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Independent Judicial Research in the "Daubert" Age

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INDEPENDENT JUDICIAL RESEARCH IN THE *DAUBERT* AGE

EDWARD K. CHENG†

ABSTRACT

The Supreme Court's Daubert *trilogy places judges in the unenviable position of assessing the reliability of often unfamiliar and complex scientific expert testimony. Over the past decade, scholars have therefore explored various ways of helping judges with their new gatekeeping responsibilities. Unfortunately, the two dominant approaches, which focus on doctrinal tests and external assistance mechanisms, have been largely ineffective.*

This Article advocates for a neglected but important method for improving scientific decisionmaking—independent judicial research. It argues that judges facing unfamiliar and complex scientific admissibility decisions can and should engage in independent library research to better educate themselves about the underlying principles and methods.

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Independent research, however, is controversial. A survey of state appellate judges shows sharp divisions on the issue, and at the same time, the rules governing independent research are astonishingly unclear. The Article responds to the likely objections some judges have to independent research and also offers a way of interpreting the existing laws to permit the practice.

Finally, the Article assesses independent research's chances for success as a method of scientific evidence reform. Based on the survey results, it concludes that a substantial number of judges will indeed take up the mantle of independent research. An equally substantial portion will likely resist, however, raising deeper issues about the importance of uniformity in judicial practice.

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INTRODUCTION

Scientific and other forms of expert evidence are crucially important to modern litigation. In today's complex and technologically oriented society, scientific evidence surfaces in nearly every kind of litigation: products liability, medical malpractice, patents, criminal prosecution, and antitrust, just to name a few. Among other things, litigants use experts to prove causation, establish the standard of care, link suspects to (or exclude suspects from) crime scenes, and assess damages.

Given the importance of scientific evidence, courts have unsurprisingly taken an active role in policing its flow into the courtroom. Most famously, the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[1] tasked federal judges as all-important gatekeepers who are obligated to ensure that only "good" science reaches the jury.[2] Many state supreme courts have subsequently followed suit. Judges may therefore no longer take a relaxed attitude toward the reception of scientific evidence, nor may they merely rely on an expert's impressive credentials as a proxy for reliability. Rather, the *Daubert* regime requires that judges critically examine an expert's methodology and conclusions with "exacting standards."[3]

Judges, however, face a conundrum. On the one hand, the scientific admissibility decision can be incredibly influential, if not outcome-determinative.[4] After all, without an expert, a toxic tort plaintiff cannot prove causation, almost certainly sounding the death

1. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993).

2. *Id.* at 596–97.

3. Weisgram v. Marley Co., 528 U.S. 440, 442 (2000).

4. *Cf.* Margaret A. Berger, *Upsetting the Balance Between Adverse Interests: The Impact of the Supreme Court's Trilogy on Expert Testimony in Toxic Tort Litigation*, 64 LAW & CONTEMP. PROBS. 289, 308–21 (Spring/Summer 2001) (criticizing federal courts for ignoring the potential relationship between *Daubert* and *Erie*).

knell for the case. On the other hand, judges are remarkably ill-positioned to make the decision. Primarily trained and seasoned in legal analysis, judges are usually unfamiliar with the specialized information presented and lack the background necessary to assess its reliability.[5] At the same time, the experts, who are prescreened and hired by the parties, invariably conflict with each other, offering the judge little help. If one expert steadfastly maintains that toxicological studies on mice are a well-accepted method for determining carcinogenicity in humans, and the other expert flatly disagrees, how can the judge decide?

Since *Daubert*, scientific evidence reformers have explored various ways to aid judges with their unenviable gatekeeping task. As Part I suggests, these approaches fall into three major categories. The most popular approach has been to provide judges with more direction through doctrinal tests, but studies have suggested that these efforts have had limited success. Another approach is to have judges seek outside help through court-appointed experts and similar mechanisms, but judges thus far have only reluctantly used them. A third approach is to focus on the judges themselves and their understanding of science. If judges can learn more about scientific principles and methods, then hopefully they can make more informed and accurate admissibility decisions. Sadly, this educative approach has received limited attention in the commentary,[6] especially given that, in practice, it has become increasingly influential through judicial education programs.

This Article explores a neglected but potentially important educative reform: independent judicial research. Ordinarily, responsible people facing an unfamiliar and specialized area do research; they read reference books and journal articles, and they search the Internet for relevant materials. This Article argues that judges should be encouraged to do the same. Library research can provide judges with the important background and other information

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5. *See* McClain v. Metabolife Int'l, Inc., 401 F.3d 1233, 1237 (11th Cir. 2005) (describing a trial court that admitted expert testimony because it "concluded that it lacked sufficient knowledge on the scientific subject matter"); Craig Lee Montz, *Trial Judges as Scientific Gatekeepers After* Daubert, Joiner, Kumho Tire, *and Amended Rule 702: Is Anyone Still Seriously Buying This?*, 33 UWLA L. REV. 87, 110 (2001) (describing survey data showing that judges have little background in science).

6. *See, e.g.*, Erica Beecher-Monas, *Blinded by Science: How Judges Avoid the Science in Scientific Evidence*, 71 TEMP. L. REV. 55, 74–75 (1998) (emphasizing the "continued need for appellate supervision and increased judicial education").

necessary for their decision when they need it most. Unlike other educative reforms, however, independent research is controversial,[7] and a number of jurists have called for greater guidance on the issue.[8] Part II explores the debate in greater detail. It first reports the results of a recently conducted survey of state appellate judges on the issue of independent research. The survey shows a judiciary extremely divided, with roughly equal numbers of judges supporting independent research enthusiastically, denouncing it vehemently, and appearing undecided. Part II then responds to the two major objections to independent research: first, that independent research violates the fundamental tenets of the adversary system; and second, that lay judges could do incomplete or incompetent research and therefore reach distorted conclusions.

Part III asks whether current law has the flexibility to permit independent research. Surprisingly, despite being a rather basic element of judicial practice, the rules governing independent research are astonishingly unclear. What little case law that exists is decidedly mixed, and the relevant statutory rules are ambiguous and in tension. Part III then offers an avenue for harmonizing the extant laws to permit independent research, although it ultimately concludes that only amendment of the relevant rules can truly clarify the ambiguities and solidify this position.

Finally, Part IV assesses independent research's chances for success as a method of scientific evidence reform. As law and social norms scholars teach us, doctrine alone is rarely enough to change behavior. Without supportive judicial norms, independent research would slowly die from neglect, just like many reforms before it. Part IV suggests that a substantial portion of judges will indeed take up the mantle of independent research, making it a potential success, but

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7. *See* George D. Marlow, *From Black Robes to White Lab Coats: The Ethical Implications of a Judge's Sua Sponte, Ex Parte Acquisition of Social and Other Scientific Evidence During the Decision-Making Process*, 72 ST. JOHN'S L. REV. 291, 298 (1998) (noting that *Daubert* or *Frye* will tempt judges to look outside the record, so this is "a particularly apt moment in legal history" to consider the issue of judicial research).

8. *See* C.T. Harhut, *Ex Parte Communication Initiated by a Presiding Judge*, 68 TEMP. L. REV. 673, 681 (1995) (writing that the case of *In re Larsen*, 616 A.2d 529 (Pa. 1992), "makes it abundantly clear that some judges are confused as to what they can discuss and with whom"); Marlow, *supra* note 7, at 298 (arguing that the time is right to "consider whether modern standards of judicial ethics should be adjusted to permit judges to engage in *sua sponte, ex parte* research while a case is pending"); Jack B. Weinstein, *Limits on Judges Learning, Speaking and Acting—Part I—Tentative First Thoughts: How May Judges Learn?*, 36 ARIZ. L. REV. 539, 539–40 (1994) (asking the broader question of how judges can ethically acquire knowledge).

that an equally substantial portion will also resist. Should the resulting inconsistency in judicial practice be troubling? The Part concludes that it should not. Although the rule of law generally prefers uniformity in practice, independent research is an instance in which the need for uniformity is attenuated and variation is acceptable.

I. THREE APPROACHES TO SCIENTIFIC EVIDENCE REFORM

As the Introduction describes, judges shoulder a great deal of responsibility in deciding scientific admissibility, yet they often lack the tools or expertise to make well-informed decisions. Accordingly, scientific evidence reform efforts since *Daubert* have often focused on solving this dilemma. This Part offers a framework for understanding these efforts, classifying them into three broad categories: doctrinal, external, and educative. As with most classification systems, these categories can overlap along the edges, but they nevertheless provide a useful tool for viewing the landscape of scientific evidence reform.

Rather than focus on the doctrinal and external approaches, which have been largely unsuccessful, this Part argues that reformers should place greater emphasis on the educative approach, which teaches judges about scientific principles, methodologies, and developments. The educative approach has shown promise and could be a superior alternative—or at minimum, an important complement—to the other approaches. Independent judicial research is a critical element of this educative approach.

A. The Doctrinal Approach

The doctrinal approach to scientific evidence reform typically focuses on choosing and/or modifying the governing scientific admissibility standard. This approach attempts to reduce scientific inquiry to its essential attributes and to use the resulting multifactor test to guide judicial decisionmaking.[9] For example, the *Daubert* decision itself established a four-factor test—falsifiability, peer review, error rates and standards, and general acceptance—for

9. *But see* Bert Black, Francisco J. Ayala & Carol Saffran-Brinks, *Science and the Law in the Wake of* Daubert: *A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 751–52 (1994) (arguing that it is a mistake to interpret *Daubert* as merely a four-factor test in light of how poorly "label and checklist approaches . . . have worked . . . in the past").

determining scientific reliability.[10] The earlier *Frye*[11] standard focused solely on whether the expert's methods were generally accepted in the relevant scientific community.[12]

So far, the doctrinal approach has dominated attempts to improve scientific decisionmaking in the courts. Since the *Daubert* decision, countless articles have argued the merits of the four *Daubert* reliability factors, compared *Daubert* and *Frye*, and proposed additional factors for courts to consider.[13] State supreme courts have debated whether to adopt *Daubert*, *Frye*, or some other admissibility standard,[14] and a vast literature has emerged advocating along similar lines.[15]

As it turns out, however, specific doctrinal tests may not matter much in practice. As a number of commentators and empirical studies have suggested, judges may be simply applying some general level of scrutiny to scientific evidence, regardless of the test.[16] The possible reasons for this phenomenon are diverse, but most likely judges find

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10. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 593–94 (1993). The *Daubert* Court was careful to note that the four factors were nonexclusive, *id.* at 593, but in practice many courts have treated them as definitive.

11. Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

12. *Id.* at 1014.

13. *See, e.g.*, D.H. Kaye, *Choice and Boundary Problems in* Logerquist, Hummert, *and* Kumho Tire, 33 ARIZ. ST. L.J. 41, 42 (2001) ("Much has been written about the merits, pedigree and operation of these standards. Each has its strengths and weaknesses, its friends and foes.").

14. *E.g.*, John v. Im, 559 S.E.2d 694, 698 (Va. 2002) (declining to adopt *Daubert*, yet not adopting *Frye*); Logerquist v. McVey, 1 P.3d 113, 125–29 (Ariz. 2000) (rejecting *Daubert* and retaining *Frye*); State v. Porter, 698 A.2d 739, 749–52 (Conn. 1997) (switching from *Frye* to *Daubert*).

15. *E.g.*, Mary Gaston, Note, State v. Gentry*: The Washington Supreme Court Opens the Door for Unreliable Scientific Evidence*, 31 GONZ. L. REV. 475, 498–99 (1995–96) (proposing either modifications to *Frye* or an adoption of *Daubert*); Penelope Harley, Comment, *Minnesota Decides:* Goeb v. Tharalson *and the Admissibility of Novel Scientific Evidence*, 24 HAMLINE L. REV. 460, 463 (2001) (summarizing the argument that Minnesota should have switched from *Frye* to *Daubert*); Andrew R. Stolfi, Note, *Why Illinois Should Abandon* Frye*'s General Acceptance Standard for the Admission of Novel Scientific Evidence*, 78 CHI.-KENT L. REV. 861, 886–87 (2003).

16. *E.g.*, 4 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE § 35-1.3.3 (2002) (doubting that admissibility rulings "actually turn on the difference between *Daubert* and *Frye*"); David E. Bernstein, Frye, Frye, *Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS J. 385, 388 (2001) (observing that the "case law under *Frye* is slowly converging with *Daubert* jurisprudence"); Edward K. Cheng & Albert Yoon, *Does* Frye *or* Daubert *Matter?: A Study of Scientific Admissibility Standards*, 91 VA. L. REV. 471 (2005) (providing empirical evidence that the choice of admissibility standard does not affect the level of scrutiny imposed on scientific evidence).

doctrinal factors unhelpful in this context. Surveys[17] and case law[18] have demonstrated that judges have a poor judicial understanding of the *Daubert* factors, which in many ways requires an unrealistic working knowledge of the philosophy of science. In addition, the breadth and diversity of expert testimony necessarily ensures that any discrete set of factors will often be a poor fit.[19] *Daubert* itself recognized this problem in declaring its factors to be flexible and nonexclusive.[20] Further amendments of the tests or other doctrinal tweaks are therefore unlikely to be successful.

B. The External Approach

The external approach to scientific evidence reform emphasizes the need for judges to seek outside help. Reformers who favor this class of solutions have typically sought to introduce a neutral expert or panel of experts into the litigation process. For example, Federal Rule of Evidence 706 and many states permit judges to use court-appointed experts,[21] and some judges have exercised their inherent judicial power to appoint technical advisers. One might also classify a number of National Research Council reports, most notably the seminal report on DNA typing, in this vein, although they tend to be very broad in scope and generally occur prior to litigation.[22]

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17. Sophia I. Gatowski et al., *Asking the Gatekeepers: A National Study of Judges on Judging Expert Evidence in a Post-*Daubert *World*, 25 LAW & HUM. BEHAV. 433, 444–48, 452–53 (2001) (reporting survey results showing that judges have a poor understanding of the *Daubert* factors and rely heavily on the *Frye* "general acceptance" test).

18. For example, in *United States v. Havvard*, 260 F.3d 597 (7th Cir. 2001), the Seventh Circuit concluded that the district court "properly considered the *Daubert* factors . . . and concluded that fingerprinting techniques have been tested in the adversarial system, [and] that individual results are routinely subjected to peer review for verification," *id.* at 601. This analysis is a patent distortion and misunderstanding of the falsifiability/testing and peer review factors. *See, e.g.*, United States v. Llera Plaza, No. CR. 98-362-10, 2002 WL 27305, at *10–11 (E.D. Pa. Jan. 7, 2002) (rejecting *Havvard's* erroneous characterization), *vacated on other grounds*, 188 F. Supp. 2d 549 (E.D. Pa. 2002).

19. For example, many forms of engineering expert testimony are based on reconstructions of unique events, creating problems for the testing, error rate, and general acceptance requirements. *See, e.g.*, 3 FAIGMAN ET AL., *supra* note 16, § 21-1.3, at 9–12.

20. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 593–94 (1993).

21. FED. R. EVID. 706; *see also* Gen. Elec. Co. v. Joiner, 522 U.S. 136, 147, 149–50 (Breyer, J., concurring) (supporting the use of court-appointed experts); Andrew MacGregor Smith, Note, *Using Impartial Experts in Valuations: A Forum-Specific Approach*, 35 WM. & MARY L. REV. 1241, 1269 & n.134 (1994) (listing twenty states with evidence provisions similar to Rule 706).

22. *See* NATIONAL RESEARCH COUNCIL, THE EVALUATION OF FORENSIC DNA EVIDENCE (1996).

In theory, external approaches offer a sensible if not optimal way of improving scientific admissibility decisions. External approaches provide judges with a knowledgeable aide who can properly digest the specialized information—and acquire additional information if necessary—in light of years of experience in the field. In addition, the external expert's neutral position significantly reduces the problem of partisanship and bias that accompanies adversarial ones. Obviously, no expert is without biases, but at least court-appointed experts are not preselected and financially compensated specifically because of their biases.

Despite their theoretical attractions, external mechanisms have unfortunately seen little use in practice.[23] Albeit somewhat dated, a 1994 Federal Judicial Center survey showed that despite having long-standing authority to appoint experts, 80 percent of federal district court judges had never used one.[24] Indeed, historically speaking, mechanisms for facilitating neutral experts either have been nonstarters or have inevitably faded away after garnering only some initial interest.[25]

The reasons for the judicial lack of interest in external assistance are likely structural. Trusted, quality experts are difficult to find, particularly because judges typically travel in legal, not scientific, circles.[26] Court-appointed experts are also administratively cumbersome, given that they are expensive and invariably involve

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23. *E.g.*, Debra L. Worthington et al., *Hindsight Bias,* Daubert, *and the Silicone Breast Implant Litigation*, 8 PSYCHOL. PUB. POL'Y & L. 154, 162 (2002) (noting that judges rarely use court-appointed experts); Samuel R. Gross, *Expert Evidence*, 1991 WIS. L. REV. 1113, 1191 (same); *see also* James Oldham, *The History of the Special (Struck) Jury in the United States and Its Relation to Voir Dire Practices, the Reasonable Cross-Section Requirement, and Peremptory Challenges*, 6 WM. & MARY BILL RTS. J. 623, 659 (1998) (noting the resistance of Delaware trial judges to special juries despite a statutory provision permitting their use).

24. Joe S. Cecil & Thomas E. Willging, *Accepting* Daubert*'s Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity*, 43 EMORY L.J. 995, 1004–05 tbl.1 (1994).

25. Edward K. Cheng, *Same Old, Same Old: Scientific Evidence Past and Present*, 104 MICH. L. REV. 1387, 1395–96 (2006) (describing the historical efforts to promote neutral experts).

26. The recent Court Appointed Scientific Experts (CASE) program, a joint effort of the American Bar Association Science and Technology Section and the American Association for the Advancement of Science, attempts to address this concern by maintaining lists of experts. American Association for the Advancement of Science, CASE Mainpage, http://www.aaas.org/spp/case/case.htm (last visited Feb. 17, 2007). Historically, however, such list projects have proven unsuccessful. Cheng, *supra* note 25, at 1395–96.

delays and extra procedural steps.[27] The trial bar vehemently opposes infringements on the adversary process, further contributing to judicial reluctance.[28] Finally, judges may feel that the additional external actor improperly interferes with the judicial process. Because judges understandably tend to ratify their court-appointed experts' opinions, the mechanism carries the appearance of delegation or abdication, however unwarranted that perception may be.

C. *The Educative Approach*

According to the educative approach, better scientific decisions will arise not from finely calibrated doctrinal tests or the use of external experts, but from a more sophisticated and well-informed judiciary. If judges have a more comprehensive appreciation and awareness of scientific problems, they will in turn make better scientific admissibility decisions.[29]

The educative approach is a natural complement to *Daubert*'s gatekeeping philosophy. To improve the legal system's handling of science, *Daubert* transferred power from the jury to the judge. But why would empowering judges over jurors improve science-related decisionmaking? Some might argue that judges are more intelligent or less plaintiff friendly, but one need not be so elitist or cynical. The more likely and palatable reason is that, unlike jurors, judges are repeat players.[30] They know that scientific reliability is a critical and recurring issue in their courtrooms, so they are well motivated to learn about the scientific process and how to separate good science from bad.[31]

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27. *See generally* Barbara S. Hulka et al., *Experience of a Scientific Panel Formed to Advise the Federal Judiciary on Silicone Breast Implants*, 342 NEW ENG. J. MED. 812 (2000) (describing the authors' experience on the breast implants panel).

28. *E.g.*, Gross, *supra* note 23, at 1197–98 (arguing that the neglect of Rule 706 is due in part to trial bar opposition and an adversarially focused judicial outlook).

29. As Ron Allen and Joseph Miller note, the common law has generally favored educating juries rather than having them "defer to the judgment of others," an observation that somewhat parallels the educative versus external approaches described here. Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131, 1133 (1993).

30. *But see* Note, *Reliable Evaluation of Expert Testimony*, 116 HARV. L. REV. 2142, 2150–51 (2003) (expressing skepticism as to judges' repeat-player advantages).

31. *See* Black et al., *supra* note 9, at 787–88 (discussing reasons why judges are preferable to jurors in the scientific evidence context); *see also* Ronald J. Allen, *Expertise and the* Daubert *Decision*, 84 J. CRIM. L. & CRIMINOLOGY 1157, 1160–62 (1994) (observing that the costs of

At the same time, the educative approach can avert many of the problems that hamper the other approaches. Unlike external solutions, educative solutions keep decisionmaking power firmly entrenched with the judge and carry fewer administrative burdens. Unlike doctrinal reforms, educative solutions are more flexible and can be descriptively richer. Given the vast array of expert testimony, admissibility standards simply cannot be fine-tuned without creating tests that are excessively complicated and difficult to understand. The educative approach allows the admissibility standard to remain flexible by shifting some of the burden to the judge's own understanding of science.

Educative solutions can take place both before and during litigation. Before litigation, judges can seek out and attend judicial education programs on science. During litigation, practical limitations generally require judges to do library research independently.

1. *Judicial Education.* Most educative efforts so far have focused on judicial education prior to litigation. Over the last few years, judicial education programs on scientific evidence have become an increasingly popular option for judges and others interested in improving scientific decisionmaking. The programs range from the semiannual Science for Judges program,[32] to weeklong courses at the National Judicial College,[33] to more ad hoc panels at judicial conferences. Many of them are arranged by the judges themselves, whereas others are sponsored or sanctioned by judicial organizations such as the Federal Judicial Center and the National Center for State Courts.[34]

Judicial education programs are a sound step toward improving the ability of judges to handle scientific evidence. They expose judges to scientific concepts and issues, and they make judges more critical

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educating jurors in scientific principles is high and recurs each time a specialized issue is litigated).

32. *See, e.g.*, Margaret A. Berger, *Science for Judges*, 12 J.L. & POL'Y 1, 1–2 (2003) (announcing the Science for Judges program). The Science for Judges program has been an ongoing series since 2003. *Id.* at 1.

33. *See* The National Judicial College Courses: Scientific Evidence and Expert Testimony, http://www.judges.org/courses/evs0707.html (last visited Feb. 17, 2007).

34. Science for Judges, for example, is cosponsored by the Brooklyn Law School Center for Health, Science and Public Policy, the Federal Judicial Center, the National Center for State Courts, and the Committee of Science, Technology and Law of the National Academies of Science. Berger, *supra* note 32, at 1.

of expert testimony. Nevertheless, ex ante judicial education efforts have significant limitations. Educational programs must necessarily paint with a broad brush, and no series of programs can ever hope to anticipate the full range of scientific admissibility issues that a judge may face in the courtroom. These programs are also considerably removed in time; judges may need a refresher by the time a *Daubert* issue surfaces. Judges need a more specific and timely complement to judicial education to make the educative approach more effective.

2. *Independent Research.* The crucial complement to judicial education programs is independent judicial research. Allowing judges to educate themselves during the course of litigation through library and other research fills the sizable gap left by judicial education. Independent judicial research allows judges to obtain necessary information in a timely manner and at the appropriate level of specificity.[35] In addition, written sources also provide stable, citable references, eliminating inaccurate or incomplete recollections from conferences long ago.

Independent research is also a more readily available option than educational programs. Although educational programs may be more user-friendly because the materials and speakers are geared toward judicial issues, they are also limited in location, time, and topic. Independent research has none of these restrictions, particularly given that today's networked world makes information incredibly easy to access.[36] A judge can just as easily search the *New England Journal of Medicine* or some other science-related site as Westlaw or LEXIS.

These arguments, of course, do not diminish the importance of judicial education programs, which remain an important component of the educative approach. Understanding scientific concepts takes

35. Concededly, independent research may not be as effective in this respect as court-appointed experts, because court-appointed experts can be more responsive to specific questions and concerns. Court-appointed experts, however, have the disadvantage of being administratively cumbersome. *See supra* Part I.B. Furthermore, such experts, harboring their own personal biases, may not provide as balanced a treatment as a comprehensive literature review.

36. *See, e.g.*, David H. Tennant & Laurie M. Seal, *Judicial Ethics and the Internet: May Judges Search the Internet in Evaluating and Deciding a Case?*, PROF. LAW., 2005, at 2 (discussing judicial research on the Internet); Coleen M. Barger, *On the Internet, Nobody Knows You're a Judge: Appellate Courts' Use of Internet Materials*, 4 J. APP. PRAC. & PROCESS 417, 431–32 (2002) (discussing the increasing use of the Internet by judges to check facts); Molly McDonough, *In Google We Trust?*, A.B.A. J., Oct. 2004, at 30 (same).

time and exposure, and ex ante education programs offer judges the relaxed environment necessary to absorb the material. Perhaps even more importantly, educational programs familiarize judges with the research resources available, ultimately making independent research more productive.

II. THE CONTROVERSY OVER INDEPENDENT RESEARCH

Unlike judicial education programs, which have been largely uncontentious and well received, independent research is likely to be controversial, in part because the idea of judges unilaterally doing research conflicts with widely held adversary system values. This Part addresses the controversy in greater detail. To paint a more vivid picture of the controversy, this Part begins by reporting the results of a 2005 survey of state appellate judges. It then asks why a sizable portion of judges reject independent research, and responds to the two likely objections: that the very idea of independent research does violence to adversary system values, and that judges will incompetently conduct research, undermining rather than improving accuracy. The Part closes with several limitations on how judges should conduct independent research to preserve adversarial values and to ensure greater accuracy.

A. Survey of State Appellate Judges

This Section reports the results of a survey of state appellate judges on the desirability of independent research in the *Daubert* context. Surveys, of course, have their inherent limitations, as will be discussed below. When trying to measure judicial attitudes, however, public data sources such as published opinions can have significant deficiencies. Published opinions, for instance, suffer from the distorting effects of controlling precedent, settlement, and publication decisions. Surveys are therefore a particularly useful method for ascertaining judicial attitudes in this context.

1. *Methods.* Surveys were distributed to a group of 136 state appellate judges attending a conference on Justice and Science sponsored by the National Foundation for Judicial Excellence.[37]

37. The conference was held in July 2005 in Chicago, Illinois. The National Foundation for Judicial Excellence is a foundation funded by the Defense Research Institute (DRI). Neither

Answers were anonymous, but the survey requested demographic information, such as the judges' state and scientific background. The response rate was approximately 61 percent (N = 83).[38]

To measure judicial *attitudes*, rather than controlling law, the survey asked participants to disregard any specific rules in their jurisdictions.[39] The survey presented a scenario in which a judge faced a difficult scientific admissibility issue in a pharmaceutical products liability case. The survey then presented the judges with a variety of methods by which the hypothetical judge could obtain additional, independent information on the drug to inform his admissibility decision. The survey asked the judges to rate the desirability of each practice using a scale of 1 (very undesirable) to 5 (very desirable). The relevant portions of the survey instrument are reproduced in the Appendix.

2. *Results.* The survey results are revealing.[40] For example, as shown in Figure 1, on the question whether it is desirable for a judge to "[f]ind and read medical journal articles (peer-reviewed) on the drug," the judges (N = 81) were remarkably divided. Strikingly, 21 percent of respondents found the research to be "very desirable," whereas 25 percent of respondents found the very same practice to be "very undesirable." Respondents were similarly divided on the issue of reading medical treatises, as seen in Figure 2.

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the conference organizers nor DRI played any role in survey construction or exercised any control over the ultimate reporting of results.

38. The judges returned eighty-three surveys, although as can be expected, surveys occasionally had blank or ambiguous answers, reducing the N for a particular question.

39. The survey instructed: "In responding to these questions, please disregard any specific rules in your jurisdiction that may govern or restrict judicial conduct. The purpose of this survey is to better understand what the rnles or norms governing independent judicial investigations should be in principle, rather than what the restrictions currently are." *See infra* app.

40. The results presented in this Article represent only a subset of the total data collected in the survey. The instrument covered a far broader range of topics, including independent research of law and general scientific principles, and a full spectrum of sources. A full analysis of the survey responses is beyond the scope of this Article and will be the subject of future work.

Figure 1. Desirability of Judges Independently Reading Medical Journals

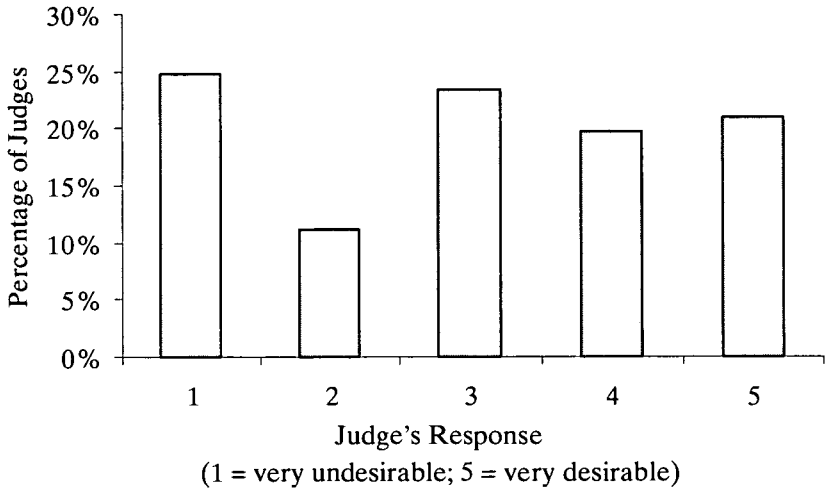
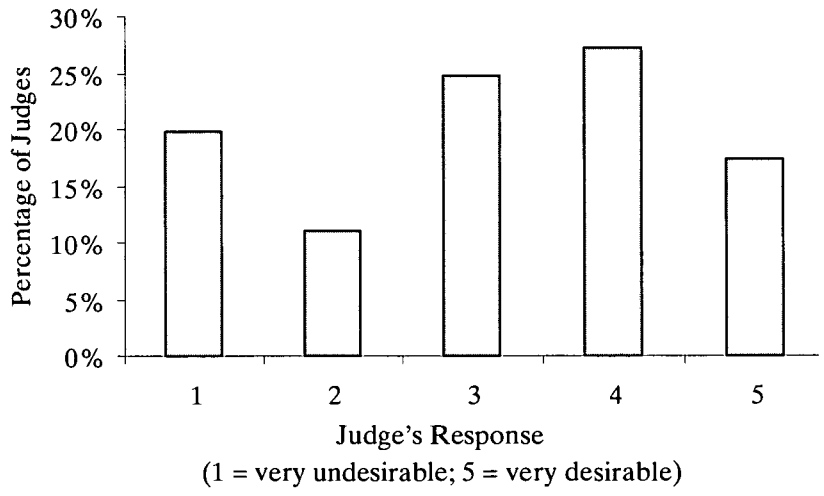


Figure 2. Desirability of Judges Independently Reading Medical Treatises



Only a few methods presented in the survey showed a relative consensus among judges, and these all involved informal conversations. A resounding 89 percent[41] of judges responded that informally consulting a family physician was "very undesirable," and 88 percent[42] of judges responded that informally consulting a medical school professor was to some degree undesirable.[43] Strong judicial norms, likely developed through clear and well-established rules against ex parte communications, likely played a key role in generating uniform answers in these categories.

3. *Discussion and Limitations.* The survey results suggest that judges are divided on the propriety of independent research in scientific evidence cases. That said, however, the results carry the usual caveats that accompany surveys in general, as well as a few additional caveats unique to this survey.

The response rate of approximately 61 percent, although quite reasonable, necessarily means that a significant number of conference participants are not represented in the survey results. Self-selection may therefore be a concern, particularly if judges who are more willing to assist academic research (by participating in the survey) are also more likely to welcome its use in the courtroom. Self-selection would bias results toward the "desirable" end of the spectrum.

The original sample itself may also be a potential source of bias. Although distributing surveys at conferences may improve response rates, the method also necessarily limits the sample to those judges interested in the conference topic (or at minimum, willing to attend a conference on that topic). To the extent that judges who are willing to attend conferences on science and the law demonstrate an inclination toward judicial education, they may have more favorable views toward other educative mechanisms.

A potential source of bias in the other direction may arise from the topic. Responses to ethical surveys may naturally skew toward the perceived ethical behavior, in this case the "undesirable" end of the spectrum.[44] Despite the promise of anonymity, respondents may still feel that they have more to lose in appearing unethical than overly

41. The 95% confidence interval is 82% to 96%.

42. The 95% confidence interval is 81% to 95%.

43. Of all respondents, 67 percent rated informal discussions with a medical school professor as "1," and 21 percent rated it as "2."

44. Many thanks to Judge Arthur Kelsey for this insight.

cautious. The cost of being overzealous or overly permissive is clear. The implicit cost of being overly cautious—not conducting independent research and increasing the risk of error—is largely hidden and secondary.

Nevertheless, although these biases may influence the precise percentages observed, they arguably do not affect the overall conclusion that conflict exists on these issues within the judiciary. First, some of the potential biases are subtle: neither a judge's willingness to assist academic research nor a judge's interest in judicial education necessarily correlates to views about independent research. Second, no matter what the bias, the surveys demonstrate that an appreciable subset of the judiciary believes that independent research is a good practice and another subset thinks it is a terrible one.

A final concern is that despite clear instructions asking respondents to disregard the specific rules of their jurisdictions, judges' opinions may have been influenced by those rules nonetheless. After all, as Part III.A suggests, roughly half of the states that have considered the issue permit judges to use medical articles independently, whereas the other half forbid it. If judges adhered to their jurisdictional rules, one might expect to see the distributions in Figures 1 and 2.

Specific jurisdictional rules, however, probably did not exert much of an influence on the overall results. First, the vast majority of states have no controlling precedent on the issue.[45] Second, as Part III.C discusses, nearly all states have adopted the ABA's Model Code of Judicial Conduct or some close approximation of it, and those statutes leave the issue of independent research on scientific issues unexplored and ambiguous. Third, the survey results appear inconsistent with a jurisdictional influence theory whether via formal rules or informal norms. Performing a regression on the results shows no statistically significant relationship between a judge's state and a judge's attitude toward independent research. Indeed, responses within any given state varied widely. On the question of medical journal articles, the ten Texas judges distributed themselves across the scoring spectrum: 1, 1, 2, 3, 3, 4, 4, 4, 5, 5. The seven Louisiana judges also distributed themselves: 1, 2, 2, 3, 3, 4, 5. Other states

45. Unfortunately, there were an insufficient number of judges from jurisdictions with controlling precedent to determine if those rules had any impact on judicial attitudes.

displayed similar results. Finally, a previous survey on independent research suggests that most judges either do not know their specific jurisdictional rules or do not find them helpful. In his 1995 survey, Judge Chester Harhut of Pennsylvania found confusion and conflict on the issue of independent research among his colleagues on the Pennsylvania bench.[46] Approximately half of those surveyed said that judges should not "fill in gaps left by counsel," whereas the other half felt that a court has "a responsibility to bring additional facts out on the record when the litigants fall short."[47]

B. Objections to Independent Research

Why are some judges so opposed to independent research? This Section raises and responds to two major objections that may be driving much of the resistance. The first objection is that independent research fundamentally conflicts with traditional adversarial process values. The second stems from skepticism about whether judges can really do independent research competently without being misled by outlier or spurious materials.

1. *Adversarial Process Objections.* Two fundamental components of the classic Anglo-American adversary system are a neutral and passive decisionmaker and party presentation of evidence.[48] Independent research clashes with both. It involves an active decisionmaker, and it threatens to undermine the importance of the evidence presented by the parties.[49] In all likelihood, judges

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46. Harhut, *supra* note 8, at 683, 690. Judge Harhut surveyed 430 active and senior Pennsylvania trial judges. *Id.* at 682.

47. *Id.* at 690; *see also id.* at 685–86 (quoting one respondent: "Nor do I feel that a violation occurs when I perform independent research and investigation. After all, what's the difference in reading a learned article in the *New England Journal of Medicine* and a case . . . ? I would, however, draw the line at formally seeking consultations with judges outside the country and other 'experts.'").

48. *E.g.*, STEPHAN LANDSMAN, READINGS ON ADVERSARIAL JUSTICE: THE AMERICAN APPROACH TO ADJUDICATION 1–5 (1988); Jerold H. Israel, *Cornerstones of the Judicial Process*, KAN. J.L. & PUB. POL'Y, Spring 1993, at 5, 12–13 (discussing the adversarial process in the criminal context); Stephan A. Landsman, *A Brief Survey of the Development of the Adversary System*, 44 OHIO ST. L.J. 713, 714 (1983) (defining the adversarial system). Landsman's definition also includes a third component, which he terms "highly structured forensic procedure" and which encompasses procedural, evidentiary, and ethical rules. *Id.* at 716–17.

49. *See* Adam J. Siegel, Note, *Setting Limits on Judicial Scientific, Technical, and Other Specialized Fact-Finding in the New Millennium*, 86 CORNELL L. REV. 167, 200–01 (2000)

who strongly support and believe in the adversarial process—and many are in this category[50]—take a dim view of independent research.

In the scientific evidence context, however, there are special justifications for sacrificing adversarial values. First, although the adversary system often improves accuracy,[51] adversarialism may be ineffective or even counterproductive here. As countless commentators have pointed out, the adversary system is particularly ill suited to handle specialized knowledge. Experts are the only variety of witness that can be prescreened and paid by the parties, practically ensuring conflicting and partisan testimony.[52] Worse yet, in the criminal context, indigent defendants lack the resources to hire their own experts, leaving prosecutorial forensic experts largely unchallenged.[53] At the same time, judges and jurors typically have no background in the scientific or technical material presented. Passive decisionmakers who cannot supplement their background knowledge therefore lack the ability to assess the experts' statements critically, a situation that is likely to produce arbitrary, not accurate, results.[54]

Second, decisions involving scientific facts demand particular attention to accuracy because of their generalized nature. Unlike typical adjudicative facts such as who caused the accident at the intersection, third parties can readily scrutinize and check scientific

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(suggesting that judicial investigations will reduce the incentive for lawyers to describe science effectively to judges and jurors).

50. *But see* Landsman, *supra* note 48, at 713 (describing Chief Justice Burger and the drafters of the Model Rules of Professional Conduct as expressing doubts about some aspects of the adversary system).

51. *E.g.*, Israel, *supra* note 48, at 13 (noting the theory that "self-interested adversaries will uncover and present more useful information . . . than would be developed by the judicial officer in an inquisitorial system"); Marlow, *supra* note 7, at 319 (noting that one reason for the adversary system is that it is more likely to be accurate).

52. MOLLY TREADWAY JOHNSON ET AL., FED. JUDICIAL CTR., EXPERT TESTIMONY IN FEDERAL CIVIL TRIALS: A PRELIMINARY ANALYSIS 5 (2000) (describing a survey in which many federal judges felt that experts "abandon objectivity and become advocates for the side that hired them"); DAVID H. KAYE ET AL., THE NEW WIGMORE: EXPERT EVIDENCE § 1.2, at 5–6 (2004).

53. *See generally* Paul C. Giannelli, Ake v. Oklahoma: *The Right to Expert Assistance in a Post-*Daubert*, Post-DNA World*, 89 CORNELL L. REV. 1305 (2004) (discussing the right to expert assistance for criminal defendants).

54. *See infra* Part II.C; *cf.* Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 54 (1901) ("[H]ow can the jury judge between two statements each founded upon an experience confessedly foreign in kind to their own? It is just because they are incompetent for such a task that the expert is necessary at all."); Worthington et al., *supra* note 23, at 158 (describing a 1983 study concluding that jurors use an expert's appearance and "paralanguage" as proxies for reliability).

findings, and well-publicized errors can call the legitimacy of the system into question. For example, when the court in *Wells v. Ortho Pharmaceuticals Corp.*[55] notoriously concluded that spermicides caused birth defects,[56] it incited a media frenzy over the mistake.[57] Furthermore, because scientific facts are general, the implications of erroneous decisions are not confined to the parties. Indeed, even if not technically binding precedent, previous decisions about scientific admissibility are cited in and arguably exert considerable influence over future cases.[58] The parties therefore cannot claim sole ownership of the litigation.

Third, the *Daubert* decision itself may signal the importance of relaxing adversarial process values in favor of accuracy in the scientific evidence context. *Daubert* was a response to the fervent criticism of "junk science" in the courtroom in the years preceding it.[59] Thus, it arguably marked the beginning of a new regime emphasizing accuracy. No longer are judges to be passive umpires, granting the parties largely unfettered control over the presentation of expert evidence to the jury. Instead, the judge must act as a gatekeeper and ensure that the evidence is reliable.[60] The public, after all, expects courts to get the science right.

Finally, it is worthwhile to note that independent research would not be alone as a countercurrent to adversarialism. Indeed, the

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55. Wells v. Ortho Pharm. Corp., 615 F. Supp. 262 (N.D. Ga. 1985).

56. Gross, *supra* note 23, at 1122; *cf.* Michael B. Bracken, *Spermicidal Contraceptives and Poor Reproductive Outcomes: The Epidemiologic Evidence Against an Association*, 151 AM. J. OBSTETRICS & GYNECOLOGY 552, 552–56 (1985) (reviewing studies concluding that there is no association between spermicides and poor reproductive outcomes).

57. *E.g.*, James L. Mills & Duane Alexander, *Teratogens and "Litogens,"* 315 NEW ENG. J. MED. 1234 (1986); Editorial, *Federal Judges v. Science*, N.Y. TIMES, Dec. 27, 1986, at A22.

58. *See* Miriam A. Cherry & Paul Decker, Daubert *Hearings and Precedent, in* THE JUDGE'S ROLE AS GATEKEEPER: RESPONSIBILITIES AND POWERS ch.9 (1999), *available at* http://cyber.law.harvard.edu/daubert/ch9.htm (discussing the precedential effect of previous admissibility decisions); Michael D. Green, *Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of* Agent Orange *and Bendectin Litigation*, 86 NW. U. L. REV. 643, 679 (1992) (noting that in many Bendectin cases, courts substantially relied on earlier opinions in making their admissibility determinations, but qualifying that Bendectin may have been a unique situation). The influence of previous opinions, however, is only speculative, because it is impossible to separate the evidence's substantive merits from the weight of prior judicial determinations. In other words, if the scientific evidence is indeed reliable, a court could admit it based on that fact alone, regardless of any prior precedent.

59. PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM 17–20 (1991).

60. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 589 (1993).

judicial system often violates its own ideals of passivity and party control in the name of better decisionmaking. Judges can independently research law, in part because the resolution of a legal dispute affects subsequent parties and implicates societal values.[61] Modern judges have also taken a more active role in managing caseloads, encouraging settlement, and supervising injunctive relief.[62] In addition, various procedural, evidentiary, and ethics rules, including discovery, hearsay, and ethical disclosure rules, exist specifically to rein in the excessive zeal and perverse effects that might otherwise accompany a purely adversarial system.

2. *"Half-Baked" Research Objections.* Another concern about independent research is whether judges will have the wherewithal to conduct first-rate library research. Judges have limited resources for conducting specialized research, both in terms of personnel and access.[63] They also lack experience and expertise in the relevant scientific fields. Judges therefore always run the risk of missing important information or being duped by outlier, polemical, or otherwise discredited material.

A few considerations should allay these fears. First, when conducting independent research, judges have a natural inclination toward standard, reliable sources. These sources (if not already cited by the parties) are more likely to come to mind as reference sources and are more readily available from the library. Of course, the Internet is a wild card in this regard, but then again, judges have considerable incentives to avoid dubious sources like blogs or personal websites. Judges must produce publicly available, written decisions, and the use of fringe sources risks undermining the persuasive power of their opinions, let alone their reputations.

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61. United States v. Burke, 504 U.S. 229, 246 (1992) (Scalia, J., concurring) ("The rule that points not argued will not be considered . . . distinguishes our adversary system of justice from the inquisitorial one. Even so, . . . the Supreme Court need not render judgment on the basis of a rule of law whose nonexistence is apparent on the face of things, simply because the parties agree upon it—particularly when the judgment will reinforce error already prevalent in the system." (citation omitted)). *But see* Quong Wing v. Kirkendall, 223 U.S. 59, 63–64 (1912) (Holmes, J.) (declining to explore the possibility of discrimination when counsel does not raise, or indeed disclaims, the issue).

62. *E.g.*, Judith Resnik, *Managerial Judges*, 96 HARV. L. REV. 374, 376–80 (1982).

63. To the extent that time and resources constrain the ability of judges to conduct independent research in all cases, independent research can only be a partial solution to judges' unfamiliarity with science and must be accompanied by other educative solutions.

Second, the structural context cabins and directs the judge's independent research, reducing the possibility of misguided research and decisions. Independent judicial research *supplements* the parties' presentation of scientific information, rather than replaces it, so the parties still frame the debate. The judge's inquiry is therefore naturally bounded by the limits set by the parties. Within these bounds, independent research contextualizes the parties' experts and helps the judge be more critical about them.

Finally, because the judge's purview is restricted to admissibility, the judge's role is necessarily limited to excluding or admitting the parties' evidence. This posture ensures that even under the absolute worst-case scenario—for example, when the judge finds and mistakenly relies upon an outlier article—the damage is confined to erroneous exclusion or admission. This result is arguably no worse than a regime without independent research, in which passive judges without adequate tools for determining reliability are consistently forced to guess anyway.

C. Potential Limits on Independent Research

Although the discussion in Section B strongly suggests that fears about adversarial process encroachment and poor quality research are insufficient to exclude independent research as an avenue for reform, one should not take those objections lightly. Indeed, those concerns advocate for several procedural safeguards that would promote greater accuracy and maintain many of the benefits of adversarial testing.

First, judges should restrict their independent research only to sources that are citable and publicly available. This requirement ensures that the parties can continue to contest the influences on the judge's reasoning. Under this limitation, judges may consider scientific information found in case law, library materials, and some Internet sites.[64] They may not engage in ex parte communications with experts and other third parties, however, although one might argue that such conversations would qualify if transcribed for the record.[65]

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64. *See* Barger, *supra* note 36, at 431–37 (discussing the problem of fleeting sources on the Internet).

65. *See* Weinstein, *supra* note 8, at 557–59 (discussing the importance of creating a record if judges need to talk to outside parties).

Second, judges should cabin their inquiry to generally applicable scientific information such as scientific principles and methods, the toxic effects of a substance, or the accuracy of a scientific technique. As noted in Section B, these generalized facts are not confined to the immediate parties, heightening the need for greater accuracy in decisionmaking. These facts are also likely to be more useful to the *Daubert* inquiry, given that they help judges ascertain whether an expert has addressed methodological concerns and/or contrary studies. Judges, however, should avoid researching case-specific facts, such as whether the plaintiff was actually exposed to a substance or how the DNA test was conducted in a particular instance.[66] This restriction is largely self-policing, as library and other publicly available sources will generally not contain case-specific information.

Finally, as generations of commentators have argued in the legislative fact context,[67] when judges discover information critical to the decisionmaking process, the parties should be notified and given an opportunity to respond.[68] This procedural safeguard further minimizes the concern about "half-baked" judicial research, because it enables the parties to double-check the judge.[69]

III. INDEPENDENT RESEARCH AND CURRENT LEGAL DOCTRINE

Assuming that having judges engage in independent research is a desirable goal, does current law permit it? One would think that such a fundamental aspect of the judicial process would have clear and well-established rules, but it does not. Indeed, the answer is surprisingly unclear and controversial. The few courts that have addressed the issue are split, with some approving and others denouncing it. At the same time, the relevant statutory texts—the evidentiary and judicial ethics rules—are equally ambiguous and

66. *See id.* at 556 (arguing for greater care when a judge acquires case-specific knowledge than when a judge acquires more general knowledge).

67. *E.g.*, Peggy C. Davis, *"There is a Book Out . . .": An Analysis of Judicial Absorption of Legislative Facts*, 100 HARV. L. REV. 1539, 1598 (1987) (encouraging judges to allow party participation when the facts found are central to outcome); Kenneth Culp Davis, *Facts in Lawmaking*, 80 COLUM. L. REV. 931, 941–42 (1980) (criticizing the lack of opportunity for the parties to respond to new legislative facts).

68. *E.g.*, Marlow, *supra* note 7, at 291; *see also* Ficic v. State Farm Fire & Cas. Co., 804 N.Y.S.2d 541, 547 & n.1 (Sup. Ct. 2005) (adopting Marlow's view that counsel should be offered an opportunity to comment on independent research); Davis, *supra* note 67, at 1598.

69. Weinstein, *supra* note 8, at 560 ("It is dangerous for the court to rely on scientific evidence and not let the parties know.").

potentially in tension with one another. This Part takes a closer look at both the case law and the underlying evidentiary and judicial ethics rules. It also suggests a way to resolve the ambiguities to permit independent research in the scientific evidence context, although it ultimately concludes that amending the relevant statutes would be far more preferable.

A. Conflicting Case Law

Few cases have explicitly addressed the issue of independent research, and even fewer have dealt with independent research in the scientific admissibility context. Nevertheless, the existent case law readily demonstrates a division among courts.

A number of cases have approved independent research, either explicitly or implicitly by engaging in it.[70] For example, in *Johnson v. United States*,[71] the Eleventh Circuit approved a trial judge's use of medical journal articles on iron poisoning prior to hearing the expert testimony.[72] The court remarked that "[i]t is a matter of common knowledge that courts occasionally consult sources not in evidence, ranging anywhere from dictionaries to medical treatises."[73] Similarly, in *Samuels v. Mladineo*,[74] the Mississippi Supreme Court refused to declare its own extra-record use of medical treatises improper, observing that many appellate courts use treatises to familiarize themselves with a field of expert testimony.[75] Indeed, the *Samuels* court declared that if a case involved expert knowledge and the record was opaque, it would "not hesitate to conduct authoritative study on [its] own."[76]

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70. *E.g.*, *Ficic*, 804 N.Y.S.2d at 546–47 (researching arson investigation methodologies and subsequently excluding arson expert); State v. O'Key, 899 P.2d 663, 686 (Or. 1995) (en banc) (conducting its "own research" on the Horizontal Gaze Nysagmus test used to determine intoxication); *see also* Marlow, *supra* note 7, at 307 (discussing *O'Key* and *State v. Marcus*, 683 A.2d 221 (N.J. Super. Ct. App. Div. 1996), in which the court cited a National Research Council prepublication report on DNA that was released subsequent to the hearing).

71. Johnson v. United States, 780 F.2d 902 (11th Cir. 1986).

72. *Id.* at 909–10. The Eleventh Circuit's discussion is technically dicta because it held the issue procedurally defaulted, but it clearly appeared unperturbed by the district judge's behavior. *Id.* at 910.

73. *Id.* at 910.

74. Samuels v. Mladineo, 608 So. 2d 1170 (Miss. 1992) (en banc).

75. *Id.* at 1183–84 (noting that the court is not confined to the record when trying to understand testimony).

76. *Id.* at 1186.

In sharp contrast, other courts have found the use of extra-record treatises to be an anathema. In *Prestige Homes, Inc. v. Legouffe*,[77] the Colorado Supreme Court reversed and reprimanded the intermediate appellate court for using medical treatises outside the record to assess whether an electric shock could cause serious injury without leaving a burn mark.[78] Similarly, in *In re J.*,[79] the Vermont Supreme Court reversed an adoption decision in which the trial court quoted extensively from a child psychology treatise that was not part of the record.[80]

Even within a particular court jurists appear split, and one suspects that little precedential weight is accorded to previous conclusions on the issue. One such example is *Hernandez v. State*,[81] a Texas Court of Criminal Appeals case in which the State had failed to present evidence at trial demonstrating the reliability of its test for marijuana.[82] The majority decision was largely unexceptional,[83] but the concurrence and dissent were strikingly at odds. In his concurrence, Presiding Judge Keller categorically stated that "appellate courts should *never* conduct their own independent research of the scientific literature."[84] Her concurrence criticized treatise research as providing potentially incomplete information and lacking the benefits of live testimony and cross-examination.[85] Judge Keasler strongly dissented, arguing that the court should be permitted to look at "*any* reliable

77. Prestige Homes, Inc. v. Legouffe, 658 P.2d 850 (Colo. 1983) (en banc).

78. *Id.* at 854 (holding that the appellate court "in effect assumed the role of an expert medical witness" because it used a treatise "which properly should be interpreted only by experts in the appropriate field").

79. *In re* J., 365 A.2d 521 (Vt. 1976).

80. *Id.* at 522 (noting that the court had previously expressed its reservations about the use of extra-record treatises).

81. Hernandez v. State, 116 S.W.3d 26 (Tex. Crim. App. 2003) (en banc).

82. *Id.* at 30–31. Notably, Texas uses a heightened "clear and convincing evidence" standard to assess scientific reliability in criminal cases. Kelly v. State, 824 S.W.2d 568, 573 (Tex. Crim. App. 1992) (en banc).

83. The majority held that the trial court had abused its discretion in admitting the evidence without any proof of reliability from the prosecution. It also rejected and criticized the prosecution's attempt to introduce scientific articles at the appellate stage, and further remarked that the State could not "rely upon the appellate courts to become independent scientific sleuths to ferret out the appropriate scientific materials." *Hernandez*, 116 S.W.3d at 30–31.

84. *Id.* at 32 (Keller, P.J., concurring) (emphasis added).

85. *Id.* at 32–33 (remarking that the Judge "trust[s] cross-examination more" than judicial research). Presiding Judge Keller's strong position also rested on her vision of the proper role of appellate review, but most of her reasoning applied to all levels of the hierarchy. *Id.* at 33.

authority it could locate," regardless of whether it was presented on the record.[86]

These reported decisions represent only the proverbial tip of the iceberg, given that most trial court decisions are unpublished,[87] and many cases settle after the *Daubert* hearing[88] or otherwise never make it to the appellate level. Worse yet, independent judicial research is often hidden from view. The parties have no natural method of detecting it, and although particularly conscientious judges may disclose and discuss the new material with the parties, overburdened and harried judges may not.[89] Indeed, in jurisdictions in which the propriety of such research is unclear, trial judges have a distinct incentive not to disclose for fear of reversal (or worse yet, sanction). The parties may also be reluctant to contest the research, hoping to avoid direct confrontation with the judge. Consequently, few cases explicitly discuss the judicial research issue despite its growing importance.

Splits in the case law are often the result of statutory ambiguity, and independent research is no different. As the following Sections suggest, ambiguities and tensions in the evidentiary and judicial ethics rules contribute to the lack of clarity in this area.

B. Evidentiary Rules

Rules 104(a) and 201 are the two provisions of the Federal Rules of Evidence most relevant to the issue of independent research. In

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86. *Id.* at 43, 49–50 (Keasler, J., dissenting) (emphasis added). Judge Keasler further noted that trial courts were no better than appellate courts at assessing scientific validity, and that appellate review should therefore be de novo. *Id.* at 51.

87. Bernstein, *supra* note 16, at 389 (recognizing that "most state court opinions, particularly at the trial court level, are unpublished").

88. *See* Berger, *supra* note 4, at 293 (noting that defendants quickly realized after *Daubert* that the optimal defense strategy is "to seek pretrial rulings on the admissibility of expert testimony and to follow a favorable result with a motion for summary judgment" (footnote omitted)); Bert Black, *Focus on Science, Not Checklists*, TRIAL, Dec. 2003, at 24, 24 ("[A] plaintiffs' win at a *Daubert* hearing can change the dynamics of a case and push defendants toward a reasonable settlement.").

89. For example, as Judge Weinstein recounts:

> I file and docket everything I read that is related to my Agent Orange and asbestos cases so that the parties can become aware of the information that might in some way affect my decision. There is, however, a limit to what can be disclosed to the parties in pending suits.

Weinstein, *supra* note 8, at 559.

tandem, they suggest that judges facing *Daubert* questions are released from any restrictions on independent investigations.

Before exploring the rules in detail, a caveat is in order. Individual states, of course, may have evidentiary rules that deviate from the federal scheme. A significant majority of states, however, have specifically incorporated both 104(a) and 201 into their evidentiary rules.[90] Even among states that have not, the Federal Rules exert influence as a quasi-model code, much like *Daubert* itself.[91]

1. *Rule 104(a).* In determining scientific admissibility questions, judges are governed by Federal Rule of Evidence 104(a),[92] which states that the court "is not bound by the rules of evidence except those with respect to privileges."[93] Judges deciding scientific admissibility questions can therefore evade some obstacles that would ordinarily hinder their ability to do independent research. For example, the hearsay rule[94] would usually bar the consideration of medical journals or treatises, except under the strictures of the

90. *See* Thomas J. Reed, *Admitting the Accused's Criminal History: The Trouble with Rule 404(b)*, 78 TEMP. L. REV. 201, 212 & n.69 (2005) ("Forty-one states, the District of Columbia, the Virgin Islands, and Guam have adopted the Federal Rules of Evidence in one form or another.").

91. For example, New York's evidentiary law remains common law, but the major treatise often references the Federal Rules and their advisory committee notes. *See* RICHARD T. FARRELL, PRINCE, RICHARDSON ON EVIDENCE § 2-210, at 46 (11th ed. 1995) (referencing Federal Rule of Evidence 201 in its discussion of the judicial notice of legislative facts).

92. *E.g.*, David L. Faigman et al., *Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying about the Future of Scientific Evidence*, 15 CARDOZO L. REV. 1799, 1817 (1994). One potential technical complication is whether issues of "fit" qualify under 104(a). *Daubert*, of course, established four factors for determining the reliability of expert evidence: falsifiability, peer review, standards and error rates, and general acceptance. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 593–94 (1993). However, Judge Becker's question of "fit," or "whether the proffered testimony [is] sufficiently tied to the facts of the case," is generally regarded to be the fifth *Daubert* factor. Downing v. United States, 753 F.2d 1224, 1226 (3d Cir. 1985) (Becker, J.); *see also Daubert*, 509 U.S. at 591 (including the fit inquiry in the *Daubert* analysis). The question of fit seems more a question of relevance to be decided under Rule 104(b), rather than one of reliability to be decided under Rule 104(a). *See Daubert*, 509 U.S. at 591 (describing the fit inquiry as related to relevance). Rule 104(b), as a conditional relevancy rule, arguably restricts the judge only to admissible evidence.

93. FED. R. EVID. 104(a).

94. FED. R. EVID. 801(c), 802.

learned treatise exception.[95] Judges deciding *Daubert*-type questions, however, need not worry.

One commentator has taken this argument one step further, arguing that 104(a) by implication authorizes judges to conduct independent research,[96] but this position seems a bit extreme. At best, Rule 104(a) is ambiguous on the issue of independent judicial research. Just because judges may consider otherwise inadmissible journal articles does not necessarily mean that the judges may acquire the articles on their own. The parties, for example, may submit the articles along with their motions in limine. Thus, although Rule 104(a)'s liberal spirit may contribute to an environment favorable to independent research, it cannot do all of the work.

2. *Rule 201.* Federal Rule of Evidence 201 governs judicial notice, and it too is ambiguous, although potentially favorable, in its treatment of independent research. The key problem here is whether the scientific information acquired by judges in the *Daubert* context qualifies as adjudicative or legislative fact. Rule 201 highly restricts judicial notice of adjudicative facts, requiring that they not be "subject to reasonable dispute."[97] For adjudicative facts, the Advisory Committee Notes suggest that "[a] high degree of indisputability is the essential prerequisite."[98] Judicial notice of legislative facts, by contrast, is basically unregulated. The Advisory Committee adopted Edmund Morgan's view on legislative facts, which would leave the judge "unrestricted in his investigation and conclusion [of legislative facts] . . . . He may make an independent search for persuasive data or rest content with what he has or what the parties present."[99]

Made famous by Kenneth Culp Davis,[100] the distinction between legislative and adjudicative facts has been much maligned for being

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95. *See* FED. R. EVID. 803(18) (permitting the use of journals and treatises only if relied upon or used against an expert witness, and requiring that the statements only be read into evidence, not received as exhibits).

96. Siegel, *supra* note 49, at 175–76. Siegel ultimately argues that the breadth of Rule 104(a) is harmful and advocates for amending the rule to make it more restrictive. *Id.* at 213.

97. FED. R. EVID. 201(b) (further defining lack of reasonable dispute to mean that the fact is either "generally known" or "capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned").

98. FED. R. EVID. 201(a) advisory committee's note.

99. *Id.* (quoting Edmund Morgan, *Judicial Notice*, 57 HARV. L. REV. 269, 270 (1944)); *see also id.* ("This is the view which should govern judicial access to legislative facts.").

100. Kenneth Culp Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364, 402 (1942).

incomplete.[101] And predictably, whether generally applicable scientific facts used to inform admissibility decisions constitute legislative or adjudicative facts is unclear. On the one hand, they are not really adjudicative facts. Scientific facts, such as whether a chemical causes cancer or whether fingerprints are a reliable method of identification, are general truths that affect a multitude of cases, not "simply the facts of the particular case."[102] Questions about specific causation (whether the plaintiff was exposed to the chemical)[103] or the particular application of a methodology (whether the fingerprint examiner observed proper protocol) involve adjudicative facts, but as noted in Part II.C, judges should not conduct independent research on these questions. Additionally, the materials that a judge is likely to find in a library or on the Internet are unlikely to help resolve case-specific questions.[104]

On the other hand, the scientific facts found in treatises and journal articles are not necessarily *legislative* facts either. They are not being used to ascertain legislative intent nor to determine "the content or applicability of a rule of domestic law."[105] When making a *Daubert*-type admissibility determination, judges are not debating the admissibility standard itself. Rather, judges use independent research to inform the application of that standard, arguably a mixed question of law and fact.

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101. *See* John Monahan & Laurens Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. PA. L. REV. 477, 485–86 (1986) (criticizing the legislative fact distinction for providing judges with no guidance, particularly on "the difficult question whether a court should independently search for scientific research when it appears relevant to the decision but has not been presented by the parties"). To address these perceived deficiencies, Monahan and Walker argue that social science should be treated analogously to legal precedents. *Id.* at 488.

102. FED. R. EVID. 201(a) advisory committee's note (defining adjudicative facts); *see also In re* School Asbestos Litigation, No. 83-0268, 1991 WL 175819, at *3 & n.6 (E.D. Pa. Sept. 4, 1991) (noting that whether "asbestos is hazardous" fits awkwardly into the legislative and adjudicative fact categories). *But see* Laster v. Celotex Corp., 587 F. Supp. 542, 543 (S.D. Ohio 1984) ("Clearly, the facts pertaining to whether asbestosis and mesothelioma are caused by exposure to asbestos are 'adjudicative facts' under Rule 201.").

103. For general background on the distinction between general and specific causation, see Michael D. Green et al., *Reference Guide on Epidemiology*, *in* FED. JUDICIAL CTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 333, 381–82 (2d ed. 2000).

104. *See* Neal C. Stout & Peter A. Valberg, *Bayes' Law, Sequential Uncertainties, and Evidence of Causation in Toxic Tort Cases*, 38 U. MICH. J.L. REFORM 781, 872 (2005) (noting that determining specific causation requires a medical expert who can review, inter alia, the patient's medical history).

105. FED. R. EVID. 201(a) advisory committee's note (quoting Morgan, *supra* note 99, at 270).

In the end, whether scientific facts should be classified as legislative or adjudicative may boil down to an analysis about the proper roles of judge and jury.[106] Adjudicative facts, of course, are quintessential jury questions, because the judge determines these facts only when they are indisputable (through the mechanism of judicial notice). Legislative facts, in contrast, are determined by the judge without deference to the jury. With the distinction viewed in this way, the generalized scientific facts used in *Daubert* decisions seem clearly legislative. First, *Daubert*'s concept of judge as gatekeeper is fundamentally infused with skepticism toward the jury, suggesting that the judge should not be deferential in this context. Second, from an evidentiary standpoint, scientific admissibility is a question not of relevance, but of reliability. Judges determine relevancy issues under Rule 104(b), which defers considerably to the jury;[107] judges determine reliability issues under Rule 104(a), which does not.[108]

Finally, good reasons exist for why judges should not defer to juries in this context. Scientific admissibility decisions demand not only accuracy[109] but also some degree of uniformity, as having different rulings on the same issue from one case to another may have a delegitimizing effect.[110] Unlike juries, judges can consider prior precedent from other courts and harmonize their decisions accordingly.[111] Concededly, although perhaps sound in theory, this last

106. *Cf.* Ronald J. Allen & Michael S. Pardo, *The Myth of the Law-Fact Distinction*, 97 NW. U. L. REV. 1769, 1769–70 (2003) (arguing that the law-fact distinction is based purely on functional considerations, including whether the question should be decided by a judge or a jury and whether the question has general or specific import).

107. Huddleston v. United States, 485 U.S. 681, 689–90 (1988) (establishing that the standard for conditional relevance under 104(b) is whether "the jury could reasonably find the conditional fact").

108. Bourjaily v. United States, 483 U.S. 171, 175–76 (1987) (establishing a preponderance standard for 104(a) questions); *see also* State v. O'Key, 899 P.2d 663, 682 n.35 (Or. 1995) (en banc) (reasoning that because scientific admissibility is a question of law, the facts used to determine admissibility questions are legislative facts).

109. *See supra* Part II.B.1; *cf.* Charles E. Wyzanski, Jr., *A Trial Judge's Freedom and Responsibility*, 65 HARV. L. REV. 1281, 1293–94 (1952) (suggesting that when a legal rule may have the effect of binding many other parties not represented in the litigation, the court has a responsibility to ensure that "the record corresponded with reality").

110. 1 FAIGMAN ET AL., *supra* note 16, § 1-3.6, at 58–59 (noting that to allow conclusions about the validity of a scientific process to vary from case to case "would strike most observers as patently irrational").

111. *See supra* note 58 (discussing courts that rely on prior precedent in making scientific admissibility determinations).

proposition is weakened by *General Electric Co. v. Joiner*,[112] which established an abuse of discretion standard for appellate review of *Daubert* determinations.[113] An abuse of discretion standard, of course, hampers the establishment of uniform scientific admissibility rulings. And although many commentators have argued that such deferential review is inappropriate,[114] it still suggests that the Supreme Court may not be too concerned about uniformity in this context.[115]

In any event, the functional analysis at least suggests that the scientific facts used for *Daubert* determinations should be treated as legislative facts. If one takes the Advisory Committee's adoption of the Morgan view seriously, this conclusion means that the Federal Rules free judges to do independent research in the *Daubert* context.

C. *Judicial Ethics Rules*

The canons of judicial ethics prohibit behavior such as ex parte communications, independent factual investigations, and possessing personal knowledge of the facts. As this Section suggests, it is unclear whether these provisions apply to independent research on scientific admissibility questions. Unlike the evidentiary rules, however, the tenor of the ethics rules seems to discourage judicial research.

As with evidentiary rules, ethics rules vary among the states. In this area, however, the states have almost uniformly adopted the ABA Model Code of Judicial Conduct, particularly the provisions most relevant to this Article.[116] For example, in his exhaustive survey of state ethics rules on ex parte communications, Leslie Abramson

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112. Gen. Elec. Co. v. Joiner, 522 U.S. 136 (1997).

113. *Id.* at 141 ("[A]buse of discretion is the proper standard of review of a district court's evidentiary rulings."). *But see* Peter Nicolas, *De Novo Review in Deferential Robes?: A Deconstruction of the Standard of Review of Evidentiary Errors in the Federal System*, 54 SYRACUSE L. REV. 531, 532–40 (2004) (arguing that the standard of review governing evidentiary rulings is more complicated in practice).

114. *E.g.*, 1 FAIGMAN ET AL., *supra* note 16, § 1-3.6, at 58–59 (criticizing the use of an abuse of discretion standard for all scientific admissibility rulings regardless of their level of generality); *see also id.* § 1-3.6, at 56 & n.202 (noting that *Joiner* conflicts with a "long standing practice . . . of treating decisions about the fundamental admissibility of scientific evidence as a matter of law").

115. *Joiner*, however, has arguably not been as well received as *Daubert* among the states. *See* David E. Bernstein & Jeffrey D. Jackson, *The* Daubert *Trilogy in the States*, 44 JURIMETRICS J. 351, 356–57 (2004) (reporting that some states have adopted *Daubert* but "not fully adopted *Joiner*").

116. *See* Harhut, *supra* note 8, at 674–65 (noting that "[m]ost states and the federal courts have adopted some version" of the ABA Code).

reports that forty-six states have adopted some version of the ABA Model Code: thirty-four states have language identical or similar to the 1990 Model Code,[117] and twelve states and the federal courts have provisions tracking a rather similar 1972 version.[118] The remaining four states have provisions based on or comparable to the original 1924 ABA Canons of Judicial Ethics,[119] which have a similar thrust.[120]

The Model Code therefore provides a convenient and appropriate focal point for this analysis. Though it is not always the precise provision adopted, it is the best available guide, especially because no state ethics committee appears to have ruled explicitly on the issue of independent research in the *Daubert* context.[121]

1. *Ex Parte Communications.* Outside of a few narrowly defined exceptions,[122] both the 1990 revision and the original 1972 version of the Model Code flatly prohibit judges from engaging in ex parte communications:

> A judge shall not initiate, permit, or consider *ex parte* communications, or consider other communications made to the

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117. Leslie W. Abramson, *The Judicial Ethics of Ex Parte and Other Communications*, 37 HOUS. L. REV. 1343, 1352 n.19 (2000) (noting also that "most states have adopted most or all" of the accompanying commentary).

118. *Id.* at 1348–49 n.16; *see also* Code of Conduct for United States Judges, 150 F.R.D. 307, 310–11 (1992).

119. Abramson, *supra* note 117, at 1347 n.14 (discussing Massachusetts, New Hampshire, Louisiana, and Rhode Island).

120. *See* CANONS OF JUDICIAL ETHICS Canon 17 (1924) ("A judge should not permit private interviews, arguments or communications designed to influence his judicial action, where interests to be affected thereby are not represented before him . . . ."), *reprinted in* LISA L. MILORD, AM. BAR ASS'N, THE DEVELOPMENT OF THE ABA JUDICIAL CODE 131, 136 (1992).

121. For his 1998 article, Judge George Marlow contacted all thirty-nine state ethics committees and found that there were no formal ethics opinions on the issue. Marlow, *supra* note 7, at 302. The federal ethics rules also have no explicit provision, Siegel, *supra* note 49, at 197, and no federal advisory opinion exists on the issue, *see* E-mail from Joe Cecil, Fed. Judicial Ctr., to author (Jan. 23, 2006) (on file with author).

122. Under the 1990 Code, exceptions to the ex parte prohibition are available for handling certain administrative matters, for seeking the advice of "a disinterested expert on the law," for consulting court personnel, for conducting settlement negotiations, and when such communications are specifically authorized by law. *See* MODEL CODE OF JUDICIAL CONDUCT Canon 3B(7)(a)–(e) (1990). The 1972 Code only had the disinterested legal expert and specific authorization exceptions, MODEL CODE OF JUDICIAL CONDUCT Canon 3A(4) (1972), although the 1990 Code additions were arguably only "to provide greater clarity and to explicitly acknowledge" exceptions left unaddressed or ambiguous by the 1972 code, *see* ABA ANNOTATED MODEL CODE OF JUDICIAL CONDUCT 129–30 (Arthur Garwin ed., 2004) [hereinafter ANNOTATED MODEL CODE].

> judge outside the presence of the parties concerning a pending or impending proceeding . . . .[123]

> [Judges should] neither initiate nor consider *ex parte* or other communications concerning a pending or impending proceeding.[124]

Thus, on their face, both versions of the Model Code clearly address the question whether judges may informally consult outside experts: the answer is a resounding no.[125] Indeed, both versions have a specific exception for judges seeking the advice of a disinterested *legal* expert, and impose procedural safeguards on such a practice.[126] Neither has any exception for nonlegal experts.[127]

The ex parte provisions of the Model Code, however, only ambiguously address the question of independent library research, Internet searching, and the like. The spirit of the provisions certainly frowns upon any judicial acquisition of knowledge beyond that presented by the parties. Expansive interpretation of the provision to encompass all independent research, however, seems excessive. First, the rule appears directed at "communications," as in when the judge acquires or receives information directly from an individual.[128] Ex parte communications raise a number of unique concerns, including the absence of a citable and publicly available record, as discussed in

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123. MODEL CODE OF JUDICIAL CONDUCT Canon 3B(7) (1990).

124. MODEL CODE OF JUDICIAL CONDUCT Canon 3A(4) (1972). The 1972 Code nominally uses the hortatory "should" as opposed to the mandatory "shall," but most courts have interpreted the 1972 Code's "should" as a mandatory duty. Abramson, *supra* note 117, at 1353 n.20 (noting that the 1990 Code's preamble indicates that the change to "shall" was intended to emphasize its mandatory nature).

125. Technically, "ex parte communications" only cover those communications made on behalf of one side in a proceeding. Informal consultations with experts therefore fall under the "other communications" prohibition of the provision. *See* MODEL CODE OF JUDICIAL CONDUCT Canon 3B(7) cmt. (1990) ("The proscription against communications concerning a proceeding includes communications from lawyers, law teachers, and other persons who are not participants in the proceeding . . . ."); MODEL CODE OF JUDICIAL CONDUCT Canon 3A(4) cmt. (1972) (same).

126. *See* MODEL CODE OF JUDICIAL CONDUCT Canon 3B(7)(b) (1990) (permitting a judge to "obtain the advice of a disinterested expert on the law" if the judge provides notice to the parties and an "opportunity to respond"); MODEL CODE OF JUDICIAL CONDUCT Canon 3A(4) (1972) (same).

127. *See also* JEFFREY M. SHAMAN ET AL., JUDICIAL CONDUCT AND ETHICS § 5.07, at 173 (3d ed. 2003) (noting that the exception for legal experts "does not extend to experts in other areas").

128. *See* E. WAYNE THODE, REPORTER'S NOTES TO CODE OF JUDICIAL CONDUCT 53 (1973) (noting that the drafters of the 1972 Model Code were concerned about informal phone calls between a judge and a professor).

Part II.C, and a lack of reliability owing to their informality and the diminished accountability of the speaker.[129] Published works, whether in print or on the Internet, generally raise fewer of these concerns, although perhaps the difference is only one of degree.

Second, an overly expansive interpretation would clash with the well-established ability of judges to do independent legal research.[130] A few judges and commentators have advocated against such practices,[131] but the prerogative of the judge to search the case law independently and to consult legal treatises is soundly entrenched, presumably to promote uniformity and accuracy in legal interpretation.[132]

2. *Independent Factual Investigations.* The commentary to the 1990 Model Code provides an additional lens through which to analyze the independent research issue.[133] Specifically, the commentary to Canon 3B(7) states: "A judge must not independently investigate facts in a case and must consider only the evidence presented."[134] A recent draft of the proposed revision of the Model Code clarifies the prohibition one step further, noting that it "extends to information available in all mediums, including electronic ones."[135]

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129. Abramson, *supra* note 117, at 1373–74.

130. *E.g.*, Clicks Billiards Inc. v. Sixshooters Inc., 251 F.3d 1252, 1267 (9th Cir. 2001) (noting that a judge can independently research law, but not facts).

131. *See* D. Scott Crook, *Affirming the Untested—Affirming a Trial Court Based on Issues Raised Sua Sponte*, 14 UTAH B.J. 10, 14 (2001) (arguing that sua sponte affirmance is inappropriate); Adam A. Milani & Michael R. Smith, *Playing God: A Critical Look at Sua Sponte Decisions by Appellate Courts*, 69 TENN. L. REV. 245, 247, 263 (2002) (criticizing sua sponte decisions); Barry A. Miller, *Sua Sponte Appellate Rulings: When Courts Deprive Litigants of an Opportunity to Be Heard*, 39 SAN DIEGO L. REV. 1253, 1297 (2002) (advocating that litigants be given notice and an opportunity to be heard when a court raises a legal issue sua sponte).

132. *See* Carducci v. Regan, 714 F.2d 171, 177 (D.C. Cir. 1983) (Scalia, J.) (noting that although courts are not "self-directed boards of legal inquiry and research," they are "not precluded from supplementing the contentions of counsel through [their] own deliberation and research").

133. Technically, the commentary is not "authoritative," but merely "provides guidance with respect to the purpose and meaning of the Canons and Sections." MODEL CODE OF JUDICIAL CONDUCT pmbl. (1990). Nonetheless, it offers further explanation for the doctrinal tension faced by judges.

134. *Id.* Canon 3B(7) cmt. No analogous language appears in the original 1972 version.

135. MODEL CODE OF JUDICIAL CONDUCT R. 2.10 cmt. 8 (Preliminary Draft 2005). The proposed revision elevates the prohibition on independent factual investigations to a full rule. *See id.* R. 2.10.B.

This fragment of commentary is perhaps the greatest obstacle to independent research. After all, researching whether a drug causes a particular disease, or whether a forensic technique is reliable, is arguably a factual investigation. Accordingly, Judge George Marlow has suggested that the prohibition on independent factual investigation makes the propriety of library research doubtful.[136]

One possible problem with this interpretation stems again from the legislative-adjudicative fact distinction. There is little doubt that the prohibition on factual investigations is primarily directed at adjudicative facts.[137] Whether the prohibition encompasses legislative facts, and by extension general scientific facts used to make admissibility decisions, is unclear. The Model Code, unlike the Federal Rules of Evidence, however, does not distinguish between types of facts.

D. Prior Knowledge and the "Ideal Decisionmaker"

The case law on independent research is conflicting, and the texts of the evidentiary and ethical rules are largely indeterminate. Moreover, the spirits of the two sets of rules seem to be in tension with each other. Resolving the question of independent research therefore requires a broader interpretive approach, one that takes into account underlying policies and related statutes that may help inform the discussion. One potentially fruitful approach is to consider what the legal system regards as the "ideal decisionmaker." More specifically, whether independent research is permissible should depend on the types of knowledge that an ideal judge should and should not have apart from the parties.

Thus far, the discussion has focused on whether judges can independently acquire information during a case. Equally important, however, are the kinds of information and background knowledge that judges can carry with them into a case. Symmetry suggests that both answers should be identical (or nearly so). It should not be legally significant whether judges learn about epidemiology at a

136. Marlow, *supra* note 7, at 317; *see also id.* at 323–25 (suggesting that the prohibition on independent investigation should apply to published material as well, given that one of the chief concerns is the inability of the parties to challenge the data).

137. *See, e.g.*, ANNOTATED MODEL CODE, *supra* note 122, at 139–40 (describing instances of factual investigation, including looking at defendant's criminal record, having a law clerk view defendant's store, calling defendant's friends to verify facts, etc.).

conference or whether they learn about it later by studying the reading materials distributed at that conference.

The judicial ethics rules on personal knowledge and disqualification govern judges' permissible prior knowledge. Canon 3E(1)(a) of the 1990 Model Code requires judges to disqualify themselves when they have "personal knowledge of disputed evidentiary facts concerning the proceeding."[138] Canon 3C(1)(a) of the 1972 Model Code has a nearly identical provision.[139] Must judges disqualify themselves in toxic tort cases if they have backgrounds in epidemiology? Intuitively, the answer would seem to be no, given that requiring disqualification would render the vast majority of judicial education programs pointless. Once again, however, the language of the Model Code is ambiguous.

One potential argument is that expert knowledge is arguably not "personal knowledge," at least as the term is often defined in evidence law.[140] Scientists do not individually conduct or directly observe the experiments that form the basis of scientific knowledge, but rather read about them in books, learn about them in school, and so forth. From an evidentiary standpoint then, expert knowledge is largely *hearsay*, not personal knowledge. This ambiguity, however, is very much beside the point. Few would dispute that if a judge acquires knowledge of disputed adjudicative facts from another person (making such knowledge technically hearsay), the judge still runs afoul of the personal knowledge prohibition.[141] As long as the judge learns of the facts extrajudicially, the prohibition applies.[142]

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138. MODEL CODE OF JUDICIAL CONDUCT Canon 3E(1)(a) (1990); *accord* 28 U.S.C. § 455(b)(1) (2000) (similar federal provision). Canon 3E addresses disqualification broadly with the vast majority of triggers involving bias, including pecuniary interest, familial relationships, and previous clients. MODEL CODE OF JUDICIAL CONDUCT Canon 3E (1990). *See generally* SHAMAN ET AL., *supra* note 127, § 4.10, at 126–27 (discussing rules governing prior factual knowledge).

139. MODEL CODE OF JUDICIAL CONDUCT Canon 3C(1)(a) (1972) ("A judge should disqualify himself in a proceeding in which . . . he has . . . personal knowledge of disputed evidentiary facts concerning the proceeding . . . ."). As with the provisions on ex parte communications, the 1972 Code uses the hortatory "should" as opposed to the 1990 Code's mandatory "shall." Once again, however, courts generally interpret the 1972 "should" as mandatory. *See supra* note 124.

140. *See* FED. R. EVID. 602 & advisory committee's note.

141. *See, e.g.*, *In re* Bell, 373 A.2d 232, 235 (D.C. 1977) (disqualifying a judge for personal knowledge when a colleague told him that the defendant was guilty).

142. *E.g.*, Liteky v. United States, 510 U.S. 540, 550–55 (1994) (discussing the extrajudicial source doctrine); ANNOTATED MODEL CODE, *supra* note 122, at 229–30 (discussing the extrajudicial requirement).

The linchpin, once again, is whether the prohibition against personal knowledge extends to legislative and other generalized facts.[143] The text of the Model Code is predictably unhelpful, but unlike in the independent research context, here the case law and the literature have solidly distinguished adjudicative from legislative facts. Personal knowledge of adjudicative facts is ground for disqualification; personal knowledge of generalized facts is not.[144]

The most immediate reason for this distinction is practicality. Whereas few (if any) judges have prior knowledge of adjudicative facts in a given case, most judges have some background in a wide variety of areas.[145] It is impractical to find judges devoid of all background knowledge or to expect them "to erase from memory all that [they have] read or experienced."[146] As Judge James Halpern notes, "[n]o judge comes to a case *tabula rasa*."[147]

If judges will inevitably bring their background and experience to a case, then it makes sense to permit the practice in the hope of promoting transparency. Prohibition or mandatory disqualification would encourage judges to suppress (however unsuccessfully) their background knowledge, making it virtually unknown and unassailable

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143. James S. Halpern, *Some Preliminary Thoughts on a Judge's Look Beyond the Record for Evidence of Legislative Facts*, 57 TAX LAW. 861, 867 (2004) (lamenting that there is "little authority on the subject of recusal if a judge has prior knowledge of the nonadjudicative facts of a case").

144. *See, e.g.*, United States v. Bonds, 18 F.3d 1327, 1331 (6th Cir. 1994) (holding that previous attendance at a DNA conference did not constitute "extra-judicial knowledge of disputed evidentiary facts"); *see also* Ross v. Hoffman, 364 A.2d 596, 600 (Md. Ct. Spec. App. 1976) ("We find no error in the fact that a trial judge continues his general education by reading, or that his reasoning is influenced by such education or by his experiences during his lifetime."). In *Bonds*, Judge Boggs distinguished his background, which involved a university-sponsored DNA conference, from the one in *In re School Asbestos Litigation*, 977 F.2d 764 (3d Cir. 1992), in which the Third Circuit required recusal when the trial judge attended a conference "indirectly sponsored by the plaintiffs, largely with funding that he himself had approved," *Bonds*, 18 F.3d. at 1331 (quoting *In re School Asbestos Litigation*, 977 F.2d 764, 782 (3d Cir. 1992) (emphasis omitted)).

145. At the same time, although a judge can theoretically sequester himself and abstain from independent research *during* a trial, it would be difficult to discourage judges from learning about the world as a general matter. Weinstein, *supra* note 8, at 543 ("Isolation is certainly not desirable.").

146. *Ross*, 364 A.2d at 600 (noting that such a practice would be "an absurdity"); *see also* Weinstein, *supra* note 8, at 543 (remarking that it would be impractical to require that judges never look at newspapers or other sources of information).

147. Halpern, *supra* note 143, at 867 (noting that as a result, "[n]o doubt most judges do not recuse themselves when they know something about technical issues before them").

by the parties. A more permissive regime encourages them to make their background assumptions apparent.

Regardless, it is not even desirable that judges come to a case tabula rasa, especially when the case involves scientific or specialized evidence. With adjudicative facts, the ideal decisionmaker may indeed be the (initially) ignorant decisionmaker because prior knowledge may irreversibly color the judge's perception of the evidence presented.[148] For example, if the judge witnessed the crime, the judge's personal observations—even if influenced by impaired vision or based on faulty logic—would invariably trump the testimony of the witnesses during a bench trial. That judge is better off serving as a witness and allowing another, uninvolved judge to weigh the evidence on both sides.

Generalized scientific facts, however, are different. First, far from being helpful, ignorance in the scientific context is actively harmful.[149] As this Article has stressed, unfamiliarity with scientific concepts and an inability to assess expert evidence critically substantially increase the chance of erroneous decisions, particularly when judges face conflicting expert witnesses. And neither those experts nor counsel are likely to be helpful to a judge in developing those necessary skills. Second, because expert knowledge is rarely based on personal observation, it may have a weaker biasing effect. Because expert knowledge is acquired through books and classes, rather than directly and vividly experienced, one can speculate that judges will be more receptive to other evidence and more objective in their assessment.

The ignorant decisionmaker does not necessarily fare better than the informed one on impartiality grounds. For example, one might argue that disqualification doctrine should strive to replicate whom the parties would select as an arbiter, and the parties "would choose an arbiter who had never commented on the matters in dispute [and] was unaligned with either party."[150] Whether this model properly applies to the scientific or any other specialized context, however, is dubious. First, although parties may generally prefer an

148. *Cf.* Israel, *supra* note 48, at 13 (noting that separating judges from the investigation function helps them withhold judgment until all angles are explored).

149. *Cf.* Siegel, *supra* note 49, at 196 (suggesting that courts "are generally reluctant to disqualify judges" for doing research that is necessary for "performing difficult judicial tasks").

150. John Leubsdorf, *Theories of Judging and Judge Disqualification*, 62 N.Y.U. L. REV. 237, 249 (1987).

unknowledgeable person for deciding a purely factual dispute, parties often choose arbitrators with knowledge and experience when a case involves a specialized field. Parties do not pick arbitrators in patent or commercial law disputes from the general population, but from among a handful of experts in the field.[151] One counterargument is the common belief that plaintiffs' attorneys prefer juries and scientifically unsophisticated judges, who are more likely to be sympathetic to their clients. This argument, however, surely misses the point, because the arbitrator model operates ex ante under a veil of ignorance. Absent advance knowledge of the strength of their tort case or whether they will be plaintiff or defendant, parties would likely prefer a scientifically knowledgeable judge over an ignorant one.

Even if the parties indeed preferred an uninformed judge, it is not at all clear that the legal system should permit party preference to drive the choice of decisionmaker in the context of generalized facts. Recall again that generalized scientific facts have precedential value, and that the litigation is therefore not wholly owned by the parties. If so, then just as the parties have no right to specify the legal rule governing their case, limits may be placed on the extent to which the parties can select the decisionmaker's level of knowledge.[152] Indeed, one example of this phenomenon is judicial notice of adjudicative facts. Although the underlying theory of judicial notice is controversial, most legal actors agree that at a minimum a court is empowered to independently find adjudicative facts that are "indisputable."[153] The reason is that, first, all judges are assumed to have a "fund of general information . . . [that] all reasonably well-informed persons"[154] have, and, second, allowing parties to control fact-finding in these instances would "risk[] an obviously erroneous

151. *E.g.*, Gregg A. Paradise, *Arbitration of Patent Infringement Disputes: Encouraging the Use of Arbitration Through Evidence Rules Reform*, 64 FORDHAM L. REV. 247, 248 (1995) (arguing that one of the chief benefits of patent arbitration is "the ability to select arbitrators who are experts and are familiar with the subject matter of the dispute").

152. One notable exception is the ability of the plaintiff to choose either a jury or bench trial.

153. *E.g.*, Morgan, *supra* note 99, at 273 (arguing that indisputable facts are subject to judicial notice because the parties cannot be allowed to lead the court to an obviously false result); *see also* John T. McNaughton, *Judicial Notice—Excerpts Relating to the Morgan-Wigmore Controversy*, 14 VAND. L. REV. 779, 787 (1961) (including "indisputable adjudicative facts" among a taxonomy of the various facts that can be judicially noticed); Kenneth Culp Davis, *Judicial Notice*, 55 COLUM. L. REV. 945, 945–46 (1955) (criticizing the Morgan view embodied in the Model Code of Evidence as being overly narrow).

154. Morgan, *supra* note 99, at 272.

finding arguably leading to injustice in the particular case and certainly making the court appear ridiculous."[155]

If a judge may bring scientific and other specialized background into litigation, it stands to reason that an initially uninformed judge should be able to acquire the same knowledge during litigation. To the extent that the judicial ethics rules strive to attain an "ideal decisionmaker," whether the judge acquires generalized knowledge before or during a case should make no difference. In either case, the judge will use that knowledge to inform judicial decisions, hopefully making them more accurate.

A likely objection to this "ideal decisionmaker" view of judicial ethics is that it neglects the importance of timing. For example, one might argue that independent research differs from prior knowledge because it gives an appearance of bias. Although background knowledge may be inevitable, conducting independent research is not, and the party harmed by a judge's research may feel that the judge is targeting or sandbagging him. This objection has validity, but limiting independent research to generalized facts and requiring judges to offer parties a meaningful opportunity to be heard should considerably alleviate the concern.[156] Digging up case-specific facts could certainly seem like targeting, but reading general material to become a better-educated decisionmaker seems far more benign. Furthermore, so limited, any unfairness associated with independent research begins to approximate that associated with prior knowledge. And an objection to prior scientific knowledge would be completely at odds with the multitude of judicial education programs that have been sanctioned and actively promoted by the courts.

E. Clarifying the Doctrine

To the extent that the concept of an "ideal decisionmaker" motivates the law, the existing statutory framework may permit independent research in the scientific admissibility context. To minimize uncertainty, however, the rule governing independent research should not be left to future interpretation or common law development—after all, the existing precedent is already split. Instead, the drafters of the latest revision of the Model Code of

155. McNaughton, *supra* note 153, at 788.

156. *See supra* Part II.C.

Judicial Conduct should explicitly authorize independent research. Clarification of the evidentiary rules could be helpful as well.

In any event, absent binding precedent to the contrary, judges should conduct independent research when confronted with *Daubert*-type issues. Such research promotes more informed and accurate decisions, and contrary to what some might argue, does not violate the principles that motivate the canons of judicial ethics.

IV. INDEPENDENT RESEARCH IN OPERATION

As tempting as it may be to conclude with a proposed statutory reform, doing so would leave the analysis incomplete. Even if the evidentiary and judicial ethics codes were amended explicitly to permit independent research—itself a Herculean task—history teaches that doctrine alone is not enough, particularly when dealing with judicial practice. Reforms in this area will require, above all, sympathetic judicial attitudes and norms to be successful.[157]

A few examples illustrate the importance of judicial norms, especially in trying to implement reforms that require active, inquisitorial-type behavior like independent research.[158] As mentioned in Part I.B, under Federal Rule of Evidence 706 and some thirty state provisions, judges are allowed to use court-appointed experts, yet they rarely do so.[159] Under Federal Rule of Civil Procedure 44.1[160] and some state provisions,[161] judges may

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157. *Cf.* Editorial, *The Dangers of Ex Parte Communications*, 74 JUDICATURE 288, 288 (1991) (recognizing the problem of ex parte contacts is "less one of improving the written rule than of spreading the word more widely").

158. *See* Gross, *supra* note 23, at 1197–98 (arguing that court-appointed expert provisions are neglected because of an adversarially focused judicial outlook); Stephan Landsman, *Of Witches, Madmen, and Products Liability: An Historical Survey of the Use of Expert Testimony*, 13 BEHAV. SCI. & L. 131, 156 (1995) (suggesting that inquisitorial-type reforms are unlikely to succeed "any time soon").

159. *See* KAYE ET AL., *supra* note 52, § 10.4.1, at 348 (noting that judges rarely appoint experts); Gross, *supra* note 23, at 1191 (same); *cf.* John Henry Merryman, *Foreign Law As a Problem*, 19 STAN. J. INT'L L. 151, 165 (1983) (reporting that "no expert witness, lawyer, or judge showed any . . . sensitivity to the possibility of a court-appointed expert" in the foreign law context).

160. FED. R. CIV. P. 44.1; *see also* Grand Entm't Group, Ltd. v. Star Media Sales, Inc., 988 F.2d 476, 488 (3d Cir. 1993) (noting that an appellate court "may do [its] own supplemental research" concerning issues of foreign law); Twohy v. First Nat'l Bank of Chi., 758 F.2d 1185, 1193 (7th Cir. 1985) ("[T]rial and appellate courts are urged to research and analyze foreign law independently."). *See generally* Arthur R. Miller, *Federal Rule 44.1 and the "Fact" Approach to Determining Foreign Law: Death Knell for a Die-Hard Doctrine*, 65 MICH. L. REV. 613 (1967) (discussing the history and reasons behind Rule 44.1).

independently raise and research foreign law issues.[162] Courts, however, have tended either to interpret those provisions narrowly[163] or to find ways to avoid the foreign law issue altogether.[164] Similarly, judges have clear authority under Federal Rule of Evidence 614 to call and actively question witnesses;[165] that power remains "substantially unused in United States courts."[166]

Can independent research be a success in practice? Or will it be neglected as so many other evidence reforms have been before it? This Part argues that based on the survey results in Part II.A, a sizable number of judges may choose to engage in independent research, making it potentially influential for improving scientific decisionmaking. The survey suggests, however, that a large number of judges will also refuse to conduct independent research.

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161. *E.g.*, N.Y. C.P.L.R. 4511(d) (McKinney 2005) (permitting the court to consider material "discovered through its own research" when taking judicial notice of a foreign law); VA. CODE ANN. § 8.01-386 (2005) (authorizing the court to consult any book, record, register, journal, or other official document "to ascertain foreign law").

162. Judges, of course, are always permitted to research the laws of their jurisdictions independently, but traditionally (i.e., prior to Rule 44.1) foreign law was an issue of fact for the jury. Miller, *supra* note 160, at 617.

163. Arams v. Arams, 45 N.Y.S.2d 251, 253–54 (Sup. Ct. 1943) (allowing a judge to supplement the parties' presentation of foreign law, but not to invoke a foreign law issue when not raised by the parties); Stephen L. Sass, *Foreign Law in Civil Litigation: A Comparative Survey*, 16 AM. J. COMP. L. 332, 345 (1968) (interpreting *Arams* more broadly as the court "refus[ing] to apply foreign law on [its] own volition" despite statutory language to the contrary); Arthur Nussbaum, *Proof of Foreign Law in New York: A Proposed Amendment*, 57 COLUM. L. REV. 348, 349 (1957) (reporting that few courts used the foreign law research provision after *Arams*).

164. *See* Euromepa S.A. v. R. Esmerian, Inc., 51 F.3d 1095, 1099 (2d Cir. 1995) ("We think that it is unwise—as well as in tension with the aims of [the statute]—for district judges to try to glean the accepted practices and attitudes of other nations from what are likely to be conflicting and, perhaps, biased interpretations of foreign law."); Vishipco Line v. Chase Manhattan Bank, N.A., 660 F.2d 854, 860 (2d Cir. 1981) (applying forum law rather than the proper Vietnamese law because the parties did not object). *But see* Roger J. Miner, *The Reception of Foreign Law in the U.S. Federal Courts*, 43 AM. J. COMP. L. 581, 583 (1995) (criticizing this practice and arguing that a "court has the affirmative obligation to seek out the applicable foreign law whether the parties have established that law or not").

165. FED. R. EVID. 614 (allowing judges to call their own witnesses and interrogate witnesses called by the parties).

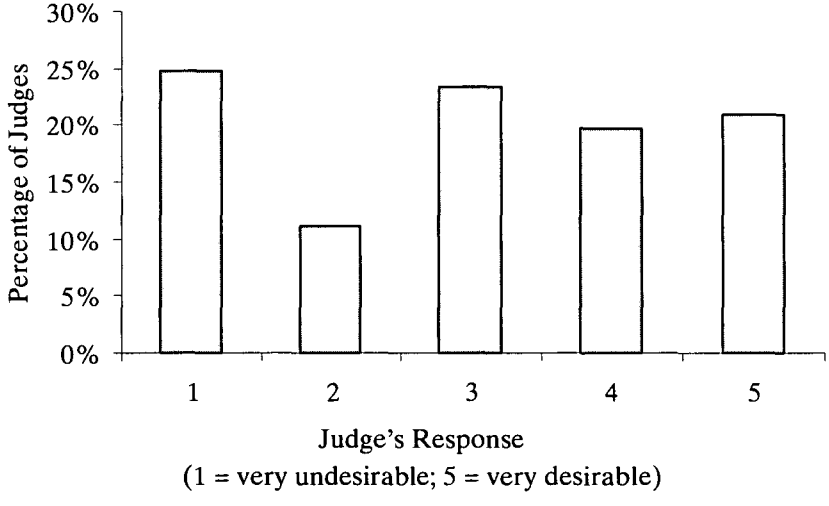
166. Alfred Gitelson & Bruce L. Gitelson, *A Trial Judge's Credo Must Include His Affirmative Duty to Be an Instrumentality of Justice*, 7 SANTA CLARA LAW. 7, 13–14 (1966) (discussing the reluctance of California judges to question witnesses); John C. Reitz, *Why We Probably Cannot Adopt the German Advantage in Civil Procedure*, 75 IOWA L. REV. 987, 992 (1990) (declaring Rule 614 to be a "striking example of the power of culture to override positive law"); *see also* United States v. Filani, 74 F.3d 378, 383–85 (2d Cir. 1996) (acknowledging the power of judges to ask questions, yet carefully limiting it and citing commentators who are strongly against it).

Given that judicial practice in this area may remain inconsistent, this Part considers whether variations in judicial practice are legitimate. The rule of law seems to demand uniformity, but the legal system seems to tolerate heterogeneity on certain occasions. Independent judicial research appears to be one of those atypical instances.

A. Adoption and Resistance

Predicting what judges would do if the rules governing independent research were clarified is obviously difficult, but there is reason for optimism. The survey data from Figure 1 (replicated below for convenient reference) suggest that significant numbers of judges will indeed conduct independent research. Over 40 percent of judges believe that reading journal articles is either somewhat or very desirable. These judges may already be engaging in independent research, but if not, they will probably do so once the statutory ambiguities and their corresponding chill are eliminated. With independent research, favorable attitudes are especially likely to translate into action—as opposed to reliance upon court-appointed experts, for example—because doing independent research involves little administrative hassle and is an almost natural reaction to confronting new and unfamiliar material.

Figure 1 (revisited). Desirability of Judges Independently Reading Medical Journals



At the same time, however, one should not forget that a sizable percentage of judges also oppose independent research, classifying it as either somewhat or very undesirable. These judges are likely to resist any statutory reform. Especially if independent research is consigned to the discretion of the judge, there is no reason to think these judges will suddenly engage in the practice.

Will the judges change their minds over time? The increased use of independent research, coupled with a rule clearly allowing the practice, has the potential to change judicial norms, particularly for the more than 20 percent of judges maintaining a neutral or undecided position. Judges holding more extreme positions, however, are far less likely to change. This entrenchment is not so much an issue of judicial rigidity (although that may have some influence) as it is a function of why the issue of independent research divides judges in the first place. The current schism in the judiciary is not the result of differing personal preferences, but rather a clash between deeply held and opposing beliefs about the fundamental role of the judge.

As Judge Joseph Colquitt once explained, there are two principal theories of adjudication. "One theory is that the litigants control the lawsuit and determine the issues to be decided. The other view is that courts have the ultimate responsibility to decide cases regardless of whether the appropriate issues are addressed by the litigants."[167] Judges who subscribe to the first theory place adversarial system values and norms of passive judging first. They probably make up the majority of judges who strongly oppose independent research. Conversely, judges who subscribe to the second theory place greater emphasis on decisional accuracy and may also sympathize with recent trends toward active judging. They likely make up most of judges who support independent research.

Argue as one might for judges to value accuracy over adversarial values in the scientific evidence context, the battle is likely to continue indefinitely. In the name of greater accuracy, some judges are willing to sacrifice adversarial values; some are not.

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167. Joseph A. Colquitt, *Judicial Use of Social Science Evidence at Trial*, 30 ARIZ. L. REV. 51, 74 (1988); *see also* State v. Holmes, 315 N.W.2d 703, 707 (Wis. 1982) (referencing the "two apparently inconsistent theories of the proper role of [a] trial" in the context of a court raising constitutional issues sua sponte); Marlow, *supra* note 7, at 328–29 (discussing Colquitt).

B. *Inconsistency and Its Legitimacy*

Although the conflict between adversarial and accuracy-oriented judges may be informative as a descriptive matter, it raises a deeper theoretical issue. When may judicial practice be legitimately inconsistent? After all, the rule of law suggests that whether a judge engages in independent research should depend on the rule, not on personal preference. The seemingly permanent divide among jurists regarding independent research would therefore seem to be cause for concern. This Section maintains that although these inconsistency concerns may be understandable, they are unwarranted in the independent research context.

1. *The Value of Uniformity.* Uniformity and consistency in treatment are often thought to be fundamental elements of the rule of law.[168] And although the goal of treating like cases alike may not always be achieved in actuality, it certainly persists as an ideal. Cases should be decided on their merits, and procedures should remain consistent from one case to another.[169]

A corollary to this ideal is that the particular judge or decisionmaker assigned to a case should make little or no difference in the outcome.[170] Reform efforts have thus focused on eliminating excessive variation in areas such as sentencing[171] and pain and suffering damages.[172] A desire for greater consistency also in large

168. *E.g.*, Thomas O. Main, *Procedural Uniformity and the Exaggerated Role of Rules: A Survey of Intra-State Uniformity in Three States That Have Not Adopted the Federal Rules of Civil Procedure*, 46 VILL. L. REV. 311, 311 (2001) (remarking that the ideal of consistency is so "deeply . . . embedded" that "many proceduralists find it difficult or unnecessary to explain why uniformity is thought to be good").

169. Stephen N. Subrin, *Federal Rules, Local Rules, and State Rules: Uniformity, Divergence, and Emerging Procedural Patterns*, 137 U. PA. L. REV. 1999, 2047 (1989) (questioning whether "uniformity of result" can be achieved if procedures are allowed to vary).

170. *See* William C. Whitford, *The Rule of Law*, 2000 WIS. L. REV. 723, 727. *But see* Erwin Chemerinsky & Barry Friedman, *The Fragmentation of Federal Rules*, 46 MERCER L. REV. 757, 782 (1995) (suggesting that the desire for "fungibility among judges" can be unrealistic).

171. *See* Mistretta v. United States, 488 U.S. 361, 365 (1989) (describing the sentencing disparities and inconsistencies that motivated the establishment of the Sentencing Guidelines).

172. Randall R. Bovbjerg et al., *Valuing Life and Limb in Tort: Scheduling "Pain and Suffering,"* 83 NW. U. L. REV. 908, 908 (1989) (discussing the problem of unpredictable tort awards).

part motivates appellate review and various uniform code efforts, perhaps most famously the Federal Rules of Civil Procedure.[173]

Variations among judges in their willingness to engage in independent research seems to fly in the face of this ideal, because whether or not a litigant faces a judge who performs independent research will depend on the luck of the draw. The values of consistency and uniformity therefore militate against a permissive rule for judicial research and in favor of a mandatory one. They might also argue for greater appellate (or other) regulation of judicial behavior.

2. *Inconsistency in the Legal System.* A closer look at the legal system, however, shows that inconsistency is not unique and that a range of judicial attitudes toward independent research is not all that troubling. The legal system tolerates—or in some cases, actively promotes—inconsistency in many areas of judicial practice.[174] For example, judges frequently and vociferously disagree about the propriety of using legislative history in statutory interpretation. Some judges forswear its use except as a last resort, whereas others advocate for its unregulated use.[175] Although some commentators have criticized the lack of rules in this area,[176] no one seems to suggest that the inconsistency is illegitimate.[177]

The Federal Rules of Civil Procedure provide an even richer and more instructive example of inconsistency. The Federal Rules, of course, were supposed to have standardized procedural practice in the federal courts. Recent experience, however, suggests otherwise.

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173. Until 1872, individual judges and district courts had the power to specify their own rules of procedure. This fragmentation led to the 1872 Conformity Act, in which Congress attempted to tie federal district court practice to local state procedural practice. Only the 1938 Federal Rules made federal procedural practice, for all intents and purposes, uniform. *See generally* Richard L. Marcus, *Slouching Toward Discretion*, 78 NOTRE DAME L. REV. 1561, 1581–82 (2003) (discussing the history of the Federal Rules of Civil Procedure).

174. For example, the Civil Justice Reform Act of 1990 specifically encouraged local inconsistencies in an attempt to develop solutions that would reduce litigation cost and delay. Civil Justice Reform Act (CJRA), Pub. L. No. 101-650, 104 Stat. 5089 (1990).

175. *See* W. David Slawson, *Legislative History and the Need to Bring Statutory Interpretation Under the Rule of Law*, 44 STAN. L. REV. 383, 385–88 (1992) (summarizing the spectrum of positions on legislative history).

176. *E.g.*, *id.* at 383.

177. *But see* Nicholas Quinn Rosenkranz, *Federal Rules of Statutory Interpretation*, 115 HARV. L. REV. 2085, 2088 (2002) (noting that the "central imperative of statutory interpretation" is "a single, predictable, coherent set of rules").

Despite Rule 83,[178] which explicitly forbids district courts and judges from establishing local or standing rules inconsistent with the Federal Rules,[179] conflicting rules have proliferated.[180] Most famously, the Local Rules Project of the Judicial Conference cataloged eight hundred potentially conflicting local rules.[181]

Additional procedural examples further illustrate the lack of uniformity in federal procedure. One would expect that the number of jurors on a jury would surely be standardized, but this is not so under Rule 48, which states that a "court shall seat a jury of not fewer than six and not more than twelve members."[182] Indeed, the Judicial Conference rejected a proposal setting jury size at twelve in favor of the more flexible current provision,[183] and Professor Judith Resnik reports that even when local rules specified six or twelve member juries, judges often allowed deliberation with numbers in between.[184]

The same inconsistency surrounds Rule 47, which addresses voir dire, Rule 11, which governs attorney sanctions, and Rule 26, which handles discovery. Although 60 percent of federal judges allow party involvement in voir dire, judges specifically rejected an amendment to

178. FED. R. CIV. P. 83.

179. Much of the focus in civil procedure circles has been on local rules passed by district courts. However, standing orders from individual judges are also a considerable part of the phenomenon. *E.g.*, Myron J. Bromberg & Jonathan M. Korn, *Individual Judges' Practices: An Inadvertent Subversion of the Federal Rules of Civil Procedure*, 68 ST. JOHN'S L. REV. 1, 1–2 (1994) (observing that judges are increasingly promulgating their own individual rules); A. Leo Levin, *Local Rules As Experiments: A Study in the Division of Power*, 139 U. PA. L. REV. 1567, 1570–71 (1991) (noting that standing orders from judges are part of the procedural mix).

180. *See* Bromberg & Korn, *supra* note 179, at 10 ("Local innovation has reached the point where almost every district and every judge has a different procedure regulating motion practice.").

181. COMM. ON RULES OF PRACTICE & PROCEDURE OF THE JUDICIAL CONFERENCE OF THE U.S., REPORT OF THE LOCAL RULES PROJECT 1–7 (1988) (finding five thousand local rules, many of which conflicted with the Federal Rules), *cited in* Marcus, *supra* note 173, at 1583 & n.84; Subrin, *supra* note 169, at 2020 (same).

182. FED. R. CIV. P. 48; *see also* Judith Resnik, *Changing Practices, Changing Rules: Judicial and Congressional Rulemaking on Civil Juries, Civil Justice, and Civil Judging*, 49 ALA. L. REV. 133, 137 n.6 (1997) (discussing a failed Advisory Committee proposal that would have fixed jury membership at twelve).

183. Resnik, *supra* note 182, at 146.

184. *Id.* at 143 n.27. In 1972, despite a federal rule specifically requiring empanelment of twelve jurors, fifty-four districts permitted the use of six-member juries. Colgrove v. Battin, 413 U.S. 149, 150 n.1 (1973), *cited in* Resnik, *supra* note 182, at 139–40.

Rule 47 that would have standardized the practice.[185] Rule 11 was amended in 1983 to require the imposition of attorney sanctions under a more objective standard.[186] For a variety of reasons, including its increasing use as a litigation weapon,[187] Rule 11 was ultimately re-amended in 1993 to be more discretionary, with many commentators praising the change.[188] Rule 26 requires the initial disclosure of certain materials (without request) as part of discovery,[189] but has an opt-out provision that has resulted in "a crazy quilt of procedures that var[y] not only district by district, but judge by judge."[190]

3. *A Functional Analysis.* The legal system, then, does not always promote uniformity. Sometimes inconsistency is inevitable; sometimes inconsistency is necessary to promote other values or goals. Thus, in analyzing independent judicial research, it is important to weigh the costs and benefits of achieving consistency, rather than valuing it merely for its own sake.[191] Consistency may more often than not be a worthy goal, but that observation justifies only a presumption in its favor.[192]

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185. Resnik, *supra* note 182, at 149 n.42; *see also* Marcia Coyle, *Rules Would Expand Voir Dire, Civil Jury Size*, NAT'L L.J., Mar. 11, 1996, at A12 (discussing controversy surrounding proposed rule change).

186. *E.g.*, Marcus, *supra* note 173, at 1594; Judith A. McMorrow, *The (F)Utility of Rules: Regulating Attorney Conduct in Federal Court Practice*, 58 SMU L. REV. 3, 45 (2005).

187. Danielle Kie Hart, *Still Chilling After All These Years: Rule 11 of the Federal Rules of Civil Procedure and Its Impact on Federal Civil Rights Plaintiffs After the 1993 Amendments*, 37 VAL. U. L. REV. 1, 10–11 (2002) (discussing the use of "Rule 11 as a strategic weapon" and its chilling effects on litigation).

188. Marcus, *supra* note 173, at 1594 n.131, 1596 (suggesting that discretion may be more appropriate for sanctions than a rigid rule). Ironically, the U.S. House of Representatives passed legislation in 2006 that will amend Rule 11 for a third time, once again removing judicial discretion. *See* Lawsuit Abuse Reduction Act of 2005, H.R. 420, 109th Cong. § 2 (2006). The legislation currently awaits Senate approval.

189. FED. R. CIV. P. 26(1).

190. Marcus, *supra* note 173, at 1585.

191. *See, e.g.*, Chemerinsky & Friedman, *supra* note 170, at 759 (asking the baseline question of whether consistency in procedure is desirable); Main, *supra* note 168, at 317 (remarking that there is often little discussion on why uniformity is good); Subrin, *supra* note 169, at 2001 (noting that the sponsors of the Rules Enabling Act never explained why uniformity was desirable and treated it as "as if it were a transcendental good whose inherent value required no explanation").

192. John E. Coons, *Consistency*, 75 CAL. L. REV. 59, 108 (1987); *see also* Lea Brilmayer, *Wobble, or the Death of Error*, 59 S. CAL. L. REV. 363, 373 (1986) (acknowledging that other considerations can override the desire for consistency).

The classic reason for promoting uniformity—the perceived unfairness associated with having outcomes depend on a particular judge[193]—is attenuated in the independent research context. First, independent research is largely procedural rather than substantive. Unlike substantive legal rules, sentencing decisions, and damage calculations, the choice to engage in independent research does not directly alter substantive rights and instead only influences the decisionmaking process.[194] Second, whereas some procedural rules have substantive effects, independent research arguably has no substantive bias, at least among resource-matched parties. It is therefore unlike other procedural rules, including *Daubert*, that disproportionately favor or disfavor certain litigants or types of cases. Independent research, of course, does have the ability to favor resource-constrained tort plaintiffs and criminal defendants who cannot afford to hire experts, but that "bias" is hardly different than the indulgences currently afforded pro se litigants.[195] Finally, the decision to engage in independent research is not outcome determinative. The judge must still conduct the research, and what that research will reveal is unknown. This situation is somewhat different from procedural rules such as time limits or exclusionary rules of evidence, whose ramifications are immediately clear. Thus, a judge could use his discretion to engage in research in some cases and not others without creating the appearance of being outcome driven. In short, there is less need for a rigid, bright-line rule governing judicial research.

Other policy reasons for promoting uniformity also do not apply to the independent research context. For example, uniform

193. *See* Robert E. Keeton, *The Function of Local Rules and the Tension with Uniformity*, 50 U. PITT. L. REV. 853, 860 (1989) ("Outcomes should not depend on the luck of the draw as to what judge decides the case . . . ."); Whitford, *supra* note 170, at 727 ("[I]t should not matter which judge is assigned to a particular case . . . .").

194. *See* Marcus, *supra* note 173, at 1606 (arguing that procedural discretion is less concerning because it is "less freighted with substantive overtones" and many procedures do not necessarily affect outcome). *But see* Chemerinsky & Friedman, *supra* note 170, at 786–87 (rejecting the view that variation can be tolerated for "housekeeping" procedures because they also have substantive effect); David P. Leonard, *Power and Responsibility in Evidence Law*, 63 S. CAL. L. REV. 937, 953 (1990) (arguing that procedures are "not trivial merely because they do not define underlying rights"—they are "a foundational value in our legal culture").

195. *E.g.*, Haines v. Kerner, 404 U.S. 519, 520 (1972) (acknowledging that pro se complaints are "[held] to less stringent standards"); *see also* Lois Bloom & Helen Hershkoff, *Federal Courts, Magistrate Judges, and the Pro Se Plaintiff*, 16 NOTRE DAME J.L. ETHICS & PUB. POL'Y 475, 486 (2002) (citing *Haines*).

procedures are often supported because they discourage forum shopping, save attorney time and money,[196] and eliminate surprises and the lack of notice regarding "procedural traps."[197] Forum shopping, however, is less worrisome in the independent research context, because the variation is at the individual-judge level. Efficiency and notice concerns are also less relevant because independent research involves no attorney or party participation; judges conduct the research entirely on their own.

At the same time, although one perhaps should not actively encourage inconsistency,[198] there are good reasons for allowing inconsistency to persist, or at minimum, for not governing independent research with a heavy hand. First, because judicial practice is notoriously difficult to regulate, mandatory rules are unlikely to achieve actual uniformity. Indeed, a flat prohibition may do nothing but drive independent research underground.[199] Many academics anecdotally remark that judges informally contact them for opinions on legal issues despite clear rules restricting ex parte communication.[200] Would it not be preferable to make the practice

196. *E.g.*, Chemerinsky & Friedman, *supra* note 170, at 783 (arguing that standardization is efficient for procedures); Subrin, *supra* note 169, at 2002 (discussing the waste of time and cost associated with learning multiple procedures); *see also* Bromberg & Korn, *supra* note 179, at 2 (complaining that procedural variations among judges "make it difficult, expensive, and occasionally, impossible for litigants to file pretrial motions").

197. *See* Keeton, *supra* note 193, at 860 (arguing that uniformity prevents surprise); Leonard, *supra* note 194, at 992 (noting that discretion and inconsistency creates a lack of predictability and therefore an inability to influence behavior).

198. One major reason for encouraging "disuniformity" is the ability to experiment with alternative solutions, much akin to Justice Brandeis's argument for federalism. Levin, *supra* note 179, at 1579 (noting that inconsistency allows experimentation); Coons, *supra* note 192, at 108 (same); *cf.* New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) ("It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."). Experimentation, however, has limited use in the independent research context given that the choice is largely binary (yes or no). *See* Chemerinsky & Friedman, *supra* note 170, at 770, 789–91 (noting that the theory of experimentation only works well when there is data collected and the experiments are structured to help researchers learn about their effects).

199. *Cf.* LAWRENCE M. SOLAN, THE LIMITS OF LEGISLATION: STATUTES AND THEIR INTERPRETATION (forthcoming 2008) (acknowledging that a bar on legislative history could be impossible to enforce because the judge never has to cite the material); Keeton, *supra* note 193, at 873 (arguing that local rules are important to fill procedural gaps, because otherwise, "judges will tend to do things according to patterns anyway, but *sub rosa*" and without notice).

200. *See* Editorial, *supra* note 157, at 288 (noting that ex parte rules are more often "honored in the breach"); Jay C. Carlisle, *Ex Parte Communication by the Judiciary*, N.Y. ST. B.J., Nov. 1986, at 12 ("[I]t is common knowledge that a judge often seeks the aid and assistance

discretionary but to mandate disclosure to the parties instead?[201] It seems better to have transparent, reasoned opinions with varying degrees of independent research than *sub rosa* decisionmaking under the illusion of consistency.

On the flip side, mandating independent research would be equally untenable. Affirmative duties are difficult to enforce, and measuring conscientiousness and zeal is nearly impossible, particularly when the amount of useful research that a judge can do varies from case to case.[202] Moreover, in this context, the parties distinctly lack incentives to enforce any such duty. Litigants naturally believe that they have done a complete job, so they believe that all materials helpful to their position have already been represented. To their minds, independent research only helps their opponent, or, at minimum, is a loose cannon presenting too much litigation risk. Parties will thus rarely, if ever, want to promote it.

Second, as Professor John Coons insightfully notes, inconsistency can foster discourse by allowing the controversy over independent research to remain apparent.[203] Mandatory rules can give the illusion of accord and hide underlying tensions that would otherwise be further explored.

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of others outside the courtroom."); *id.* at 14 (noting that the strict 1924 Canon barring all ex parte communications was often ignored).

201. Some ex parte communications provisions allow judges to contact disinterested legal experts, if parties are later given notice and an opportunity to respond. *See, e.g.*, MODEL CODE OF JUDICIAL CONDUCT Canon 3B(7)(b) (1990). Many states, however, have no such exception. *See, e.g.*, Ann Lousin, *The New* Ex Parte *Communications Rule in Illinois: A Step Forward?*, 19 LOY. U. CHI. L.J. 1031, 1035–36 (1988) (discussing Illinois).

202. An exchange during 1938 debates over Federal Rule of Civil Procedure 16, which makes pretrial conferences discretionary, illustrates this point:

> Mr. [Herbert] Bingham: As a matter of curiosity why was [Rule 16] made discretionary?
>
> [Professor Edson] Sunderland: Because if the district judges didn't like it, it wouldn't work anyway. (Laughter)
>
> Mr. Bingham: Why could it not have been mandatory?
>
> Mr. Sunderland: There is no use in making it mandatory because nothing will be accomplished without the sympathetic interest of the judge, and you can't force him to be sympathetic. (Laughter).

Resnik, *supra* note 182, at 200 (quoting RULES OF CIVIL PROCEDURE FOR THE DISTRICT COURTS OF THE UNITED STATES AND PROCEEDINGS OF THE INSTITUTE ON FEDERAL RULES 299 (William W. Dawson ed., 1938)).

203. Coons, *supra* note 192, at 111 (noting that inconsistency can encourage participation and pluralism); *id.* at 112 ("[I]nconsistency's most compelling claim for recognition may lie in its potential service to truth.").

Third, the close relationship between independent research and the judicial process strongly cautions against the use of draconian methods to achieve uniformity. Unlike typical procedural or evidentiary rules, which focus on litigant behavior, rules governing independent research regulate the *judge's* conduct and decisionmaking process. To be sure, even if independent research were at the core of the interpretative function—which it is not—it would still be subject to regulation,[204] but excessive or undue interference raises judicial independence and separation-of-powers concerns.

Finally, although not a sufficient justification by itself, making independent research subject to judicial discretion is perfectly in line with the character of modern rules of evidence and procedure. As Professor Jon Waltz once observed, significant discretion is given to trial judges under the Federal Rules of Evidence in two primary situations: when the rule conflicts with traditional adversarial values,[205] or when the rule is largely procedural and demands flexibility.[206] Independent judicial research qualifies under both. It sharply conflicts with the adversarial norm of party-driven proof, is largely procedural, and requires flexibility in application. A discretionary approach to independent research also matches the trend in civil procedure toward greater judicial discretion as part of the managerial judge paradigm.[207]

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204. *See* Solan, *supra* note 199, at 13–18 (citing various statutes that preclude courts from considering certain types of evidence when making legal decisions, and noting that although such limited prohibitions are probably valid, blanket prohibitions are questionable).

205. Jon R. Waltz, *Judicial Discretion in the Admission of Evidence Under the Federal Rules of Evidence*, 79 NW. U. L. REV. 1097, 1117 (1985) (discussing discretionary rules that "undercut[] [the] longstanding Anglo-American tradition of party-controlled evidence").

206. *Id.* at 1119 (arguing that the Federal Rules of Evidence give discretion only when it was already present in the common law or when the rule "relates to essentially procedural matters as to which flexibility is practically unavoidable"). *But see* Leonard, *supra* note 194, at 966 (arguing that discretion is infused throughout the Federal Rules of Evidence). To be sure, trial court rulings are normally only reviewed for abuse of discretion. The discretion ordinarily granted in those instances is considerably more bounded, however, given that the discretion's principal function is to give the judge leeway to account for case-specific contexts. The court is not at liberty to dispense with the rules themselves.

207. Resnik, *supra* note 182, at 136 (describing the recent history of procedure as being characterized by "growing judicial discretion over civil process"); *see also* Keeton, *supra* note 193, at 859 (noting that Rule 16 neither mandates nor prohibits pretrial settlement conferences, but rather is discretionary and "enabling"); Marcus, *supra* note 173, at 1587–89 (noting that case management entails more discretion because there are no right answers in case management).

CONCLUSION

When writing about judges and judicial practice, one often wonders whether the scholarship will ultimately have any traction with the judges themselves. On this score, it may be appropriate to conclude with a brief anecdote from a recent science-related conference attended by both federal and state judges. During a breakout session, the judges asked the moderator, who was a scientist, for his suggestion on how they, as nonscientists, could best handle complex scientific evidence. The judges were in large part concerned with how they could protect themselves from being duped. The moderator responded that the judges should compile a ready list of eminent scientists, perhaps one or two in each major field, whom the judges could call for a "gut check."

Immediately, one of the judges protested, explaining that ex parte communication rules prohibited such behavior. Another judge, however, wondered aloud why calling the scientists would be any different from reading their scientific textbooks or journal articles, implying that the latter was permissible. On this note, yet another judge chimed in—she did not believe that judges could do library research either. A lively discussion ensued.

As the anecdote and the survey results reported in this Article suggest, judges are indeed deeply concerned and divided about the issue of independent research. After all, it goes to the heart of their roles and responsibilities in the legal system. To many judges, doing independent research when confronted with new and unfamiliar material seems the most responsible and natural thing to do. To others, it represents the worst kind of overreaching and a threat to long-cherished adversarial values.

This Article has argued that independent research is both desirable and permissible. Indeed, independent research carries great promise as a tool for helping judges decide *Daubert* questions and for improving scientific decisionmaking in the courts generally. Furthermore, although ultimately ambiguous, current rules seem to allow sufficient leeway to permit the practice. But ultimately, whether one agrees with its position or not, this Article's true purpose is a broader one, and that is to spark greater academic and judicial commentary on the issue of independent research and the various ways to help judges make scientific admissibility decisions.

APPENDIX: SURVEY INSTRUMENT

Author's Note: As discussed in footnote 40, the results presented in this Article are only a subset of the total data collected in the survey. Portions of the survey relevant to this Article are reproduced below.

SURVEY OF JUDICIAL INFORMATION SOURCES

Survey Instructions

In the three hypotheticals below, Judge Jones is a trial court judge who is handling a complex products liability case involving a pharmaceutical drug. Judge Jones is faced with a ruling that involves some form of specialized knowledge and feels that the parties have not provided the court with adequate information. For example, in the Law Scenario, Judge Jones must decide a procedural legal issue related to complex litigation, and in Background Science and Specific Science Scenarios, Judge Jones must make a *Daubert* determination.

Each scenario then provides a list of sources that Judge Jones might consider referencing to supplement the information presented by the parties. For each source, the survey asks two questions:

1) How desirable would it be for Judge Jones to use the method described?
2) If Judge Jones uses the method and relies on the information, how important would it be to place the material on the record and provide counsel with an opportunity to respond?

In responding to these questions, please disregard any specific rules in your jurisdiction that may govern or restrict judicial conduct. The purpose of this survey is to better understand what the rules or norms governing independent judicial investigations should be in principle, rather than what the restrictions currently are.

All answers are strictly anonymous.

Thank you for your time and participation.

Specific Science Scenario

In this scenario, Judge Jones must also make a *Daubert* ruling but instead believes that the (conflicting) experts have presented extreme viewpoints in the controversy. The judge would therefore like to supplement the court's knowledge of the extant medical literature on the drug to get a more complete picture. How desirable would it be for Judge Jones to use the following methods **to gather additional information on the drug's effects**?

Source of Information	Desirability How desirable would it be for Judge Jones to use this method? 1 = very undesirable 5 = very desirable	Procedure If Judge Jones uses the method and relies on the information, how important would it be to place the material on the record and provide counsel with an opportunity to respond? 1 = not important at all 5 = very important
Conduct a search (independent of the parties) of previous cases involving the drug to see what other evidence on the drug exists	1 2 3 4 5	1 2 3 4 5
Consult the Federal Judicial Center's *Reference Manual on Scientific Evidence*	1 2 3 4 5	1 2 3 4 5
Find and read medical treatises or textbooks discussing the drug	1 2 3 4 5	1 2 3 4 5
Find and read medical journal articles (peer-reviewed) on the drug	1 2 3 4 5	1 2 3 4 5
Find and read medical newsletter articles (non-peer-reviewed) on the drug	1 2 3 4 5	1 2 3 4 5
Refer to proceedings from an academic conference (that Judge Jones previously attended) that discussed the effects of the drug	1 2 3 4 5	1 2 3 4 5
Read materials about the drug on various Internet websites	1 2 3 4 5	1 2 3 4 5
Attend an academic conference discussing the effects of the drug	1 2 3 4 5	1 2 3 4 5
Discuss the issues with a law clerk who has a scientific/medical background and has some knowledge about the drug	1 2 3 4 5	1 2 3 4 5
Appoint a medical school profssor as a court-appointed expert, who will testify and be subject to examination by the parties	1 2 3 4 5	N/A
Appoint a medical school professor as a technical adviser, who will not testify but will aid Judge Jones in chambers	1 2 3 4 5	N/A
Informally discuss the drug's effects with a medical school professor	1 2 3 4 5	1 2 3 4 5
Informally discuss the drug's effects with Judge Jones's physician	1 2 3 4 5	1 2 3 4 5

Comments:

_____

_____

_____

Additional question

Would your ratings in Scenarios #2 (Background Science) or #3 (Specific Science) change if the parties had agreed to a bench trial and Judge Jones sat as the finder of fact? If so, how would they change?

_____

_____

_____

Geographic/Demographic Information

State.

_____

Type of Court (e.g., Appellate, Trial, Specialized):

_____

Years on the bench:

_____

Type of scientific background (please circle all that apply):

a. Formal training or degree in science or medicine
b. Some course work in science or medicine
c. Have attended judicial/academic seminars on science and law
d. General interest or knowledge in science or medicine
e. Other (please specify) _____
f. None of the above

Many thanks again for your time and participation.