism for Selecting Public Goods when Preferences Must Be Elicited*, Kennedy School of Government Discussion Paper 70D (1980).

[14] *See* KENNETH J. ARROW, SOCIAL CHOICE AND INDIVIDUAL VALUES (2d ed. 1970).

[15] *See generally* Maria Carla Galavotti, *The Notion of Subjective Probability in the Work of Ramsey and de Finetti*, 57 THEORIA 239 (1991).

[16] *See, e.g.*, R.T. Cox, *Probability, Frequency, and Reasonable Expectation*, 14 AM. J. PHYSICS 1 (1946).

of belief will tend to converge to the same probability as more and more evidence comes in. In short, isn't this subjective convergence toward truth a good description of how common law judges decide cases?

III. OBJECTIONS TO BAYESIAN JUDGING

As with any ambitious or novel proposal, objections will be raised. Here are three potential objections to Bayesian voting by appellate judges: (i) *impracticality*: Bayesian voting is much more cumbersome and complicated than traditional forms of binary voting; (ii) *incommensurability*: Since each voter's credence is subjective, it is meaningless to combine or aggregate such subjective and incommensurable values; and (iii) *anti-majoritarianism*: Bayesian voting can produce anti-majoritarian outcomes. Let's consider each objection in turn.

A. *Impracticality*

Bayesian voting is marginally more costly and cumbersome than the traditional, i.e. binary, method of voting that appellate judges typically use. But the question is whether the comparative costs are outweighed by the comparative benefits of Bayesian voting. As a threshold matter, traditional methods of voting also have costs; in particular, any ordinal system of binary voting can easily be manipulated in one way or another.[17] As a result, it's not enough to point out that Bayesian voting is costly or cumbersome. Instead, one must compare the costs of Bayesian voting (both the switching costs of implementing a new method of voting for appellate courts and the operational costs of using this new method) with the potential benefits of Bayesian voting, such as accuracy, coherence, and fairness. To the extent Bayesian voting methods are harder to manipulate or jury-rig than ordinal or traditional binary methods of voting, these switching and implementation costs might be well worth trading off.[18]

In any case, Bayesian voting is, in fact, not all that hard to understand or complicated to use. People engage in a form of Bayesian voting in their

[17] *See generally* Saul Levmore, *Parliamentary Law, Majority Decisionmaking, and the Voting Paradox*, 75 VA. L. REV. 971 (1989). *See also* Frank H. Easterbrook, *Ways of Criticizing the Court*, 95 HARV. L. REV. 802, 814-831 (1982).

[18] At the very least, Bayesian voting should be tested on a trial basis.

daily lives whenever they rank or review products on Amazon, rate movies on Netflix or Rotten Tomatoes, or decide how much money to place on a bet. All of these mundane activities are everyday examples of Bayesian voting: subjective expressions of a voter's personal preferences. The more one likes a product or movie, the higher score the product or movie should receive, and conversely, the less one likes the product or movie, the lower the score. (The same Bayesian logic applies to bets: the more confident a person is in the outcome of a bet, the more money he or she should be willing place on the bet.) Cardinal ranking is useful because it conveys more information than a simple binary choice does.[19]

B. *Incommensurability*

Regardless of how easy it would be for judges to put Bayesian voting into practice, one could object that a group of Bayesian votes cannot be aggregated together because each judge's Bayesian vote (his or her degree of belief in the proper outcome of a case) is subjective or personal, since each judge's criteria for scoring a case might vary. I will make three points in reply.

First and foremost, so what? After all, even with simple binary voting, a judge's vote is already highly subjective. In many cases, especially contested cases involving issues of constitutional law, judges can have different judicial philosophies and often employ different criteria when deciding such cases—even judges with similar backgrounds and identical professional training. Second, subjectivity won't be such a big deal to the extent judges are using the same scale or numerical range (0 to 1) to score their degrees of belief. And third and last, Bayesian voting has the additional virtue of allowing judges to effectively abstain from voting (without having to recuse themselves) by assigning a score of 0.5 to their degrees of belief

[19] As an aside, many Netflix users have criticized Netflix's decision to replace its five-star rating system with a binary "thumbs up"/"thumbs down" system. By way of example, one Netflix user referred to the new binary system as "quite literally the most useless rating system I have ever seen across any form of media." Paul Tassi, *Netflix's Thumb-Based Rankings System Is the Epitome of Uselessness*, FORBES (June 26, 2017, 9:51 AM), https://www.forbes.com/sites/insertcoin/2017/06/26/netflixs-thumb-based-ratings-system-is-the-epitome-of-uselessness/#4238092713d3. For a defense of Netflix's binary method of ranking movies, see David Sims, *Netflix Believes in the Power of Thumbs*, THE ATLANTIC (Mar. 21, 2017), https://www.theatlantic.com/entertainment/archive/2017/03/netflix-believes-in-the-power-of-thumbs/520242/.

(again, assuming we are using a standard 0 to 1 point scale). If a case is close (i.e., if the arguments on both sides are equally persuasive), judges should have the ability to openly admit such closeness, an option judges don't have under binary voting.

C. *Anti-majoritarianism*

Regardless of the inherently subjective nature of judicial voting, one could criticize Bayesian voting as anti-majoritarian. With Bayesian voting, for example, a numerical minority of judges with intense preferences could, in theory, outvote a numerical majority of judges with weak preferences. But is this theoretical possibility a bug or a feature?

As Jeremy Waldron notes, it's not obvious why the principle of majority rule should apply to law.[20] When the law is contested and a case is appealed to a higher court, the higher court must, at a minimum, make two decisions. First, it must decide whether the lower court committed any legal errors (Decision #1), and if so, it must decide whether any of those legal errors are serious enough to warrant a reversal of the lower court's decision (Decision #2). Formally, let's call Decision #1 (did the lower court make a legal error?) the choice between *e* and not *e*, and let's call Decision #2 (if there is an error, is it serious enough for a reversal?) the choice between small *e* and large *e*.

For ease of exposition, I shall limit my discussion to Decision #1, the choice between *e* and not *e*. (The same logic applies to the choice between small *e* and large *e*.) Under the traditional method of judicial voting (one-judge, one-vote), the votes of each judge are equally weighted. Thus the one-judge, one-vote rule can only tell us whether *e* has garnered more votes than not *e* (or vice versa). By contrast, with Bayesian voting, judges would have to disclose their degrees of belief in *e* and not *e*. As a result, Bayesian voting generates more information than a simple majority-rule vote: a Bayesian voting procedure would reveal the comparative intensities of the judges' beliefs about *e* and not *e*.

Why should anyone want to know the relative intensities of the judges' beliefs? The answer (in two words) is fairness and accuracy. By way of

[20] *See, e.g.*, Jeremy Waldron, *Five to Four: Why Do Bare Majorities Rule on Courts?*, 123 YALE L. J. 1692 (2014).

illustration, consider a non-legal example.[21] A population of TV viewers are asked to rank two TV series using simple majority voting and Bayesian voting: *Breaking Bad* versus *Mad Men* (or *Nurse Jackie* versus *Orange Is the New Black*). Under majority voting, viewers can only vote for one show, even though both TV shows are very good. Under Bayesian voting (such as Netflix's five-star rating system), however, each viewer could express the intensity of his or her preferences.[22] In ethical terms, Bayesian voting is more fair and more accurate than simple majority rule, for Bayesian voting is not only more immune to strategic voting than simple majority rule, it also generates a more accurate picture of the voters' relative preferences.

To sum up, the problem with majority rule in ordinal or binary voting systems is precisely the fact that the final tally of votes does not reflect the intensity of the voters' beliefs. Furthermore, as William Riker and others have shown, simple majority voting can produce incoherent results and can be easily gamed to produce almost any outcome.[23] In short, if we care about accuracy, coherence, and fairness, then simple majority rule must give way to a more nuanced account of preferences.

CONCLUSION

Posner and Vermeule are definitely on to something. The votes of appellate judges do indeed provide additional relevant information about the case under review. The problem, however, is not *whether* judges should engage in Bayesian updating, but rather *how* they should do so. Why not give Bayesian voting a try? After all, there is no reason why the logic of Bayesian voting cannot be applied to appellate judicial procedure. Instead of voting up or down (e.g., affirm or reverse), with Bayesian voting judges would score the strength of their credences or degrees of belief in a given legal proposition or a legal outcome. Such a method promotes the values or accuracy, simplicity, and fairness more than binary or two-stage voting does.

# # #

[21] I thank Paul Tassi for this example.

[22] For example, although I liked *Mad Men*, I considered *Breaking Bad* to be one of the best TV series of all time.

[23] *See generally* WILLIAM H. RIKER, LIBERALISM AGAINST POPULISM: A CONFRONTATION BETWEEN THE THEORY OF DEMOCRACY AND THE THEORY OF SOCIAL CHOICE (1988), especially Chapter 4.

AN AGENT-BASED MODEL OF JUDICIAL POWER

Alex Schwartz[†]

INTRODUCTION

The power of courts to exercise judicial review of legislation and government action cannot be taken for granted. Even in long-established constitutional democracies, courts are occasionally ignored, defied, or attacked in retaliation for decisions that frustrate the goals of the political branches.[1] The resistance of many southern American states to the United States Supreme Court's decision in *Brown v. Board of Education* is one well-known example of outright defiance.[2] More recently, the Supreme Court's decision to recognize a constitutional right to same-sex marriage was, at least initially, met by various kinds of evasion.[3] Periodically, in

[†] Assistant Professor and Deputy Director of the Centre for Comparative and Public Law, Faculty of Law, The University of Hong Kong. I am especially grateful to David Law, for suggesting the terminology of "baby steps" and "big breaks," and to Ryan Whalen, for introducing me to agent-based modeling. In addition, I am thankful for helpful feedback from Daniel Katz, Daria Roithmayr, Christopher Schmidt, and the participants of the Public Law Group at University College London, Faculty of Laws; Birmingham Law School's Global Legal Studies Group; the 2018 Annual Meeting of the Law and Society Association (Toronto); the 2018 Emergence of Computational Law Studies Conference; and the Public Law Research Group seminar series at the University of Hong Kong.

[1] For an influential theoretical account of why political branches decide to attack or, alternatively, tolerate independent judicial review, see generally Keith E. Whittington, *Legislative Sanctions and the Strategic Environment of Judicial Review*, 1 INT'L J. CONST. L. 446 (2003).

[2] For discussion, see GERALD N. ROSENBERG, THE HOLLOW HOPE: CAN COURTS BRING ABOUT SOCIAL CHANGE? (2d ed. 2008), and Christopher W. Schmidt, *"Freedom Comes Only From the Law": The Debate over Law's Capacity and the Making of* Brown v. Board of Education, 4 UTAH L. REV. 1491 (2008).

[3] *See, e.g.*, James M. Oleske, Jr., *"State Inaction," Equal Protection, and Religious Resistance to LGBT Rights*, 87 U. COLO. L. REV. 1 (2016).

response to unpopular or inconvenient decisions, the United States Congress has also flirted with court-curbing measures that would weaken the Supreme Court in one way or another.[4]

As these examples illustrate, courts can and do survive episodic defiance and threats to their authority (albeit maybe with their confidence a little shaken). But for some courts, particularly new courts, the risks would seem to be more immediate and existential. In the early 1960s, for example, the Supreme Constitutional Tribunal of the fledgling Republic of Cyprus was openly defied because of a series of politically sensitive cases and eventually made defunct (the country soon descended into a conflict that is still unresolved).[5] In the early days of the Russian Federation, the newly established Constitutional Court boldly asserted its power of judicial review only to be defied by the Federation's constituent republics, police authorities, and President Boris Yeltsin (who subsequently suspended the Court and reconstituted it with more pliant judges and a much-diminished jurisdiction).[6] Likewise, independent judicial review did not survive long into the post-socialist era in Belarus.[7]

More mature courts can also be neutralized by court-curbing attacks. For example, the Federal Court of Malaysia, established in 1957, was effectively cowed into submission in 1988 after it provoked the wrath of the executive.[8] And, more recently, in Hungary,[9] Poland,[10] and Turkey,[11]

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[4] *See* Tom S. Clark, *The Separation of Powers, Court Curbing, and Judicial Legitimacy*, 53 AM. J. POL. SCI. 971 (2009). *See also* TOM S. CLARK, THE LIMITS OF JUDICIAL INDEPENDENCE (2010), *and* Roger Handberg & Harold F. Hill, Jr., *Court Curbing, Court Reversals, and Judicial Review: The Supreme Court versus Congress*, 14 LAW & SOC'Y REV. 309 (1980).

[5] See the discussion in Alex Schwartz, *International Judges on Constitutional Courts: Cautionary Evidence from Post-Conflict Bosnia*, 44 LAW & SOC. INQUIRY 1 (2019).

[6] *See* Lee Epstein et al., *The Role of Constitutional Courts in the Establishment and Maintenance of Democratic Systems of Government*, 35 LAW & SOC'Y REV. 117 (2001), *and* ALEXEI TROCHEV, JUDGING RUSSIA: THE ROLE OF THE CONSTITUTIONAL COURT IN RUSSIAN POLITICS 1990–2006 (2008).

[7] *See* WOJCIECH SADURSKI, RIGHTS BEFORE COURTS: A STUDY OF CONSTITUTIONAL COURTS IN POST-COMMUNIST STATES OF CENTRAL AND EASTERN EUROPE 7 (2d ed. 2014).

[8] *See* A.J. Harding, *The 1988 Constitutional Crisis in Malaysia*, 39 INT'L & COMP. L.Q. 57 (1990).

[9] *See* Kriszta Kovács & Kim Lane Scheppele, *The Fragility of an Independent Judiciary: Lessons from Hungary and Poland–and the European Union*, 51 COMMUNIST AND POST-COMMUNIST STUD. 189 (2018). *See also* Bojan Bugaric & Tom Ginsburg. *The Assault on Postcommunist Courts*, 27 JOURNAL OF DEMOCRACY 69 (2016).

[10] *See* WOJCIECH SADURSKI, POLAND'S CONSTITUTIONAL BREAKDOWN (2019).

[11] *See* Ozan O. Varol et al., *An Empirical Analysis of Judicial Transformation in Turkey*, 65 AM. J. COMP. L. 187 (2017). For further empirical study of the Turkish context, see Aylin Aydin-Cakir, *The*

governments have purged, packed, or restructured courts in an apparent effort to snuff out any potential for independent judicial review.

Episodes like these suggest that judicial power is a fragile good, one that may not endure a collision with the political branches. Accordingly, the virtual consensus in the academic literature is that the growth and maintenance of judicial power depends, at least in part, on the strategic behavior of judges.[12] But despite the considerable body of empirical evidence on strategic judicial behavior, we still know very little about which judicial strategies are best for the growth and maintenance of judicial power.[13]

This article attempts to shed fresh light on this topic. Using a method of computer simulation called agent-based modeling, it explores how new courts can act strategically to build their power while mitigating the risk of retaliation by the political branches. The use of an agent-based model (or "ABM") for these purposes breaks new methodological ground. Although agent-based modeling has been fruitfully employed for a wide variety of topics in the social sciences, from cultural change[14] to political-party competition,[15] this article is the first attempt to develop an ABM to simulate judicial review. The results of the ABM simulations vindicate the intuition that the growth of judicial power will normally depend on relatively restrained and incremental (as opposed to sudden and bold) assertions of judicial review. A court that avoids challenging the preferred policies of the political branches in high-salience disputes will, ultimately, tend to

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Impact of Judicial Preferences and Political Context on Constitutional Court Decisions: Evidence from Turkey, 16 INT'L J. CONST. L. 1101 (2019).

[12] *See* Epstein, *supra* note 6; TOM GINSBURG, JUDICIAL REVIEW IN NEW DEMOCRACIES: CONSTITUTIONAL COURTS IN ASIAN CASES (2003); GEORG VANBERG, THE POLITICS OF CONSTITUTIONAL REVIEW IN GERMANY (2004); JEFFREY K. STATON, JUDICIAL POWER AND STRATEGIC COMMUNICATION IN MEXICO (2010); GRETCHEN HELMKE, COURTS UNDER CONSTRAINTS: JUDGES, GENERALS, AND PRESIDENTS IN ARGENTINA (2012); *and* SHAI DOTHAN, REPUTATION AND JUDICIAL TACTICS: A THEORY OF NATIONAL AND INTERNATIONAL COURTS (2015). *Cf.* David S. Law, *A Theory of Judicial Power and Judicial Review*, 97 GEO. L.J. 723 (2009).

[13] For recent surveys and discussion of this literature, see Georg Vanberg, *Constitutional Courts in Comparative Perspective: A Theoretical Assessment*, 18 ANN. REV. POL. SCI. 167 (2015), and Lee Epstein & Jack Knight, *Strategic Accounts of Judging*, *in* ROUTLEDGE HANDBOOK OF JUDICIAL BEHAVIOR 48-61 (Robert M. Howard & Kirk A. Randazzo eds., 2017).

[14] *See* Robert Axelrod, *The Dissemination of Culture: A Model with Local Convergence and Global Polarization*, 41 J. CONFLICT RESOL. 203 (1997).

[15] *See* MICHAEL LAVER & ERNEST SERGENTI, PARTY COMPETITION: AN AGENT-BASED MODEL (2011).

exert more influence on constitutional law than a court that moves to establish its power early on in landmark cases.

I. BUILDING JUDICIAL POWER: BABY STEPS OR BIG BREAKS?

Arguably, the question of how courts become consequential institutions, despite their weakness relative to the political branches, is the central concern at the intersection of the fields of comparative constitutional law and political science.[16] One influential perspective proposes that the growth of judicial power requires courts to proceed cautiously at first, gradually building authority in cases that are unlikely to provoke defiance or retaliation.[17] Later, once patterns of compliance with judicial decisions have become established, it is thought that courts will be less vulnerable and can therefore afford to be ever more assertive.[18] In short, the idea here is that judicial power grows by way of "baby steps."

The "baby steps" theory of judicial empowerment emphasizes the strategic behavior of judges. To discern when to be assertive or cautious, judges need some reasonably reliable way to anticipate how political elites will react to their decisions (how likely is defiance? how likely is retaliation? etc.). To explain how judges might make this appraisal, Epstein and others introduced the useful concept of "tolerance intervals": the range of potential, non-ideal case outcomes that a political actor is nevertheless prepared to accept.[19] The idea is that courts can build their power gradually by making decisions that either fall within the intersection of the tolerance intervals of the relevant political elites or, when no such intersection exists, by avoiding those decisions altogether. For simplicity's sake, let us call both of these moves "strategic avoidance."

To a large extent, the viability and mode of strategic avoidance will depend on the constitutional context. Some courts can use docket control

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[16] *See* RAN HIRSCHL, TOWARDS JURISTOCRACY: THE ORIGINS AND CONSEQUENCES OF THE NEW CONSTITUTIONALISM (2004), Ginsburg, *supra* note 12. *See also* CONSEQUENTIAL COURTS: JUDICIAL ROLES IN GLOBAL PERSPECTIVE (Diana Kapiszewski et al. eds., 2013), *and* THE GLOBAL EXPANSION OF JUDICIAL POWER (C. Neal Tate & Torbjorn Vallinder eds., 1997).

[17] *See* Epstein, *supra* note 6; Ginsburg, *supra* note 12.

[18] Ginsburg, *supra* note 12, at 73.

[19] *See* Epstein, *supra* note 6.

to eschew high-risk cases in favor of low-risk cases. Other courts may lack docket control but have the benefit of well-established justiciability doctrines, or doctrines that allow the implementation of their judgments to be postponed.[20] But in many instances, either because there is little or no docket control or no available doctrinal excuse, there may be no way for a court to avoid provoking an inter-branch conflict other than to straightforwardly uphold the impugned law or policy ("strategic avoidance" in this last instance might also be called "strategic deference"). Furthermore, the real world is likely to generate noisy signals that might mislead courts as to what the political branches really care about. Political posturing may exaggerate or downplay the intensity of elite preferences; legislatures are not single-minded entities; even the same political party, depending on party discipline, may be a cacophonous mess of rival factions and back-bench mavericks; the executive–particularly if it is a coalition government–may be just as polyphonic. In such circumstances, it will be difficult to anticipate how the political branches will actually respond to a court decision when push comes to shove; the cognitive load of trying to estimate the relevant tolerance intervals may simply be too much to bear.[21] Accordingly, a court wishing to avoid defiance or retaliation may have to rely instead on a much cruder heuristic: avoid or uphold in cases that seem *too* politically salient and be assertive in cases that seem *less* politically salient.

To be sure, there are also important potential tradeoffs in adopting a strategy of avoidance. For one thing, a court trades short-term influence for the sake of uncertain future gain. Not only does the court lose opportunities to win victories when it upholds disagreeable law or policy simply to avoid confrontation, it also does nothing to build a record of compliance with its decisions. Furthermore, by upholding a law or policy that it would otherwise oppose, the court may discourage potential litigants by leading them to wrongly believe that it is hostile to their claims.[22]

But strategic avoidance is not the only way that a court might take "baby steps" toward greater power. Instead of avoiding risky cases, one

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[20] *See* Erin F. Delaney, *Analyzing Avoidance: Judicial Strategy in Comparative Perspective*, 66 DUKE L.J. 1 (2016), *and* Rosalind Dixon & Samuel Issacharoff, *Living to Fight Another Day: Judicial Deferral in Defense of Democracy*, 2016 WIS. L. REV. 683.

[21] *See* Epstein & Knight, *supra* note 13.

[22] Gretchen Helmke & Jeffrey K. Staton, *The Puzzling Judicial Politics of Latin America*, *in* COURTS IN LATIN AMERICA 306-31 (Gretchen Helmke & Julio Rios-Figueroa eds., 2011).

possible alternative is for courts to limit the scope of their decisions, confining rulings to the particulars of the disputes that they are asked to resolve and saying only what is necessary to justify a determinate result. Cass Sunstein calls this style of judicial decision making "minimalism," its hallmark being a preference for narrow and shallow judgments.[23] Minimalist judgments are narrow in the sense that they "decide the case at hand; they do not decide other cases too, except to the extent that one decision necessarily bears on other cases."[24] And they are shallow in the sense that they are "unaccompanied by abstract accounts about what accounts for those judgments."[25] Sunstein claims that minimalism is, normatively speaking, often the optimal approach to constitutional adjudication because it reduces the costs incurred by courts in making decisions, as well as the costs borne by society if the courts get things wrong. Moreover, minimalism promotes democracy because it leaves more to be debated and decided by elected officials.[26]

Sunstein's minimalism is not explicitly concerned with building judicial power per se.[27] But there is a very straightforward way in which judicial minimalism might be part of a long-term "baby steps" strategy. By limiting the scope of their decisions, courts can also limit the range of political branches and public authorities affected by their decisions and, consequently, mitigate the risks of defiance, widespread opposition, and retal-

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[23] CASS R. SUNSTEIN, ONE CASE AT A TIME: JUDICIAL MINIMALISM ON THE SUPREME COURT (2001).

[24] *Id.* at 10.

[25] *Id.* at 13. Examples of supposedly minimalist decisions cited by Sunstein include: United States v. Virginia, 518 U.S. 515 (1996) (striking down sex discrimination at military institute); Richmond v. J.A. Croson Co., 488 U.S. 469 (1989) (striking down an affirmative-action policy); Romer v. Evans, 517 U.S. 620 (1996) (striking down a Colorado constitutional amendment limiting the rights of sexual minorities); and United States v. Lopez 514 U.S. 549 (1995) (invalidating a ban on the possession of guns near schools).

[26] *Id.*

[27] Indeed, with only a few exceptions, the potential strategic dimension of judicial minimalism has not received much scholarly attention. One of these exceptions is a recent article by Justin Fox and Georg Vanberg, *Narrow Versus Broad Judicial Decisions*, 26 J. THEORETICAL POL. 355 (2013). They argue that, from the perspective of a court confronted with uncertainty about the implication of constitutional doctrine, minimalism is probably not good strategy. Rather, maximalist decisions are to be preferred because they stimulate policy responses that more accurately probe these consequences in future decisions. Another exception is a pair of articles by Mathew D. McCubbins, Roger G. Noll, and Barry R. Weingast (writing under the pseudonym "McNollgast"). *See* McNollgast, *Politics and the Courts: A Positive Theory of Judicial Doctrine and the Rule of Law*, 68 S. CAL. L. REV. 1631 (1995), *and* McNollgast, *Conditions for Judicial Independence*, 15 J. CONTEMP. LEGAL ISSUES 105 (2006).

iatory attacks. It also seems reasonable to assume that the more laws or policies that are invalidated by a court's decision, the more likely it is that the decision will provoke widespread dissatisfaction among political elites who–sharing a common target–may then coordinate an attack of some kind on the court. And so, by spacing out those decisions that frustrate the goals of political elites, minimalist courts will be less likely to provoke a broad and simultaneous backlash. For these reasons, a court might stick to narrow decisions when it has yet to establish its authority (or when its authority is in jeopardy), but favor broad (and therefore more rewarding) decisions when its authority looks secure. Call this "strategic minimalism."

Strategic minimalism also comes with its own potential tradeoffs. A minimalist court may challenge the political branches on politically salient issues. But by limiting the scope of its decisions, the court sacrifices the potential for more systemic policy interventions. In other words, minimalism trades opportunities for big victories, *à la Brown*, for small ones of relatively narrow consequence. Furthermore, narrow decisions may well generate fewer discrete instances of defiance, but their capacity to build a court's reputation for compliance is, for this same reason, also diminished.

Both of the strategies canvassed so far–strategic avoidance and strategic minimalism–are consistent with the "baby steps" theory of judicial power. But there is another way of thinking about the creation of judicial power. Following David Law, we might imagine that judicial power depends on a kind of coordination equilibrium.[28] Because courts are public institutions, political elites will be aware of judicial decisions and have reason to believe that other political elites are also aware of those same decisions.[29] What is more, out of all the various people or institutions that might make pronouncements on questions of constitutional law, courts are uniquely placed because that is their putative public function, that is, to provide authoritative interpretations of law.[30] And so, assuming a context in which unilateral defiance of court decisions will be costly in some way, political elites' expectation that other political elites will comply with court decisions is itself sufficient reason to comply with court deci-

[28] *See* Law, *supra* note 12.
[29] *Id.* at 774.
[30] *Id.*

sions.[31] Ultimately, what matters is the widespread belief that the court's decisions will coordinate behavior: "Because everyone expects everyone else to comply, and because the best strategic response to compliance by everyone else is to comply, the expectation that people will comply is self-fulfilling."[32]

This way of thinking about judicial power shares something important with the "baby steps" theory outlined earlier; significantly, both assume that judicial power is path dependent, in so far as past compliance with judicial decisions is thought to affect the likelihood of future compliance. Whereas the "baby steps" theory might counsel strategic avoidance of high-salience cases, however, this second way of thinking about judicial power would actually counsel the opposite. A high-salience and controversial decision (assuming it is obeyed) provides an especially powerful reinforcement of the court's authority. The more often a court issues decisions like this, "the greater the court's power to coordinate may become."[33] And even a single case like this might have a dramatic effect on expectations.[34] Moreover, although a newly established constitutional court might face a greater risk of defiance (because it has yet to establish a reputation for compliance), a single, highly salient decision that commands obedience early on might be such a powerful signal that it solidifies a court's reputation for compliance.[35]

We can take this idea one step further. The *best* time to decide highly salient, controversial cases might be early on, at the beginning of a court's career. This proposal may seem counterintuitive, but there are reasons to take it seriously. If an independent court with the power of judicial review has been established, it could only have been established with the support of some substantial portion of the governing political elites. Indeed, the literature on this topic has identified a variety of basically self-serving, or "rational-strategic," reasons why elites come to support the creation of an independent court with the power of judicial review. A very influential line of argument, advanced by Tom Ginsburg and others, proposes that political elites facing uncertain electoral prospects may create independent

[31] *Id.* at 764
[32] *Id.*
[33] *Id.* at 780.
[34] *Id.* at 782.
[35] *Id.* at 796.

judicial review as a kind of "insurance" to protect themselves and their interests in the event that their rivals come to power.[36] A similar rationale also applies in the context of federal systems,[37] or indeed any system with multiple units of government or autonomous sites of power.[38] If power is fragmented across multiple factions, each faction may tolerate independent courts with the power of judicial review as a check on rivals.

Whatever the reasons elites may have for creating independent courts, those reasons will presumably be freshest early in a court's career, before subsequent events have a chance to change the calculus. Consider the insurance rationale. At first, and for some time, political elites may continue to believe that the political environment is just as competitive as it was when they decided to create independent judicial review. But as conditions change, or expectations turn out to be mistaken, elites may come to believe that electoral contests are not as competitive as they initially expected. Having paid for insurance up front, they may come to feel a kind of buyer's remorse and be increasingly inclined to disobey the court or engage in court-curbing retaliation as time goes on. The best strategy for the court, then, might be to make a bold move early on, seizing the opportunity of a high-salience case to establish authority when the original reasons for supporting the court are still fresh and the odds of compliance are consequently more favorable.

To accentuate the contrast between this view and the "baby steps" theory outlined earlier, let us call this the "big breaks" view of judicial

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[36] For the definitive statement of this "insurance thesis," see Ginsburg, *supra* note 12. Although Ginsburg is responsible for articulating and popularizing the analogy with insurance, it should also be noted that the theory is foreshadowed in earlier work by J. Mark Ramsayer in *The Puzzling (In)Dependence of Courts: A Comparative Approach*, 23 J. LEGAL STUD. 721 (1994). And a formal, game-theoretic formulation of the same logic is articulated in by Matthew C. Stephenson in "*When the Devil Turns . . .": The Political Foundations of Independent Judicial Review*, 32 J. LEGAL STUD. 59 (2003).

[37] *See* Bruce Ackerman, *The Rise of World Constitutionalism*, 83 VA. L. REV. 771 (1997), discussed in Tom Ginsburg, *The Global Spread of Constitutional Review*, *in* THE OXFORD HANDBOOK OF LAW AND POLITICS (Keith Whittington and Daniel Keleman eds., 2008). *See also* Miguel Schor, *Mapping Comparative Judicial Review*, 7 WASH. U. GLOBAL STUD. L. REV. 257, 264 (2008), *and* Barry Friedman & Erin F. Delaney, *Becoming Supreme: The Federal Foundation of Judicial Supremacy*, 111 COLUM. L. REV. 1137 (2011).

[38] On the "fragmentation hypothesis," see John Ferejohn, *Judicializing Politics, Politicizing Law*, 65 LAW & CONTEMP. PROBS. 41 (2002), and Rebecca Bill Chávez et al., *A Theory of the Politically Independent Judiciary*, *in* COURTS IN LATIN AMERICA 219-47 (Gretchen Helmke & Julio Rios-Figueroa eds., 2011). *See also* Stephenson, *supra* note 36, *and* Mark V. Tushnet, *Political Power and Judicial Power: Some Observations on Their Relation*, 75 FORDHAM L. REV. 755 (2006).

power. Rather than counseling courts to favor low-salience decisions that gradually build judicial power over time, the "big breaks" theory favors big gambles in high-salience cases that have the potential to decisively establish the court's authority. The logic of this wager rests on the assumption that compliance with decisions in high-salience cases has a greater impact on the probability of future compliance than low-salience cases. This may seem like a risky gamble. Presumably, the effect on defiance is symmetrical: defiance of high-salience cases will also have a greater impact on the probability of future defiance. But the gamble may not be so foolhardy. If political elites do have some provisional reason to support the creation of independent judicial review in the first place (which is a reasonable assumption), the court might capitalize on this friendly disposition to win some big victories in high-salience cases early on.

Which of these approaches is more conducive to growth and survival of judicial power, "baby steps" or "big breaks"? This is a difficult question to answer. Both approaches assume path dependency: the history of compliance, as well as initial predispositions, are thought to influence the likelihood of future compliance. Formal game-theoretic methods are not much help in determining which of the two approaches does better—answering the question is not a matter of solving for the "best response" equilibrium at any given point in time. To answer the question, rather, we need to see how the system behaves over time: How does the court's record of compliance change? Does judicial power survive, or does it fail? If so, when is failure most likely to occur?

Traditional empirical methods also limit our ability to answer these questions. We can observe what look like "baby steps" or "big breaks" in particular times and places, but we can never observe what would have happened had a court taken a different approach in a counterfactual context. Conceivably, a cross-national empirical study might be able to overcome this problem of causal inference. But even if the data are comparable across contexts, unobserved or unobservable factors would present an obvious threat to valid inference. Moreover, if courts tend to behave strategically to promote compliance and avoid attack, as the extant empirical evidence suggests, then there are likely to be few observable cases of court failure.

II. AGENT-BASED MODELS

Partly in response to the difficulties canvassed above, the novel approach taken here is to develop an ABM that can simulate the performance of several stylized strategies in a variety of stylized conditions. As the name suggests, the fundamental building blocks of an ABM are autonomous "agents." Agents behave according to pre-programmed "procedures." Typically, the procedures that agents follow are relatively simple behavioral responses to events that occur within the "world" of the simulation. Agents may have individual characteristics and states that change over the course of the simulation. Agents may be mobile, moving around the world and interacting with other agents according to their respective procedures. Agents may also be sedentary units that affect or are affected by neighboring agents. An ABM will play out over a series of "steps," but the world of the simulation need not be an explicit geometric space; it may represent a logical or network space in which relationships between agents are arranged and interactions between them occur according to those arrangements.

It is a characteristic feature of an ABM that the interactions of many autonomous agents, each following their respective procedures, can lead to complex system-level patterns.[39] The emergent complexity displayed by an ABM, though not readily predictable from the initial state of the simulation, can be made intelligible by comparing how the model performs with different procedures or different parameters. For this reason, agent-based modeling provides a distinct way to explore the macro-level implications of micro-level theories and assumptions.[40]

Agent-based modeling has been widely applied to a variety of topics. In the natural sciences, it has been used to simulate phenomena such as the spread of contagious diseases[41] and the behavior of ant colonies.[42] Agent-based modeling has arguably had an even greater impact in the social sci-

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[39] *See* Axelrod, *supra* note 14.

[40] Joshua M. Epstein, *Agent-Based Computational Models and Generative Social Science*, COMPLEXITY, May/June 1999, at 41.

[41] *See* Liliana Perez & Suzana Dragicevic, *An Agent-Based Approach for Modeling Dynamics of Contagious Disease Spread*, 8 INT'L J. HEALTH GEOGRAPHICS 50 (2009).

[42] *See* Stephen C. Pratt et al., *An Agent-Based Model of Collective Nest Choice by the Ant* Temnothorax albipennis, 70 ANIMAL BEHAV. 1023 (2005).

ences,[43] where it has been used to study a diverse range of topics from everyday ethnocentrism[44] to sophisticated financial markets.[45] Indeed, agent-based modeling is said to facilitate a distinct research paradigm of "generative social science" in which macroscopic social regularities are explained in terms of "decentralized local interactions of heterogeneous autonomous agents."[46]

Though still relatively rare, agent-based modeling has also been applied to legal studies in inventive ways.[47] Some studies have used agent-based modeling to simulate how different regulatory regimes influence individual agent behavior and how that agent-level behavior in turn generates systemic effects. For example, Daria Roithmayr created an ABM to demonstrate how residential segregation along racial lines can "lock in" despite laws that formally prohibit racial discrimination.[48] Other studies have used ABMs to investigate the diffusion of legal norms or legal knowledge within a network, including the ABM developed by Daniel Katz and others to complement a computational model of intellectual influence within the American legal academy.[49]

There are several important advantages in using an ABM to explore the growth or failure of judicial power under varying conditions. For one

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[43] *See* Flaminio Squazzoni, *The Impact of Agent-Based Models in the Social Sciences After 15 Years of Incursions*, 18 HIST. ECON. IDEAS 197 (2010).

[44] *See* Ross A. Hammond & Robert Axelrod, *The Evolution of Ethnocentrism*, 50 J. CONFLICT RESOL. 926 (2006).

[45] *See* Blake LeBaron, *A Builder's Guide to Agent Based Financial Markets*, 1 QUANTITATIVE FIN. 254 (2001).

[46] Epstein, *supra* note 40.

[47] For a good, if now somewhat dated, overview of the diverse applications of ABMs, see Robert Axelrod & Leigh Tesfatsion, *Appendix A: A Guide for Newcomers to Agent-Based Modeling in the Social Sciences*, *in* 2 HANDBOOK OF COMPUTATIONAL ECONOMICS 1647-59 (Leigh Tesfatsion & K.L. Judd eds., 2006). *See also* JOSHUA M. EPSTEIN, GENERATIVE SOCIAL SCIENCE: STUDIES IN AGENT-BASED COMPUTATIONAL MODELING (2006); Scott de Marchi & Scott E. Page, *Agent-Based Models*, 17 ANN. REV. POL. SCI. 1 (2014); *and* Charles M. Macal & Michael J. North, *Tutorial on Agent-Based Modelling and Simulation*, 4 J. SIMULATION 151. 156-57 (2010). For an overview and discussion of the use of agent-based modeling for legal studies, see Alex Schwartz, *Agent-Based Modeling for Legal Studies*, *in* COMPUTATIONAL LEGAL STUDIES: THE PROMISE AND CHALLENGE OF DATA-DRIVEN LEGAL RESEARCH (Ryan Whalen ed., forthcoming 2019).

[48] *See* Daria Roithmayr, *Locked in Segregation*, 12 VA. J. SOC. POL'Y & L. 197 (2004).

[49] *See* Daniel Martin Katz et al., *Positive Legal Theory and a Model of Intellectual Diffusion on the American Legal Academy*, COMPUTATIONAL LEGAL STUDIES (Aug. 26, 2009), https://www.computationallegalstudies.com/2009/08/26/model-of-intellectual-diffusion-on-the-american-legal-academy-repost-from-422/, *and* Daniel Martin Katz et al., *Reproduction of Hierarchy? A Social Network Analysis of the American Law Professoriate*, 61 J. LEGAL EDUC. 76 (2011).

thing, unlike the formal models typically employed by game theory, an ABM does not require a mathematically tractable "solution" premised on "best responses."[50] Consequently, ABMs can readily incorporate "bounded rational" (or even irrational) heuristic behavioral rules inspired by simple intuitions or empirical evidence about how fallible actors pursue their goals. Furthermore, there is virtually no limit, apart from computing power, to the number and variety of the agents that an ABM can accommodate within a simulation.[51] ABMs thus provide great flexibility because they are not constrained by the limits of mathematical tractability, limits that would easily be strained by trying to solve for "best responses" in a strategic setting that includes the interdependent and adaptive behavior of multiple heterogeneous agents.

A second and more important advantage of using ABMs has already been alluded to: the ability to explore path dependency and system robustness. As we have seen, there are good reasons to think that the emergence and maintenance of judicial power is path dependent. Initial conditions and early choices (for example, to uphold or invalidate a politically salient law; to comply with or defy a landmark judicial decision) are thought to influence the probability of later choices and events. Moreover, this series of choices and events–as the examples from Russia or, more recently, Hungary show us–may ultimately result in a system-level failure of judicial power. ABMs are also particularly well suited to exploring the emergent properties of systems that result from the interaction of many agents; the agents can have individual memories, and they can learn (or fail to learn) from their respective histories.[52] Thus, an ABM allows us to simulate how judicial power might evolve along different trajectories depending on the adoption of different strategies and the values of various parameters.[53] By systematically varying strategies and parameters, we can observe how the resultant trajectories lead to the growth or failure of judicial power.[54]

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[50] *See* de Marchi & Page, *supra* note 47, and Eric Bonabeau, *Agent-Based Modeling: Methods and Techniques for Simulating Human Systems*, 99 PROC. NAT'L ACAD. SCI. 7280 (2002).

[51] *See* Uri Wilensky & William Rand, AN INTRODUCTION TO AGENT-BASED MODELING: MODELING NATURAL, SOCIAL, AND ENGINEERED COMPLEX SYSTEMS WITH NETLOGO 37 (2015).

[52] *See* Bonabeau, *supra* note 50. *See also* Axelrod & Tesfatsion, *supra* note 47, at 1649.

[53] *See* Paul E. Smaldino et al., *Theory Development with Agent-Based Models*, 5 ORGANIZATIONAL PSYCHOL. REV. 300 (2015).

[54] *See* Axelrod & Tesfatsion, *supra* note 47, at 1650.

Like all methods, agent-based modeling has its limitations. An ABM is a kind of hi-tech thought experiment. Like the formal models used in game theory, there is always a tradeoff between apparent realism and parsimony. Although ABMs can accommodate more complex (and therefore seemingly realistic) assumptions, each assumption comes with the potential cost that the model is either relevant to a narrower range of circumstances than it might otherwise be or, if the assumption is really misguided, not relevant at all. For these reasons, ABM methodologists recommend building models that are only as complex as they need to be for the modeler's purposes.[55]

III. AN ABM OF JUDICIAL POWER

A. *Model Overview and Assumptions*

The ABM presented here simulates how judicial power might evolve over the course of a sequence of interactions between two types of agents: a constitutional court ("the Court") and the political branches ("the Government Agents"). As constitutional challenges arise, the Court must decide to uphold or invalidate a challenged law or policy. In doing so, the Court is influenced by the direction and strength of its own policy preferences, its belief about how likely the Government Agents are to comply with its decisions, and its strategic sensibilities (a pre-programmed decision rule it follows in each case). If the Court invalidates a law or policy, the Government Agents may decide to comply with or defy the Court's decision. The Government Agents are influenced by the direction and strength of their own policy preferences, as well as existing expectations about compliance and defiance. If at any time the Government Agents decide that the Court's decisions cost them too much in preferred policy outcomes, they can attempt to coordinate a court-curbing attack that terminates independent judicial review. If they succeed in doing so, the simulation ends.

Like all models, this ABM makes several simplifying assumptions. It is assumed that both the Court and the Government Agents are "policy seek-

[55] *See* Wilensky & Rand, *supra* note 51.

ers"; they have preferences about policy and derive some utility (a "payoff") when they are able to influence case outcomes in accordance with those preferences. The model also assumes that the policy preferences of the Court and the Government Agents are static and fixed at the outset. In other words, the ABM does not include compositional change to the agents (for example, retirement, elections, etc.), ideological drift, or other events or processes that might alter the agents' preferences over time.

It is further assumed that the Court and the Government Agents are unitary entities, as opposed to collegial bodies that make decisions collectively. Obviously real courts, legislatures, and executives are not like this. But the internal dynamics of these bodies are not of interest for purposes of this investigation, and modeling inter-branch relations is much more manageable if those dynamics are assumed away (indeed, this is a common simplifying assumption in analyses of inter-branch relations).[56] If the reader prefers, she is free to think of the agents' decisions as those of the "median justice," in the case of the Court, or the "median legislator," in the case of the Government Agents.

A fourth simplifying assumption is that the Court and the Government Agents make binary choices; the Court must uphold or invalidate, and the Government Agents must comply or defy (there are no intermediate responses). In the real world, of course, there is a range of responses that might be possible. For example, a court might formally uphold a challenged law but effectively rewrite it by interpretation so that the constitutionally approved meaning is significantly different from what the legislature originally ratified. A court might also invalidate a law but delay the operation of its decision. Likewise, a range of responses would be open to the political branches, from full compliance, partial or uneven compliance, surreptitious disobedience, to outright defiance. The ABM simplifies all this into simple binary choices.

Finally, it is assumed that the Court and the Government Agents have incomplete information about each other and neither can predict the actions of the other without error; Government Agents cannot know if the Court will uphold or invalidate a law or policy, and the Court cannot know if the Government Agents will defy a decision. But it is also assumed that the Court and the Government Agents have perfect information about

[56] *See, e.g.*, Epstein, *supra* note 6; and Vanberg, *supra* note 12.

the history of their interactions, and they can rely on the past to predict what is likely to happen in the future.

It should be emphasized that these simplifying assumptions are not merely for modeling convenience. By subtracting much of the complexity that one would expect to see in the real world, the ABM can help us to isolate the influence of certain parameters on the outcomes of interest.

B. *Simulation Sequence and Parameters*

At the very beginning of the simulation, the ABM generates the Court and a number of the Government Agents determined by an adjustable parameter (NUMBER-OF-GOV-AGENTS). This parameter allows the simulation to model varying degrees of institutional complexity. A very simple context would include the Court and just a single Government Agent; a more complex context–for example, a federal system like the United States–might include dozens of Government Agents representing a set of autonomous legislatures and executives. Two other adjustable parameters model the policy preferences of the Court and the Government Agents. The first, POLARIZATION, determines how likely the Court is to disagree with an existing law or policy and how likely, on average, the Government Agents are to disagree with the Court. The second, FRAGMENTATION, models the variance in policy preferences among Government Agents, that is, how likely the Government Agents are to disagree with one another.

Once these elements are in place, the simulation runs through a series of "steps." At the beginning of each "step" in the simulation, a case is generated and assigned a random value (CASE-SALIENCE), ranging from 0 to 1 (drawn from a normal distribution). This variable represents how politically important the case is to the agents in the simulation. As in the real world, not all cases will attract the same level of attention. Some cases will have a very high profile and be especially divisive; think of the United States Supreme Court's decision in *Obergefell v. Hodges*, 135 S. Ct. 2584 (2015), finding a constitutional right to the legal registration and recognition of same-sex marriage. Other cases will have a relatively low profile. Each case is also assigned a random interval (CASE-SCOPE) that determines the range of Government Agents that may be affected by the case in question, depending on how the Court decides. Some cases will inevitably

have very broad policy consequences across the system, while others–even if highly salient–will have relatively narrow consequences (for example, *Obergefell* only had direct legal consequences for those 14 states that had not already legalized same-sex marriage in one way or another).

Once a case is generated, and the salience and scope values are assigned, the Court will either agree or disagree with the impugned law or policy. If it disagrees, it makes a decision to either uphold or invalidate the impugned law or policy and whether to do so narrowly (minimalist) or broadly (non-minimalist). If the Court decides to invalidate the law or policy, the Government Agents must respond by either complying or defying. The number of Government Agents that must respond is determined by the CASE-SCOPE interval and whether the Court invalided narrowly or broadly. If the Court decides to invalidate broadly, then a higher number of Government Agents must respond. If the Court decides to invalidate narrowly, then a lower number of Government Agents must respond.[57]

Once the Court and affected Government Agents have made their respective decisions, each agent collects a payoff in utility according to the following scheme:

i. If the Court invalidates a law or policy, then the Court collects a payoff equivalent to the product of CASE-SALIENCE and the number of affected Government Agents that comply with the decision. Meanwhile, affected Government Agents that agree with the law or policy suffer a loss equivalent to CASE-SALIENCE.

ii. If the Court upholds a law or policy that it disagrees with, affected Government Agents that agree with the law or policy collect a payoff equivalent to CASE-SALIENCE. Meanwhile, the Court suffers a loss equivalent to the product of CASE-SALIENCE and the number of affected Government Agents.

iii. If the Court upholds a law or policy that it agrees with, then the Court suffers no loss and affected Government Agents that agree

[57] For simplicity's sake, intermediate outcomes between these two poles are excluded from the simulations.

with the law or policy collect a payoff equivalent to CASE-SALIENCE.

When a Government Agent's utility score drops below zero, it becomes UNHAPPY and it will consider launching a court-curbing attack (for example, impeachment, jurisdiction stripping, suspension, etc.). The success of this attack depends on two threshold parameters. The first, DEFIANCE-THRESHOLD, represents theoretical expectations about the influence of past defiance on the probability of a present court-curbing attack. Setting this parameter very high models a world in which Government Agents are cautious about court curbing and, even if they are UNHAPPY, will not attempt an attack until a recent history of defiance suggests that the Court's authority is already failing. Conversely, setting this parameter at a relatively low level will model a world in which Government Agents are more cavalier about the costs of court curbing and do not need to perceive much, if any, weakness in the Court's authority before launching an attack. The second parameter, DISSATISFACTION-THRESHOLD, determines the proportion of Government Agents that must simultaneously be UNHAPPY for a coordinated court-curbing attack to succeed. The idea here is to model the influence of institutional veto points that make a court-curbing attack require the coordinated effort of several Government Agents at once.

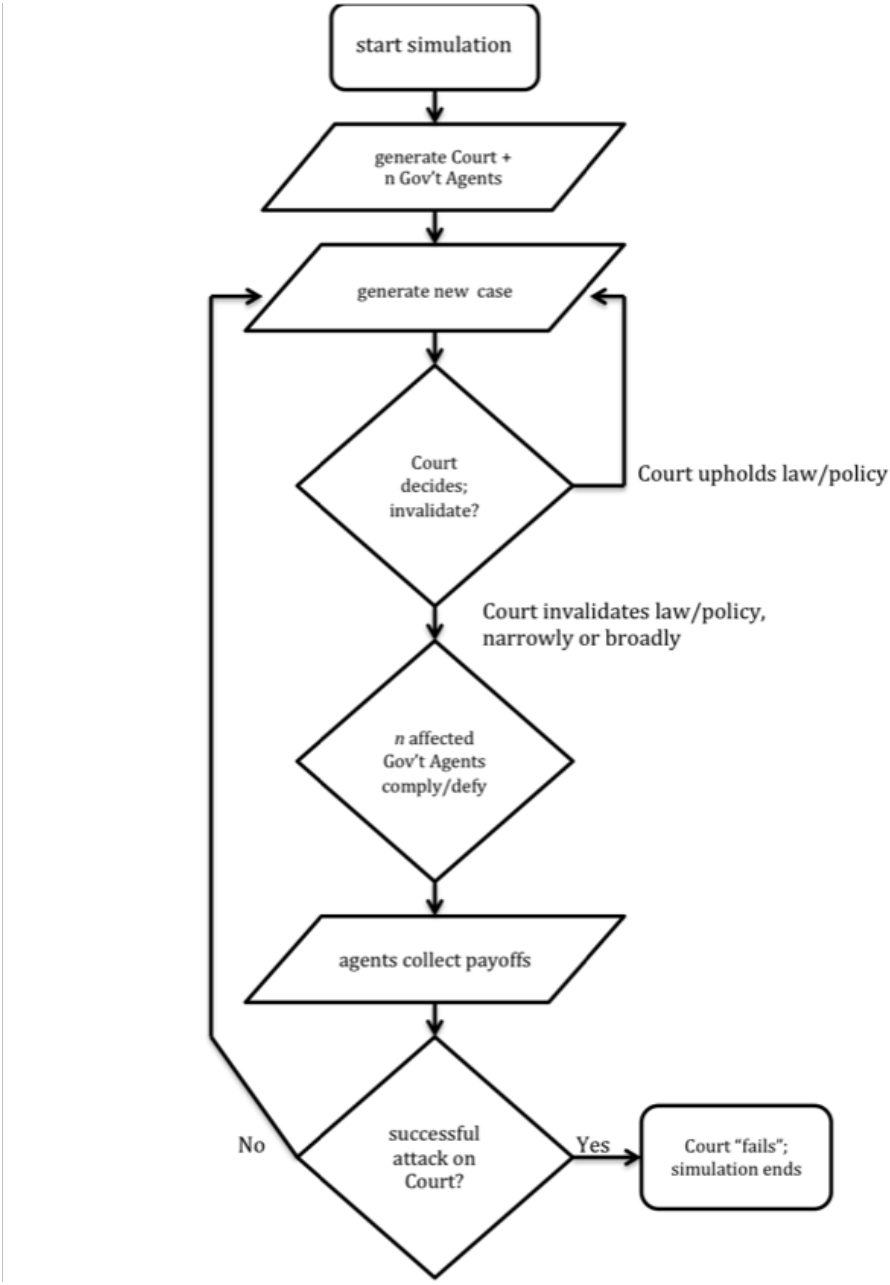

Figure 1. Simulation Flow Chart

C. *Decision Rules*

The Court's decision rule is the real focus of this investigation. We want to know what sort of behavior is best for building judicial power: a strategy premised on "baby steps" or one premised on "big breaks." But before explaining the Court's stylized decision rules, the way the ABM models the Government Agents' decisions to comply with or defy the Court's decisions requires some explanation.

Presumably, a decision to defy a court is not costless. There might be a negative public reaction to government defiance of judicial decisions, a reaction that could translate into adverse consequences for political elites. Indeed, the idea that diffuse public support for the judiciary encourages the political branches to obey judicial decisions is a key tenet in much of the literature on judicial power.[58] In addition to costs associated with adverse public reactions, government defiance of the judiciary may also sacrifice international prestige, jeopardize foreign direct investment, and risk incurring international sanctions.[59] Furthermore, governments might have genuine ideational commitments (say, a sincere belief in the rule of law) that militate against defying the courts. Rather than attempt to model all of these influences individually–which would necessitate a very complex simulation–the ABM presented here lumps them together and allows them to vary randomly from case to case. Thus, the decision to defy in any given case is a function of whether the random costs of defiance (for example, a negative public reaction) happen to be outweighed by other factors in that instance.

To keep things relatively simple, the ABM models only two such factors, each inspired by the scholarly literature. The first of these, CASE-SALIENCE, has already been introduced and defined. As previous literature suggests, the more political elites care about the outcome of a case, the more prepared they will be to absorb the associated costs of defiance.[60]

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[58]For an overview, see Vanberg, *supra* note 13. *See also* Clark, *supra* note 4; Staton, *supra* note 12; *and* Vanberg *supra* note 12.

[59] For an influential theory of how the protection of constitutional rights might work as a signal to attract investment, see Daniel A. Farber, *Rights as Signals*, 31 J. LEGAL STUD. 83 (2002).

[60] *See, e.g.*, Epstein, *supra* note 6, at 129. For a general overview of the literature on compliance, see Diane Kapiszewski & Matthew M. Taylor, *Compliance: Conceptualizing, Measuring, and Explaining Adherence to Judicial Rulings*, 38 LAW & SOC. INQUIRY 803 (2013).

Thus, other things being equal, the Government Agents will be more likely to defy the Court in a high-salience case.

The second factor (EXPECTATION-OF-DEFIANCE) models common beliefs about how likely defiance is. The rationale for this factor has already been suggested: judicial authority depends on "self-fulfilling" expectations about compliance, expectations which are themselves built on a court's reputation for securing compliance with its decisions.[61] Thus, the more a court is defied, the more people will expect it to be defied, and the less authority it will actually wield. This parameter is adjustable so that the initial beliefs about judicial authority can be set to simulate a continuum of contexts, from a state in which there is a very strong expectation of judicial power to a state in which judicial power is tenuous and generally expected to fail. Once the simulation is underway, EXPECTATION-OF-DEFIANCE is simply the standing average of defiance, weighted by CASE-SALIENCE to account for the greater effect that defiance in high-salience cases should have on beliefs about the Court's authority. The combination of CASE-SALIENCE and EXPECTATION-OF-DEFIANCE is intended to capture the generic calculus of defiance and compliance. These two parameters are averaged together to produce a value from 0 to 1 that determines the working probability of defiance at any given time.

Holding the Government Agents' decision rule constant, how then does the Court behave? The ABM allows the Court's decision rule to take one of six styles (these remain fixed for the duration of each "run" of the simulation). The first of these, called *basic-random*, is used simply as a benchmark for comparison. If the Court follows this decision rule, it will uphold or invalidate a challenged law or policy with equal probability, and if it does invalidate the law or policy, the scope of the decision is equally likely to be narrow (that is, minimalist) or broad.

The next two decision rules are called *avoider* and *minimalist*. If the Court uses *avoider* it will only invalidate a law or policy if the case is a relatively low salience one. Following this decision rule, the Court is also consistently maximalist in its decisions; it will seek to influence policy as much as possible, albeit in relatively low-salience cases. In contrast, if the

[61] Law, *supra* note 12, at 764. *See also* Dothan, *supra* note 12.

Court uses the *minimalist* decision rule it will be consistently minimalist in its decisions, but without regard to the salience of the cases.

The fourth and fifth decision rules–called *strategic-avoider* and *strategic-minimalist*–are inspired by the "baby steps" theory of judicial power. Both of these "strategic" decision rules make the Court cautious at first and become more assertive with time, but return to a cautious approach if a court-curbing attack seems imminent. Initially, a Court using the *strategic-avoider* decision rule behaves the same way as a Court using the *avoider* decision rule does. But the Court will drop any constraint related to case salience once a track record of compliance is established,[62] provided that the moving average of defiance is safely below the DEFIANCE-THRESHOLD parameter setting.[63] Thereafter, the Court will revert to only invaliding low-salience cases if the moving average of defiance approaches the DEFIANCE-THRESHOLD parameter.[64] Similarly, a Court using the *strategic-minimalist* decision rule will be consistently minimalist in its decisions until a track record of compliance is established,[65] after which it will shift to broad, maximalist decisions so long as the moving average of defiance is safely below the DEFIANCE-THRESHOLD parameter.

The final decision rule, called *gambler*, is inspired by the "big breaks" theory of judicial power. A Court using *gambler* tries to leverage high-salience cases in an effort to establish its power as soon as possible. Thus, if the Court disagrees with the law or policy, it will invalidate it with a probability equivalent to the case's salience (the higher the value of CASE SALIENCE, the more likely the Court is to invalidate the impugned law or policy).

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[62] Arbitrarily, this is set at 50 invalidations.

[63] This is a distance of more than .1. The results presented below are robust to alternative specifications that use a distance of less than or greater than .1.

[64] This is a distance within .1. The results presented below are robust to alternative specifications that use a distance of less than or greater than .1.

[65] As before, this is set at 50 invalidations. *See* note 62, *supra*.

Decision Rule	Pseudocode
random	Uphold or invalidate with equal probability; if invalidate, invalidate broadly or narrowly with equal probability.
avoider	If agree with challenged law/policy, uphold it; if disagree and CASE-SALIENCE is less than .5, invalidate broadly.
minimalist	If agree with challenged law/policy, uphold it; if disagree, invalidate narrowly.
strategic-avoider	If agree with challenged law/policy, uphold it; if disagree and moving average of defiance is more than .1 below the DEFIANCE-THRESHOLD, invalidate broadly; if disagree and moving average of defiance is less than .1 below, equal to, or above DEFIANCE-THRESHOLD, invalidate if CASE-SALIENCE is less than .5; if invalidate, invalidate broadly.
strategic-minimalist	If agree with challenged law/policy, uphold it; if disagree and moving average of defiance is more than .1 below the DEFIANCE-THRESHOLD, invalidate broadly; if disagree and moving average of defiance is less than .1 below, equal to, or above DEFIANCE-THRESHOLD, invalidate narrowly.
gambler	If agree with challenged law/policy, uphold it; if disagree, invalidate with probability equivalent to CASE-SALIENCE; if invalidate, invalidate broadly.

D. *Results and Analysis*

As should be apparent, the ABM not only incorporates a great deal of randomness but also several parameters which, depending on what value they take, may affect the ultimate results. Multiple simulations, in which the parameters are systematically varied, are therefore required to robustly evaluate how the various decision rules perform. In the jargon of agent-based modeling, this is called a "parameter sweep."

To conduct a parameter sweep of the ABM, I ran the simulation 20 times for 1,000 steps for every possible combination of a meaningful range of values for each parameter.[66] At the conclusion of each of these "runs," measures are taken of the Court's accumulated payoffs, whether or not the Court "failed" (that is, was the victim of a successful attack) and, if it did fail, at what "step" in the simulation. All told, this process yields a dataset of 67,492 observations.[67] The data are then analyzed in much the same way as an empirical dataset might be. A regression model is used to determine the effect of each decision rule on the Court's ultimate payoff. The Court's accumulated payoff (or final *score*) is the outcome variable. The explanatory variables are the several decision rules (taking *basic-random* as the benchmark reference category for estimating the effect of the other five decision rules) and the various parameter settings described above. The coefficient estimates of the effect of the decision rules are plotted below in Figure 2.

[66] The baseline EXPECTATION-OF-DEFIANCE is varied in increments of .2, from .2 to .8. The NUMBER-OF-GOV-AGENTS is varied in increments of 2, ranging from 2 to 8. POLARIZATION is varied in increments of .2, ranging from a low of .2 to .8. FRAGMENTATION ranges from .25 to .55, in increments of .1. Finally, to explore the preconditions for a successful attack, the DISSATISFACTION-THRESHOLD is varied from .25 to .75 (in increments of .25), and the DEFIANCE-THRESHOLD is varied from 0 to .5 (also in increments of .25).

[67] These data are available from the Harvard Dataverse repository, online at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi%3A10.7910%2FDVN%2FHKYOS3.

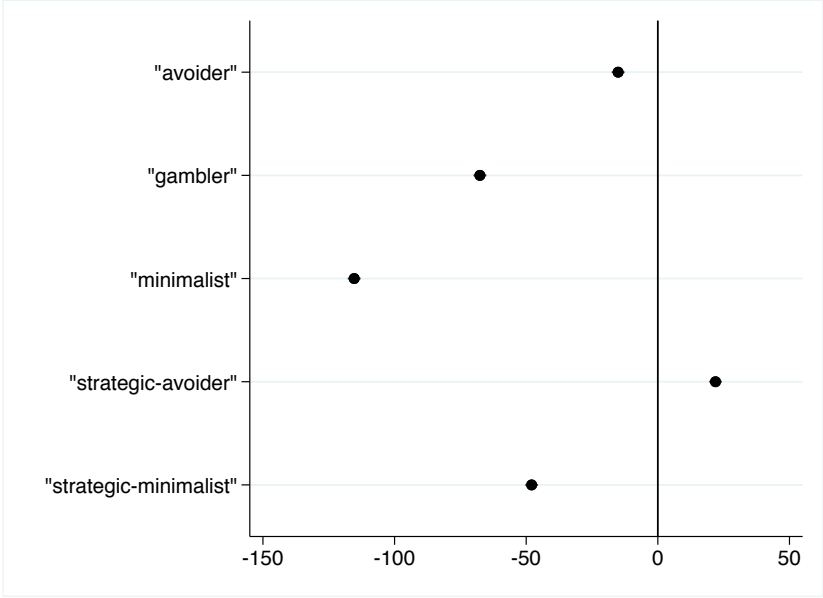

Figure 2. Results of OLS Regression for Court Score by Court Strategy

The results show that the *strategic-avoider* decision rule is the only rule that performs better than a random strategy (it can be expected to win about 22 more points of policy utility than the basic benchmark of a random decision rule). The other decision rules do significantly worse. The *minimalist* decision rule does particularly poorly, which is perhaps not surprising because this rule limits the potential policy payoff of the Court's decisions. Likewise, the simple *avoider* rule–although it does better than the *minimalist* rule–also does worse than the *basic-random* rule; under this rule, the Court is deliberately eschewing opportunities for big policy wins. Interestingly, the *gambler* decision rule–which is premised on the "big breaks" theory of judicial power and therefore makes the Court more likely to invalidate law and policy in high-salience cases–also performs very poorly (on average, about -68 utility points worse than a random decision rule).

Perhaps the most striking result from the simulations, however, is the radical difference between the two "strategic" decision rules, *strategic-avoider* and *strategic-minimalist*. Both of these rules are premised on the "ba-

by steps" theory of judicial power, and under them the Court begins cautiously but becomes more assertive once it has had time to build a record of compliance. Under both rules, the Court will also revert to a more cautious approach if its authority starts to falter. Despite these similarities, the *strategic-avoider* rule achieves a score 70 points greater than the *strategic-minimalist* rule.

What explains the distinctive success of strategic avoidance? Part of the answer is that strategic avoidance does not require the Court to forego all opportunities to score big policy victories; if the circumstances are right, the Court can be assertive and issue broad rulings in politically charged cases. But the other part of the explanation is that this decision rule helps the Court avoid a court-curbing attack. Avoiding a court-curbing attack is a key ingredient of success; if independent judicial review is eliminated, then the Court cannot go on to score any further policy victories.

In fact, the simulations show how different parameter settings make a court-curbing event more or less likely, conditional on the decision rule that the Court follows. Figure 3 illustrates how the decision rules perform in this respect at different parameter settings for POLARIZATION.

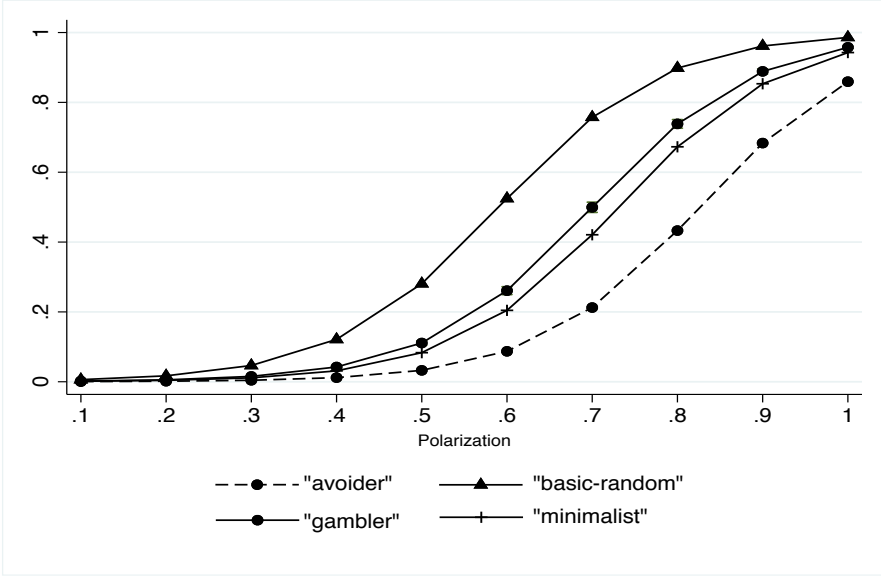

Figure 3(a). Probability of Court Failure by Polarization

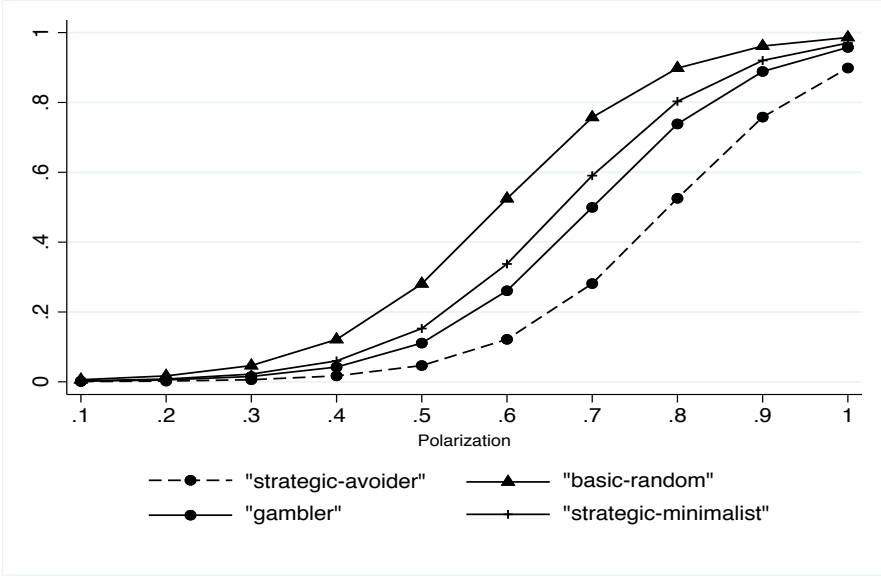

Figure 3(b). Probability of Court Failure by Polarization

First, it is worth noting that there is no real difference between the various decision rules until POLARIZATION reaches .4 (that is, a 40% probability of disagreement). In other words, in a context in which the agents are more likely than not to agree with one another on matters of constitutional law, the simulations suggest that the Court's survival is so likely that strategic judicial behavior has virtually nothing to contribute. There is also not much difference between the several decision rules at the very highest levels of POLARIZATION, when failure becomes so likely as to be virtually certain regardless of how the Court behaves. At the intermediate levels of POLARIZATION, however, the different decision rules lead to very different probabilities of Court failure. The *gambler* rule and both minimalist rules are about twice as likely to lead to Court failure in this range as the *avoider* and *strategic-avoider* rules, which are, respectively, the safest and second safest decision rules. In fact, even at the very highest level of POLARIZATION, the *avoider* and *strategic-avoider* decision rules are still significantly safer rules to follow (although there is an 85% chance of the Court failing).

Another influential parameter is NUMBER-OF-GOV-AGENTS. Though not as powerful a factor as POLARIZATION, the influence of this parameter is still notable. The simulations suggest that the greater the complexity of the Court's institutional environment, the more likely a court-curbing attack becomes. This makes intuitive sense: the more Government Agents there are, the more potential court-curbing attackers there will be. Notably, as Figure 4 shows, both the *avoider* and *strategic-avoider* decision rules help to insulate the Court from the increased risk that comes with greater institutional complexity.

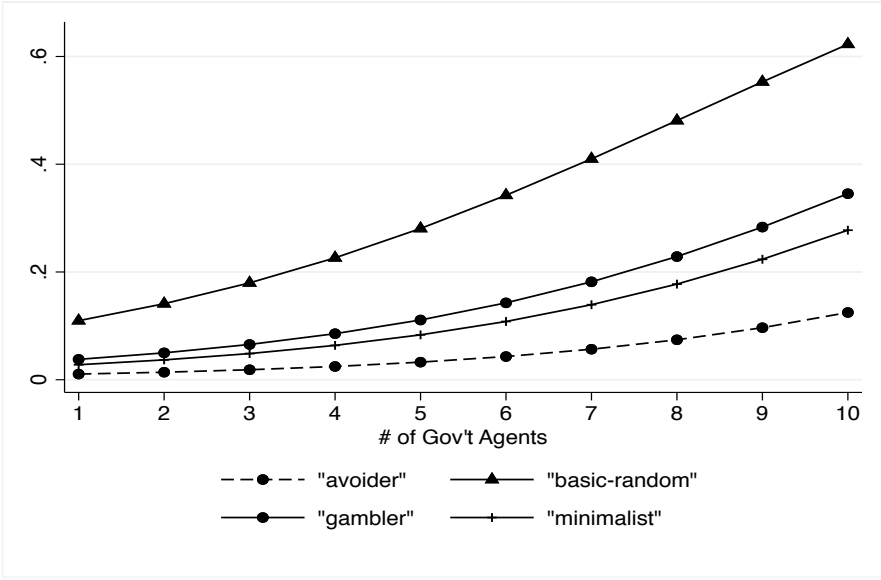

Figure 4(a). Probability of Court Failure by Number of Gov't Agents

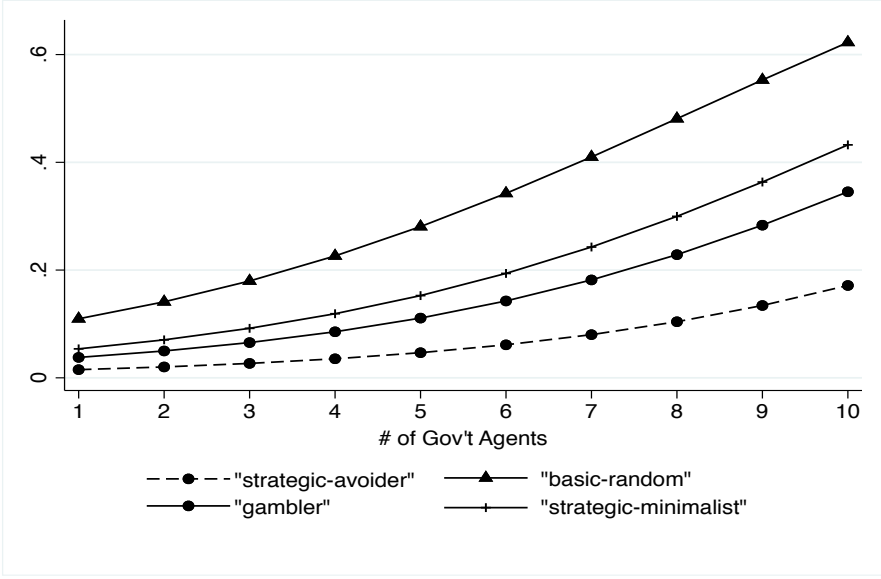

Figure 4(b). Probability of Court Failure by Number of Gov't Agents

At the highest level for this parameter, the *strategic-minimalist* rule is about 2.5 times more failure-prone than the *strategic-avoider* rule (and about 3.5 times more failure-prone than the simple *avoider* rule). The *gambler* rule is also outperformed by both the *avoider* and *strategic-avoider* rules, which are at least half as failure-prone in the upper range of this parameter setting.

In addition to exploring how the different decision rules perform at various parameter settings, the ABM also allows us to see how the rules affect the probability of the Court's survival across time. To this end, Figure 5 displays the smoothed "hazard estimates" of Court failure. Controlling for variation in the parameter settings, the graphs show the probability that the Court will be the victim of a successful court-curbing attack at every "step" in the simulation.

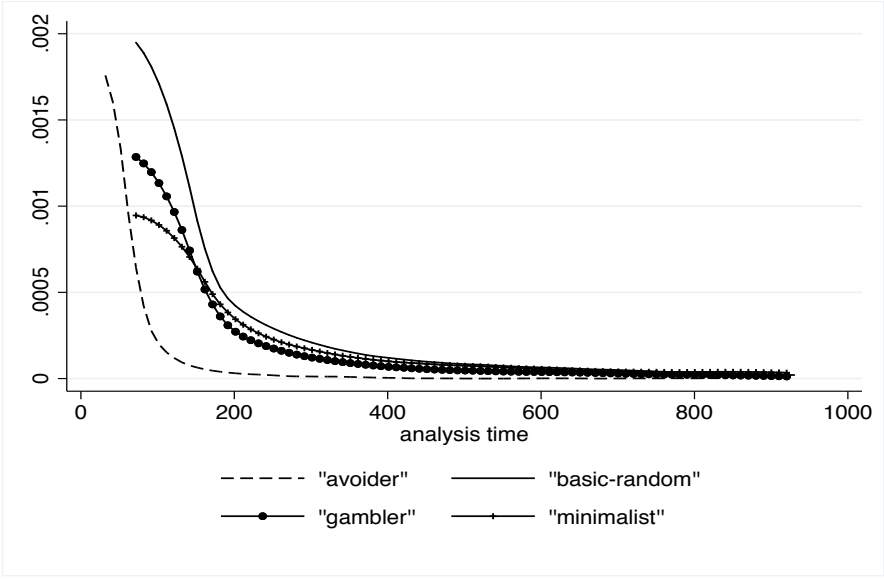

Figure 5(a). Hazard Estimates of Court Failure by Court Strategy

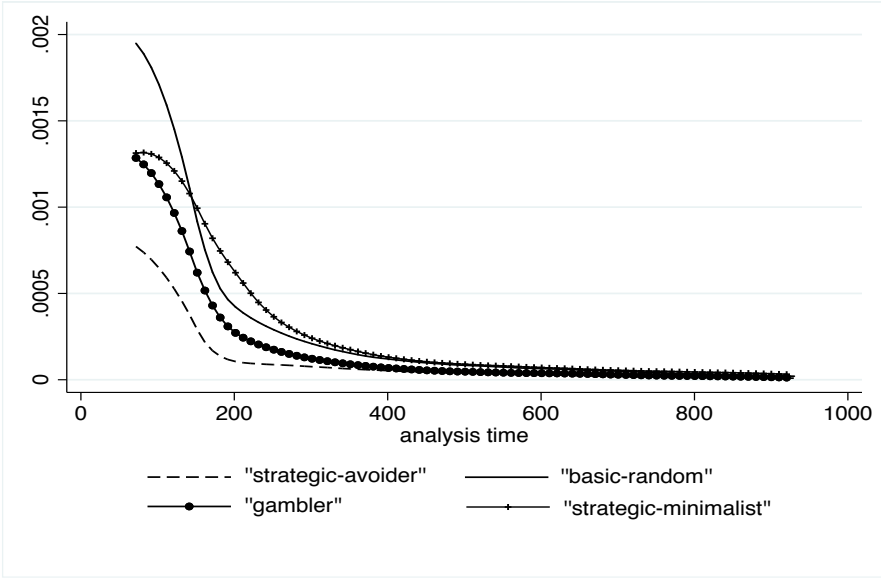

Figure 5(b). Hazard Estimates of Court Failure by Court Strategy

During the earlier stages of the Court's existence, it is evident that the decision rules create very different risks. Some of these differences could be anticipated from what we have already seen. For example, the *avoider* and *strategic-avoider* rules are the safest and, generally, the *basic-random* rule is the most failure-prone. Interestingly, however, there is a window of time in the simulation in which the *strategic-minimalist* rule is actually more failure-prone than even a random rule. This is likely the downstream consequence of the Court changing gears and adopting broad decisions after an initial phase of minimalism. Because the *strategic-minimalist* rule only restrains the Court with respect to the scope of its decisions, it seems that the rule leaves the Court in a very vulnerable position: Government Agents will gradually turn against the Court because of its disagreeable decisions, even if these are narrowly tailored. Eventually, once the Court starts issuing broad decisions, the built-up opposition to the Court culminates in a coordinated court-curbing attack.

At a more general level, it is important to note that the risks of failure for all decision rules eventually converge. Furthermore, there is really no risk of a court-curbing attack after about the half-way point in the simula-

tion ("step" 500); if the Court is going to fail, it will fail relatively early on. But a Court that can survive this phase will tend to survive for the duration of the simulation, and so any contribution that the decision rules make to the Court's survival is made during this early period. This pattern is very much in line with the "baby steps" theory of judicial power, according to which it is dangerous for a court to assert itself too boldly before it has established a record of compliance. In contrast, the *gambler* decision rule–which is premised on the "big breaks" theory of judicial power–is a relatively imprudent approach. To be sure, this rule fares much better than a random decision rule. This much suggests that the wager it makes (that is, that the Court can quickly establish its authority in high-salience cases) is not completely misguided. But a Court that relies on these "big breaks" also takes big risks. The simulation suggests that a more cautious strategy, premised on "baby steps," improves the chances that the Court will survive and thus, as we saw above, is more likely to maximize the Court's long-term influence on policy.

CONCLUSION

The simulations presented here support the view that courts are more likely to establish their power by incremental "baby steps" than by sudden "big breaks." The second approach turns out to be so risky that the big policy victories it might achieve in high-salience cases are completely offset (and then some) by the increased likelihood of court-curbing retaliation during the early stage of a court's career. The better approach, it seems, is to build judicial power gradually by avoiding invalidating law and policy in high-salience cases. The simulations suggest that a court that picks its battles in this way–using a simple heuristic focused on case salience–can nevertheless achieve significant influence over law and policy while avoiding a catastrophic court-curbing attack. When a court's record of compliance looks strong, it can afford to challenge the political branches even in high-salience cases. Indeed, by issuing broad rulings with more systemic consequences, courts can maximize their influence in otherwise less-important cases. This approach also appears to mitigate the influence of ideological polarization and institutional complexity, factors which, according to this ABM, increase the chances of a court-curbing

attack. If the simulations have captured something true about the real world, we should expect courts that have survived in contexts that are politically polarized or institutionally complex to have adopted something like the strategic avoidance heuristic modelled here.

This analysis deliberately shies away from the ethical question of how judges *ought* to decide cases. The proposition that judicial power is most likely to be established by modest decisions does not necessarily deny or defeat whatever ethical reasons there may be for judges to decide cases in some other way. Obviously, strategic considerations about the growth and maintenance of judicial power are not the only considerations that judges should heed in adjudicating disputes; upholding the rule of law is presumably the core of their mandate. But, assuming some scope for consequentialist reasoning, there may also be strong ethical reasons for heeding strategic considerations. A court that takes bold stands only to scuttle its authority in losing battles with the political branches also forfeits future opportunities to do anyone any good. And the broader imperatives of preserving constitutional democracy might sometimes outweigh the immediate questions of justice in a particular dispute.[68] In sum, the right thing to do may also be the strategic thing to do. This study supports the intuition that incrementalism is the best long-term strategy for building judicial power. Other scholars are encouraged to consider the ethical implications of this strategy in greater depth and detail.

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[68] *See* Dixon & Issacharoff, *supra* note 20. *Cf.* TOM GERALD DAY, THE ALCHEMISTS: QUESTIONING OUR FAITH IN COURTS AS DEMOCRACY-BUILDERS (2017).

APPELLATE REVIEW V

OCTOBER TERM 2014

Joshua Cumby[†]

Rather than counting up the Supreme Court's explicit affirmances and reversals of the federal appellate courts' decisions—what we call the "primary review" affirmance rate—the founding editors of the Journal of Legal Metrics devised a system for counting up implicit approvals and disapprovals of the appellate courts' decisions in cases where the Court reviews and resolves "circuit splits."[1]

Consider an exemplary case, *Reyes Mata v. Lynch*, decided by the Court during its October 2014 term. Mata, a Mexican citizen who entered the United States unlawfully and was later convicted of assault, was ordered to leave the country.[2] When Mata's motion to reopen his removal proceedings was denied, "a federal court of appeals ha[d] jurisdiction to consider a petition to review th[at] decision."[3] "Notwithstanding that rule," the U.S. Court of Appeals for the Fifth Circuit "declined to take jurisdiction over such an appeal."[4] The Court granted cert (and reversed the Fifth Circuit) because "[e]very other Circuit that reviews removal orders has affirmed its jurisdiction to decide an appeal" like Mata's.[5]

Here, only the Fifth Circuit's loss counts toward the primary review affirmance rate. But our metric also counts wins for the First, Second,

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[†] Editor-in-chief, the *Journal of Legal Metrics*; associate, Adams and Reese LLP (Nashville and Washington, D.C.).

[1] *See* Tom Cummins & Adam Aft, *Appellate Review*, 2 J.L. (1 J. LEGAL METRICS) 59 (2012) ("Appellate Review I").

[2] 135 S. Ct. 2150, 2153 (2015).

[3] *Id.* (citing Kucana v. Holder, 558 U. S. 233, 242, 253 (2010)).

[4] *Id.*

[5] *Id.*; *see also id.* at n.1 (citing decisions from the First, Second, Third, Fourth, Sixth, Seventh, Eighth, Ninth, Tenth, and Eleventh Circuits).

Third, Fourth, Sixth, Seventh, Eighth, Ninth, Tenth, and Eleventh circuits. This is the parallel review affirmance rate, and it is a better metric because it counts both winners and losers, expanding the sample size and mitigating the Supreme Court's "decided propensity" to review lower court decisions it intends to reverse.[6] In the October 2014 Term, for example, the Court reversed or vacated decisions in 53 of 76 cases[7] (or 70% of the time). The parallel review affirmance rate also compares appellate courts' performance on the same legal questions with the same degree of difficulty—in each case, the players play the same game governed by the same rules—and acknowledges that not all affirmances and reversals are created equal.

THE RULES

In the course of compiling statistics for previous installments in this series,[8] and with a little help from our friends,[9] we've refined our method:

> 1. Because we limit the term "circuit split" to conflicts between federal appellate courts or "inter-circuit" splits, "intra-circuit" splits and disagreements between lower federal and state courts don't count.[10] For simi-

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[6] *See* Thomas Baker, *The Eleventh Circuit's First Decade Contribution to the Law of the Nation*, 1981-1991, 19 NOVA. L. REV. 323, 327 (1994) ("The 'decided propensity' of the Supreme Court, statistically speaking, is to grant a writ of certiorari in cases it intends to reverse.").

[7] *See generally*, Opinions of the Court - 2014, https://www.supremecourt.gov/opinions/slipopinion/14 (last visited Sept. 14, 2019).

[8] *See* Appellate Review I; Tom Cummins & Adam Aft, *Appellate Review II – October Term 2011*, 3 J.L. (2 J. LEGAL METRICS) 37 (2013) ("Appellate Review II"); Tom Cummins, Adam Aft & Joshua Cumby, *Appellate Review III – October Term 2012 and Counting*, 4 J.L. (3 J. LEGAL METRICS) 385 (2014) ("Appellate Review III"); Joshua Cumby, *Appellate Review IV – October Term 2013 – The Prodigal Sums Return,* 8 J.L. (5 J. LEGAL METRICS) 65 (2018) ("Appellate Review IV").

[9] *See* Aaron-Andrew P. Bruhl, *Measuring Circuit Splits: A Cautionary Note*, 4 J.L. (3 J. LEGAL METRICS) 361 (2014).

[10] *See, e.g.*, Rodriguez v. United States, 135 S. Ct. 1609, 1614 (2015) (granting cert "to resolve a division among lower courts on the question whether police routinely may extend an otherwise-completed traffic stop, absent reasonable suspicion, in order to conduct a dog sniff" exemplified by the Eighth Circuit's decision in United States v. Morgan, 270 F. 3d 625, 632 (2001) (postcompletion delay of "well under ten minutes" permissible) and the Utah Supreme Court's decision in State v. Baker, 229 P. 3d 650, 658 (2010) ("[W]ithout additional reasonable

lar reasons, opinions reviewing state or federal district court decisions aren't counted.[11]

2. Because its jurisdiction is statutorily distinct, opinions reviewing decisions by the U.S. Court of Appeals for the Federal Circuit also aren't counted.[12]

3. To be counted, the circuit split must be identified within the four corners of an opinion (including majority opinions, concurrences, and dissents),[13] which must also resolve the circuit split so that we can confidently count winners and losers.[14]

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suspicion, the officer must allow the seized person to depart once the purpose of the stop has concluded."); Oneok, Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1599 (2015) (granting cert "to resolve confusion in the lower courts as to whether the Natural Gas Act preempts retail customers' state antitrust law challenges to practices that also affect wholesale rates" and comparing the Nine Circuit's decision below with the Tennessee Supreme Court's decision in Leggett v. Duke Energy Corp., 308 S.W.3d 843 (2010)).

[11] *See, e.g.*, Ala. Legislative Black Caucus v. Alabama, 135 S. Ct. 1257 (2015) (reviewing the decision of a three-judge panel of the United States District Court for the Middle District of Alabama).

[12] *But see* Hana Financial, Inc. v. Hana Bank, 135 S. Ct. 907, 910 (2015) (resolving a circuit split between the Ninth Circuit on the one hand, and the Sixth and Federal Circuits on the other). *See also* note 17, *infra*.

[13] Cert petitions violate our four corners rule in part because they are susceptible to advocacy bias. A circuit split is one of only a few "compelling" reasons for granting review. *See* SUP. CT. R. 10(A); Reyes Mata, 135 S. Ct. at 2156 ("[A]ll appellate courts to have addressed the matter have held that the Board [of Immigration Appeals] may sometimes equitably toll the time limit for an alien's motion to reopen. . . . Assuming the Fifth Circuit thinks otherwise, that creates the kind of split of authority we typically think we need to resolve. See this Court's Rule 10(a)."). But we can't assume that a split identified in a petition is the reason the Court grants cert, or that the Court's opinion necessarily resolves that split. *See, e.g.*, City & Cty. of S.F. v. Sheehan, 135 S. Ct. 1765, 1778-79 (2015) ("The petition assured us (quite accurately), and devoted a section of its argument to the point, that 'The Circuits Are In Conflict On This Question.' . . . And petitioners faulted the Ninth Circuit . . . [and] expressly advocated for the Fifth and Sixth Circuits' position in the Court of Appeals. . . . Imagine our surprise, then, when the petitioners' principal brief, reply brief, and oral argument had nary a word to say about that subject.") (Scalia, J., concurring in part and dissenting in part).

[14] This rule—and our conservative approach overall—means that our sample size is likely underinclusive. For example, the Court decided four cases in the October 2014 term that involved (and in most instances resolved) circuit splits, but that we don't count because we aren't confident about who the winners and losers are. *See* Young v. UPS, 135 S. Ct. 1338, 1348 (2015) (granting cert "[i]n light of lower-court uncertainty about the interpretation" of the Pregnancy Discrimination Act and citing decisions from the Fifth, Sixth, Seventh, and Eleventh Circuits without indicating which (if any) interpreted the act correctly); Bullard v. Blue Hills Bank, 135 S. Ct. 1686, 1691 (2015) (observing only that the First Circuit "examined whether a bankruptcy court's denial of plan confirmation is a final order, a question that it recognized had divided the Circuits."); Elonis v. United States, 135 S. Ct. 2001, 2013 (2015) (stating that the Court's holding is "clear[ly] . . . contrary to

The reasons for these rules are explained in greater detail elsewhere.[15] And if we change or add to them, we'll tell you all about it.

THE RESULTS

Applying our rules to the Supreme Court's work in the October 2014 term, we count 12 circuit splits:

October Term 2014 Circuit Splits				
Caption	**Cite**	**Split**	**Winners**	**Losers**
Warger v. Shauers	135 S. Ct. 521, 525	3-2	8, 3, 10	9, 5
Dart Cherokee Basin Operating Co. v. Owens	135 S. Ct. 547, 553	2-1	4, 7	10
T-Mobile South, LLC v. City of Roswell	135 S. Ct. 808, 813-14	2-3	11,[16] 4	1, 6, 9
Hana Financial, Inc. v. Hana Bank	135 S. Ct. 907, 910	1-2	9	6[17]

the view of nine Courts of Appeals"), 2014 ("We granted review in this case to resolve a disagreement among the Circuits. But the Court has compounded—not clarified—the confusion.") (Alito, J., concurring in part and dissenting in part), 2018 ("We granted certiorari to resolve a conflict in the lower courts . . . Save two, every Circuit to have considered the issue—11 in total—has held that [18 U.S.C. § 875(c)] demands proof only of general intent . . . The outliers are the Ninth and Tenth Circuits . . . Rather than resolve the conflict, the Court casts aside the approach used in nine Circuits and leaves nothing in its place.") (Thomas, J., dissenting); Kingsley v. Hendrickson, 135 S. Ct. 2466, 2471-72 (2015) (granting cert to resolve "disagreement among the Circuits" about "whether the requirements of a § 1983 excessive force claim brought by a pretrial detainee must satisfy the subjective standard or only the objective standard" and comparing exemplary decisions from the Second, Eleventh, Sixth, and Ninth Circuits without indicating which standard each applies).

[15] *See* Appellate Review III at 388-92.

[16] Although reversed, the Eleventh Circuit applied the correct rule. *See*, 135 S. Ct. at 811 ("The question presented is whether, and in what form, localities must provide reasons when they deny telecommunication companies' applications to construct cell phone towers. We hold that localities must provide or make available their reasons, but that those reasons need not appear in the written denial letter or notice provided by the locality."); *see also id.* at 813 (explaining that the Eleventh Circuit's decision below relied on Circuit precedent, which held that a locality's decision is sufficient even if its reasons are contained in different documents that the applicant has access to.). So, although reversal usually indicates a loss, here we chalk it up as a win.

October Term 2014 Circuit Splits				
Caption	**Cite**	**Split**	**Winners**	**Losers**
United States v. Kwai Fun Wong	135 S. Ct. 1625, 1630	2-1	9, 7	5
Mach Mining, LLC v. EEOC	135 S. Ct. 1645, 1651 n.1	2-1	11, 6	7
Harris v. Viegelahn	135 S. Ct. 1829, 1836	1-1	3	5
Coleman v. Tollefson	135 S. Ct. 1759, 1762-63	1-1	6	4
Henderson v. United States	135 S. Ct. 1780, 1784 n.2	2-2	2, 7	11, 8
Reyes Mata v. Lynch	135 S. Ct. 2150, 2154 n.1	10-1	1, 2, 3, 4, 6, 7, 8, 9, 10, 11	5
King v. Burwell	135 S. Ct. 2480, 2488	1-1	4	DC
Obergefell v. Hodges	135 S. Ct. 2584, 2597, 2608 (App. A)	6-1	1, 2, 4, 7, 9, 10	6, 8

This year's winners are the Second and Third Circuits, tied for first place with three wins, no losses, and a 100% parallel review affirmance rate. The Fourth Circuit (last year's winner) and the Seventh Circuit are tied for second place with an 83% affirmance rate, and the Tenth and Eleventh Circuits are tied for third with a 75% affirmance rate.

October Term 2014 Parallel Review Affirmance Rates				
Circuit	**Wins**	**Losses**	**AB**	**Rate**
2nd	3	0	3	100%
3rd	3	0	3	100%
4th	5	1	6	83%
7th	5	1	6	83%
10th	3	1	4	75%
11th	3	1	4	75%
1st	2	1	3	67%

[17] The Federal Circuit joined the Sixth Circuit on the losing side of this split. *See* 135 S. Ct. at 910. But we don't count wins and losses for the Federal Circuit (as you know). *See* note 12, *supra*, and accompanying text.

October Term 2014 Parallel Review Affirmance Rates				
Circuit	**Wins**	**Losses**	**AB**	**Rate**
9th	4	2	6	67%
6th	3	3	6	50%
8th	2	2	4	50%
5th	0	4	4	0%
DC	0	1	1	0%

Looking back over the years, this is something of an upset.[18] October Term 2014's winners came in fifth (Second Circuit) and sixth (Third Circuit) place in October Term 2013, and one of that term's second place finishers (the First Circuit) dropped to fourth place in October Term 2014. The Ninth Circuit improved its position; the Fifth Circuit did not.

Historic Parallel Review Affirmance Rates by Place[19]									
OT2010		**OT2011**		**OT2012**		**OT2013**		**OT2014**	
Cir.	**Rate**	**Cir.**	**Rate**	**Cir.**	**Rate**	**Cir.**	**Rate**	**Cir.**	**Rate**
10th	100%	4th	78%	10th	88%	4th	86%	2nd	100%
1st	86%	11th	56%	1st	80%	10th	83%	3rd	100%
5th	79%	DC	50%	7th	67%	1st	83%	4th	83%
3rd	78%	6th	50%	2nd	64%	6th	80%	7th	83%
4th	67%	9th	44%	5th	60%	8th	75%	10th	75%
7th	62%	2nd	40%	4th	57%	7th	75%	11th	75%
2nd	60%	3rd	40%	8th	40%	2nd	67%	1st	67%
9th	60%	10th	38%	11th	40%	3rd	57%	9th	67%
6th	50%	7th	36%	DC	40%	DC	50%	6th	50%
8th	50%	1st	33%	3rd	36%	11th	50%	8th	50%
11th	45%	5th	33%	6th	33%	9th	27%	5th	0%

[18] The presentation of historical data is a relatively new feature of the Appellate Review and one that we hope will prove more useful as we collect even more data. But it comes with a couple of caveats. First, we altered our method in Appellate Review III (October Term 2012), so while we continue to compare apples to apples, the way we pick them has changed. *See* Appellate Review III at 388-92 ("[T]he metric compares the courts' performance on the same legal questions. Apples-to-apples, as they say."). Second, our sample size is still very small. The Supreme Court has been deciding circuit splits for more than two centuries, but we've only counted them for five terms.

[19] *See* Appellate Review I at 69; Appellate Review II at 40; Appellate Review III at 394; Appellate Review IV at 68.

Historic Parallel Review Affirmance Rates by Place[19]									
OT2010		OT2011		OT2012		OT2013		OT2014	
Cir.	Rate	Cir.	Rate	Cir.	Rate	Cir.	Rate	Cir.	Rate
DC	33%	8th	25%	9th	18%	5th	0%	DC	0%

Historic Parallel Review Affirmance Rates by Circuit[20]					
Cir.	OT2010	OT2011	OT2012	OT2013	OT2014
	Rate	Rate	Rate	Rate	Rate
1st	86%	33%	80%	83%	67%
2nd	60%	40%	64%	67%	100%
3rd	78%	40%	36%	57%	100%
4th	67%	78%	57%	86%	83%
5th	79%	33%	60%	0%	0%
6th	50%	50%	33%	80%	50%
7th	62%	36%	67%	75%	83%
8th	50%	25%	40%	75%	50%
9th	60%	44%	18%	27%	67%
10th	100%	38%	88%	83%	75%
11th	45%	56%	40%	50%	75%
DC	33%	50%	40%	50%	0%

CONCLUSION

In the next installment in our series, we'll be counting up circuit splits and tabulating parallel affirmance rates for the 81 decisions from the October 2015 term, more than half of which were decided by an eight-justice Court. Then on to the October 2016 term where, again, more than 50% of the cases were considered and decided by an incomplete Court. We look forward to sharing our findings with you.

# # #

[20] *Id.*