Docketology, District Courts, and Doctrine

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Recommended Citation

Washington University
Law Review

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ABSTRACT

Empirical legal scholars have traditionally modeled trial court judicial opinion writing by assuming that judges act rationally, seeking to maximize their influence by writing opinions in politically important cases. To test such views, we collected data from a thousand cases in four different jurisdictions. We recorded information about every judicial action over each case's life, ranging from the demographic characteristics, workload, and experience of the writing judge; to information about the case, including its jurisdictional basis, complexity, attorney characteristics, and motivating legal theory; to information about

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the individual orders themselves, including the relevant procedural posture and the winning party.

Our data reveal opinions to be rare events in the litigation process: only 3% of all orders, and only 17% of orders applying facts to law, are fully reasoned. Using a hierarchical linear model, we conclude that judges do not write opinions to curry favor with the public or with powerful audiences, nor do they write more when they are less experienced, seeking to advance their careers, or in more interesting case types. Instead, opinion writing is significantly affected by procedure: we predict that judges are three times more likely to write an opinion on a summary judgment motion than a discovery motion, all else held equal. Judges similarly write more in cases that are later appealed, and in commercial cases, while writing less in tort and prisoner cases. Finally, jurisdictional culture is very important. These findings challenge the conventional wisdom and suggest the need for further research on the behavioral aspects of opinion writing.

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For many observers of the American legal system, law is what judges write in appellate opinions.[1] These observers are mistaken.[2] But the gravitational pull of an appellate-centered view of the legal world is strong. Opinions from such tribunals continue to dominate the training of new lawyers and are widely disseminated by the mainstream media.

Legal realists have challenged the hegemony of appellate courts and urge us to focus on the *trial* courts as paradigmatic policymakers.[3] But

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    1. *See* Emerson H. Tiller & Frank B. Cross, *What is Legal Doctrine?*, 100 NW. U. L. REV. 517, 518 (2006) (describing "conventional" view that the "language of judicial opinions represents the law"). Llewellyn described how this view is inculcated in law students: "What do you see? You see the so-called 'case', as reported from the court of review. Its name or 'style', the court that decided it . . . . Almost you can say, the opinion for the purposes of case-books *is* 'the case'." K. N. LLEWELLYN, THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY 37 (1969); *see also* NEIL POSTMAN, AMUSING OURSELVES TO DEATH 20 (1985) ("The law is what legislators and judges have written.").

    2.

    For a thousand [cases] which reach the intermediate court there are ten or twenty thousand which go wholly unappealed . . . . Here in this moving mountain of the cases *un*appealed, is the impact of the officials on society—even within the realm of litigation . . . . By my own showing, on my own premises, these are what count. I pass them by. Out of my own mouth, damned.

LLEWELLYN, *supra* note 1, at 90.

    3. *See, e.g.*, BRIAN Z. TAMANAHA, REALISTIC SOCIO-LEGAL THEORY: PRAGMATISM AND A SOCIAL THEORY OF LAW 215–20 (1997) (summarizing studies on district courts).

how should studies of the trial courts proceed? Treatise writers commonly deploy a motley selection of district court opinions to describe doctrine.[4] Realizing that such unsystematic choices may mislead, a new cohort of empiricists—sometimes called the "new legal realists"—have instead amassed and evaluated large datasets of district court opinions, writing dozens of papers evaluating judicial rhetoric in the aggregate.[5]

This Article argues that the new realists have made two wrong turns. The first is *structural*: they err in using as their unit of analysis the case as a whole, when the appropriate way to evaluate litigation is the individual judicial order. The second is *motivational*: they err in assuming that trial judges' opinion-writing practices are rational and utility-maximizing. Scholars are thus misled to conclude that opinions from the district courts are good proxies for how judges resolve disputes, and even can be authoritative proof of what the "law" is.

We remedy such errors by applying a novel statistical methodology to a dataset we created that consists of thousands of individual trial court orders. Our analysis rebuts the conventional account of opinion writing. We suggest an alternative story, which is not ruled out by the data, and hypothesize that trial court opinion writing is motivated by the fear of reversal. Such structural and motivational challenges to the status quo unsettle a great number of recent law reform proposals based on empirical analyses of opinions' content.

But this paper is only partly about why trial judges write opinions. We seek to advance a developing methodological approach to legal realism and the study of law.[6] That method is docketology: the intensive study of

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4. *See, e.g.*, 6 THOMAS LEE HAZEN, THE LAW OF SECURITIES REGULATIONS § 12.15(1)(B), at 513 (5th ed. 2005) (citing 11 district court cases); 2 EDWARD J. IMWINKELRIED, THE NEW WIGMORE: A TREATISE ON EVIDENCE: EVIDENTIARY PRIVILEGES § 9.2.2, at 1186 (2002) (citing 10 district court cases); 1 THOMAS J. SCHOENBAUM, ADMIRALTY AND MARITIME LAW § 10-3, at 723 (4th ed. 2004) (citing 19 district court cases); 1 EUGENE F. SCOLES ET AL., CONFLICT OF LAWS § 12.18, at 551 (4th ed. 2005) (citing 15 district court cases); 1 CHARLES ALAN WRIGHT, FEDERAL PRACTICE AND PROCEDURE § 105, at 360 (3d ed. 1998) (citing 9 district court cases).

5. *See infra* note 9. The term comes from a new ABA project. *See* The New Legal Realism Project, http://www.newlegalrealism.org/ (last visited Jan. 28, 2008). At an important recent conference, presenters from a wide variety of fields demonstrated the high ambitions of the project. *See* The First Annual Conference on Empirical Legal Studies, University of Texas, Austin, http://www.utexas.edu/law/conferences/cels2006/index.php (last visited Jan. 28, 2008).

6. Early work in this tradition was led by Theodore Eisenberg. *See* Theodore Eisenberg, *Section 1983: Doctrinal Foundations and an Empirical Study*, 67 CORNELL L. REV. 482 (1982) (examining docket records in California); Theodore Eisenberg & Stewart Schwab, *The Reality of Constitutional Tort Litigation*, 72 CORNELL. L. REV. 641 (1987) (same). Recent work continues this focus on specific doctrinal areas and largely looks at outcomes from dockets. *See, e.g.*, Jay P. Kesan & Gwendolyn G. Ball, *How are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237 (2006) (using Administrative Office of the U.S. Courts

trial court dockets. As we show, a great deal of substantive legal work occurs in trial court decisions that are not fully explained. This under-explained work, as we will describe, makes up the constitutive backbone of litigants' substantive rights and immunities, but, because it is not easily available, it has been essentially ignored. Why? As noted realist Karl Llewellyn explained:

> I am a prey, as is every may who tries to work with law, to the apperceptive mass. . . . What records have I of the work of [trial court] magistrates? How shall I get them? Are they any? And if there are, must I search them out myself? But the appellate courts make access to their work convenient. They issue reports, printed, bound, to be had all gathered for me in libraries. The *convenient* source of information lures.[7]

Such laments are obsolete. Federal trial dockets have been digitized since 2003. By looking at each individual order in the cases' e-dockets, we can illuminate what the law's rights and duties actually mean in practice. A legal right, after all, is given meaning by how the litigation to enforce it unfolds. We conclude that drafters of Restatements, treatises, and other qualitative descriptions of the common law remain too wedded to opinions and ignore the ways in which the dozens of judicial choices in each case—ranging from motions to compel, to partial grants of motions to dismiss, to motions in limine—together create important, unseen limits and glosses on doctrine.[8] At its most ambitious, this Article develops a research agenda that would reorient modern scholarship toward a neglected source of

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data supplemented by docket reports)*; Ronald F. Wright, *Trial Distortion and the End of Innocence in Federal Criminal Justice*, 154 U. PA. L. REV. 79 (2005) (applying district-court outcome statistics to the federal sentencing guidelines); Anne Morrison Piehl & Margo Schlanger, *Determinants of Civil Rights Filings in Federal District Court by Jail and Prison Inmates*, 1 J. EMPIRICAL LEGAL STUD. 79 (2004); Margo Schlanger, *Inmate Litigation*, 116 HARV. L. REV. 1555 (2003) (using a mix of Administrative Office of the United States Courts data, docket filings, and qualitative data to examine inmate litigation); Jean O. Lanjouw & Josh Lerner, *Tilting the Table? The Use of Preliminary Injunctions*, 44 J.L. & ECON. 573 (2001) (analyzing patent cases).

The recently-launched Civil Rights Litigation Clearinghouse focuses in part on collecting information about trial court dockets. *See* Civil Rights Litigation Clearinghouse, http://clearinghouse.wustl.edu/; Margo Schlanger & Denise Lieberman, *Using Court Records for Research, Teaching, and Policymaking: The Civil Rights Litigation Clearinghouse*, 75 UMKC L. REV. 153 (2006) (explaining project).

   7. LLEWELLYN, *supra* note 1, at 90. He continued: "Men work with it, first, because it is there; and because they have worked with it, men build it into ideology."

   8. *See* Stephen C. Yeazell, *The Misunderstood Consequences of Modern Civil Process*, 1994 WISC. L. REV. 631, 674 (discussing relationship between appellate review and the "managerial" model of litigation).

information about law. Our work on opinions is but the first fruits of that project.

By way of further introduction, we begin with a definition. The number of new realists' articles using district court opinions is quite large.[9] For simplicity, we will refer to scholars who count opinions as a way of learning about legal authority as "opinionologists." Opinionologists typically proceed by gathering a sample of opinions collected from the Westlaw or Lexis databases. They then engage in content analysis[10]: coding opinions for selected variables, they attempt to explain changes in legal rules using statistical regressions.[11]

Most opinionologists are careful to recognize that opinions might be unrepresentative of how trial courts resolve legal problems:

- "Because this review is limited to those decisions reported on WESTLAW, it is not exhaustive in its scope; rather it merely touches on the 'tip of the iceberg.'"[12]

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9. *See, e.g.*, John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955 (2007) (collecting opinions, including 217 from the district courts, and performing content analysis); Barton Beebe, *An Empirical Study of U.S. Copyright Fair Use Opinions, 1978–2005*, 156 U. PENN L. REV. (analyzing dataset of district and circuit court patent cases) (forthcoming, available at http://ssrn.com/abstract=99841); Mitu Gulati et al., *Fraud by Hindsight*, 98 NW. U. L. REV. 773 (2004) (examining securities doctrine); Robert A. Hillman, *Questioning the "New Consensus" on Promissory Estoppel: An Empirical and Theoretical Study*, 98 COLUM. L. REV. 580 (1998) (examining federal and state promissory estoppel opinions); Sean M. McEldowney, *New Insights on the "Death" of Obviousness: An Empirical Study of District Court Obviousness Opinions*, 2006 STAN. TECH. L. REV. 4 (analyzing dataset of five years of district court opinions); Wendy Parker, *The Decline of Judicial Decisionmaking: School Desegregation and District Court Judges*, 81 N.C. L. REV. 1623, 1628–29 n.36 (2003) (analyzing school desegregation opinions); Gregory C. Sisk, *How Traditional and Minority Religions Fare in the Courts: Empirical Evidence from Religious Liberty Cases*, 76 U. COLO. L. REV 1021 (2005) (analyzing religious liberty cases); Gregory C. Sisk et al., *Searching for the Soul of Judicial Decisionmaking: An Empirical Study of Religious Freedom Decisions*, 65 OHIO STATE L.J. 491 (2004) (same); Brian A. Sutherland, *Whether Consent to Search was Given Voluntarily: A Statistical Analysis of Factors that Predict the Suppression Rulings of the Federal District Courts*, 81 N.Y.U. L. REV. 2192 (2006) (analyzing consent requirement); Adam Winkler, *Fatal in Theory and Strict in Fact: An Empirical Analysis of Strict Scrutiny in the Federal Courts*, 59 VAND. L. REV. 793 (2006) (analyzing strict scrutiny opinions from 1990 and 2003).

10. Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, Wake Forest University Legal Studies Research Paper Series, No. 913336, July 2006, at 3, *available at* http://ssrn.com/abstract=913336 ("[Content analysis] could form the basis for an empirical methodology that is uniquely legal.").

11. Quantitative research generally is an increasingly important form of legal scholarship in elite law journals. *See infra* Appendix A-3 (discussing growth of quantitative scholarship); *see also* Hall & Wright, *supra* note 10, at 6–8 (discussing growth of case counting in law reviews).

12. Gregory A. Gordillo, *Summary Judgment and Problems in Applying the* Celotex *Trilogy Standard*, 42 CLEV. ST. L. REV. 263, 278 n.106 (1994).

- "By examining only published decisions, we biased our database in favor of decisions that raise highly visible, controversial, landmark, or difficult questions . . . or at least issues . . . that a judicial actor found particularly interesting and thus worthy of publication."[13]

- "For discussions of some of the vices inherent in analyzing legal issues by looking at reported cases, see generally [long string citation]."[14]

- "Although we acknowledge that published opinions, both district and appellate, may not be representative of all underlying case findings, this does not mean that one must abandon hope of obtaining useful insights about an area of law from them."[15]

But with exceptions,[16] opinionologists proceed to claim that the dataset of opinions is good enough for statistical inference.[17] After all, scholars

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13.   Sisk, *Traditional and Minority Religions*, *supra* note 9, at 1049.

The collected set of published opinions also is likely to be skewed toward those cases that raised viable, as opposed to frivolous, claims and those that resulted in decisions in favor of claimants against the government, because judicial rulings that overturn the decisions of governmental entities are more likely to generate the kind of attention and interest by judges that would lead those judges to submit such decisions for publication.

Id.

14.   Lawrence C. Marshall et al., *The Use and Impact of Rule 11*, 86 N.W. L. REV. 943, 944 n.4 (1992).

15.   Theodore Eisenberg & Sheri Lynn Johnson, *The Effects of Intent: Do We Know How Legal Standards Work?*, 76 CORNELL L. REV. 1151, 1195 (1991). *See also* Pat K. Chew, *Unwrapping Racial Harassment Law*, 27 BERKELEY J. EMP. & LAB. L. 49, 52 n.7 (2006) ("Basing an empirical study on published opinions also has certain limitations."); Gulati et al., *supra* note 9, at 803 ("[The] data suffer from an incompleteness problem arising from reliance on published opinions."); Jeff L. Lewin, *The Genesis and Evolution of Legal Uncertainty About "Reasonable Medical Certainty,"* 57 MD. L. REV. 380, 435 (1998) ("[E]mpirical shortcomings that result from using published opinions as evidence of litigation practice are obvious."); McEldowney, *supra* note 9, at 10 n.51 ("For the purposes of this Note, I use the term 'published' to refer to any opinion available on Westlaw, whether or not the opinion is reported in an official reporter."); Peter Siegelman & John J. Donohue III, *Studying the Iceberg from Its Tip: A Comparison of Published and Unpublished Employment Discrimination Cases*, 24 LAW & SOC'Y REV. 1133, 1135 (1990) ("We begin in section II by confirming what most readers probably know already—the potential unrepresentativeness of cases with published opinions is likely to be significant because only a few cases ever leave a published record."); Sutherland, *supra* note 9, at 2205 ("[H]ard cases are more likely to appear in the sample [of opinions] than easy cases . . . ."); Winkler, *supra* note 9, at 811 n.104 ("Some applications of strict scrutiny necessarily evaded the data set by the decision to focus only on published opinions.").

16.   Wendy Parker, *Lessons in Losing: Race Discrimination in Employment*, 81 NOTRE DAME L. REV. 889, 903 (2006) (explaining limited use her article would make of unqualified claims of statistical inference based on reported opinions).

17.   As Hall and Wright observe, "[a]ll empirical studies are imperfect . . . . The goal in selecting cases in not a perfect match between sample frame and research conclusions, but only a reasonable connection between the two . . . ." Hall & Wright, *supra* note 10, at 32.

should focus on "difficult" cases, not "easy" ones.[18] And "agonized handwringing" about sampling bias can quickly tire even the enterprising empiricist.[19]

Consider the metaphor describing law as an iceberg.[20] To date, opinionologists have treated the tip of the iceberg (opinions available online or in print reporters) as fundamentally identical to the part hidden below the waterline (orders that are merely commands to the parties). On this view, sampling from the online databases provides a decent sense of the law's shape. Of course, most opinionologists acknowledge that there is a bias in this dataset. They have identified two basic factors that may increase the likelihood of opinion writing for a given case:

- *Importance of Case*: cases that are perceived to be politically significant or novel;

- *Judicial Demographics*: cases under the control of judges who are young and wish to be promoted, or who possess different racial or gender characteristics than the majority.

Opinionologists' assumptions about these variables have been largely confirmed by a large number of statistically motivated articles by political scientists.[21] Such data have (perversely) comforted opinionologists by suggesting that opinions are like orders, *only more interesting*. Bolstered by such evidence, the empirical movement rolls onward.

As we earlier alluded, this paper challenges the opinionologist orthodoxy's structural and motivational approaches to studying trial courts.

First, we develop a distinct structural approach to studying trial court litigation. We have collected data on approximately 1,000 cases from four different trial court jurisdictions. For each case, we have coded information on every judicial action (we call such actions "dispositions") taken during the case's lifecycle. We coded up to forty-four pieces of

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18. *See, e.g.*, Cass R. Sunstein, David Schkade & Lisa Michelle Ellman, *Ideological Voting on Federal Courts of Appeals: A Preliminary Investigation*, 90 VA. L. REV. 301, 313 (2004) ("Our sample is limited to published opinions. This limitation obviously simplifies research, but it also follows from our basic goal, which is to test the role of ideology in difficult cases rather than easy ones.").

19. Hall & Wright, *supra* note 10, at 31.

20. *See, e.g.*, Siegelman & Donohue, *supra* note 15, at 1152 (studying factors influencing publication in LEXIS). An early work in this tradition, using a slightly different metaphor, is Marc S. Galanter, *Reading the Landscape of Disputes: What We Know and Don't Know (and Think We Know) About Our Allegedly Contentious and Litigious Society*, 31 UCLA L. REV. 4, 11 (1983) (pyramid metaphor discussed).

21. *See infra* text accompanying notes 52–93.

information for each judicial action, including the wealth and numbers of lawyers involved, the experience (as of the date of the order) of the judge, the procedure, the numbers of parties, and who won that particular order. We thus created an unprecedented dataset describing federal district court activity.

Second, unlike opinionologists, we do not start from the assumption that judges' opinion-writing practices are rational. Instead, we assume that judges are cognitively biased decision makers.[22] A particularly important bias affecting judicial behavior is risk aversion. We hypothesize that judges sometimes overreact to what is in fact a rare risk of reversal by appellate courts, leading them to structure their case management in unexpected ways.

Within each case, judges make many decisions theoretically subject to appellate review. But few such decisions are actually reviewed: most *cases* are not appealed, and most *decisions* within cases that are appealed are ignored by the appellate panel because they are not the specific order under review. If judges believe that individual decisions within cases accompanied by opinions are less likely to be reversed than those without such reasoning, judges may write opinions—instead of mere orders—for decisions they *believe* will be reviewed by a higher court.

Several factors might lead judges to believe that a decision within a case will be appealed. Some may relate to the type of case itself: groundbreaking decisions concerning individual liberties, for example, may be perceived as heading toward the Supreme Court. But we posit that such case factors are likely to be insignificant compared with the effect of procedure. The rules of procedure largely determine whether a decision within a case can be appealed at all, and they push specific categories of order toward appellate review. For example, discovery orders are rarely reviewed by appellate courts because parties generally cannot appeal them until the end of the case. Summary judgment decisions, by contrast, are dispositive if granted. Judges know this, and might choose to write more opinions at summary judgment than in discovery. That choice is independent of the "hardness" or legal novelty of the underlying matters decided. Thus, in an important sense, the rules of civil procedure will often

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22. *See generally* Chris Guthrie, Jeffrey J. Rachlinski & Andrew J. Wistrich, *Inside the Judicial Mind*, 86 CORNELL L. REV. 777 (2001); Chris Guthrie, Jeffrey J. Rachlinski & Andrew J. Wistrich, *Blinking on the Bench: How Judges Decide Cases*, 93 CORNELL L. REV. 1 (2007) (providing evidence of intuitive judging and proposing an "intuitive-override" theory of judicial behavior).

determine what we can learn about trial court litigation from studying trial court opinions.[23]

This Article has four Parts. In Part I, we set out the opinionologist orthodoxy, drawing on judicial biographies and autobiographies and articles from political scientists and law professors. We then suggest an alternative, behavioral model of opinion writing. We develop a *reversal hypothesis*, that opinion writing will increase with the likelihood of appeal, and a *settlement hypothesis*, that opinion writing is a tool that judges use to manage parties' cognitive biases and increase the odds of settlement.

In Part II, we discuss our methodology and provide a description of the data that we collected.

In Part III, we evaluate the data, using a statistical technique called hierarchical linear modeling that here makes its first sustained appearance in the legal literature and that enables us to deal with characteristics of common law decision making that previous authors have all but ignored.[24] The data do not support the orthodoxy's view of opinion writing: we found no evidence that case importance or judicial demographic characteristics affect judicial writing practices. Neither did we find any clear evidence supporting our settlement hypothesis. Our reversal hypothesis was not excluded by the data, but more work is needed to determine whether it offers a complete explanation of judicial motivation.

In Part IV, we expand on docketology's contribution to the empirical study of law, offering a critique of a specific published paper which used statistical analysis to shed light on a facet of federal securities law doctrine.[25] We finally offer some thoughts on the larger promise, and perils, of the research project that we propose.

I. MODELING OPINION WRITING

This Part describes and critiques the opinionologist orthodoxy. As noted in the introduction, the conventional wisdom makes critical structural and motivational assumptions. Structurally, the orthodoxy ignores the iterated nature of trial court work and assumes that within a case, a judge has one opportunity to write (or not write) an opinion, instead of many. Motivationally, the orthodoxy relies on a traditional

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23. *Cf.* C.K. ROWLAND & ROBERT A. CARP, POLITICS AND JUDGMENT IN FEDERAL DISTRICT COURTS 122–23 (1996) (observing that pre-trial rulings are "rarely published" and that they are "largely immune from appellate court contradiction").

24. For an extended treatment of the technique, see *infra* Appendix B.

25. *See* David A. Hoffman, *The "Duty" To Be a Rational Shareholder*, 90 MINN. L. REV. 537, 608 (2006).

economic view of human behavior—the rational actor model—and assumes that courts seek to maximize their utility in the most efficient way possible. These assumptions are problematic.

We begin this Part by describing the relevant differences between opinions and orders in the district courts, and we discuss how the former end up on computer screens through Westlaw and Lexis. In Section B, we explain the orthodoxy's theoretical assumptions. In Section C, we summarize its empirical findings. Finally, in Section D, using insights from behavioral law and economics and motivated by docketology's structural approach, we suggest alternative testable hypotheses about why judges write opinions.

A. Defining Opinion Writing

When a trial judge makes a decision within a litigation, how is it disseminated? The judge might hang a flag outside the window: "blue" for a plaintiff's victory, "red" for defendants, and "green" for indeterminate. Or the court might instead perform an interpretative dance, stomping to the right or left as the law compels. But why sweat? Why not simply smile knowingly at the winning party?

These possibilities are whimsy. Trial courts issue orders. Each trial court decision has, as its last line, the judge's signature, compelling the parties to the case to take whatever action that she deems necessary.[26]

Some orders contain more text before that signature than others, explaining the court's reasoning. As the citations and rhetoric garnishing such a text increase in number and effect, it starts to look like an *opinion* of the sort that first-year law students are accustomed to reading in their case books.[27] Ultimately, what divides such *opinions* from orders is a matter of degree and the choice of a judge, or a publishing company, to make that text publicly available. Today, the decision to designate certain dispositions as opinions is largely in the hands of judges. How that came to be requires a very brief historical detour.[28]

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26. There are very limited circumstances where non-parties to an action may be compelled by a trial court's order. *See, e.g.*, Haymond v. Lundy, No. 99-5048, 2002 WL 1964336, at *6–10 (E.D. Pa. Aug. 23, 2002) (describing rules on binding non-parties to action). Federal Marshalls and clerks may also be compelled by judicial orders, presumably as a facet of the court's inherent authority over its employees.

27. Technically, some judges issue opinions as separate documents from orders; others append the "order" as the last page of the opinion. In our coding, we coded as one document any opinion and order combination.

28. For a slightly different version of this story, see Hillel Y. Levin, *Making the Law: Unpublication in the District Courts*, 53 VILL. L. REV. (forthcoming 2008), available at SSRN

In the past, federal district court judges only "published" a small number of their decisions.[29] Publication meant that the judge's words were reprinted in a paper copy of the Federal Supplement or the Federal Rules Decisions, reporters owned by the West Company.[30] Before the widespread use of electronic research databases, unpublished decisions were unread.[31] However, the decision to publish (or not) was not scientific: the West Company generally put opinions into Reporters at judges' requests.[32] Thus, "publication" used to be practically quite significant.[33] Westlaw and Lexis (together, "the databases") changed this picture somewhat by digitizing all judicial opinions, reported or not.[34] But the choice of what to explain in an opinion was unguided: although courts were directed to only write opinions on issues of "continuing public interest," they had extensive discretion.[35] Finally, the system the databases

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papers.ssrn.com/sol3/papers.cfm?abstract_id=1006101, at 12–14.

29. Karen Swenson, *Federal District Court Judges and the Decision to Publish*, 25 JUST. SYS. 121, 122 (2004) ("Federal district court judges release fewer than 20 percent of their written opinions for publication . . . .").

30. *See* Tony Mauro, *Unpublished Opinions: Inedible Sausage or Crazy Uncle?,* LAW.COM, Apr. 12, 2004, http://www.law.com/jsp/article.jsp?id=1081348862446; *see also* ROBERT A. CARP AND C.K. ROWLAND, POLICYMAKING AND POLITICS IN THE FEDERAL DISTRICT COURTS 16 (1983) ("When the average practitioner considers the actions taken by the federal district courts he thinks of the West publications—first the *Federal Supplement*, and then on a moment's reflection he will probably recall the *Federal Rules of Decision*.") (internal quotations omitted) (emphasis in original); Amy E. Sloan, *A Government of Laws and Not Men: Prohibiting Non-Precedential Opinions by Statute or Procedural Rule*, 79 IND. L.J. 711, 720 (2004) (noting that non-published opinions were not available in print reporters); Schlanger & Lieberman, *supra* note 6, at 162.

31. ROWLAND & CARP, *supra* note 23, at 18–19.

32. *Id*. at 19.

33. But not legally relevant. Trial court decisions have marginal precedential effect, as they do not bind other Article III courts or state courts.

34. A West Reference Attorney explained that "[t]he difficulty with discussing unpublished opinions is that there is not a very clear definition of what opinions are considered unpublished. The definition used to mean decisions that did not appear in a print reporter . . . [T]oday we (and competitors) carry many decisions that will never appear in a print reporter." E-mail from Thomson West Reference Attorney to Marcie Seiler, Research Assistant to Professor Hoffman (Nov. 21, 2006, 19:52 EST) (on file with authors).

35. In 1964, the Federal Judicial Center began to discourage federal courts from spending time on "unpublished" decisions. *See* Swenson, *supra* note 29, at 121. Less than ten years after the Center revealed its policy, the Advisory Council for Appellate Justice issued formal guidelines to govern opinion writing. The guidelines suggested that an opinion should be published if it established a new rule of law or modified an existing rule, if it involved a legal issue of "continuing public interest," if it criticized existing law, or if it resolved a conflict of authority. Lauren K. Robel, *The Myth of the Disposable Opinion: Unpublished Opinions and Government Litigants in the United States Courts of Appeals*, 87 MICH. L. REV. 940, 941 n.3 (1989). It is interesting to compare these events with the contemporaneous move to codify federal statutes and regulations. *Cf.* Note, *Federal Register and the Code of Federal Regulations—A Reappraisal*, 80 HARV. L. REV. 439 (1966) (discussing the history of the codification project as a product of the desire for uniformity).

used to disseminate any written materials to customers was eclectic.[36]

The E-Government Act of 2002 changed this distribution system by requiring federal courts to post all of their "opinions" on their websites, regardless of whether the opinions were designated (for the Federal Supplement) as published or unpublished.[37] The Judicial Conference defines "written opinion" as "any document issued by a judge or judges of the court, sitting in that capacity, that sets forth a reasoned explanation for a court's decision."[38] The definition excludes routine dispositions like scheduling orders or rulings on motions for extension of time.[39] The databases harvest such opinions and, after adding codes like Keycites, make them available for a fee.

Thus in theory if a disposition is on Westlaw or Lexis, a judge has determined that it "sets forth a reasoned explanation for a court's decision." If that modern disposition is not on Westlaw or Lexis, the judge has decided not to explain it fully. Texts that judges do not designate as opinions will remain unseen, except by those individuals who are willing to pay to access the docket, or come to the courthouse in person.

We are thus comfortable distinguishing between opinions and orders with a simple definition:

> *For our purposes, an "opinion" is any judicial disposition on Westlaw or Lexis; an "order" is any disposition that is not.*

We seek to determine when trial courts resolve dispositions through what they perceive to be "routine, non-substantive orders" and when they (instead) "set forth a reasoned explanation" for their decisions. We will identify reasoned dispositions by their presence in the electronic databases.[40]

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36. Beginning in 1973, Lexis offered access to opinions in its electronic databases, and in 1975 Westlaw did the same. *See* Lawrence Duncan MacLachlan, *Gandy Dancers on the Web: How the Internet Has Raised the Bar on Lawyers' Professional Responsibility to Research and Know the Law*, 13 GEO. J. LEGAL ETHICS 607, 621 (2000). Until very recently, the Databases obtained opinions when the court, judges, clerks, and attorneys submitted them. ROWLAND & CARP, *supra* note 23, at 18 ("[The] attitude of West publishing company . . . seems to be that it will publish any writing which a sitting federal district judge sends into the company." (quoting Allen Vestal, *Reported Opinions*, *infra* note 52, at 405)).

37. LINDA D. KOONTZ, U.S. GOV'T ACCOUNTABILITY OFFICE, ELECTRONIC GOVERNMENT: FEDERAL AGENCIES HAVE MADE PROGRESS IMPLEMENTING THE E-GOVERNMENT ACT OF 2002, (2004) *available at* http://www.gao.gov/cgi-bin/getrpt?GAO-05-12.

38. *See* Release Notes, District CM/ECF, Version 2.4, https://ecf.cand.uscourts.gov/cand/info/releases/2.4.htm (last visited Jan. 28, 2008); Pub. L. No. 107-347, § 205(a)(5), 116 Stat. 2899, 2913 (codified at 44 U.S.C. § 3501).

39. *Id*.

40. We recognize that there are differences in opinion-writing practice between jurisdictions, and

B. *The Theory of Opinionology*

The orthodoxy assumes that judges are rational and write opinions to maximize their expected utility. Two recent contributions, by Seventh Circuit Judge Richard Posner and by Ahmed Taha, are paradigmatic.[41] Taha's model, unlike Posner's, accounts for the desire to achieve promotion among trial courts and attempts to measure the independent utility of writing.[42]

The basic import of such models is that judges will be more likely to write an opinion in cases where they can best advance their policy preferences. Such disputes are the high-profile, constitutional, and federal civil rights matters that dominate news coverage. Similarly, judges will write opinions more in federal question cases and when writing to powerful audiences of lawyers and parties. We have referred to this as the *importance bias or hypothesis*. Similarly, judges who are younger or who are themselves women or minorities may choose to write as a way of increasing the likelihood of public exposure and recognition and thus promotion.[43] We referred to this as the *demographic bias or hypothesis*.

C. *Opinionology: The Empirical Evidence*

1. *The Story Judges Tell Themselves*

District judges rarely discuss their role as opinion writers. Those that do ascribe to themselves a dispute management, rather than law-shaping,

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this description is the product of one of the authors' experiences firsthand as a district court clerk in the Eastern District of Pennsylvania and then as a litigator in several other jurisdictions. Indeed, our category system oversimplifies. We observed some "orders" that cited case law and ran for multiple pages and some "opinions" that were merely a few paragraphs long.

41. *See* Richard A. Posner, *What Do Judges and Justices Maximize? (The Same Thing Everybody Else Does)*, 3 SUP. CT. ECON. REV. 1 (1993) (analyzing behavior of appellate judges); Ahmed E. Taha, *Publish or Paris? Evidence of How Judges Allocate Their Time*, 6 AM. L. & ECON. REV. 1, 6 (2004) (analyzing, in part, district judges).

42. Taha, *supra* note 41, at 5. Taha's model reads: $U_i(t_p, t_j, t_l, P(t_p), C(t_p, t_j), R(t_p, t_j), I(t_l), O)$. In the model, i represents a judge; t_p is the time spent writing; t_j all other judicial activities, including writing orders; t_l is leisure time; P is the utility associated with writing; C is the probability associated with promotion to a more prestigious court (itself a function of a tradeoff between opinion writing and other judicial functions); R measures reputation; I represents income; and O is other utility, including the possibility of reversal. Posner's "very simple formal model of the judicial utility function" excludes the possibility of utility from writing or promotion. It reads: $U = U(t_j, t_l, I, R, O)$. Posner, *supra* note 41, at 31.

43. *See* JOHN PAUL RYAN ET AL., AMERICAN TRIAL JUDGES: THEIR WORK STYLES AND PERFORMANCE 238–39 (1985) (discussing demographic effects).

function.[44] If opinions are necessary at all, most judges explain them as persuasive writings directed at higher courts.[45] As Judge Kinneary of the Southern District of Ohio opined, "I think the fundamental reason to write an opinion is to state the reasons for arriving at a certain conclusion, which primarily benefits the court of appeals."[46] And a California bankruptcy judge glossed: "I think it is particularly important for a bankruptcy judge to explain rulings because the appellate courts are [not] bankruptcy specialists. I have learned the hard way that it is a decision not fully explained that returns to haunt."[47]

Appellate judges have grander ambitions.[48] Former D.C. Circuit Judge Patricia Wald explained that judges must write to "reinforce [the judiciary's] oft-challenged and arguably shaky authority to tell others— including our duly elected political leaders—what to do."[49] She continued that opinions demonstrate the consistent application of the rule of law, permit judicial expression, enhance policymaking and persuasion, enable personal gratification of recognition through citation, assist courts to obtain better law clerks, and maximize the odds of promotion.[50] Wald,

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44.   As one trial court judge wrote, in praising another:

He had his share of important cases, but he knew that the primary role of a trial judge is not to chart new directions in the law or to write learned legal treatises of opinions. Rather, it is to ascertain the facts and the law in individual cases and to deal fairly, justly and courteously with the litigants and lawyers who find themselves before him or her.

The Honorable Dickinson R. Debevoise, *Tribute to the Honorable John F. Gerry*, 6 SETON HALL CONST. L.J. 7, 9 (1995).

45.   By contrast, a survey in the mid-1970s reported that some jurisdictions' judges believed that "opinion preparation [was] an essential part of their jobs. . . . [T]rial judges are uniquely equipped to contribute to the development of law in many areas . . . ." STEVEN FLANDERS, FED. JUDICIAL CTR., CASE MANAGEMENT AND COURT MANAGEMENT IN UNITED STATES DISTRICT COURTS 58 (1977).

46.   Robert S. Alexander, *Standing on the Corner When the Streetcar Came By: An Interview With the Honorable Joseph P. Kinneary (1905–2003)*, 32 CAP. U. L. REV. 451, 471 (2003).

47.   George W. Kuney, *Where We Are and Where We Think We Are: An Empirical Examination of Bankruptcy Precedent*, 28 CAL. BANKR. J. 71, 90 (2005).

48.   Although some admit that opinion writing serves to minimize the chances of reversal. *See* Karen M. Poole, *Whitbeck: Case Time, E-Filing Are Priorities as COA Chief*, MICH. L. WKLY., Dec. 10, 2001, at 121, *available at* http://www.milawyersweekly.com/subscriber/archives_FTS.cfm? page=mi/01/C10014.htm&recID=65508*QueryText=whitbeck%20und%20poole (reporting on Appellate Judge comments):

Second, to a greater or lesser degree judges at the trial court level are looking over their shoulders at the Court of Appeals, while judges in the Court of Appeals are looking over their shoulders at the Supreme Court. Some profess not to care. I care. I'll be very candid about that. So if the Supreme Court is going to reverse me, at least they are going to know my reasons for deciding as I did. They may find my reasons to be wrong, but at least they're going to know what they are. I'm just not going to jump to some conclusion. This is my style. Other judges have totally different styles.

49.   Patricia M. Wald, *The Rhetoric of Results and the Results of Rhetoric: Judicial Writings*, 62 U. CHI. L. REV. 1371, 1372 (1995).

50.   *Id*. at 1372.

however, confined these ambitions to the appellate courts: the "[a]bsence of rhetoric [in unpublished dispositions] is principally an appellate court problem," because "[t]he higher a court's place in the judicial hierarchy, the more important it is for that court to rationalize its results."[51]

2. Previous Empirical Scholarship

The opinionologists' quantitative case starts with Professor Allan Vestal's work on publication practice in the district courts.[52] Vestal's scholarship, completed on the eve of the electronic database revolution,[53] observed that the "production of helpful writings by district court judges is almost completely a matter of discretion";[54] whether to write an opinion (or not) was "essentially a personal matter decided by each federal judge."[55] He argued that judges' preferences to advance policy goals informed this discretion, as did West Publishing's collection practices.[56]

In one work, Vestal analyzed 3,012 opinions from 1962. He found that some states had more published opinions than others,[57] and that doctrinal categories were unevenly distributed in the database.[58] Vestal also found that different jurisdictions produced different numbers of opinions per judge, from one in Washington State to twenty-three in the District of Maryland.[59]

Later work, following in Vestal's tradition, generally tried to account for the differences between the sample of cases represented by reported opinions and the universe of cases at large.[60] Such data suggested that

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51. *Id*. at 1375.

52. *See* Allan D. Vestal, *Reported Opinions of the Federal District Courts: Analysis and Suggestions*, 52 IOWA L. REV. 379 (1966); Allan D. Vestal, *Reported Federal District Court Opinions: Fiscal 1962*, 4 HOUS. L. REV. 185 (1966); Allan D. Vestal, *A Survey of Federal District Court Opinions: West Publishing Company Reports*, 20 SW. L.J. 63 (1966); Allan D. Vestal, *Publishing District Court Opinions in the 1970s*, 17 LOY. L. REV. 673 (1970).

53. *See* Vestal, *Reported Opinions*, *supra* note 52, at 380 ("There has now appeared on the horizon of legal research a cloud no larger than the hand of a man which foreshadows changes in reporting and distribution more significant than those of the past one hundred years. This is the use of computers.").

54. *See id*. at 387. Vestal noted that the lack of an opinion could result in appellate disfavor. *Id.* at 387 n.37.

55. *See* Vestal, *Survey*, *supra* note 52, at 96.

56. *See* Vestal, *Reported Opinions*, *supra* note 52, at 390–91.

57. Primarily, opinions arising from eastern courts.

58. *See* Vestal, *Reported Opinions 1962*, *supra* note 52, at 190–215.

59. *See* Vestal, *Survey*, *supra* note 52, at 82 tbl.VI.

60. This focus may confuse modern readers, because, as we have observed, there is no difference today between opinions published and unpublished: both can be found on the databases. But these previous authors were writing in a time when the lines had not yet blurred.

approximately only five[61] to twenty[62] percent of cases result in a *reported* opinion.[63] The opinionologist orthodoxy has assumed that the unpublished "missing cases" represent a rational choice by judges seeking to maximize political, legal, or personal ends.[64] As Siegelman and Donohue explained:

> The most important pattern that emerges from [the analysis] is a simple one: cases with published opinions are indeed significantly different from those without them. The published cases tend to be longer, more complicated, more heavily concentrated on newer areas of the law. They also seem to include a different mix of plaintiff occupations, to proceed at a different pace through the legal system, and to end in different kinds of outcomes.[65]

Similarly, Susan Olson concluded that the "choice of which and how many judicial opinions to send up [to the reporter system] is left up to the individual district judges with only minimal policy guidance."[66]

Thus, the opinionologist orthodoxy concluded that there is a problem of unrepresentativeness in the database of federal district court opinions, which was worth more detailed study.[67] In recent years, scholars have

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61.   *See* Susan M. Olson, *Studying Federal District Courts Through Published Cases: A Research Note*, 15 JUST. SYS. J. 782, 790 (1992).

62.   Siegelman & Donohue, *supra* note 15, at 1141; *see also* Swenson, *supra* note 29, at 122.

63.   Percentages of unpublished opinions also vary. *See* Schlanger & Lieberman, *supra* note 6, at 165 (8.7%).

64.   *See, e.g.*, Swenson, *supra* note 29, at 123 (criticizing the either or choice of attitudinal or legal models); Taha, *supra* note 41 (utility maximization model).

65.   Siegelman & Donohue, *supra* note 15, at 1156.

66.   Olson, *supra* note 61, at 786. Looking at the district court of Minnesota, Olson compared reported cases with a sample of the total civil caseload and found that civil rights and federal regulatory law cases were overrepresented while personal injury cases were underrepresented among reported opinions. *See also* Donald R. Songer, *Nonpublication in the United States District Courts: Official Criteria Versus Inferences from Appellate Review*, 50 J. OF POL. 206, 213 (1988) ("[T]here are a substantial number of unpublished district court decisions which cannot be assumed to be trivial or consensual cases.").

67.   *See generally* Evan J. Ringquist & Craig E. Emmert, *Judicial Policymaking in Published and Unpublished Decisions: The Case of Environmental Civil Litigation*, 52 POL. RES. Q. 7, 15–16 (1999) (summarizing literature); *but cf.* CARP & ROWLAND, *supra* note 30, at 16–19. Carp and Rowland argue that trial court opinions are likely to be representative of those courts' public function because opinions are found in the "overwhelming majority of the more important, policymaking cases that come before the lower federal judiciary." *Id.* at 18. They estimated that 85–90% of their dataset "consist of cases that are somewhat unusual and/or which contain elements that potentially affect parties other than those whose case is being litigated." *Id*. The remaining 10–15% of opinions "border on the trivial." *Id*. Thus, although opinions represented "a small part of the real story," and may be "deceptive," there is "no more rigorous way to gather data on the outcome of cases, short of a review of transcripts in each court's files—a task whose dimensions foreclose the prospect on more than case study or sampling . . . ." *Id*. at 16. In another work, Carp and Rowland argue that opinions "primarily reflect the key policy-making, precedent-setting judgments of trial court judges." ROWLAND & CARP, *supra* note 23, at 21.

continued to test what factors influence judges to publish opinions in the reporters, comparing the dataset of opinions with the dataset of all filed cases. The orthodoxy generally analyzes two different categories of potential influence: variables that are shared by many judges within an institution, i.e., "*jurisdictional factors*," and variables that are shared by each judicial disposition with a given case, i.e., "*case factors*."

a. Jurisdictional Factors

The orthodoxy has suggested that different trial court jurisdictions write more (or less) than others.[68] Implicitly, this is a hypothesis that trial courts have a culture that affects individual judges' propensity to explain themselves. Regional differences also appear to shape judicial effort.[69] Thus, "relying solely on cases with published opinions will generally produce a geographically skewed sample of all cases filed in the United States."[70]

The mechanism generating judicial culture is obscure. Recent work in appellate courts suggests that a single, particularly hardworking judge can sharply change his or her colleagues' habits of productivity.[71] This "great judge" theory of judge behavior may be less convincing when applied to the trial courts. As a general matter, district court judges have more immediate demands on their time than appellate judges, and their ability to increase output to mirror a productive colleague is limited.[72] Perhaps for this reason, as we observe later in this paper, culture changes slowly in the

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68. Swenson, *supra* note 29, at 136; *see also* Schlanger & Lieberman, *supra* note 6, at 165 (demonstrating the effect of geography on percentage of opinion writing in relationship to case terminations).

69. CARP & ROWLAND, *supra* note 30, at 18.

70. Siegelman & Donohue, *supra* note 15, at 1144; *see also* Andrew P. Morriss, *Developing a Framework for Empirical Research on the Common Law: General Principles and Case Studies of the Decline of Employment-at-Will*, 45 CASE W. RES. L. REV. 999, 1026 n.112 (1995) (noting that district courts from the Second Circuit produced more opinions than district courts from the Fifth Circuit).

71. Stephen J. Choi & G. Mitu Gulati, *Mr. Justice Posner? Unpacking the Statistics*, 61 N.Y.U. ANN. SURV. AM. L. 19, 24–27 (2005) ("Posner therefore appears to be at least partially responsible for the increase in productivity of published opinions on the Seventh Circuit.").

72. There are some additional, speculative reasons to believe that district court culture is less susceptible to a "great" judge than appellate culture. The work product of appellate courts is largely opinions, which are circulated to all members of the court as a matter of practice. Appellate judges sit and work together. District court work, as we show, consists of orders and litigation practice, which are unique to each judge. Therefore, "great" district judges have less of a chance to signal their diligence to their colleagues than "great" appellate judges.

district court. Courts known for productivity and opinion writing in one generation remain productive, as we explore, in the next.[73]

b. Case Factors

(1) Case Importance and Type

The orthodoxy has found that judges follow the publication guidelines promulgated by the Administrative Office of U.S. Courts in deciding whether to publish.[74] Such studies conclude that "the vast majority of published opinions are explications of discretionary policy decisions that directly or indirectly allocate value beyond the litigants of record."[75] As Siegelman and Donohue remark, if a case "breaks novel legal ground"[76] it will more likely be published. They analogize judicially explained orders to evolutionary mutations.[77]

Olson tested importance by looking at the type of case, and found that certain categories of cases were underrepresented in reported opinions: property, habeas prisoner petitions, forfeiture, contract, and personal injuries.[78] Further, social security cases were underrepresented because judges "do not perceive the cases as involving new legal issues . . . or as being important for other reasons."[79] Conversely, some categories were overrepresented: particularly, federal statutory law, including civil rights.[80] Olson explained the variance based on the need for a judicial decision, arguing that diversity cases were likely to terminate in settlements before

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    73. Perhaps this stability arises because the local bar shapes and constitutes district courts more strongly than appellate courts.
    74. *See* David E. Klein & Robert J. Hume, *Fear of Reversal as an Explanation of Lower Court Compliance*, 37 LAW & SOC'Y REV. 579, 588 (2003); *see also* Swenson, *supra* note 29, at 133–34 (holding all else equal, courts are 8% more likely to publish if opinion complies with guidelines).
    75. ROWLAND & CARP, *supra* note 23, at 19.
    76. Siegelman & Donohue, *supra* note 15, at 1149.
    77. *Id.*
    78. Olson, *supra* note 61, at 790 tbl.1. Olson examined the publication rate, by subject matter, of 697 Minnesota district court opinions. The classification of "subject matter" came from the "nature of suit" code on the civil sheet which attorneys must check at the time of filing, consisting of 84 different case types that Olson further broke down into 13 larger categories. Olson traced each case by docket number and considered it published if it was reported on Lexis. For 330 private-plaintiff cases for which plaintiff's attorneys returned questionnaires, Olson further examined whether published cases were more important than unpublished cases. The questionnaire provided three different measures of a case's significance, including whether the case was a class action, whether an interest group was present on the plaintiff's side, and whether the plaintiff's attorney considered the issues within the case to be important for reasons other than just his or her client. Olson then compared the attorney's responses regarding what they considered significant to what Lexis reported. *Id.* at 789–90.
    79. *Id.* at 791.
    80. *Id.* at 790 tbl.1.

significant judicial involvement.[81] She also asked lawyers which cases *they thought* were important, and then tracked whether those cases had reported opinions. 32% of cases were important to attorneys, but only 9% of those cases resulted in an opinion.[82]

(2) Judge Characteristics

Scholars have also spent some time evaluating the effect of judicial background on opinion writing.[83] There is limited support for the hypothesis that judicial age affects the propensity to write.[84] Similarly, there is mixed evidence on the effects of a judge's educational background,[85] race,[86] previous prosecutor work experience,[87] and political affiliation.[88] On the other hand, the orthodoxy concludes that perceived quality[89] and desire to be promoted have significantly positive correlations with opinion writing.[90]

(3) Party Characteristics

Several studies have tested the relationship between the parties, their counsel, and the likelihood of opinion writing. The dominant hypothesis is

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81. *Id.* at 790–91.

82. *Id.* at 793.

83. This work usually is marked by a methodological error of unknown scope. Many authors assume that the "judge" will remain fixed during the life of a case, such that one could correlate an independent variable (length of a judge's tenure, etc.) with a case's outcome. But many cases involve multiple judges, especially in jurisdictions that use magistrates as an active part of the dispute resolution process. *See* Judith Resnik, *Aggregation, Settlement, and Dismay*, 80 CORNELL L. REV. 918, 935 n.67 (1995) (collecting magistrate judge literature); Linda J. Silberman, *Judicial Adjuncts Revisited: The Proliferation of Ad Hoc Procedure*, 137 U. PA. L. REV. 2131, 2138–41 (1989) (discussing magistrate judge practice).

84. Taha, *supra* note 41, at 18 (noting that older judges 8% less likely to write than younger judges, but result statistically insignificant); *cf.* CARP AND ROWLAND, *supra* note 30, at 17 (quoting federal judge who explained that younger judges write more opinions to "impress everyone").

85. Taha, *supra* note 41, at 19 (no significant effect); Andrew P. Morriss, Michael Heise & Gregory C. Sisk, *Signaling and Precedent in Federal District Court Opinions*, 13 SUP. CT. ECON. REV. 63, 82 (2005) (no correlation between opinion writing and attendance at an elite law school).

86. *Compare* Morriss et al., *supra* note 85, at 82 (finding that rationale of district court opinion writing was sometimes correlated with race), *with* Taha, *supra* note 41, at 11 (finding that race and gender did not significantly relate to opinion writing).

87. Taha, *supra* note 41, at 19 (no significant effect).

88. *See, e.g.*, Taha, *supra* note 41, at 21 (no significant relationship with partisan affiliation).

89. *Id.* at 19 (ABA rating significant).

90. Gregory C. Sisk, Michael Heise & Andrew P. Morriss, *Charting the Influences on the Judicial Mind: An Empirical Study of Judicial Reasoning*, 73 N.Y.U. L. REV. 1377 (1998); Morriss et al., *supra* note 85 (finding a relationship between progressive ambition and opinion writing in sentencing guideline cases); Taha, *supra* note 41, at 21–23 (discussing promotion and political effects).

that judges write more for powerful audiences to advance career goals.[91] Judges are said to write more often in cases with more lawyers[92] and when complaints contain higher amounts in controversy.[93]

D. A Behavioral Model of Opinion Writing

Behavioral law and economics challenges any simple, rational account of judicial motivation.[94] This challenge is so severe that it is surprising that studies of opinion writing have not, to date, considered how judges' explanatory practices are shaped by cognitive bias. In this Article, we offer a preliminary, and admittedly simplistic, behavioral model of opinion writing. This model is necessarily incomplete and contestable. But failures in our model's explanatory power do not result merely from our demerits: one important conclusion of behavioral research is that it is "difficult to predict what individuals will do," as preferences (and thus decisions) are manipulable.[95]

A behavioral account of opinion writing, like the conventional orthodoxy, starts by acknowledging that judges face an array of hard choices when trying to maximize the use of their time. Some jurists therefore posit that judges will "expend the greatest effort on deciding cases in areas in which the opinion will bring the judge prestige and other reputational benefits."[96] These areas will be either personal to the judge,[97] or those which normally receive mainstream attention (e.g., "first amendment cases").[98] Thus, at least on one view, behavioralism would support the importance and demographic hypotheses.

But this view does not account for the effect of reversal on trial judges' self-esteem, nor the ability of judges to control the risk that their decisions will be reversed. Even rational judges might worry about reversal rates.[99]

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91. There are alternative stories one might tell. Perhaps judges write more opinions before such parties because the briefs are better and clearer to understand, or because counsel filter cases that are worth the court's time.

92. Siegelman & Donohue, *supra* note 15, at 1150.

93. *Id*. at 1152.

94. For a literature review of behavioralism, together with a critique of some of its applications, see Hoffman, *supra* note 25, at 546–48.

95. Hoffman, *supra* note 25, at 547.

96. Stephen M. Bainbridge & G. Mitu Gulati, *How Do Judges Maximize? (The Same Way Everyone Else Does—Boundedly): Rules of Thumb in Securities Fraud Options*, 51 EMORY L.J. 83, 104 (2002) (internal parentheses omitted).

97. GERALD GUNTHER, LEARNED HAND: THE MAN AND THE JUDGE 145 (1994) ("[Hand] enjoyed mastering new fields [of law] . . . .").

98. Bainbridge & Gulati, *supra* note 96, at 104.

99. Our focus here is the trial court judge. Federal appellate judges are probably less concerned

Some hypothesize that reversal decreases chance of promotion[100] and reduces the opportunities available to a retiring judge due to diminished reputation.[101] That said, in reality, reversal is uncommon.

Studies have found that between 10 and 25% of the federal trial court cases that *are appealed* are reversed.[102] But this is a deeply misleading statistic. In 2006 the trial courts terminated 198,646 cases, but parties commenced only 32,201 cases in the courts of appeal. The appellate courts, in turn, decided 12,338 cases on the merits.[103] Ultimately, notwithstanding the tremendous mass of litigation oozing up from below, the courts of appeal reversed or remanded a mere 1,891 cases.[104] Thus, the effective reversal rate of trial court orders is significantly lower than the reversal rate found in appellate decisions, and is below 1%.[105] In view of these statistics, we doubt that rational judges would change their opinion-writing practices to reduce a reversal risk, especially when professional (legal) norms would push in a contrary direction.

That said, this rare reversal risk is the only substantive professional sanction that federal trial judges ordinarily face.[106] Reversal entails unique

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about reversal. They write as a part of panels, reducing the attribution of wrongdoing on reversal. The Supreme Court has also rejected the idea of Supreme "error-correction," which is to say that reversal of appellate court precedent is almost always a matter of differing normative or political priorities, and not mistake. *See generally* Frank B. Cross, *Decisionmaking in the U.S. Circuit Courts of Appeals*, 91 CAL. L. REV. 1457, 1484–85 (2003) (suggesting reasons to doubt that appellate judges are strongly affected by reversal, and finding support for the legal model of appellate decision making).

100. Morriss et al., *supra* note 85, at 63–96.

101. The evidence of the effect of post-retirement opportunities on judicial behavior is concededly mixed. *See* Jerome A. Maddox, *Do Judicial Salaries Matter? State Appellate Judge Career Decisions and the Opportunity Costs of State Judicial Service* (on file with authors).

102. John B. Oakley, *Precedent in the Federal Courts of Appeals: An Endangered or Invasive Species?*, 8 J. APP. PRAC. & PROC. 123, 126 (2006) ("[T]he rate of reversal of the court below in appeals decided by the federal courts of appeals has fallen sharply, from not quite twenty-eight percent in 1955 to eighteen percent in 1975 and roughly ten percent in 2005."); Chad M. Oldfather, *Remedying Judicial Inactivism: Opinions as Informational Regulation*, 58 FLA. L. REV. 743, 778 (2006) (noting that the 1960 reversal rate of 24.5% had declined to 9.4% by 2003); *cf.* Jon O. Newman, *A Study of Appellate Reversals*, 58 BROOK. L. REV. 629, 632 tbl.1 (1992) (finding that the Second Circuit had reversed trial court opinions at a 24% rate over the preceding two years).

103. *See* STATISTICS DIVISION, U.S. COURTS ADMIN. OFFICE STATISTICAL TABLES FOR THE FEDERAL JUDICIARY 2006 tbls.C-4, B-1 & B-5 (2006), http://www.uscourts.gov/stats/dec06/index.html. For Tables B-1 and B-5, criminal cases, original petitions, and administrative cases have been excluded.

104. *See id*. at tbl.B-5 (adding together the reversed and remanded cases from 2006, while excluding criminal cases, original petitions, and administrative cases).

105. *See also* Newman, *supra* note 102, at 637–38. Judge Newman concludes that although the Second Circuit's reversal rate was 24%, the percentage of civil cases terminated on the merits that were reversed was less than 1%. *Id*. Judge Newman also notes that "[l]itigants and lawyers are accepting the judgments of district courts in the overwhelming percentage of cases, and are appealing only the group of cases for which there appears to be some reasonable prospect of reversal." *Id*.

106. *Cf.* Marc O. DeGirolami, *Congressional Threats of Removal Against Federal Judges*, 10

psychological costs.[107] It might also result in perceived decrease in political power.[108] As the newly developed cultural-status model of risk aversion explains, individuals will consider as particularly significant and odious hazards that affect his or her place within a group ranking.[109] For trial courts, reversal is just such a low-probability threat with a high-emotional valence.[110]

Appellate court opinions signal that explanations and reversal are correlated. When reversing trial court work, appellate judges often comment on the lack of a written opinion.[111] Conversely, when affirming,

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TEX. J. C.L.& C.R. 111, 114 (2005) (stating that from 1799 through 2005, only thirteen federal judges were tried for impeachment by the Senate).

107. *See* Andrew S. Watson, *Some Psychological Aspects of the Trial Judge's Decision-Making*, 39 MERCER L. REV. 937, 949 (1988) ("The inevitable narcissistic desire not to be reversed will influence greatly the judge's writing process."); *see also* James M. Fischer, *Discretion and Politics: Ruminations on the Recent Presidential Election and the Role of Discretion in the Florida Presidential Election Recount*, 69 U. CIN. L. REV. 807, 846 n.139 (2001) ("Like the Shakespearean lady who 'doth protest too much, me thinks,' the District Judges' expression [disclaiming feelings about reversal] masks the exactly opposite internal reality.").

108. *See* Klein & Hume, *supra* note 74, at 579 (finding that on balance, judges act as "faithful agents of their higher court principals"). However, the evidence of the effect of reversal is weakened by a lack of empirical data. *See* Sara Benesh & Malia Reddick, *Overruled: An Event History Analysis of Lower Court Reaction to Supreme Court Alternation of Precedent*, 64 J. POL. 534, 534 (2002) (explaining that literature on compliance is "eclectic"). Part of the problem of aggregating data on judicial reversals is that "the message that the judge receives from having a decision reversal . . . may . . . be affected by who made the decision." Joseph L. Smith, *Patterns and Consequences of Judicial Reversals: Theoretical Considerations and Data from a District Court*, 27 JUST. SYS. J. 28, 33 (2006) (reporting on a study of the D.C. District Court opinions and finding that district courts respond to reversal rates by changing the content of their decisions).

109. *See* Dan M. Kahan, Donald Braman, John Gastil, Paul Slovic & C.K. Mertz, *Gender, Race, and Risk Perception: The Influence of Cultural Status Anxiety* (Yale Law Sch. Pub. Law & Legal Theory Research Paper Series, Paper No. 86, 2005), *available at* http://ssrn.com/abstract=723762.

110. *See generally* CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE 26 (2005) (asserting that members of the public are irrationally fearful of "low-probability risks"); *but cf.* Dan M. Kahan et al., *Fear of Democracy: A Cultural Evaluation of Sunstein on Risk*, 119 HARV. L. REV. 1071, 1083–87 (2006) (describing how a cultural model of risk perception offers a more nuanced view than Sunstein's rational/irrational dichotomy). That individuals overweigh low-probability or high-valence risks does not mean that they are resigned to them. To the contrary, individuals are generally risk-seeking with respect to future losses. Gregory La Blanc & Jeffrey J. Rachlinski, *In Praise of Investor Irrationality*, *in* THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR 542, 555 (2005) (discussing risk-aversive behavior with respect to future gains and risk-seeking when facing potential losses).

111. *See, e.g.*, Interfaith Cmty. Org. v. Honeywell Int'l, Inc., 426 F.3d 694, 713 (3d Cir. 2005) ("Where the opinion of the district court 'is so terse, vague, or conclusory that we have no basis to review it, we must vacate the fee-award order and remand for further proceedings.'" (quoting Gunter v. Ridgewood Energy Corp., 223 F.3d 190, 196 (3d Cir. 2000))); In re MRRM, P.A., 404 F.3d 863, 867 (4th Cir. 2005) (noting the court's reservations about the "conclusory nature of the district court's order allocating the fee"); U.S. v. Nuzzo, 385 F.3d 109, 120 (2d Cir. 2004) ("[I]t is undisputed that the District Court's explanation of its decision to depart [downward from guidelines] was conclusory and limited to a sentence in the written order and judgment invoking a provision of the Sentencing Guidelines."); Edwards v. Wyatt, 335 F.3d 261, 263 (3d Cir. 2003) ("[T]he district court failed in its

the courts of appeal go out of their way to complement trial court explanations.[112] Although empirical evidence on whether opinions reduce reversal rates is at best ambiguous,[113] it is possible that trial judges believe that writing can protect them from shame.[114]

If this belief were widely held, judges would write opinions in support of orders they believed would be appealed. We call this the *reversal hypothesis*. This effect will be strongest in two types of situations: (i) where the judge believes that the type of case at issue is susceptible to appeal; and (ii) where the procedural posture makes appeal likely.

We will discuss this procedural effect more below. However, the reader may appreciate a short explanation of the "case type" effect. There are reasons to think that a trial court will obtain signals about the likelihood of appeal during litigation. The judge might learn (from the vehemence of their oral arguments) of their parties' passion to continue fighting. She might know the lawyers and realize that the litigation will affect a series of cases, thus requiring a final appellate statement on the law. And, of course, she can look at the issues to be decided and realize that they are extremely controversial or novel. Conversely, she might learn during settlement discussions facts about the parties' wealth that make appeal unlikely. Only some of these factors will be visible to an outside observer, and a judge will learn more about the likelihood of appeal the longer a case survives before her.

We also acknowledge a serious causation problem. The reversal hypothesis posits that judges are more likely to write opinions in orders likely to be appealed: that is, the potential for appeal causes opinions. But

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opinion to express its reasoning or findings having to do with the alternate . . . ."); Pasquino v. Prather, 13 F.3d 1049, 1050 (7th Cir. 1994) ("Because the district court failed to articulate adequately the ground for its decision, we must vacate the district court's judgment and remand the case to permit the district court to provide a more plenary explanation for its decision . . . .").

112. *See* Westland Holdings, Inc. v. Lay, 462 F.3d 1228, 1230 (10th Cir., 2006) ("[We agree] with the well-reasoned opinion of the district court . . . . [and] as we have on other appropriate occasions, we formally adopt the decision, attached as an appendix hereto, as our own."); Weber v. Iowa State Bank and Trust Co. of Fairfield, Iowa, 457 F.3d 857, 859 (8th Cir. 2006) ("[As evidenced by its] expansive and well-reasoned opinion . . . . the district court properly dismissed [the] claim."); Fasano v. Fed. Reserve Bank of N.Y., 457 F.3d 274, 287 (3d Cir. 2006) ("[We] count ourselves fortunate to have the benefit of a very well-reasoned opinion of Judge Padova of the Eastern District of Pennsylvania . . . ."); BancInsure, Inc. v. Marshall Bank, N.A., 453 F.3d 1073, 1077 (8th Cir. 2006) (affirming "the well-reasoned opinion of the district court in all respects"); Harrell v. U.S., 443 F.3d 1231, 1233 (10th Cir. 2006) (agreeing with and adopting fully "the well-reasoned opinion of the district court . . ."); Evans v. UnumProvident Corp., 434 F.3d 866, 879 (6th Cir. 2006).

113. *See supra* note 108.

114. *See supra* notes 44–48 and accompanying text. It is possible that the legal system might have behavioral reasons for encouraging opinion writing. *See* Guthrie, Rachlinski & Wistrich, *supra* note 22, at 36–38 (discussing the benefits and costs of using opinion-writing as a debiasing technique).

what if opinions cause appeals? A losing party may see an opinion as a signal of the difficulty of the issues, making the case a better candidate for appellate review. Or, perhaps, some unknown other factors increase the likelihood of opinions and appeals.[115] The data do not exclude the "appeals cause opinions" link that we have hypothesized, but the causative direction is inconclusive.[116] Ultimately, we conclude that further research will be needed to support the reversal hypothesis.

A second behavioral hypothesis rests on the observation that trial judges care about their reputation before a variety of audiences, not just the court of appeals.[117] We have already discussed the role of audience with respect to advancement within the judicial hierarchy. It is true that trial judges seeking promotion may take care to cultivate reputations as thoughtful or ideologically acceptable. But this external story of reputation-seeking is incomplete. As Bainbridge and Gulati observe, "[t]he most important audience is likely to be that of other judges."[118] Other trial judges may believe that the best kinds of judges are those which dispose of cases quickly through settlement.

This role of trial judges as managers has been well explored in the literature,[119] but the constant tweaking of the legal landscape necessary to dispose of their dockets has to date been underappreciated.[120] In particular, scholars have been insufficiently attendant to the shaming sanctions that judges face if they fall too far behind on their docket.[121] In essence,

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115.   We are grateful to Margo Schlanger, Craig Green, and other readers for this useful critique.

116.   Conversations with district court clerks suggest that trial courts do structure their decision-making practices to avoid appeal, though the evidence here too is mixed. Similarly, the words of some judges support our story. *See supra* notes 44–47. Additionally, as reader Jeff Dunoff suggests, perhaps longer opinions discourage appeals and thus reduce the risk of reversal. Such is the case, he suggests, in the context of disputes arising in the World Trade Organization.

117.   *See* LAWRENCE BAUM, JUDGES AND THEIR AUDIENCES: A PERSPECTIVE ON JUDICIAL BEHAVIOR 32–39 (2006) (describing the basic implications of an audience-centered view of judicial behavior).

118.   Bainbridge & Gulati, *supra* note 96, at 107.

119.   One starting point is with Judith Resnik, *Managerial Judges*, 96 HARV. L. REV. 374 (1982), which suggests how judges manage cases rather than decide them.

120.   *Cf.* Allen Redlich, *Who Will Litigate Constitutional Issues for the Poor?*, 19 HASTINGS CONST. L.Q. 745, 766 n.135 (1992) (noting that judges rarely write opinions in cases that settle or which end in jury verdicts).

121.   These shaming sanctions flow from the Civil Justice Reform Act (CJRA), 28 U.S.C. § 476(a) (2000). Congress enacted the CJRA to improve the quality of the process of civil litigation by addressing the problems of excessive cost and delay. *See* Michael A. Perino, *Drafting Mediation Privileges: Lessons from the Civil Justice Reform Act*, 26 SETON HALL L. REV. 1, 2 (1995). The CJRA process publicly monitors the outcomes of motions and trials in each court. It requires the Administrative Office to report to Congress and the public biannually the number of motions pending for longer than six months for each judge, the number of bench trials not decided for more than six months, and the number of cases that have not been resolved within three years. *See* Joseph R. Biden,

Congress (through the Administrative Office) publishes a list naming judges whose dockets are too full. Such dilatory judges face the gentle ribbing of their fellows at the judicial lunch table and the harsh glare of the media spotlight.[122]

Such sanctions can be ameliorated by gaining a reputation as a docket-managing, settlement-encouraging judge. One obvious way to expedite dockets is to write fewer opinions.[123] But a more subtle approach is to find ways to encourage settlement. The public and bar often praise judges for bringing about settlements and rarely vilify them.[124] The bench has several powerful tools in its arsenal to settle cases. One important technique is a judge's ability to manipulate rulings early in cases (i.e., where the likelihood of appeal is low) to give both parties partial victories. In such compromise decisions, as behavioral research teaches, neither party will be endowed with excessive attachment to past victories and both parties will be risk-averse about the possibility of future defeats.[125]

We hypothesize that judges—consciously or not—avoid irrational party endowment through opinion writing.[126] Holding all else equal, we

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Jr., *Congress and the Courts: Our Mutual Obligation*, 46 STAN. L. REV. 1285, 1294 n.61 (1994); *see also* John Ferejohn & Larry D. Kramer, *Judicial Independence in a Democracy: Institutionalizing Judicial Restraint*, *in* NORMS AND THE LAW 177 (2006) (criticizing CJRA for undermining judicial independence). In the end, the CJRA program as implemented had little effect on time to disposition, litigation costs, satisfaction, or views of fairness. JAMES S. KAKALIK ET AL., JUST, SPEEDY, AND INEXPENSIVE? AN EVALUATION OF JUDICIAL CASE MANAGEMENT UNDER THE CIVIL JUSTICE REFORM ACT (1996), *available at* http://www.rand.org/pubs/research_briefs/RB9027/index1.html.

122. *See, e.g.*, John Council, *The Slowpoke Report: Claims Based on Old Prison Litigation Show up in 2006*, TEX. LAW., Jan. 1, 2007, at 6 (discussing Judge Furgeson's delayed docket); John Council, *The Slowpoke Report: Hurricane Rita Hampers Hand-Downs*, TEX. LAW., Jan. 2, 2006, at 1 (discussing Judge Heartfield's delayed docket); Brendan Stephens, *U.S. Judges Trim Backlog of Older Cases*, CHI. DAILY L. BULL., Dec. 7, 1998, at 1 (analyzing Northern District of Illinois and naming overdue judges).

123. Indeed, there is some evidence that there is a tradeoff between opinion writing and finishing judicial work in a timely way. FLANDERS, *supra* note 45, at 58–59 (observing inverse relationship between opinion writing and case terminations per judge).

124. A search in Westlaw's electronic version of the Almanac of the Federal Judiciary [AJF Database] for the term "good settlement judge" produced 19 hits; a search for "settlement judge" produced 52 hits, all reflecting a positive value that lawyers put on settlement. *But cf.* Owen M. Fiss, *Against Settlement*, 93 YALE L.J. 1073 (1984) (arguing against ADR procedures). The explanation in the text above refers only to civil cases. The "settlement" of criminal cases by plea bargaining is more controversial.

125. *See* Jeffrey J. Rachlinski, *Gains, Losses, and the Psychology of Litigation*, 70 S. CAL. L. REV. 113, 147–48 (1996) (discussing how a party's views of his rights may change during the litigation as a result of psychological endowment); *see also* Thierry Post et al., *Deal or No Deal? Decision Making Under Risk in a Large-Payoff Game Show* (EFA 2006 Zurich Meetings Paper, June 2007), a*vailable at* http://ssrn.com/abstract=636508 (discussing effect of earlier near losses on future risk assessment).

126. Whether judges are conscious of their own behavioral biases and the strategies they use to ameliorate them is basically immaterial, and is in any event, a distinction that the data do not speak about. *See generally* Paul J. Heald & James E. Heald, *Mindlessness and Law*, 77 VA. L. REV. 1127,

expect orders early in cases or where the parties obtain complete victories; compromises and late dispositions should be more likely to manifest in opinions. This is the *settlement hypothesis*.[127]

Thus, this Article offers a direct challenge to opinionology's structural and motivational assumptions about trial court rhetoric. We believe that the orthodoxy's empirical findings rely on an inappropriate dataset— cases—and rest on theoretical assumptions about human nature which are problematic. We summarize our challenge in the Table below. In Appendix C, we list the variables we have evaluated and their relationship to our hypotheses. In the next Part, we describe the data used to test these competing hypotheses.

	OPINIONOLOGY	DOCKETOLOGY
Structural Unit of Analysis	The Case	The Judicial Order
Motivational Assumptions	Rational Actor Model	Cultural Status Anxiety; Cognitive Bias Affecting All Parties
Specific Factors Likely to Increase Opinion Writing	Case importance; inexperienced, ambitious, and minority judges; geography; party wealth.	Procedural posture; case importance; minority judges; interaction with settlement and party endowment; geography.

1137 (1991) (describing the difficulty in distinguishing between conscious and nonconscious precursors to action).

    127. Our hypothesis does not address the content of judges' discovery decisions. *Cf.* Joel L. Schrag, *Managerial Judges: An Economic Analysis of the Judicial Management of Legal Discovery*, 30 RAND J. ECON. 305 (1999) (modeling inverse relationship between availability of early discovery and the chances of settlement). Nor does this hypothesis exclude other explanations for why opinion writing early in litigation would be rare. For example, perhaps trial courts internalize a sense of role, and do not want to give parties the appearance of partiality early in litigation, before such views would be appropriate. Similarly, judges are usually politically savvy and are selected (in part) because they rarely offend. Thus, they may be disposed to seek decision-making strategies that reduce conflict and tend to resist making one party angry at an early stage in the life of a case. We are in debt to Laura Little for these alternative possibilities.

II. METHODOLOGY AND DESCRIPTIVE STATISTICS

A. Methodology

We began by selecting four jurisdictions to study. We had two goals in creating a sample: (1) to find jurisdictions that had adopted electronic docketing by 2003, permitting complete information for most complicated cases; and (2) to find jurisdictions whose case filing in 2003 contained types that were fairly like the national averages. Ultimately, we decided to focus on the District of Maryland, the Northern District of California, the Southern District of New York (SDNY), and the Eastern District of Pennsylvania (EDPA).[128]

Having selected the jurisdictions, we trained law students to code each judicial action taken in 250 cases filed in 2003.[129] For each docket, the students recorded from the docket header a variety of factors concerning each judicial action: docket number, order type, jury demand, basis of jurisdiction, type of case, and total docket entries, to name but a few. For a subset of cases, our coders added other factors, including number and character of parties and counsel, whether an opinion issued, the dates of various orders, the result of the order, and the writing judge's demographic characteristics.[130]

To reduce data collection error, we undertook "dry run" coding sessions with each of our coders. We validated the data by observing and eliminating impossibilities (e.g., a case with a higher value of days pending than total duration). Finally, we audited various selections of the data.[131]

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128. For more detail on the Sample, see *infra* Appendix A-1.

129. The civil justice wheel distributes each case through the courthouse door to a random judge. We chose the 1,500th case of the year to start because two of our jurisdictions did not start e-filing until March 2003 (the busiest jurisdiction filed its 1,500th case in early March).

130. These variables are further defined in Appendix C.

131. Our final audit observed an error rate of 1%. We selected 100 cases at random and compared the results to that recorded by the coders, looking at four key categories: the type of order, the result of the order, the result of the case, and the type of case. We found a 1% error rate in these 100 cases. We did not, however, perform an inter-coder reliability analysis, as we failed to originally record which student coded which jurisdiction, and did not systematically ask students coding the same jurisdiction to check their reliability. We estimate the highest source of error is the *result* variable: it is hard to tell who wins some types of orders. Similarly, we believe that there may be errors in order type, which reflects difficulties that can sometimes result when different jurisdictions label types of orders in different ways (in particular, the relationship between district judges and magistrates).

B. Descriptive Statistics

We begin by describing the data. After accounting for corrupted entries,[132] there were 980 cases and 5,736 unique dispositions.[133] The four jurisdictions displayed similar numbers of total judicial activity,[134] averaging between 5.59 and 6 orders per case.[135] However, as Figure 1 demonstrates, the distribution of docket entries per case—a very crude measure of procedural complexity—demonstrates a declining curve. The first lesson from our data is this: most cases are procedurally simple.[136]

FIGURE 1: A HISTOGRAM OF DOCKET ENTRIES PER CASE[*]

Distribution of Complexity
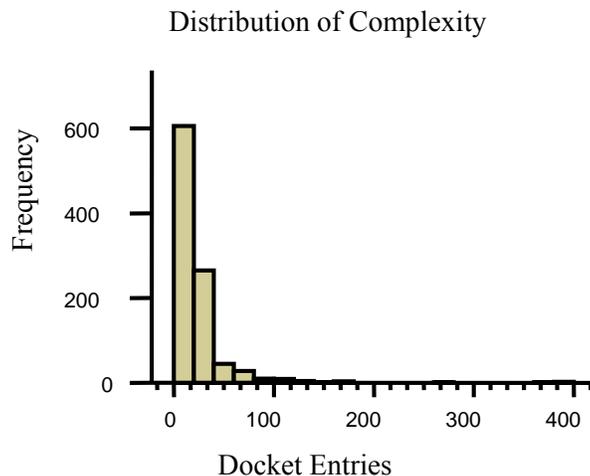
∗ The number of docket entries is on the horizontal axis and the total number of cases with that number of docket entries on the vertical axis. This figure illustrates that almost 600 cases had fewer than 15 docket entries, while fewer than 10 cases had more than 150 entries.

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132. Repeated entries were the most common. Some cases appear to have been mistakenly docketed twice. We deleted such cases on review.

133. Maryland had 248 cases; New York 247; Pennsylvania 237; and California 248.

134. Maryland had 1,456 orders; New York 1,482; Pennsylvania 1,412; and California 1,386.

135. Maryland had 5.87 orders/case; New York 6 orders/case; Pennsylvania 5.96 orders/case; and California 5.59 orders/case.

136. *See* Kesan & Ball, *supra* note 6, at 272 (observing that the "vast majority" of patent disputes settle); David M. Trubeck et al., *The Costs of Ordinary Litigation*, 31 UCLA L. REV. 72, 83–84 (1983) (ordinary cases resolved quickly).

The jurisdictions differed significantly in terms of total opinions produced, from a high of 1 opinion per 2.6 cases in Pennsylvania to a low of 1 opinion per 12.4 cases in California.[137] As predicted, Westlaw collected more opinions than Lexis.[138] Overall, of the 5,736 judicial actions we recorded, only 178—3%—came accompanied by opinions.[139]

Of the 5,736 orders, 4,631 (or 81%) were "ministerial": orders scheduling cases, approving settlements, issuing judgments, referring to magistrates or mediation, and managing the docket (including transfer to the multi-district litigation panel). These judicial acts are routine and never apply precedent. They are mere exercises in managerial power. Here, judges act most clearly as bureaucrats, running their courtrooms and churning cases.[140] Interestingly, the number of ministerial orders varied by case, judge, and jurisdiction.[141]

Ministerial orders never lead to opinions. (Imagine the opinion that would attempt to explain why a judge had decided to permit an adjournment of a three o'clock phone conference until half past three.) As it turns out, only half of cases require judges to do anything more than issue a few ministerial orders before the parties settle. Of the 980 cases we observed, 496 contained only ministerial orders; the remaining 484 cases contained both ministerial and what we came to think of as "hard" (non-ministerial) orders. (Cases containing hard orders we called "difficult cases.")

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137. Maryland had 21 opinions; New York 45; Pennsylvania 92; and California 20.

138. All opinions collected by Lexis were present on the Westlaw database, while 40 opinions were on Westlaw but not Lexis. This result generally confirms that, for historical data, Westlaw is a better source for data collection of trial court opinions. The effect was different between jurisdictions. In New York and Pennsylvania, the databases were essentially identical. In California and Maryland, by contrast, Lexis' collection was significantly smaller than West's. Generally, we expected this result, as both anecdote and scholarship suggest that Lexis' opinion-collection practices are less complete than Westlaw's, especially for historical opinions. *See* Debra Baker, *Treading on Titans' Turf*, 86 ABA J. 44 (2000) (noting Lexis originally compiled its database by hiring workers to type out Westlaw's database).

139. Thus, 18% of total cases resulted in an opinion. This is well within the range established by the existing literature. *See supra* notes 61–63.

140. For more on judges as bureaucrats, see MICHAEL LIPSKY, STREET-LEVEL BUREAUCRACY: DILEMMAS OF THE INDIVIDUAL IN PUBLIC SERVICES (1980).

141. For example, judges in the Southern District of New York issue proportionally more ministerial orders, particularly scheduling orders, than any other district.

Difficult cases survive, on average, three months longer than cases with only ministerial orders.[142] Difficult cases are more likely to be federal question cases[143] but less likely to contain jury demands.[144] 14% of difficult cases led to an appeal, while 21% settled. However, difficult cases exhibit much of the same distribution of complexity as the bigger dataset. Figure 2-a uses a survival analysis to calculate the likelihood that at any given time a given difficult case has not yet terminated. Thus, for example, looking at the 400 day mark on the horizontal axis, we estimate that there is a 50% chance that a case will have terminated. Figure 2-b considers survival per jurisdiction, and shows how different courts manage their dockets at different rates: at 400 days, we estimate that there is a 70% chance that a case from New York will still be pending, but only 30% chance in Maryland.

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142. The total cases database had an average duration of 380 days. The subset of difficult cases had an average duration of 461 days.

143. In the total cases database, 73% asserted federal question jurisdiction while 27% asserted jurisdiction based on diversity. In the database containing only difficult cases, the ratio was 79% to 21%.

144. In the total cases database, 49% contained jury demands and 51% did not. In the difficult cases database, the ratio was 42.5% to 57.5%.

FIGURE 2-A: PROBABILITY OF SURVIVAL

ACROSS ALL DIFFICULT CASES
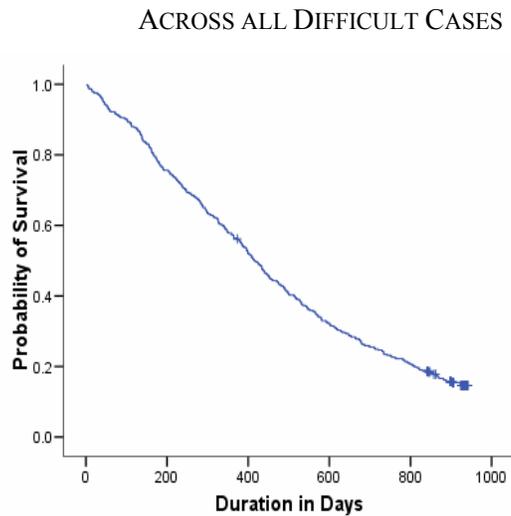
FIGURE 2-B: PROBABILITY OF SURVIVAL ACROSS
ALL DIFFICULT CASES, BY JURISDICTION
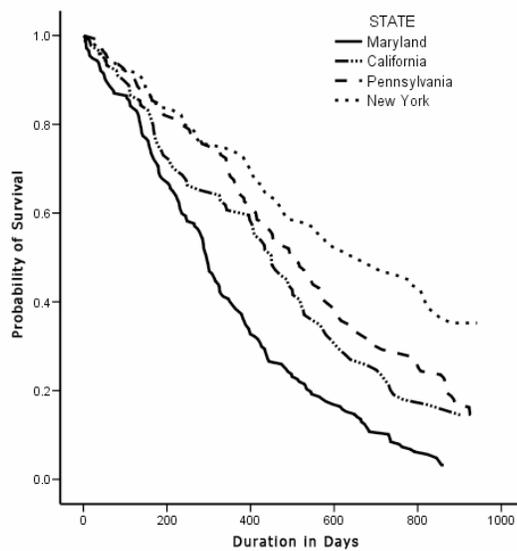
Survival may be affected by factors other than the sitting court. For example, as Figure 3 demonstrates, cases that ended in settlements appear to have different survival characteristics than cases that did not.

FIGURE 3: SURVIVAL OF CASES ACROSS ALL JURISDICTIONS,
CONTROLLING FOR WHETHER THE CASE EVENTUALLY SETTLED
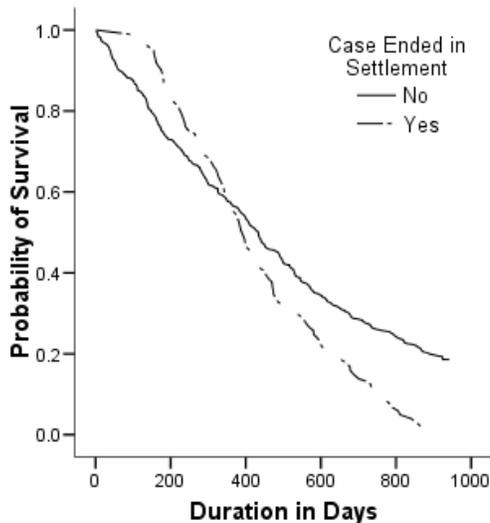
As the reader can see, cases that eventually settle begin "life" appearing more complicated than the ordinary case but quickly begin to "die off." Thus, at 200 days, we predict that almost every case that will eventually settle is still pending, while at 800 days, we predict that the likelihood of such settling cases remaining alive is almost zero. By contrast, at 800 days, we predict a 20% likelihood that a non-settling case will still be pending. One lesson from these data reinforces our settlement hypothesis: judges should wait to act in cases that may potentially settle until late in the life of the case, as almost all cases that will settle do so within three years of the filing date.

Because our project questions why judges write opinions, we focused just on orders that were "hard" and ignored the ministerial orders. In other words, we dropped cases that contained only easy orders from our analysis. Although the question of why some cases are easier than others is important, it is beyond the scope of this Article.

In all, we coded 1,091 hard orders in the 484 remaining cases, averaging 2.25 orders per case.[145] These hard orders came in over fifty

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145. The total cases database averaged 5.85 orders per case.

different types.[146] Figure 4 describes the relationship between the top twenty order types.

FIGURE 4: THE PERCENTAGE OF TOTAL HARD ORDERS REPRESENTED
BY THE TOP TWENTY HARD ORDER TYPES
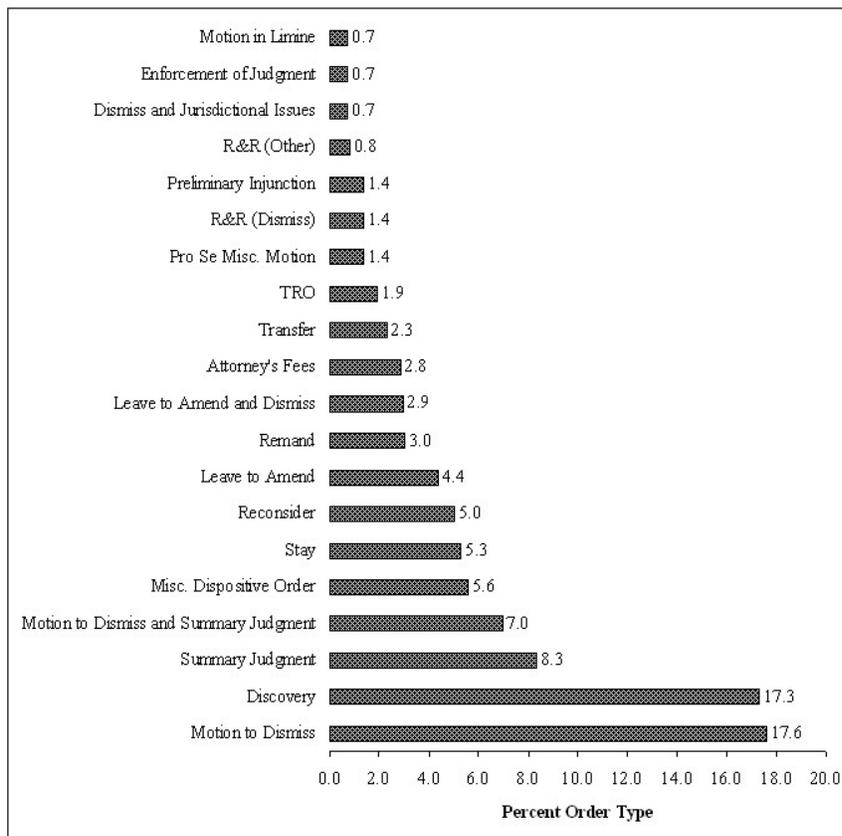
Motions to dismiss, summary judgment, and discovery orders comprise the majority of hard judicial orders in the database. But the figure demonstrates the wide variety of orders produced by trial judges, most of which, as we explore, are never fully explained and thus are not read by non-parties to lawsuits.

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146. See *infra* Appendix A for a further description of how we categorized orders.

We observed over fifty different kinds of procedural posture that could lead to a judicial action.[147] We reduced these possibilities to three major types, determined by the relationship between the kind of motion and the likelihood that it would be appealed. The first, "management orders," are rarely immediately appealable (discovery is a prime example).[148] Such orders result from decisions early in cases, and if denied lead to further work in the trial court most of the time. Moreover, they are traditionally seen as part of the docket-management task that is left to the trial court's discretion. Trial courts rarely expect such orders to be appealed.

The second type, "intermediate orders," result in appeals only some of the time (motions to dismiss are paradigmatic).[149] The final category is "final action orders," which are almost always conclusive and appealable (like granting summary judgment).[150]

Management orders represented 33.5% of the orders, but only 24% of the total opinions. Intermediate action orders represented 41.1% of orders, but only 34% of opinions. Final action orders presented the remaining 25.4% of orders, but almost half (42%) of opinions.[151]

These proportions support the reversal hypothesis. However, to fully explore that relationship, we require a regression analysis.

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147. *See infra* Appendix A.2, Table A-1.

148. Orders included in this category were: class certification, discovery orders, stays, contempt orders, appointment of masters, motions in limine, in-trial orders, motions to intervene, attorney's fees orders, motions to amend, joinder petitions, motions for an interlocutory appeal, and writs of execution. We acknowledge that some of these orders, in particular, class certification decisions, are subject to special discretionary appeals. *See* FED. R. CIV. P. 23(f). Such appeals do not stay proceedings in the district court unless the district court or the court of appeals so orders. *Id. See generally* Blair v. Equifax Check Servs., Inc., 181 F.3d 832, 833–35 (7th Cir. 1999) (noting wide discretion to consider appeals, but suggesting that such review should be exercised carefully).

149. Orders included in this category were reports and recommendations (on motions to dismiss, prisoner petitions, summary judgment, and miscellaneous matters), motions to remand, transfer, dismiss, for a temporary restraining order, for a preliminary injunction, for reconsideration, to vacate default judgment, and combinations of either the previous order types or between these order types and "management orders." Remand orders, as a special case, were difficult to categorize. Although they are not ordinarily appealable, they nevertheless occasion substantial briefing because they are dispositive when granted.

150. Orders included in this category were judgments on the pleadings, summary judgments, permanent injunctions, post-trial motions, enforcements of judgment, writs of attachment, miscellaneous dispositive orders, forfeitures, arbitration, combinations of the previous order types, and combinations between these order types and either intermediate or management order types. (Thus, if a summary judgment order were to be paired with a motion to dismiss, the resulting judicial disposition would be in the final order category.)

151. Some readers of this paper in draft have suggested that because our categories do not differentiate between the winners and losers of orders, there is a potential for confounding. We discuss this issue at greater length *infra* note 161.

III. STATISTICAL ANALYSIS

If we were to adopt the opinionologists' structural error and assume that judges only write opinions once during a case, our data would confirm the orthodoxy. A "kitchen sink" regression, including all of the variables in Appendix C, found that multiple variables changed the likelihood of opinion writing at significant levels. On that list are: firm wealth, number of lawyers, case types, judge experience, judge demographics, and the length of time a case was pending before the disposition issued.

But this regression would mislead. Traditional techniques of statistical inference assume that the observations (in our case, the dispositions) are independent of one another. Our data, by contrast, consist of variables that characterize individual dispositions, but these dispositions also form part of the history of a larger entity: the case itself. Furthermore, cases are also nested within an even larger entity: the jurisdiction. Variables that characterize dispositions within the same case are more similar than variables that characterize dispositions in different cases; cases within the same jurisdiction may be more similar than cases in different jurisdictions.[152] An illustration may help:

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152. This is not to say that a Racketeer Influenced and Corrupt Organizations Act (RICO) case in New York is more like an admiralty case in New York than a RICO case in Pennsylvania, but that the case's opinion-writing characteristics will share a jurisdictional culture of opinion writing of unknown strength.

| SDNY | EDPA |

Jurisdictions: Each has a unique culture of opinion writing and unique methods of distributing opinions to Westlaw and Lexis.

| Case 1 | Case 2 |

Cases: Each case within New York shares a culture of writing, but has unique *case* attributes. E.g., each case has a case type (civil rights, contract, etc.), distinct numbers (and wealth) of parties and lawyers, and a unique complication index.

| Order 1 |
| Order 2 |
| Order 3 |
| Order 4 |
| Order 5 |
| Order 6 |

Dispositions: Each order shares *jurisdictional* **and** *case* factors, but has unique *dispositional* attributes. For example, each order is unique in its procedural posture and how long Case 1 was pending when the order issued.

The technical description for these data in statistics is "hierarchical." Hierarchical data require evaluation by special statistical models.[153] A "hierarchical linear model" (HLM) controls for dispositions within a case that resemble each other and cases within jurisdictions that share cultural

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153. Specifically, the model is a linear logistic model with hierarchical structure on the input variables. The left-hand-side of the model is a logit transformation of a probability: $\log(p/(1-p))$. The right-hand-side of the model is linear in the parameters (i.e., the unknown coefficients of the variables).

characteristics.[154] HLM modeling is complex, ordinarily requiring the use of specialized software.[155] Perhaps as a result, HLM has been employed rarely in the law reviews, and this Article marks its first application to the court system.[156] Nonetheless, we predict that HLM modeling will soon be recognized as the most appropriate statistical method to use when evaluating the common law.

In Appendix B, we reproduce the complete results from the hierarchical model, together with a full explanation of how such modeling proceeds. In the text, we will assume that most readers are less interested in why the model works and more interested in the results it produced.

* * *

Our HLM model decisively rejects the opinionologist orthodoxy. Many of the effects predicted by the conventional wisdom—and confirmed by our kitchen-sink analysis—were not significantly related to opinion writing. For example, the basis of federal jurisdiction, the number and wealth of counsel, the complexity of cases, the existence of decisions resulting from compromise, the timing of decisions, and the presence of federal government all had *no significant relationship with opinion writing*. The effects that we—and others—observed with respect to these variables disappear when procedural, jurisdictional, and case type factors are taken into account. We observed no relationship between opinion writing and any judicial demographic, congestion, or experiential characteristic.

On a more positive note, the HLM model supports our major hypotheses, at least in large part.

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154. For a description of HLM modeling, see generally ANTHONY S. BRYK & STEPHEN W. RAUDENBUSH, HIERARCHICAL LINEAR MODELS: APPLICATIONS AND DATA ANALYSIS METHODS, ADVANCED QUANTITATIVE TECHNIQUES IN THE SOCIAL SCIENCES, VOLUME 1 (1992). *See also infra* Appendix B.

155. We used the HLM 6 software package, available from Scientific Software International, Inc. Other packages are available, including R.

156. *See, e.g.*, Paula L. Hannaford et al., *The Timing of Opinion Formation by Jurors in Civil Cases: An Empirical Examination*, 67 TENN. L. REV. 627, 636 (2000) (using HLM model to estimate jury behavior); Robert J. Sampson & Dawn Jeglum Bartusch, *Legal Cynicism and (Subcultural?) Tolerance of Deviance: The Neighborhood Context of Racial Differences*, 32 LAW & SOC'Y REV. 777, 789 (1998) (using HLM model to estimate the relationship between geography and views on crime); *cf.* Bernard E. Harcourt & Jens Ludwig, *Broken Windows: New Evidence from New York City and a Five-City Social Experiment*, 73 U. CHI. L. REV. 271, 288 (2006) (commenting on another HLM study).

A. Jurisdictional Factors

As expected, there were important differences between jurisdictions. Holding the District of Maryland as the baseline, and controlling for all other variables, the Eastern District of Pennsylvania and the Southern District of New York produced significantly higher numbers of opinions. There was no difference between Northern California's opinion writing and Maryland's. Similar findings in the past with respect to at least two of these jurisdictions suggest that a culture of opinion writing can be fairly stable over time.[157]

B. Case Factors

We observed several relationships between case type and opinion writing, though those relationships were not ones predicted by prior research. Holding all else equal, dispositions within two case types were associated with more opinion writing at significant levels: contracts and labor cases.[158] We found no indication that "important" case types, like civil rights cases or those involving the federal government, were more likely to result in opinions when dispositional and jurisdictional factors were controlled.[159] We also found that dispositions within two other types of cases were less likely to result in opinions than the average: torts and habeas prisoner petitions.

Second, we found that dispositions within cases that resulted in an appeal were more likely to result in opinions.[160]

C. Dispositional Factors

Management orders (e.g., discovery) and intermediate orders (e.g., motions to dismiss) were less likely to be opinions than final orders (e.g., summary judgment). This result holds even when we control for whether that particular procedural order was likely to end the case.[161]

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157. Past research observing only at the case-level found that Maryland had significantly fewer opinions per judge than Pennsylvania. FLANDERS, *supra* note 45, at 57. Further, Schlanger and Lieberman observed a similar high proportion of publication in 2004 for the Southern District of New York. *See* Schlanger & Lieberman, *supra* note 6, at 164.

158. In the text below, all other observations and correlations noted are statistically significant.

159. Olson, *supra* note 61, at 792; *see also* Swenson, *supra* note 29, at 133.

160. Notably, this variable measures the presence of an appeal at any point during the data collection period, not with respect to the disposition at issue.

161. At the suggestion of readers, we created two new categories of order which combine the order type variable and the result variable: Motion to Dismiss Granted; and Summary Judgment

Surprisingly, the identity of the winner or loser of any given order did not correlate with opinion writing. Nor were orders that resulted in compromises more likely to be opinions than the norm. We found no relationship between opinion writing and a judge's race, gender, high workload, or experience.

D. Predicted Probabilities and Summary

The model estimates the effect of individual factors on the odds of an opinion being written.[162] Using the coefficients for each significant factor in the model, we can generate "predicted probabilities" for specific combinations of variables.[163] A predicted probability is a statistical method that asks the following question: if we match a certain set of variables to a given order, what is the likelihood that a judge will write an opinion?

Recall that the overall incidence of opinions across jurisdictions was 178 opinions in 1,091 hard dispositions, or 16.3%. Now, consider a basic example where all the *significant* independent variables were "turned off." That is, imagine a disposition from Maryland or California (not from the EDPA or the SDNY); the case was not appealed, nor was it a tort, prisoner petition, contract, or labor matter. However, it resulted from a final order.[164] In that scenario, which we will call the *intercept*, the probability of an opinion being written is 10.9%.

The next simplest example to consider is the disposition that is exactly the same in all the factors as the intercept except that only one variable is different. Consider a disposition that is baseline except that it results from an intermediate (rather than a final) procedural order. The resulting predicted probability of an opinion being written is 5.1%. Now, what if it is a disposition arising from a management order? The probability is 3.6%. To put it another way, *a management order is about one third as likely as*

Granted. If, as some believe, judges were writing opinions as a result of the case ending, rather than merely the likelihood of appeal, we would observe that opinion writing would be indistinguishable as between granted motions to dismiss and granted summary judgment motions. But after modeling the data in HLM, we found that the procedural effects were distinct: summary judgment (granted) produced significantly more opinion writing than motion to dismiss (granted). Summary judgment (denied) and motion to dismiss (denied) produced fewer opinions than their positive counterparts. Details of this analysis are on file with the authors.

    162.   Due to limitations inherent in a logistic regression, general statements about individual factor influences on the probability of an opinion being written are impossible.

    163.   *See generally infra* Appendix B.

    164.   We must include this variable because the baseline of the model could not incorporate all three procedural variables in the same run. It would have failed to converge. Therefore, our baseline includes one significant variable effect: we assume that the order was final, and ask how the other two procedural types differ, if at all, from that baseline.

a final order, all else being equal, to result in an opinion; an intermediate order is about half as likely.

We can repeat this analysis for each of our three different jurisdictions: New York, Pennsylvania, and Maryland/California.[165] Around each predicted probability we include a measure of uncertainty, together with the intercept. (Recall that the intercept results from a final action order.) Figure 5 displays this analysis.

FIGURE 5: PREDICTED PROBABILITY OF AN OPINION RESULTING FROM MANAGEMENT AND INTERMEDIATE ORDERS, BY JURISDICTION[*]
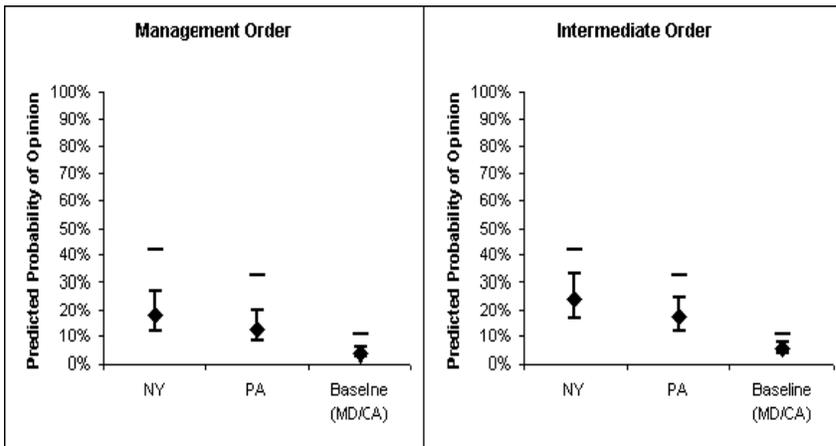
* All probabilities are given assuming all other variable values are at baseline (Not Appeal, Not Tort, Not Contract, Not Prisoner Petition, Not Labor). For details on the calculation, see Appendix B. The horizontal dashes (-) identify the intercept.

Next, assume that a disposition is at the intercept, but results from a case that was appealed. In the average jurisdiction, we predict an opinion in 23.6% of dispositions. In New York, we predict an opinion in 64.4% of dispositions. Figure 6 illustrates.

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165. Recall that we observed no significant differences between the opinion-writing characteristics of Maryland and the Northern District of California.

FIGURE 6: PREDICTED PROBABILITY ON OPINION RESULTS FROM AN
ACTION WHERE CASE IS APPEALED, BY JURISDICTION*
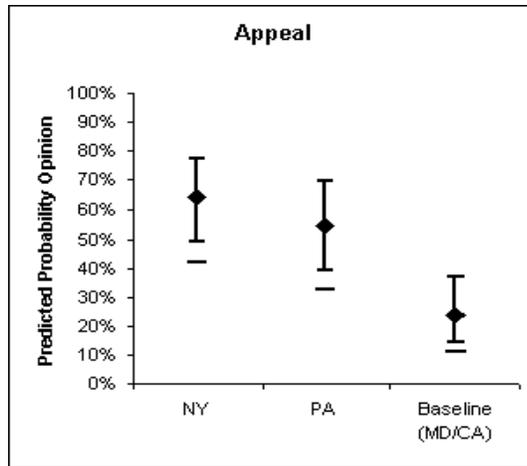
* All probabilities are given assuming all variable except for Appeal are at baseline
(Not Tort, Not Contract, Not Prisoner Petition, Not Labor, Yes Final Order). For
details on the calculation, see Appendix B. The horizontal dashes (-) identify the
intercept.

Next, what are the effects of the different case types? Figure 7 displays
those findings for each of the case types where we found a significant
relationship with opinion writing.

FIGURE 7: PREDICTED PROBABILITY OF AN OPINION RESULTING FROM
CONTRACT, TORT, PRISONER PETITION, AND LABOR CASES, BY
JURISDICTION*
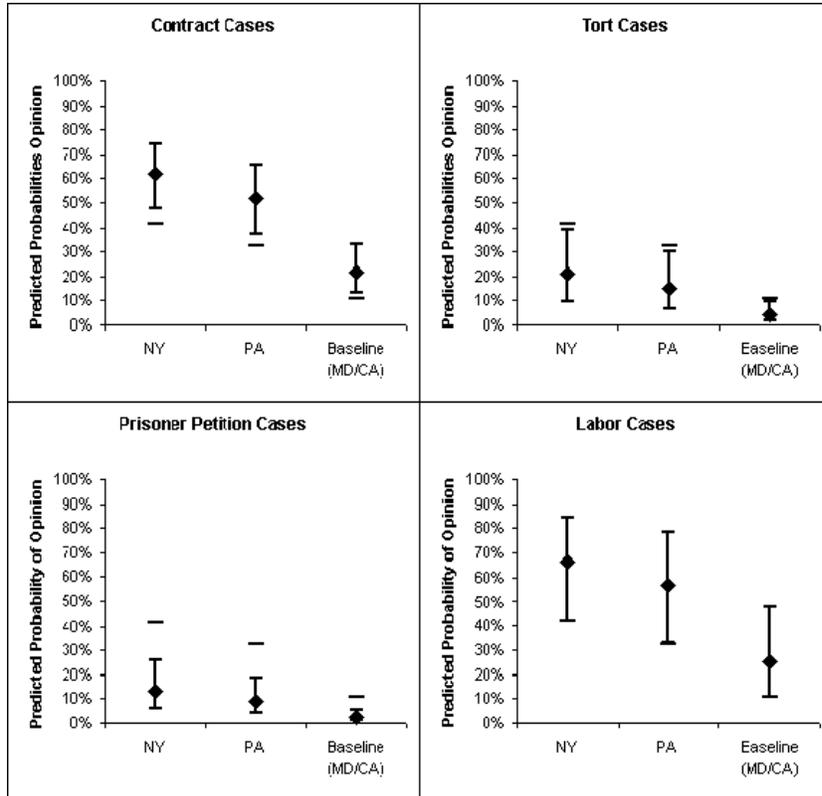
* All probabilities are given assuming all other variable values (apart from the
labeled value) are at baseline (Not Appeal, Not Any Other Case Type, Yes Final
Order). For details on the calculation, see Appendix B. The horizontal dashes (-)
identify the intercept.

Thus, while the predicted opinion-writing probability for a final-order
disposition in the Southern District of New York is around 41.8%, the
probability in a similarly situated contract case is 61.8%, a tort case

20.8%, a prisoner petition case 13.3%, and a labor case 66.4%. We include the exact figures, including confidence intervals, in the footnote.[166]

A highlight from this analysis is the very wide ranges in probabilities. For example, we predict that a Southern District of New York judge ruling on a summary judgment motion in a labor case will write an opinion around 66% of the time. But a District of Maryland or Northern District California judge ruling on a summary judgment motion in a habeas petition will write an opinion only 2% of the time.[167] Or to put it another way, we predict that 98% of summary judgment decisions in habeas cases from the District of Maryland will not be explained and thus will be unavailable to both quantitative empiricists and ordinary law professors who seek to know what the "law of habeas" is.

A second notable result is that two systematic factors, jurisdiction and procedure, appear to result in a significant amount of the variation observed in the model.

Overall, the data do not support the *judicial demographic* hypothesis. We found no evidence that a judge's race, gender, experience, or current docket congestion was at all related to his or her opinion-writing practices. This finding was startling in light of the common, realist view that judicial personality matters to the production of law. Our analysis, by contrast, finds no evidence that trial court explanations are demographically determined.

Similarly, the data do not support the *importance* hypothesis. Unlike almost all previous authors, we found no evidence that orders in constitutionally salient cases—like civil rights, or habeas petitions—were explained in opinions at high rates. Nor did we find that "boring administrative law cases"—like social security—were underexplained. We found no relationship between federal question jurisdiction and opinion

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166. Predicted Probabilities by Percentage (Confidence Intervals in Parentheses). See *infra* Appendix B for a further explanation of how these probabilities were generated.

	NY	PA	MD/CA
Appeal	64 (49, 77.4)	54.7 (39, 69.5)	23.6 (14.1, 36.8)
Tort	20.8 (9.7, 39)	14.9 (6.7, 29.9)	4.3 (1.8, 9.9)
Contract	61.8 (47.5, 74.4)	51.9 (37.5, 65.9)	21.6 (13.4, 33.1)
Prisoner Petitions	13.3 (6.3, 25.7)	9.2 (4.3, 18.7)	2.5 (1.1, 5.6)
Labor	66.4 (42.2, 84.3)	56.9 (32.7, 78.2)	25.3 (11.1, 47.9)
Management Order	18.2 (11.9, 26.7)	12.9 (8.2, 19.6)	3.6 (2.2, 5.9)
Intermediate Order	24.1 (16.9, 33.1)	17.4 (11.9, 24.8)	5.1 (3.3, 7.8)
Intercept	41.8	32.3	10.9

167. The text above substitutes "summary judgment" for "final order motion" to make the example easier to digest.

writing. Nor were opinions more likely to result from cases litigated by rich law firms, or by those with many lawyers, or where the federal government was a party. These results powerfully refute the conventional wisdom.[168]

With respect to the orthodoxy's alternatives, the jury is still out. The procedural finding alone is not conclusive to prove the reversal hypothesis. Nor is our finding that cases that are appealed contain orders that were explained at high rates. All of our findings are subject to the problem of causation, which is a difficult one to solve with these data.[169]

We thus offer some suggestions on ways that the reversal hypothesis could be more directly tested in future empirical work. One idea would be comparative docketology, looking at common law jurisdictions with different rules of appealability than our own, but similar opinion-writing processes. For example, imagine if Scotland allowed the immediate appeal of discovery orders. A test of the reversal hypothesis would measure if Scotland's discovery orders were explained at higher rates than our own.

A second idea requires a reversal of the model, asking what factors in cases (or orders) are correlated with appeals. If appeals are predicted by opinions, it would seem more likely that opinions help lawyers sort "hard" cases worthy of further investment from easier ones, or perhaps help lawyers make the case to clients that further investment will be rewarded. Alternatively, opinions may set the stage for appellate review, identifying issues for the appeals court and thus making it cheaper for parties to bring and prosecute appellate arguments. Notably, these conclusions would not necessarily exclude the reversal hypothesis, as trial judges could believe that opinions offer protection from reversal.

A third project would try to test whether greater insecurity leads to a higher rate of explanation. This could lead to a focus on magistrate judges, who are largely hired by the district court for fixed terms. However, only some magistrate judge orders are directly reviewed by appellate courts,

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168. We did not examine whether the individual orders under review were themselves controversial or novel: after all, not all constitutional cases contain interesting issues to resolve. But we think that we have decisively shifted the burden of proof on opinionologists to justify why they (still would) believe that opinions are just like orders, only more interesting.

169. As we explained *supra* at text accompanying note 115, there is a potentially different causal direction at work. Assessing causation problems like these requires the use of a statistical method like propensity score matching. *See generally* Paul R. Rosenbaum & Donald B. Rubin, *The Central Role of Propensity Score in Observational Studies for Causal Effects*, 70 BIOMETRIKA 41 (1983). When input variables are hierarchically structured, we would prefer to use multilevel models to estimate such scores. Indeed, the practical and theoretical foundations for using propensity scores to evaluate multilevel models are currently the active subject of statistics dissertations and research articles. But at present, propensity scores cannot be computed using the HLM program.

which would make it difficult to study their work directly. Alternatively, scholars could expand docketology to focus on state court judges in jurisdictions that highlight reversal rate in the election or appointment process. Identifying such jurisdictions would be an admittedly hard task, particularly because electronic docketing in state courts is still in its early stages.

A fourth test would look for changing rules about an individual procedural moment's appealability. Consider, for example, the evolving trend to permit appeals of grants or denials of class certification motions.[170] To the extent that such a change in the law postdates the digitalization of dockets, scholars could analyze if providing for new appellate avenues increases the rate of opinion writing.

Finally, our settlement hypothesis was not well supported. The variables most directly linked to the hypothesis—days a case was pending, its complexity, and whether it was settled—all were uncorrelated to opinion writing. This nonfinding undermines the claim that courts use opinions to debias parties and increase the odds of settlement.[171]

Putting this hypothesis testing aside, the data revealed many puzzles. We understand why prisoners' petitions and torts are less often rationalized through opinions.[172] These cases are perceived by judges to be nuisances—the routine slip-and-fall, or a habeas petition of dubious merit.[173] It is less clear why labor and contract cases were more likely to be explained through opinions. One explanation might be that such cases produce novel problems for federal judges, either because, in the case of labor, they are rare or because, in the contracts example, they often arise from state law. Another explanation is the judges seek to create certain rules for commercial parties. But these are weak explanations. Torts, like

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170. *See supra* note 148.

171. For more examples of debiasing, see Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 J. LEGAL STUD. 199, 203–24 (2006). In a way, the procedural finding does provide limited support for the settlement hypothesis, as procedural stages may be seen as gates the parties pass through, each one increasing the costs of litigation and decreasing the likelihood of settlement. Opinions at early procedural stages may increase the chance of parties being overconfident in their ability to get to a favorable judgment. A future paper might consider testing this hypothesis by using settlement, not opinion writing, as an outcome variable in an evaluation of how and why cases "die."

172. *See* Olson, *supra* note 61, at 790.

173. However, it is disturbing that prisoners and tort plaintiffs seem to receive less judicial time than other similarly situated parties. Such plaintiffs appear to receive less justice. However, that normative problem is outside the scope of this paper. One of us has engaged in a dialogue on this topic which may suggest where a docketology normative project could lead. *Compare* Dave Hoffman, *Must District Judges Give Reasons*, Concurring Opinions, July 20, 2006, http://www.concurringopinions.com/archives/2006/07/must_district_j_1.html *with* Lawrence Solum, *The Obligation to Give Reasons*, Legal Theory Blog, July 23, 2006, http://lsolum.typepad.com/legaltheory/2006/07/.

contracts, are often rooted in state law; admiralty claims, like labor, are rare. And if judges really wanted to settle commercial expectations, then the civil commercial cases—which include securities law and antitrust law—would often be explained. Ultimately, we do not believe that these kinds of case effects are robust.[174]

IV. IMPLICATIONS

Docketology challenges the orthodox view regarding *why* judges write opinions. And so what? Does it really matter that some judges may write to avoid reversal and not to leave their indelible mark on the law? That the dataset of opinions is biased toward events late in the life of litigation? This Part considers the broader implications of a docketology approach to trial court work.

In our view, docketology's main contribution is to starkly expose how little trial court work is explained through written opinions. An astonishingly low 3% of all orders are available on the databases; more than 80% of difficult orders are similarly "hidden" without explanation. To date, scholars have simply ignored the content of such orders, assuming that judges' written explanations were fairly representative of law. But we have exposed this structural assumption as deeply problematic.

In Section A, we discuss the implications of our findings for empirical legal studies, arguably the fastest growing jurisprudential movement in the legal academy. For that movement's adherents, our message is cautionary: empirical work about trial courts is more expensive, more time-consuming, and more uncertain that one might imagine. In Section B, we discuss how analysis of trial courts' hidden work similarly influences qualitative legal studies, or, more simply, anyone who wants to understand what trial courts do.

A. Empirical Legal Studies

Our study recommends great caution in proceeding with quantitative analysis of legal opinions.[175] The underrepresentativeness of opinions is

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174. Previous iterations of our model found that tax was positively related to opinion writing, and that civil rights cases were negatively related. The only case types that were consistently significant over various models were prisoner petitions and torts.

175. *See also* Lee Epstein & Gary King, *The Rules of Inference*, 69 U. CHI. L. REV. 1 (2002) (offering suggestions to improve methodology in empirical research); Gregory Mitchell, *Empirical Legal Scholarship as Scientific Dialogue*, 83 N.C. L. REV. 167 (2004) (proposing disclosure

obvious and well known. Nevertheless, many authors have drawn exceedingly strong normative claims based on datasets that docketology reveals to be substantially biased.

We offer an example. One of us has previously written an empirical article about securities doctrine in the New York federal courts.[176] That article depended, in part, on content analysis of district court opinions.[177] It rejected a then-extant hypothesis that judges were applying doctrine in a docket-pruning way by chopping a certain percentage of cases from their docket at each procedural opportunity. In part, the paper did so by looking at the distribution of procedural stages in the opinions dataset.[178] This analysis was then leveraged to suggest that courts have engaged in a wrong normative turn in securities law, privileging some investors at the expense of others.[179] But docketology confounds that paper's reliance on any conclusions about the relationship between procedure and doctrine. It may be right, but opinions do not resolve the issue one way or another.

Essentially, it is unwise to use databases of trial court opinions—as the securities paper and many others like it have done—to infer trends in outcomes, the effects of party or judge characteristics, or other potential variables.[180] It is possible that the only thing such databases measure is what judges write in opinions. As we have shown, what judges write in opinions is notably distinct from how they manage litigation.

There is a better way. This Article illustrates how future empirical work on trial courts should proceed. The recent availability of electronic dockets has the potential to spark a new way forward in empirical legal studies that will enable authors to attain a more finely tuned and accurate view of what motivates courts' decisions. The project of studying dockets is already ongoing and should soon revolutionize how the new legal realists will approach the problem of quantitative research.[181]

Docketology may not be a perfect method, especially for those seeking empiricism on the cheap. It is labor intensive, requiring legal authors to rely on others—coders—who create a risk of translation error.[182] It further

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requirements to enhance the status of empirical legal scholarship).

   176. Hoffman, *supra* note 25.
   177. The article offered the usual apologies. Hoffman, *supra* note 25, at 568.
   178. Hoffman, *supra* note 25, at 573–74.
   179. *Id.* at 600–01.
   180. The use of opinion-only databases to fully capture the work of appellate courts is also troubling, because those courts do issue some orders to the parties that are not captured in the electronic databases. However, such orders are only rarely substantive, with the notable exception of orders related to prisoner litigation.
   181. *See supra* note 6.
   182. Docket coding requires a degree of knowledge about procedure that would make it very

costs time and money. We began coding the data for study in 2005, almost two years from the date the paper was completed. Along the way, we viewed the federal dockets thousands of times, each access costing eight cents. Such costs accumulate.[183] Most significantly, docketology remains impractical in analyzing cases before 2003, when electronic docketing gained widespread acceptance in the district courts. Nor is it yet of much use for the state courts. Thus, projects looking outside of the federal system, or at historical trends, yet remain "prey . . . to the apperceptive mass."[184]

But, if we may speculate, the number and availability of electronic dockets are on the rise. Recent proposals would make federal trial court docket access free.[185] Westlaw already has begun to collect federal docket entries, making it cheaper for scholars to access such materials. State courts will follow suit, and, we hope, records from the past may become digitized as well. Empiricists who hope to study trial court work will soon find themselves confronted by a wealth of data awaiting careful study.

B. Doctrine and Judicial Decision Making

This Article does not intend to play "gotcha" with others' scholarship. Opinionology laudably seeks to improve on the previous approach to studying trial court work: divining legal rules from a handful of trial court opinions. Indeed, focusing on opinions, whether or not through statistical aggregation, makes a great deal of sense, at least in some circumstances. It is a traditional and tested approach in a profession where "that's novel" is the worst insult one lawyer can say to another.[186] It is cheap and relatively easy.[187] For appellate courts, opinions do constitute the majority of judicial

difficult to use non-law students as coders.

    183.   Ascertaining the exact cost is difficult. Based on information received from the Temple Law Library, we estimate that the total docket access charges exceed $700. *See* Email from Noa Kaumeheiwa, Reference Librarian, Temple University Beasley School of Law, to David A. Hoffman, Assistant Professor of Law, Temple University Beasley School of Law (Feb. 2, 2007) (on file with author). This is not itself a large sum, although (unlike Westlaw or Lexis access) it is not covered by a flat agreement and incorporated into existing library budgeting.

    184.   LLEWELLYN, *supra* note 1, at 90.

    185.   *See* Lyle Denniston, *Conference Endorses New Records Access*, SCOTUSBlog, Mar. 13, 2007, http://www.scotusblog.com/movabletype/archives/2007/03/conference_endo.html.

    186.   *See* Parker, *supra* note 16, at 901 ("Lawyers, judges, public policy experts, and lawmakers rely on reported opinions."); Kevin M. Clermont & Theodore Eisenberg, *Litigation Realities*, 88 CORNELL L. REV. 119, 125 (2002) ("In a sense, [studies of opinions] represented a systematization of traditional legal research. Instead of reporting the fruits of years of subjective reading of opinions that had crossed one's desk, the legal scholar turned to selecting randomly, coding tirelessly, and then analyzing hundreds of cases.").

    187.   Docketology, by contrast, was said to be "a task whose dimensions foreclose the prospect on

work product, and their rhetoric does create doctrine. And, as we explored, opinionology is supported by a rich literature concerning judicial behavior arising from the political science and law and economics traditions.[188]

At its root, though, the opinionology orthodoxy is motivated by a deep assumption about what opinions mean. Noted empiricists Theodore Eisenberg and Sheri Johnson explained that opinions are often thought of as representative because "they are the full population . . . of the *cases shaping perceptions of the legal system*. Published opinions are all most of us ever work from."[189] This insight is the heart of the conventional wisdom: trial court opinions should be studied because they help to create a public story about what the "law" is. That is, opinions constitute "doctrine." But this conventional account is impoverished on two fundamental levels.

First, it depends on a technological and cultural moment that is passing. When dockets become freely available, unexplained judicial orders will begin to shape perceptions about the content of legal rules.[190] The media will distribute orders they find notable, bloggers will dissect the interstices of important litigation, and ultimately society at large will come to know and appreciate the vast beehive of work that makes up trial court litigation practice.

Second, there are already large numbers of individuals whose views of the law are affected by dockets: lawyers. Complaints from lawyers about law professors' distance from legal practice are common. Recent work enlisting network theory suggests why: lawyers may share information about hidden aspects of the court's procedural and substantive rules in highly efficient ways.[191] Such counsel networks function something like predictive markets for law, collecting information and "pricing" legal outcomes in that the networks influence the decision to file in one

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more than case study or sampling . . . ." Kenneth M. Dolbeare, *The Federal District Courts and Urban Public Policy: An Exploratory Study (1960–1967)*, *in* FRONTIERS OF JUDICIAL RESEARCH 378 (1969); *see also* Maria Perez Crist, *The E-Brief: Legal Writing for an Online World*, 33 N.M. L. REV. 49, 56 (2003) ("Before electronic filing, docket information and case filings enjoyed relative obscurity because of the obstacles involved in obtaining the documents. Anyone interested in the contents of a case file would have to go to the courthouse, pore over paper files, and pay for copies to be made.").

188. *See supra* text accompanying notes 41–93.

189. Theodore Eisenberg & Sheri Lynn Johnson, *The Effects of Intent: Do We Know How Legal Standards Work?*, 76 CORNELL L. REV. 1151, 1195 (1991) (internal citations omitted, emphasis added); *see also* ROWLAND & CARP, *supra* note 23, at 21 ("[Opinions] primarily reflect the key policy-making, precedent-setting judgments of trial court judges.").

190. *See* Levin, *supra* note 28, at 50 (making normative argument for free access to judicial work product).

191. *See, e.g.*, Byron G. Stier, *Resolving the Class Action Crisis: Mass Tort Litigation As Network*, 2005 UTAH L. REV. 863 (2005).

courthouse or another.[192] The conventional account of doctrine reinforces lawyers' ability to profit from a dissonance between common accounts of legal rules and a view informed by a close study of dockets.[193]

Docketology, by contrast, at the least exposes the difference between opinions and orders and enables a significantly improved account of how the common law will evolve.[194] Docketology's promise is thus an extension of the digital revolution, and the claims made in this Article mirror those made when electronic databases of opinions came online.[195]

More fundamentally, docketology offers a way to study litigation that informs readers about the real content of legal rights and obligations. For example, consider the right to be free from an unlawful touching, enforced through a tort liability regime. Docketology gives more meaning to that right than was previously available. To recover damages, one must sue, and docketology informs us about that lawsuit. This technique allows us to answer questions like how long will the litigation take; how much will it cost (measured by how many orders it produces); do rich attorneys matter; how will discovery proceed; when will settlement likely occur; how will the court rule on motions in *limine*; are transfer motions welcomed; and should the parties cross-move for summary judgment. Trial court tort law opinions must be measured and contextualized against the litigation that produces them. Docketology permits us to accomplish this contextualizing task. It enables us to quantify the realities of litigation.

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192. Miriam A. Cherry & Robert L. Rogers, *Tiresias and the Justices: Using Information Markets to Predict Supreme Court Decisions*, 100 Nw. U. L. Rev. 1141, 1142 (2006) (discussing the application of information markets to predicting Supreme Court decisions).

193. Lawyer publications are replete with claims that the law "on the ground" is distinct from that advanced by law professors. *See, e.g.*, Richard Connelly, *Disgruntled Clients Put Bar Policies on Firing Line in Citizen's Sunset Review*, Tex. Law., at 8, Apr. 16, 1990 ("Law in the trenches is not like law in the ivory tower.").

194. As a recent paper observed:

> In short, for anyone who hopes to understand litigation—one specific litigation or an entire field of litigation—there is no substitute for court records. Historians, sociologists, anthropologists, political scientists, legal researchers, and policymakers all need court records if they are going to understand either a type of case or a particular litigation, whether it is individually important or studied as an exemplar. There is simply no other source of information about the substantive or legal issues, the conduct of disputes, or their resolutions.

Schlanger & Lieberman, *supra* note 6, at 168.

195. *See* Diana Fitch McCabe, *Automated Legal Research: A Discussion of Current Effectiveness and Future Development*, 54 Judicature 283 (1971) (claiming that OBAR, a computerized legal research tool, would help lawyers manage large data sources, reduce the time spent searching, equalizing the advantages held by large firms and making representation generally more affordable); Robert K. Pezold, *Computerized Legal Research—An Arrival*, 10 Tulsa L.J. 583, 587 (1975) (describing LEXIS, a new service, that would provide significantly improved research capabilities for lawyers, but noting cost problems).

Similarly, docketology may deepen our knowledge about what motivates legal actors. Here, we have focused on the role of the opinion. If the reversal hypothesis is confirmed by subsequent research, one way to view an opinion is as a brief to an appellate court.[196]

Understanding that opinions are not only intended to create rules for society but also to make a plea against reversal suggests doubt about conventional accounts of the relationship between judicial action and social behavior. Heroic accounts of judges imagine that they have largely instrumentalist, public-regarding goals: deterring wrongdoing, signaling good norms, and encouraging legal order.[197] But perhaps fear is part of the mix as well.

For some, this view of judges' self-perception will be disheartening at best and, perhaps, deeply shocking. After all, if courts are willing to distort the *medium* of their decision making to avoid an already minor chance of reversal, might they be willing to change the content of their message too? To shape the facts to make them more robust? To give victory to the party more likely to appeal a contrary verdict? These behaviors are said to mark the behavior of certain aberrant judges: the legitimacy of the trial courts depends on such judges being the exception and not the rule.[198]

If the law we read from trial courts results from risk aversion, perhaps opinions appear when judges attempt to vary precedent rather than abide by it. In such circumstances, after all, appellate review and reversal is probably more likely than the norm. For example, imagine a court decides to deny discovery when in comparable circumstances she usually grants it. Might she do so through an opinion on the theory that it is the extraordinary case that will face appellate scrutiny?[199] Qualitative students of trial court opinions may read a hundred discovery decisions, never realizing that each one runs counter to the larger flowing tide. This

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196. There is a process under Federal Appellate Rule 21(b)(4) that makes this brief-writing function explicit: "The court of appeals may invite or order the trial-court judge to address the [appealing party's] petition or may invite an amicus curiae to do so. The trial-court judge may request permission to address the petition but may not do so unless invited or ordered to do so by the court of appeals." Applications of this rule are rare. *See* Michael E. Solimine & Christine Oliver Hines, *Deciding to Decide: Class Action Certification and Interlocutory Review by the United States Courts of Appeals Under Rule 23(f)*, 41 WM. & MARY L. REV. 1531, 1588 n.291 (2000).

197. *Cf.* Lawrence M. Friedman, *Judging the Judges: Some Remarks on the Way Judges Think and the Way Judges Act*, *in* NORMS AND THE LAW, *supra* note 121, at 150–51 (suggesting that judges' self-portrait as above politics is flawed).

198. Indeed, the results we observed could have been the result of a minority of judges systematically writing to avoid appeal, while the majority do not.

199. There were 189 discovery orders in the database. Of those orders, plaintiffs (including counter-claim defendants) won (in whole or part) 87, a 46% general success rate. Notably, this was higher than the overall average win rate of 36%. Of those 87 cases, 10 were written as opinions.

suggests that opinions aren't just briefs. They are briefs in favor of law's black sheep.

We suggest this ovine analogy with caution because our analysis does not tell us whether opinions contain different views of the law than orders. Discerning whether the "flock" of orders tracks conventional accounts of doctrine will be an important part of the research project that we suggest. But even if it turns out that opinions are not significantly unlike orders, docketology would be an important advance in the realist project.

As a method of studying law, docketology focuses us on trial court orders, which are the appropriate units when approaching modern litigation, which so often results in secret settlements.[200] As an account of judicial motivation, docketology embraces behavioralism and does not insist that judges are perfect utility maximizers. Docketology's roots are old—it has been, after all, more than seventy-five years since Llewellyn delivered his *Bramble Bush* lectures—but it has been practical only within the last few years. We invite readers of this Article to try studying dockets. You never know what you may find.

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200. *See generally* Minna J. Kotkin, *Outing Outcomes: An Empirical Study of Confidential Employment Discrimination Settlements*, 64 WASH. & LEE L. REV. 111 (2007) (reporting on dataset of anonymously coded settlements collected from Federal Magistrates).

APPENDIX A: FURTHER NOTES ON METHODOLOGY

The Appendix expands on three topics: (1) the sample; (2) categorization of orders; and (3) support for the importance of empirical work.

1. The Jurisdictional Sample

We analyzed jurisdictions' case filings for the twelve-month period ending March 31, 2003.[201] We began the sampling process by converting the frequencies of case codes (accessed through the Administrative Office's federal caseload statistics collections) for each jurisdiction into percentages.[202] We calculated squared percentage differences for each jurisdiction by (a) calculating the difference between the State percentage and the appropriate National percentage, for each of the twenty-nine types, and (b) squaring these differences. Summing these results gives us summed squared percentage differences (SSPD). Smaller SSPDs indicate greater similarity between the total federal court's numbers and that jurisdiction's.

That process resulted in a list ranking jurisdictions from the most to the least unremarkable in terms of the kinds of cases they processed.[203] We removed jurisdictions with incomplete electronic records. This left the District of Maryland and Northern District of California, the most representative jurisdictions that had complete electronic records.

We then added the Southern District of New York and the Eastern District of Pennsylvania, respectively the 37th and the 92nd most ordinary jurisdictions in terms of the kinds of cases processed (out of 94). These jurisdictions, though somewhat unique, are seen as sophisticated and important district courts whose practices with respect to opinion filing are

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201. *See* STATISTICS DIV., U.S. COURTS ADMIN. OFFICE, FEDERAL JUDICIAL CASELOAD STATISTICS, 2003 TABLE C-2, *available at* http://www.uscourts.gov/caseload2003/tables/ C02Mar03.pdf. Other statistics from the Federal Judiciary's Administrative Office are available at http://www.uscourts.gov/caseload2003/contents.html.

202. *See* STATISTICS DIV., U.S. COURTS ADMIN. OFFICE FEDERAL JUDICIAL CASELOAD STATISTICS, 2003, TABLE C-2, *available at* http://www.uscourts.gov/caseload2003/tables/ C02Mar03.pdf.

203. The top ten ordinary jurisdictions, with their sum squared percentage difference scores, were: Maryland (1.139), Idaho (1.341), Eastern District of Missouri (1.387), New Hampshire (1.524), Kansas (1.808), Northern District of Ohio (1.860), Middle District of Florida (1.909), Colorado (1.914), Northern District of California (1.941), and Southern District of Alabama (1.942).

significantly ahead of the curve.[204] Judges' opinion-writing practices in these jurisdictions are likely to be a model for other regions of the country.

That said, New York and Pennsylvania are not ordinary. To the extent that the jurisdictions are skewed to certain case types and further have cultural aspects that promote or retard opinion writing, we confound our results. But we are not overly concerned. Pennsylvania's oddness comes almost entirely from the large proportion of asbestos cases filed in that year, a case type that was negligibly represented in our sample draw. New York's oddness results from the high percentages of intellectual property and financial cases, which also were not large parts of the draw.

Another issue results from the filing of large numbers of related cases in succession, which are then consolidated and transferred through the MDL process. We observed one such string of related cases in California in the middle of our sample. Such case strings do little to add to the variability of the data. In the future, researchers should use a random selection method on top of the randomness achieved through the civil docket wheel.

2. Types of Orders

1 = Scheduling	28 = Enforcement of Judgment
2 = Voluntary Dismissal by Settlement	29 = Writ of Attachment
	30 = Intervene
3 = Judgment (Default or Otherwise)	31 = Attorney's Fees
	32 = Misc. Dispositive Order
4 = Referral	33 = Leave to Amend
5 = Misc. Management (including MDL Transfer)	34 = SJ and Judgment on the Pleading
	35 = Joinder
6 = Remand	36 = PI & Stay
7 = Transfer	37 = SJ and Discovery
8 = Dismiss	38 = PI & Discovery
9 = Judgment on Pleadings	41 = Leave to amend and MTD
10 = Class Cert	43 = Judgment on the Pleadings and Strike
11 = Discovery	45 = Subject matter jurisdiction and MTD
12 = SJ	46 = Motion for appeal
13 = TRO	47 = Remand and SJ
14 = Preliminary Injunction ("PI")	48 = Writ of Execution
15 = Permanent Injunction	49 = SJ and trial related

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204. *See, e.g.*, Louis S. Rulli & Jason A. Leckerman, *Unfinished Business: The Fading Promise of ADA Enforcement in the Federal Courts Under Title I and its Impact on the Poor*, 8 J. GENDER RACE & JUST. 595, 615 (2005).

16 = Stay	50 = MTD and SJ
17 = Contempt	51 = MTD, fees and discovery
18 = R&R Dismiss	52 = TRO and Prelim. Inj.
19 = R&R Prisoner	53 = Remand and Stay
20 = R&R SJ	54 = Forfeiture
21 = R&R Other	55 = Discovery and fees
22 = Order on R&R	56 = Stay & Transfer to ADR
23 = Reconsider	57 = Vacate Default Judgment
24 = Appoint Master	58 = Missing
25 = Motion in Limine	59 = Arbitration Confirmation
26 = Trial Related	60 = MTD and Remand
27 = Post-trial	61 = Pro Se Misc. Dismissal

Table A-1: Types of orders, based on the underlying motions that prompted judicial action.

3. Quantitative Evidence of Quantitative Scholarship

We created the following table to illustrate the growth of empirical scholarship in certain flagship law reviews.

	2002			2003			2004			2005		
Law Review	QA	TA	PQ	QA	TA	PQ	QA	TA	PQ	QA	TA	PQ
Yale	0	39	0	0	48	0	0	35	0	4	53	8
Stanford	4	36	11	5	53	9	3	40	8	12	63	19
Harvard	4	119	3	2	116	2	4	124	3	8	167	5
Columbia	2	55	4	0	48	0	2	54	4	6	53	11
NYU	3	40	8	0	44	0	3	43	7	6	38	16
Chicago	4	58	7	4	61	7	6	52	12	3	55	5
Penn	1	37	3	3	61	5	3	38	8	3	34	9
Berkeley	3	45	7	5	44	11	2	41	5	3	35	9
Michigan	5	58	9	4	76	5	1	59	2	4	56	7

Table A-2: TA is the total number of articles for the year in the relevant law school's flagship journal, QA the total number of quantitative articles—those that attempted statistical inferences of any kind, and PQ the rounded percentage of quantitative articles. Of 2,224 articles published in the years reviewed, 131, around 6%, employed quantitative statistical research.

APPENDIX B: HLM MODELING

1. Hierarchical Data Structure

Although hierarchical data structures occur naturally in education, the social sciences, business applications, and the physical and natural sciences, it is only recently that special software has been written to fit suitable models to datasets with hierarchical structure. In this Article, we introduce the notion of analyzing a highly structured dataset by way of a hierarchical linear model.

What does it mean for a dataset to have hierarchical structure? Basically, the data are arranged naturally into several levels. Individuals typically constitute the first level (or Level-1); these individuals are grouped into a number of larger entities to form the second level (or Level-2); and these grouped individuals will then be grouped together into a number of even larger entities to form the third level (or Level-3).

Such a hierarchical arrangement is exemplified, for example, by educational data collected on students, who are grouped into classes, and the classes are nested within schools, and so on. For this example, the student test scores would be the continuous response variable, the students would be described by socioeconomic variables (e.g., parental education, parental occupation, income), the classes would be described by teacher characteristics (e.g., gender of teacher, teaching experience, teaching style), and the schools would be described by type of school (private or public), academic level (high, moderate, low), and location (urban, rural, suburban). Thus, students in the same class share the same values of all the class variables, and classes within the same school share the same values of all the school variables.

2. Hierarchical Linear Models

In our study, there is much similarity with the student-class-school example, but the main difference lies with the response variable. Here, the response variable is a Bernoulli variable (rather than a continuous variable) with two possible values, 1 (representing "yes") or 0 (representing "no"), depending upon whether or not a disposition becomes an opinion. This would be akin to converting student scores into pass/fail scores only. When the response variable is Bernoulli, it is inappropriate to use a normal error model, which is used for continuous responses. The most appropriate model for a Bernoulli response variable is a logistic

model, where we relate the logit function to the input variables arranged by level.

Each level in the dataset is typically characterized by its own subset of the input variables. In our dataset, the following variables, which are defined in Appendix C, form the various levels in the hierarchical structure:

Level-1 (Disposition-Specific Factors): DP, OR.MANAG, OR.INTER, RCM, JWM, JMNJEXP, and CJRA

Level-2 (Case-Specific Factors): DIV, AML, ATY, CCI, GOV, K, RP, T, CC, CR, PP, LB, TX, SS, BR, IP, SET, APL, and JRY

Level-3 (Jurisdictional-Specific Factors): EDPA, NDCA, and SDNY

The Level-1 variables are specific to the dispositions, the Level-2 variables are specific to the cases, and the Level-3 variables are specific to the jurisdictions.

In hierarchical linear models, each level is described by its own submodel, which states the relationship between certain variables. As a result, if the data have hierarchical structure, with observations of individuals (in our case, dispositions) ordered in time, the classical assumption of statistical independence of the observations is violated. Also, because the model error variances are no longer homogeneous, we cannot assume a constant variance for the observations. Hence, we cannot fit a traditional regression model to such data, where we disregard the hierarchical structure.

There is a close relationship between such hierarchical linear models and variance components models. Indeed, we can view the model as a one-way linear model, with the coefficients of the (randomly selected, Level-1) disposition-specific variables and the coefficients of the (randomly selected, Level-2) case-specific variables as random-effects components, and with the coefficients of the (nonrandomly selected, Level-3) jurisdictions as fixed-effects components.

3. Modeling the Dispositions

Let $Y_{ijk} = 1$ if the ith disposition nested within the jth case and the kth jurisdiction is an opinion, and is 0 otherwise, $i = 1, 2, ..., I_j$, $j = 1, 2, ..., J_k$, $k = 1, 2, ..., K$. We therefore assume that the sampling model is Bernoulli with probabilities of "success" and failure given by

$$\text{Prob}\,(Y_{ijk} = 1 \mid \beta) = p_{ijk}, \quad \text{Prob}(Y_{ijk} = 0 \mid \beta) = 1 - p_{ijk},$$

respectively, where p_{ijk} represents the probability of success (i.e., that the ith disposition nested within the jth case and the kth jurisdiction is an opinion) given $\boldsymbol{\beta}$, all the parameters in the model.

The model that we use in this study is composed of three levels of variables that are arranged as separate models as follows. We assume that the Level-1 link function is the logit transform, so that the Level-1 model which includes all *disposition-specific* factors, is given by:

$$\log_e \left(\frac{p_{ijk}}{1 - p_{ijk}} \right) =$$

$$\beta_{0,jk} + \beta_1 (DP)_{ijk} + \beta_2 (OR.MANAG)_{ijk}$$
$$+ \beta_3 (OR.INTER)_{ijk} + \beta_4 (RCM)_{ijk} + \beta_5 (JWM)_{ijk}$$
$$+ \beta_6 (JMN)_{ijk} + \beta_7 (JEXP)_{ijk} + \beta_8 (CJRA)_{ijk} + u_{ijk},$$

where β_0 is the intercept term, β_ℓ is the coefficient of the ℓth Level-1 variable, $\ell = 1, 2, ..., 8,$ and u_{ijk} is the associated error term. The logit transform, $log_e (p/(1-p))$, of p is the logarithm of the odds of success, defined as the ratio of the probability of success to the probability of failure. The Level-1 model relates the logit transform of p to a linear function of the input variables plus an error term.

The Level-2 model, which includes all *case-specific* factors, is given by:

$$\beta_{0,jk} = \beta_{00,k} + \beta_{01} (DIV)_{jk} + \beta_{02} (AML)_{jk} + \beta_{03} (ATY)_{jk} +$$
$$\beta_{04} (CCI)_{jk} + \beta_{05} (GOV)_{jk} + \beta_{06} (K)_{jk} + \beta_{07} (RP)_{jk} +$$
$$\beta_{08} (T)_{jk} \ \beta_{0,9} (CC)_{jk} + \beta_{0,10} (CR)_{jk} + \beta_{0,11} (PP_{jk} +$$
$$\beta_{0,12} (LB)_{jk} + \beta_{0,13} (TX)_{jk} + \beta_{0,14} (SS)_{jk} + \beta_{0,15} (BR)_{jk} +$$
$$\beta_{0,16} (IP)_{jk} + \beta_{0,17} (SET)_{jk} + \beta_{0,18} (APL)_{jk} +$$
$$\beta_{0,19} (JRY)_{jk} + u_{0,jk},$$

where β_{00} is the intercept term in the Level-2 model for β_0, β_{0m} is the coefficient of the mth Level-2 variable, $m = 1, 2, ..., 19,$ and u_0 represents the Bernoulli error term of the Level-2 model.

The Level-3 model, which includes all *jurisdictional-specific* factors, is given by:

$$\beta_{00,k} =$$

$$\beta_{000} + \beta_{001} (\text{EDPA})_k + \beta_{002} (\text{NDCA})_k + \beta_{003} (\text{SDNY})_k + u_{00,k},$$

where β_{000} is the intercept term in the Level-3 model for β_0, β_{0m} is the coefficient of the *k*th jurisdiction in the Level-3 model $k = 1,2,3$, and u_{00} is the Bernoulli error term of the Level-3 model. Note that we expressed the three jurisdictions in the model, EDPA, NDCA, and SDNY, as indicator (or dummy) variables: $(\text{EDPA})_k = 1$ if $k = 1$ and is 0 otherwise, $(\text{NDCA})_k = 1$ if $k = 2$ and is 0 otherwise, and $(\text{SDNY})_k = 1$ if $k = 3$ and is 0 otherwise.

At every level of this three-level model, we have used the standard analysis of variance convention of setting one level of each factor to zero. Thus, for example, MD does not appear in the Level-3 portion of the model. The omitted level of a given factor, thus, acts as a baseline level of zero from which the other levels of that particular factor may be compared.

4. Estimating Probabilities

It will be convenient to write the intercept β_{000} as μ, and to collect all the regression coefficients $(\beta_1,..., \beta_8, \beta_{01},..., \beta_{0,20}, \beta_{002},..., \beta_{003})$ into the vector $\boldsymbol{\beta}$ and all the variables (DP,..., CJRA, DIV,..., JRY, EDPA,..., SDNY) into the vector $\mathbf{X}$. The above 3-level model can be then written as

$$Z = \mu + \boldsymbol{\beta}^\tau X + e,$$

where $Z = \log_e(p/(1-p)) = (\log_e(p_{ijk}/(1-p_{ijk}))$ is a vector with $\boldsymbol{n} =$ $\sum_{k=1}^{K} \sum_{j=1}^{J_k} I_j$ entries, and $e = u + u_0 + u_{00}$ is a random error term, and $\boldsymbol{\beta}^\tau$ is the transpose of the vector $\boldsymbol{\beta}$.

HLM processing of the model yields a vector of parameter estimates that can be written as the vector $\hat{\boldsymbol{\beta}}$. From the output, the estimated log-odds ratio,

$$\hat{Z} = log_e\left(\frac{\hat{p}}{1-\hat{p}}\right) = \hat{\mu} + \hat{\boldsymbol{\beta}}^\tau X ,$$

is computed, where $\hat{\mu}$ is the estimated intercept and X is the vector of variables. The log-odds ratio can be inverted to give an estimated probability:

$$\hat{p} = \frac{e^{\hat{Z}}}{1+e^{\hat{Z}}} ,$$

where

$$e^{\hat{Z}} = e^{\hat{\mu}} e^{\hat{\beta}^\tau X} ,$$

Because all variables are 0-1 indicator variables, setting all variables to their zero-values yields the estimated baseline probability:

$$\hat{p}_0 = \frac{e^{\hat{\mu}}}{1+e^{\hat{\mu}}} ,$$

If we now set $X_v = 1,$ while leaving all other variables as zeros, we have that

$$\hat{p}_v = \frac{e^{\hat{\mu}} e^{\hat{\beta}_v}}{1+e^{\hat{\mu}} e^{\hat{\beta}_v}} ,$$

where $\hat{\beta}_v$ is the estimated coefficient of X_v. In other words, the effect of setting $X_v = 1$ (while keeping the values of all other variables fixed at zero) is to increase the odds of a positive response multiplicatively by the factor exp ($\hat{\beta}_v$).

For example, consider the effect of a disposition originating from the EDPA jurisdiction. From fitting the full model, the intercept estimate is $\hat{\mu} = -2.915$ and the coefficient estimate for EDPA is $\hat{\beta}_{001} = 1.712$. Taking exponentials of both, we have, to four decimal places, that

$$e^{\hat{\mu}} = e^{-2.915} = 0.0542, \; e^{\hat{\beta}_{001}} = e^{1.712} = 5.5400.$$

So, holding all else constant, a disposition originating from the EDPA jurisdiction has odds of an opinion being written that is 5.54 times higher than the odds of an opinion being written from a disposition from the MD jurisdiction (because MD is the baseline jurisdiction). We next multiply these two terms together to get

$$e^{\hat{\mu}} e^{\hat{\beta}_{001}} = (0.0542...)(5.5400...) = 0.002938.$$

Thus,

$$\hat{p}_{\text{EDPA}} = \frac{e^{\hat{\mu}} e^{\hat{\beta}_{001}}}{1 + e^{\hat{\mu}} e^{\hat{\beta}_{001}}} = \frac{0.002938}{1.002938} = 0.002929,$$

Or just over 0.29%.

Table B-1 gives the calculations of estimated probabilities for all factors in the full HLM.

TABLE B-1: COMPUTATION OF THE ESTIMATED PROBABILITIES OF EACH FACTOR IN THE F HLM

Factor (v)	$\hat{\beta}_v$	$\exp(\hat{\beta}_v)$	$\exp(\mu)*\exp(\hat{\beta}_v)$	$\hat{p}_v * 100\%$
Intercept (μ)	-2.915	0.0542	0.002938	0.2929
EDPA	1.712	5.5400	0.300292	23.0942
NDCA	0.470	1.6000	0.086726	7.9805
SDNY	2.127	8.3897	0.454753	31.2598
DIV	0.532	1.7023	0.092273	8.4478
AML	-0.120	0.8869	0.048075	4.5870
ATY	0.008	1.0080	0.054639	5.1809
CCI	-0.660	0.5169	0.028015	2.7252
GOV	0.070	1.0725	0.058134	5.4940
K	0.707	2.0279	0.109920	9.9034
RP	0.811	2.2502	0.121968	10.8709
T	-1.280	0.2780	0.015071	1.4847
CC	1.157	3.1804	0.172389	14.7041
CR	-0.220	0.8025	0.043500	4.1686
PP	-1.224	0.2941	0.015939	1.5689
CB	1.356	3.8806	0.210346	17.3790

Factor (v)	$\hat{\beta}_v$	$\exp(\hat{\beta}_v)$	$\exp(\mu)*$ $\exp(\hat{\beta}_v)$	$\hat{p}_v * 100\%$
TX	2.624	13.7908	0.747516	42.7759
SS	-0.011	0.9891	0.053611	5.0883
BR	1.505	4.5042	0.244143	19.6234
IP	0.823	2.2773	0.123440	10.9877
SET	-0.262	0.7695	0.041711	4.0040
APL	0.888	2.4303	0.131730	11.6397
JRY	0.127	1.1354	0.061544	5.7976
DP	0.000	1.0000	0.054204	5.1417
OR.MANAG	-1.282	0.2775	0.015041	1.4818
OR.INTER	-0.800	0.4493	0.024355	2.3776
RCM	-0.028	0.9724	0.052707	5.0068
JWN	0.270	1.3100	0.071005	6.6298
JMN	-0.176	0.8386	0.045456	4.3480
JEXP	0.006	1.0060	0.054530	5.1710
CJRA	-0.008	0.9920	0.053772	5.1028

5. Reducing the Size of the Model

Just as there are many different reasons why one would want to reduce the number of variables in a regression model, there are also many different ways of doing it. In this discussion, we focus on a stepwise method that is most appropriate when dealing with a hierarchical model.

Variable reduction (also called subset selection) is a statistical procedure that is commonly used when one is faced with the problem of fitting a regression model having a large number of variables. In general, we wish to reduce a large model (which may contain a variety of types of variables) to a much smaller one, where the "smaller" model contains the most important subset of those variables that best explain the dependent variable. This is the desirable principle of deriving a parsimonious model. Small models having few variables are usually much more understandable than larger models having many variables. Variables that are dropped from an initial model in order to create a reduced model are considered to have no significant contribution in explaining the behavior of the dependant

variable. Such nonsignificant variables are considered as noise, and are added to the error component of the model to form a new error component.

Each variable in a regression model can be considered to have two possible states: the variable can be in the equation or out of it. So, if we have p possible predictor variables for an analysis, then there are $2^p - 1$ possible regression models (we do not include the empty model with no variables). If p is large, computing all those regression models and evaluating their goodness of fit will be a daunting job. Stepwise methods were introduced as automated techniques for finding a path through the different possible models in the most efficient way. Such a path looks at differently-sized nested subsets of variables and assesses whether or not to add one variable to the subset or drop one variable from the subset.

The stepwise method we use in this paper is that of "backwards elimination" (BE). When using the BE stepwise method, we start out with the full model, and at each step we remove one variable from the current model. The variable that is removed from the model at each step is that variable with the smallest $|t|$- value (or the largest p-value) of all the variables currently in the model. As of this writing, there is no software to carry out an automated BE stepwise method for an HLM; as a result, we manually carried out a BE stepwise procedure for our three-level HLM, stopping when all the variables remaining in the model had a $|t|$- value greater than 2.0.

In our stepwise analysis of the above HLM, we arrive at a reduced HLM having the following subset of the variables at Level- 1:

$$\log_e\left(\frac{p_{ijk}}{1 - p_{ijk}}\right) =$$

$$\beta_{0,ijk} + \beta_1 \,(\text{OR.MANAG})_{ijk} + \beta_2 \,(\text{OR.INTER})_{ijk} + u_{ijk},$$

where the Level-2 portion of the model is:

$$\beta_{0,ijk} = \beta_{00,jk} + \beta_{01}\,(\text{T})_{jk} + \beta_{02}\,(\text{K})_{jk} + \beta_{03}\,(\text{PP})_{jk}$$
$$+ \beta_{04}\,(\text{LB})_{jk} + \beta_{05}\,(\text{APL})_{jk} + u_{0;ijk},$$

TABLE B-2: COMPUTATION OF THE ESTIMATED PROBABILITIES OF EACH FACTOR IN THE REDUCED HLM FOR THE SDNY JURISDICTION. Here $\exp(\hat{\mu}) = \exp(-2.088) = 0.1239$ AND

$$\exp(\hat{\beta}_{SDNY}) = \exp(1.768) = 5.8603.$$

Factor (v)	$\hat{\beta}_v$	$\exp(\hat{\beta}_v)$	$\exp(\hat{\mu}) * \exp(\hat{\beta}_{SDNY}) * \exp(\hat{\beta}_v)$	$\hat{p}_{v*}$ 100%
K	0.814	2.2572	1.63838	62.0980
T	-1.004	0.3664	0.26593	21.0065
PP	-1.546	0.2132	0.15471	13.3983
LB	1.016	2.7611	2.00410	66.7121
APL	0.927	2.5269	1.83414	64.7160
OR.MANAG	-1.174	0.3092	0.22442	18.3287
OR.INTER	-0.817	0.4416	0.03205	24.2710

and the Level-3 portion of the model is:

$$\beta_{00,jk} = \beta_{000,k} + \beta_{001}(\text{EDPA})_k + \beta_{002}(\text{SDNY})_k + u_{00,jk},$$

where $u_{ijk}, u_{0,ijk}, u_{00,jk}$ are the independent Bernoulli error components of the model.

The calculations for estimating the probabilities for all factors in the reduced HLM are given in Tables B-2 (for the SDNY jurisdiction), Table B-3 (for the EDPA jurisdiction), and Table B-4 (for the baseline NDCA and MD jurisdictions). For the SDNY jurisdiction, the computation uses a product of three terms:

$$\exp(\hat{\mu}) \exp(\hat{\beta}_{SDNY}) \exp(\hat{\beta}_v),$$

where v is the particular factor being considered. For the EDPA jurisdiction, we multiply the three terms,

$$\exp(\hat{\mu}) \exp(\hat{\beta}_{EDPA}) \exp(\hat{\beta}_v).$$

For the baseline NDCA and MD jurisdictions, the coefficient is zero, the jurisdiction multiplier is unity, and the computation only uses a product of two terms,

$$\exp(\hat{\mu}) \exp(\hat{\beta}_v).$$

There are other subset selection methods for use in multiple regression problems that are favored over stepwise methods. However, as of this

writing, such methods are not yet available for HLMs, which have more complex structures than plain-vanilla multiple regression models.

TABLE B-3: COMPUTATION OF THE ESTIMATED PROBABILITIES OF EACH FACTOR IN THE REDUCED HLM FOR THE EDPA JURISDICTION.

Here, $\exp(\hat{\mu}) = \exp(-2.088) = 0.1230$ AND

$\exp(\hat{\beta}_{EDPA}) = \exp(1.362) = 3.9028$.

Factor (v)	$\hat{\beta}_v$	$\exp(\hat{\beta}_v)$	$\exp(\hat{\mu})*\exp(\hat{\beta}_{EDPA})$ $*\exp(\hat{\beta}_v)$	$\hat{p}_v*100\%$
K	0.814	2.2572	1.63838	52.1790
T	-1.004	0.3664	0.17710	15.0456
PP	-1.546	0.2132	0.10304	9.3411
LB	1.016	2.7611	1.33469	57.1677
APL	0.927	2.5269	1.22150	54.9854
OR.MANAG	-1.174	0.3092	0.14946	13.0026
OR.INTER	-0.817	0.4416	0.21345	17.5900

TABLE B-4: COMPUTATION OF THE ESTIMATED PROBABILITIES OF EACH FACTOR IN THE REDUCED HLM FOR THE NDCA AND MD JURISDICTIONS. Here,

$\exp(\hat{\mu}) = \exp(-2.088) = 0.1239$ and $\exp(\hat{\beta}_{SDNY}) = \exp(.768) = 5.8603)$.

Factor (v)	$\hat{\beta}_v$	$\exp(\hat{\beta}_v)$	$\exp(\hat{\mu})*\exp(\hat{\beta}_v)$	$\hat{p}_v*100\%$
K	0.814	2.2572	1.27958	21.8491
T	-1.004	0.3664	1.04538	4.3408
PP	-1.546	0.2132	1.02640	2.5721
LB	1.016	2.7611	1.34198	25.4833
APL	0.927	2.5269	1.31298	23.8374
OR.MANAG	-1.174	0.3092	1.03830	3.6883
OR.INTER	-0.817	0.4416	1.05469	5.1854

APPENDIX C: VARIABLE DEFINITIONS, CODING, AND HYPOTHESIS
TESTING

1. Jurisdictional Factors

We first created an index of judicial culture. Defining district court
culture is not easy. We focused on the 2002–2003 year. We decided to
focus on total opinions in the entire jurisdiction (collected on Westlaw) by
total judges (as listed in the CJRA).

	EDPA	SDNY	DMD	NDCA
Total Opinions	1370	3081	688	285
Total Judges	50	62	40	34
CLT Factor	27.4	49.7	17.2	8.4

We hypothesize that courts with a higher number of opinions per judge
would be more likely to produce an opinion in a given disposition.

2. Case Factors

DIV: **Was jurisdiction founded on diversity of citizenship?**
We hypothesize that diverse cases are less likely to result in opinions.
This is a straightforward application of the *importance hypothesis*:
scholars and judges have often asserted that diversity cases are a nuisance
for federal judiciary.[205]
AML: **Was an AMLAW 100 firm involved in the case?**
We measured AMLAW by asking if any counsel listed on the docket
was a member of the 2003 list of AMLAW 100 firms.[206] We identified 97
cases with AMLAW firms. In such cases, as an application of our
demographic hypothesis, we predict that the tendency to write opinions
would increase. Judges writing for powerful audiences ought to be more
likely to try to curry favor by spending more time on the case.

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205. *See* David L. Shapiro, *Federal Diversity Jurisdiction: A Survey and a Proposal*, 91 HARV. L.
REV. 317, 322 (1977) (relaying negative judicial views on diversity cases).
206. Jim Schroeder, Michael Ravnitzky & Sara Yoon, *The AM Law 100, 2003: The Charts*, AM.
LAW., July 2003, at 109 (39).

ATY: **How many law firms were on the docket?**

This is a straightforward count of the number of law firms or individual lawyers involved in a case, through a reading of the docket. Thus, *pro se* counted as 0 for this variable. Our largest number of observed firms in one case was 14. Like AML, we hypothesize that more firms would be correlated with higher propensities to write opinions.

CCI: **Case Complication Index**

CCI is an index created by running a principal components analysis (PCA) on Duration of Case, an indicator variable for duration of case (identifying whether a case was completed or not),[207] and total docket entries. The PCA was computed using a correlation matrix (not a covariance matrix). CCI is the first principal component score. Negative values for CCI correlate with more complicated cases—those with higher durations and docket entries. We predicted that opinions would be more likely in such cases, as a result of our *importance hypothesis*. However, this was the matter of some debate. The importance hypothesis here runs in tension with the *settlement hypothesis*: more complicated cases may be the ones that judges least want to aggravate with opinion writing.

GOV: Was the federal government a party to the case?

This variable identifies whether the federal government is a party, either as a plaintiff, defendant, or in any other form. We identified only 20 federal party cases in the set of difficult cases. We hypothesize that the federal government is involved most often in cases that are high-profile, and as an implication of our *importance hypothesis*, we would predict a positive association with opinion writing.

IMP: How important was the case?

To measure importance based on case type, we first recoded the case types provided by the Federal Judiciary as follows.[208]

- IF 110, 120, 130, 140, 150, 151, 152, 153, 190, 195, 196 THEN RECODE as **CONTRACTS**
- IF 210, 220, 230, 290 THEN RECORD as **REAL PROPERTY**
- IF 240, 245, 310, 315, 320, 330, 340, 345, 350, 355, 360, 362, 365, 368, 370, 371, 380, 385 THEN RECODE as **TORTS (PRIVATE)**
- IF 160, 410, 430, 450, 470, 480, 490, 850, 875, 891, 892, 893, 894 THEN RECODE as **CIVIL COMMERCIAL**

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207. This variable is activated in cases where the docket was not yet terminated on the date that the data was collected, i.e., the case was still pending.

208. *See* PACER SERVICE CENTER, NATURE OF SUIT CODES, *available at* http://pacer.psc.uscourts. gov/documents/natsuit.pdf for a list of case types.

- IF 440, 441, 442, 443, 444, 445, 446 THEN RECODE as **CIVIL RIGHTS**
- IF 510, 530, 535, 540, 550, 555 THEN RECODE as **PRISONER'S PETITITONS**
- IF 710, 720, 730, 740, 790, 791 THEN RECODE as **LABOR**
- If 422, 423 THEN RECODE as **BANKRUPTCY**
- If 820, 830, 840 THEN RECODE as **INTELLECTUAL PROPERTY**
- If 861, 862, 863, 864, 865 THEN RECODE as **SOCIAL SECURITY**
- If 870, 871 THEN RECODE as **TAX**
- IF ANYTHING ELSE THEN RECODE as **OTHER FEDERAL ACTIONS**

These categories better tracked relationships between cases than the nature of suit codes permitted. We hypothesized, based on prior work, that courts would see intellectual property, civil rights, civil commercial, and contracts as more important than the norm. We hypothesized that courts would see prisoner petitions, social security, labor, tax, and real property as less important than the norm. The "other federal actions" category was therefore the baseline and removed from the HLM analysis.

SET: **Did the case end in a settlement?**

We coded SET in the affirmative where the terminal docket entry was an agreed settlement by the parties. As noted in the text, approximately 20% of cases involving hard orders settled. Approximately 35% ended in a judgment on the merits. (The remainder were transferred, remanded, abandoned, or were still pending.) We hypothesized that cases that settled would be less likely to result in orders, a product of our *settlement hypothesis*.

APL: **Did the case end in an appeal?**

Approximately 14% of cases were appealed. As a product of our *reversal hypothesis*, we predicted that such cases would be more likely to contain opinions, as the judges estimated the likelihood of an appeal and reacted accordingly. Notably, since appeal notices usually divest trial courts of jurisdiction, judges' opinion writing in such cases is based on a mere prediction about the likelihood of appeal.

JRY: **Did any party demand a jury?**

As a product of our *settlement hypothesis*, we assume that judges would be less likely to write opinions in cases where the parties had demanded a jury. The basic intuition is that in non-jury cases, courts will be more likely to write opinions as a matter of course; in jury cases, by

contrast, the ultimate decision will be a jury's and the court can only endow the parties with settlement-deterring rights if it makes its opinions clear.

3. *Dispositional Factors*[209]

DP: How many days was the case pending when the disposition issued?

This variable measures the difference between the filed date of the case and the date of the order, in days. As a product of the *settlement hypothesis*, we predict that earlier in cases, judges will be less willing to write opinions, on the theory that such endowments reduce the likelihood of settlement. Additionally, the *reversal hypothesis* predicts that late in cases, judges would fairly anticipate that appeal is more likely from any given disposition.

ORD: **What was the order type?**
See supra text accompanying notes 147 through 150.

RCM: **Who won the disposition?**

Each disposition was coded as one of ten possibilities: (1) defendant wins (40.6% of dispositions); (2) defendant wins in part (6.9%); (3) neither side wins (15.2%); (4) plaintiff wins in part (5.3%); (5) plaintiff wins (29.2%); (6) plaintiff wins in part and defendant wins in part (1.3%); (7) counterclaim defendant wins (0.7%); (8) counterclaim defendant wins in part (0.3%); (9) counterclaim plaintiff wins (0.1%); and (10) counterclaim plaintiff wins in part (no observations). We recoded this into two possibilities, composed of a compromise decision (numbers 2, 3, 4, 6, 8, 10, consisting together of 29% of dispositions) and a pure victory for one side of the other (1, 5, 7, 9, consisting of the remainder of dispositions). The *settlement hypothesis* predicts that compromise verdicts should be more likely to be associated with opinion writing. Verdicts where one party clearly wins will, by contrast, by written as orders so the

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209. We note an important missing variable. Law clerks write the first drafts of many opinions in both the trial and appellate courts. *See* Orran L. Brown, Tribute, *Tribute to Judge Merhige*, 40 U. RICH. L. REV. 15, 17 (2005) ("[Trial judge] relied on his clerks to write drafts of orders and opinions."). Some have argued that clerks' role in drafting opinions has increased significantly with the number of opinions arising from the district courts. Levin H. Campbell, Tribute, *A Tribute to Judge Bailey Aldrich*, BOSTON BAR J., Apr. 1994, at 10, 11 ("There aren't many judges today who write their opinions from scratch; rather, while modern judges remain closely involved and do the deciding, most utilize law clerks actively in the drafting."). If it were possible, a full analysis would try to account for changing clerks, and might even find a way to model the effects of assiduous versus lazy clerks on the propensity to write. Our analysis is more preliminary.

parties are not endowed with overconfidence and consequently fail to settle.

JWM: **Was the writing judge a woman?**

Because judges can change during the life of a case, we coded the judicial characteristics on a disposition-by-disposition basis. We identified the gender of judges by looking at the almanac of the federal judiciary, combined with observation of court web pages. 25% of the total hard dispositions were written by women. The *demographic hypothesis* predicts that women judges may have to work harder (and write more opinions) to achieve the same reputation effects. Therefore, women judges ought to be associated with more opinion writing.

JMN: **Was the writing judge a minority?**

We identified minority judges through the *Almanac of Federal Judiciary* and court web pages. For our purposes, minorities included African-Americans, Latinos (where so identified), Native Americans, and Asian-Americans. 22% of the total hard dispositions were written by minorities, so defined. The JMN hypothesis follows the JWM hypothesis in direction.

JEXP: **How experienced was the writing judge?**

We measured judicial experience as of the date of the order (i.e., it may change during a case). It is a function of total years judging, including years as a state court judge if applicable, as measured by biographies collected in the *Almanac of Federal Judiciary*. The mean judicial experience in the hard order database was 8.65 years, the maximum, 44 years. We predicted that more experienced judges ought to be less likely to write opinions.

CJRA: **How many orders did the writing judge have on the closest Civil Justice Reform Act statistics?**

We measured this factor by identifying the CJRA reports through Westlaw, taking the number of orders on the delay list on the date closest to the order, i.e., if the order was issued in February 2004, we took the March 2004 CJRA statistics. The *demographic hypothesis* predicts that judges seeking to maximize their reputations will write less as their delay statistics increase.