Clashing Standards in the Courtroom: Judicial Notice of Scientific Facts

GREGORY W. SEGAL*

The doctrine of judicial notice, contained in Rule 201 of the Federal Rules of Evidence, serves as a powerful tool for judges to bring in adjudicative facts without introducing any witnesses. Given the broad language of Rule 201(b), federal courts have used this doctrine for a wide and expanding range of materials. When a fact is judicially noticed, its impact is tremendous: in civil cases, under Rule 201(f), a jury must treat any fact that has been judicially noticed as conclusive. Judicial notice can be applied to scientific facts, but little attention has been paid to how judicial notice operates vis-à-vis the high bar set for the admission of expert scientific testimony under Daubert.

This Note explores this possibility. It begins by explaining the mechanics of judicial notice and the Daubert *standard, and looks at how judicial notice has been applied to certain scientific facts. The Note identifies potential problems with current approaches: misapplication of Rule 201 with scientific facts and the possibility of evidence getting in via the judicial notice standard but not under* Daubert. *This Note argues that transparency is the key to avoiding these problems, such as judges providing more detailed explanations when taking judicial notice, applying* Daubert *in their judicial notice analysis, and more clearly citing precedent in taking judicial notice.*

---

* Design & Layout Editor, Colum. J.L. & Soc. Probs., 2017–2018. J.D. Candidate 2018, Columbia Law School. The author thanks Professor Philip Genty and the staff of the *Columbia Journal of Law and Social Problems* for their thoughts, guidance, and edits throughout the process of writing this Note. He dedicates this Note to his parents, Theodore Segal and Joyce Wasserstein, and his wife, Gabriella Meltzer, for their endless love and support.

I. INTRODUCTION

One of the defining elements of a trial is the manner in which facts are introduced into a proceeding. Traditionally, the judge or jury is tasked with applying the relevant burden of proof to information obtained from witnesses and exhibits.[1] With this image in mind, Rule 201 of the Federal Rules of Evidence, establishing the doctrine of "judicial notice" in federal courts, seems peculiar. Once called an "evidentiary shortcut" by the First Circuit Court of Appeals,[2] Rule 201 allows a court to "judicially notice a fact that is not subject to reasonable dispute,"[3] or, put another way, to accept a fact without a witness or exhibit to attest to its veracity. As set forth in the rule itself, the court can take judicial notice at any point in a proceeding, either on its own volition or when a party requests it.[4] The rule gives a judge tremendous power, especially in civil cases. While in a criminal case a jury still has discretion to decide whether to accept the truth of a judicially noticed fact, in civil cases "the court must instruct the jury to accept the noticed fact as conclusive."[5]

Given the potency of this rule, it is vital to understand the range of facts to which judicial notice is permitted to apply. The rule itself states that it only covers adjudicative facts,[6] and facts "generally known within the trial court's territorial jurisdiction" or ones that "can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned."[7] In its most uncontroversial application, judicial notice would apply only to indisputable facts, such as the number of days in a week, the rising and setting of the sun, or basic geography.[8] No argument

---

1. 1 CLIFFORD S. FISHMAN & ANNE T. MCKENNA, JONES ON EVIDENCE § 2:1 (7th ed. 2016); DENNIS D. PRATER ET AL., EVIDENCE: THE OBJECTION METHOD 933 (5th ed. 2016).

2. Getty Petroleum Mktg., Inc. v. Capital Terminal Co., 391 F.3d 312, 321 (1st Cir. 2004) ("Judicial notice of fact is an evidentiary shortcut.").

3. FED. R. EVID. 201(b).

4. FED. R. EVID. 201(c)–(d).

5. FED. R. EVID. 201(f).

6. FED. R. EVID. 201(a). *See infra* Part III.B (containing a more detailed discussion of what constitutes "adjudicative" facts and what effect this may have on the application of judicial notice).

7. FED. R. EVID. 201(f); *see also infra* Part III.B (discussing different avenues through which a court may take judicial notice).

8. *See* Paul J. Kiernan, *Better Living Through Judicial Notice*, 36 LITIG. 42, 43 (Fall 2009) (quoting Shahar v. Bowers, 120 F.3d 211 (11th Cir. 1997) ("[T]he kinds of things about which courts ordinarily take judicial notice are (1) scientific facts: for instance, when

can be raised as to the truth of these facts, and calling a witness to testify, for instance, that the sun rises in the east, would waste a court's time.[9] However, judicial notice has been used far more broadly, on a much wider range of facts than the straightforward examples given above.[10] With the rise of the Internet, the doctrine of judicial notice has expanded to include a broader array of sources as ones whose "accuracy cannot reasonably be questioned."[11]

As the scope of judicial notice grows, the number of facts that can be brought to a case without going through the traditional procedures for bringing in evidence increases. This raises a fundamental question: what if courts judicially notice more questionable material, ones that otherwise might not be admitted under other evidentiary standards? Scholars typically focus on the scope of judicial notice in isolation, without acknowledging how it functions alongside other standards in the courtroom. Such a narrow approach ignores the chance that the two standards could produce inconsistent results. Given the power of judicial notice, especially in civil cases, this possibility — that judicial notice could expand to the point that it begins to clash with other standards — deserves far greater attention.

This Note examines such a circumstance, using judicial notice of scientific materials in federal courts as a case study. Admission of scientific facts occurs through Rule 702 of the Federal Rules of Evidence, which codifies the United States Supreme Court's standard for admission of expert testimony announced in *Daubert v. Merrell Dow Pharmaceuticals*.[12] *Daubert* held that some scientific facts — ones that "have attained the status of scientific law" — could be subject to judicial notice.[13] However, courts have invoked judicial notice for science that is far less con-

---

does the sun rise or set; (2) matters of geography: for instance what are the boundaries of a state; or (3) matters of political history: for instance, who was president in 1958.")).

9. FISHMAN & MCKENNA, *supra* note 1 ("As to certain information, however, the law dispenses with the evidential process as unnecessary and even undesirable. Instead, the law simply takes 'notice' that such information is true.").

10. *See* 1-201 MARK S. BRODIN ET AL., WEINSTEIN'S FEDERAL EVIDENCE § 201.12 (2018) (listing some categories of facts that have been judicially noticed); *see also* PRATER ET AL., *supra* note 1, at 936–37.

11. *See infra* Part II.B (exploring judicial notice of sources from the Internet and whether they can be deemed "sources whose accuracy cannot reasonably be questioned.").

12. FED. R. EVID. 702 advisory committee's note to 2000 amendment. *See infra* Part II.A.

13. Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 593 n.11 (1993).

crete.[14] While one would hope that a scientific fact would not be judicially noticed unless it met the *Daubert* test for reliability, the text of Rule 201 itself does not prevent such an occurrence. Thus, a latent risk remains: in the extreme case, a scientific fact could be judicially noticed without surviving the *Daubert* standard for admissibility.[15] This Note considers the chance that evidence of questionable reliability may find its way into the courtroom via Rule 201, rather than being put through the rigors of Rule 702. Inconsistency may well result: what one courtroom deems an insufficient basis for expert testimony could simultaneously be judicially noticed in another courtroom.

Judicial notice of scientific materials in federal courts serves as an illuminating case study for several reasons. First, the rules and doctrine for admission of scientific facts provide a clear standard to use as a point of comparison with judicial notice. *Daubert* provides judges with four factors to utilize in their evaluation of the reliability of a methodology.[16] Such a clear test makes for cleaner analysis, enabling direct comparisons to the process of taking judicial notice. By avoiding the quagmire of more ambiguous standards, the Note can focus on how the two standards of *Daubert* and Rule 201 may conflict with one another.

Second, there is not extensive scholarship on judicial notice of scientific materials. Treatises and articles on judicial notice do not specifically mention judicial notice of scientific materials, or they simply list examples of sources that have been judicially noticed without considering how they interact with other standards.[17] The work that has come closest to this analysis is a 2007 article by Christopher Onstott entitled *Judicial Notice and the Law's 'Scientific' Search for Truth*.[18] However, while Onstott's essay does look at judicial notice of scientific facts, he dedicates primary attention to state courts, the way judicial notice operates

14. *See infra* Part IV.B (discussing this possibility in greater depth).

15. *See infra* Part IV.B.

16. *See infra* Part II.A (explaining the factors outlined in *Daubert* for judges to use in evaluating the reliability of scientific expert testimony).

17. For sources addressing judicial notice of scientific materials but making no mention of *Daubert*, *see, e.g.*, 1-201 BRODIN ET AL., *supra* note 10, § 201.12; H. B. Chermside, Jr., Annotation, *Judicial Notice of Diseases or Similar Conditions Adversely Affecting Human Beings*, 72 A.L.R.2d 554; FISHMAN & MCKENNA, *supra* note 1, § 2:70; 1 CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, FEDERAL EVIDENCE § 2 (4th Edition June 2017 Update).

18. Christopher Onstott, *Judicial Notice and the Law's 'Scientific' Search for Truth*, 40 Akron L. Rev. 465 (2007).

vis-à-vis the pre-*Daubert* standard for admission of scientific facts, and a proposal to create a new rule for judicial notice of scientific facts.[19]

Finally, the act of a judge bringing in scientific facts from outside materials has recently gained greater attention. In a 2015 Seventh Circuit Court of Appeals case, *Rowe v. Gibson*, the court reviewed a district court's grant of summary judgment against a prisoner who had sued for being denied the proper medication for a medical condition. Judge Richard Posner's opinion, writing for a 2-1 majority, relied heavily on his own Internet research, citing descriptions of gastroesophageal reflux disease (GERD) from the National Institutes of Health and the Mayo Clinic websites, a WebMD page discussing the long term consequences of GERD, and information from the website of the medication Zantac.[20] While Judge Posner said that he was not formally taking judicial notice of this information, both his opinion and a fiery dissent discussed whether it is appropriate for a judge to rely on facts from outside the courtroom in his or her decisions.[21] One cannot help but notice that the facts that Judge Posner brought in were *scientific* in nature.[22] As this case is debated, the way in which judges can take their own initiative with scientific facts will surely continue to receive additional attention.[23]

After Part II of this Note explains the mechanics of judicial notice and standards for admission of scientific facts in the courtroom, this Note will address several issues. Part III gives an overview of cases where judicial notice was taken of scientific materials, aiming to provide a deeper understanding of current approaches to judicial notice of scientific facts in the courtroom.

---

19. *Id*. Onstott also looks more philosophically at science and the degree to which science can be deemed a fact, which is not the focus of this note.

20. Rowe v. Gibson, 798 F.3d 622 (7th Cir. 2015).

21. *Id.*

22. *Id.*

23. In December 2017, the ABA Standing Committee on Ethics and Professional Responsibility issued a formal opinion discouraging judges from conducting their own research online. Notably, the line they drew was directly tied to judicial notice, as it writes: "Information properly subject to judicial notice is well within the judge's discretion to search and use according to the applicable law. On the other hand, adjudicative facts are needed to determine an issue in a case, but which are not properly subject to judicial notice, may not be researched without violated Rule 2.9(C). Stated simply, a judge should not gather adjudicative facts from any source on the Internet unless the information is subject to proper judicial notice." ABA Standing Comm. on Ethics and Prof'l Responsibility, Formal Op. 478 (2017) (discussing "Independent Factual Research by Judges Via the Internet").

Part IV describes problems with the current approach to judicial notice of scientific materials, describing the challenges that arise as judicial notice continues to be extended further and the possibility that standards come into contact with one another. Finally, Part V recommends how to minimize the risk of conflict between the two standards. The Note will pay special attention to the risks of judicial notice in civil cases, given the larger impact of judicial notice in a civil case.[24]

II. TWO EVIDENTIARY STANDARDS

Before exploring the judicial notice of scientific materials, it is vital to first explain the mechanics of the two relevant standards — the standards for admission of expert scientific testimony and Rule 201. The explanations of each standard will not be exhaustive, but rather will provide the background necessary to enable relevant comparisons in Part IV.

A. *DAUBERT* AND RULE 702

The D.C. Circuit provided the first test for admissibility of scientific materials in federal courts in 1923 in the case of *Frye v. United States*.[25] Asked to consider the result of a "systolic blood pressure deception test" (an early lie detector), the court held that a scientific methodology "must be sufficiently established to have gained general acceptance in the particular field in which it belongs" in order to be admitted.[26] Under *Frye*, a judge was to consider only one factor whether to admit scientific materials: "general acceptance."[27]

In 1993, the Supreme Court displaced this test in *Daubert,*[28] articulating a far greater role for judges in deciding whether scientific facts should be admissible.[29] Now, judges were to serve a "gatekeeping" function, determining whether the scientific meth-

24. *See* FED. R. EVID. 201(f) (providing that in civil cases "the court must instruct the jury to accept the noticed fact as conclusive").

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

26. *Id*. at 1014.

27. 4-702 BRODIN ET AL., *supra* note 10, § 702 App.100 ("Prior to the enactment of the Federal Rules, courts often relied on the Frye standard under which, for the testimony to be admissible, the scientific principal or discovery on which it is based must be generally accepted in the particular field to which it belongs.").

28. Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993).

29. *Id.*

od employed was sufficiently reliable to warrant being presented to the jury.[30] The case articulated four factors for a judge to consider: (1) the ability to test a theory and its falsifiability, (2) whether the theory or method has undergone peer review and publication, (3) the error rate and the presence of standards controlling the operation of the method, and (4) general acceptance.[31] None of these four factors is dispositive, and judges have ample discretion and flexibility when deciding what is admissible.[32]

As mentioned previously, the *Daubert* opinion touched briefly on judicial notice. In footnote eleven of the opinion, the Court states: "Indeed, theories that are so firmly established as to have attained the status of scientific law, such as the laws of thermodynamics, properly are subject to judicial notice under Fed. Rule Evid. 201."[33] Such a remark makes sense in the context of the *Daubert* framework. If a theory is so "firmly established" that it achieves "the status of scientific law," going through a *Daubert* inquiry would be redundant. To use the laws of thermodynamics as an example, a litigant could not feasibly argue that the laws of thermodynamics are not testable or that they lack general acceptance. In addition, they would be easily found in unimpeachable sources. As such, these elementary scientific rules are facts "not subject to reasonable dispute," and are proper subjects for judicial notice.

In *Kumho Tire Co. v. Carmichael*, the Supreme Court determined that the gatekeeping function articulated in *Daubert* applies to all expert testimony, including the engineering testimony at issue in that case.[34] In 2000, Rule 702 codified *Daubert* and *Kumho Tire*.[35] It reads:

---

30. *Id*. at 593–4.

31. *Id*. at 593. Notably, the fourth prong harkens back to the *Frye* standard. Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923) (setting "general acceptance" as the single factor for a judge to consider in whether to admit scientific testimony).

32. *Daubert*, 509 U.S. at 593–4 ("Many factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test. . . . The inquiry envisioned by Rule 702 is, we emphasize, a flexible one.").

33. *Id.* at 592 n.11.

34. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 147 (1999).

35. FED. R. EVID. 702 advisory committee's note to 2000 amendment ("Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc*., and to the many cases applying *Daubert*, including *Kumho Tire Co. v. Carmichael*. . . .The amendment affirms the trial court's role as gatekeeper and provides some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony. Consistently with *Kumho*, the Rule as amended provides that all types of expert

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.[36]

The admissibility of expert testimony is determined by a judge under a "preponderance of the evidence" standard,[37] and an appellate court reviews a ruling under *Daubert* using an abuse of discretion standard.[38]

Accordingly, when faced with a proffer of scientific testimony, *Daubert* and Rule 702 are the rubric that should be applied. If an expert passes the test posed by *Daubert* and Rule 702, he or she can introduce scientific information in the proceeding.

B. APPLICATION OF JUDICIAL NOTICE

As stated previously, Rule 201 establishes judicial notice while providing several restrictions on its applicability. The most prominent limitation found in the rule lives in the divide between "legislative" and "adjudicative" facts. Rule 201 "governs judicial notice of an adjudicative fact only, not a legislative fact."[39] The Advisory Committee for the Federal Rules of Evidence describes this distinction as follows:

> Adjudicative facts are simply the facts of the particular case. Legislative facts, on the other hand, are those which

---

testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful." (citations omitted)).

36. FED. R. EVID. 702.

37. FED. R. EVID. 702 advisory committee's note to 2000 amendment ("Consequently, the admissibility of all expert testimony is governed by the principles of Rule 104(a). Under that Rule, the proponent has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence." (citations omitted)). *See also* FED. R. EVID. 104.

38. General Elec. Co. v. Joiner, 522 U.S. 136, 139 (1997) ("[A]buse of discretion is the proper standard by which to review a district court's decision to admit or exclude scientific evidence.").

39. FED. R. EVID. 201(a).

> have relevance to legal reasoning and the lawmaking process, whether in the formulation of a legal principle or ruling by a judge or court or in the enactment of a legislative body.[40]

Put another way, Rule 201 only applies to "facts concerning the immediate parties — who did what, where, when, how, and with what motive or intent."[41] In that circumstance, "the court or agency is performing an adjudicative function, and the facts are conveniently called adjudicative facts."[42] However, the line between these categories can be blurry. At no point in Rule 201 is either term defined, and explanations often become confusing.[43] As a result, the extent to which the adjudicative-legislative dichotomy truly limits a court in taking judicial notice is not clear.[44]

Rule 201(b) sets forth two avenues for a court to take judicial notice: "[t]he court may judicially notice a fact that is not subject to reasonable dispute because it: (1) is generally known within the trial court's territorial jurisdiction; or (2) can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned."[45] A fact must be able to pass through one of these options in order to be judicially noticed. Whereas the first prong, by its terms, seems to apply to only a limited universe of information,[46] the second prong, allowing for notice of facts

---

40. FED. R. EVID. 201 advisory committee's note to the 1972 proposed rules.

41. *Id.*

42. *Id.*

43. *See* Kurtis A. Kemper, Annotation, *What Constitutes "Adjudicative Facts" Within Meaning of Rule 201 of Federal Rules of Evidence Concerning Judicial Notice of Adjudicative Facts*, 150 A.L.R. Fed. 543 ("Counsel should be aware that the terms 'adjudicative facts' and 'legislative facts' are not defined by the Federal Rules of Evidence and the distinction between the two is not always readily apparent. Indeed, the question has been described by courts and commentators as 'baffling.'").

44. *Id.* ("Because of this difficulty, it is not unusual for a court to simply apply the restrictive provisions of Rule 201 without first determining whether the fact to be judicially noticed is adjudicative and subject to Rule 201 or legislative and not subject to Rule 201. Adding to the confusion, some courts have applied Rule 201(b) in determining the propriety of taking judicial notice of legislative facts.").

45. FED. R. EVID. 201(b).

46. The meaning of "generally known" may not be literal. As one treatise notes, while "[t]he traditional test is whether the existence or operation of the fact has met with unconditional acceptance by the public," for items of specialized knowledge, "judicial notice is appropriate if the fact in question is well known and generally accepted in specialized areas among those members of the public who deal with such matters." FISHMAN & MCKENNA, *supra* note 1, § 2:9. It continues: "The latter situation is particularly true in the scientific field, so that common knowledge is not necessary if scientists agree that the essential element of certainty exists." *Id.*

"from sources whose accuracy cannot reasonably be questioned," is more open-ended. Instead of needing something to be "generally known" in a jurisdiction, it instead enables a litigant to raise facts from a source considered reliable, regardless of how "generally known" the fact is.[47]

Significant debate has emerged as to how judicial notice applies to Internet sources, particularly whether sources from the Internet can qualify as "sources whose accuracy cannot reasonably be questioned."[48] Courts have taken judicial notice of information on government websites, Google Maps, news websites, and corporate websites, among others.[49] Benefits of taking judicial notice of materials from the Web include easier and faster access to a wide amount of information for litigants, although

47. *See* 1-201 BRODIN ET AL., *supra* note 10, § 201.12, which lists a broad array of sources used for this prong, such as dictionaries and encyclopedias, public records, maps, university publications, etc. As to what qualifies as a "source whose accuracy cannot reasonably be questioned," there does not appear to be a clear answer. One treatise suggests that the question is whether the source is "unimpeachable." 1 MUELLER & KIRKPATRICK, *supra* note 17, § 2.5. Another treatise says that the question is whether the source's "accuracy is beyond dispute." 29 Am. Jur. 2d, Evidence § 34. *See also* Onstott, *supra* note 18, at 476 ("[I]t has been noted that "nowhere can there be found a definition of what constitutes competent or authoritative sources for purposes of verifying judicially noticed facts." And, it should be noted that after a number of courts take judicial notice of a principle, subsequent courts begin to dispense with the production of these materials and to take judicial notice of the principle as a matter of law established by precedent.")

48. 1 FISHMAN & MCKENNA, *supra* note 1, § 2:10 ("Online content and a court's ability to take judicial notice of facts that appear online has generated a new line of precedent."). *See, e.g.*, Jeffrey Bellin and Andrew Gurthrie Ferguson, *Trial by Google: Judicial Notice in the Internet Age*, 108 NW. U.L. REV. 1137 (2014); Erin Godwin, *Judicial Notice and the Internet: Defining a Source Whose Accuracy Cannot Reasonably be Questioned*, 46 CUMB. L. REV. 219 (2015/2016); Ellie Margolis, *It's Time to Embrace the New-Untangling the Uses of Electronic Sources in Legal Writing*, 23 ALB. L.J. SCI. & TECH. 191 (2013); Daniel A. Dorfman & Michael C. Zogby, *Judicial Notice: An Underappreciated and Misapplied Tool of Efficiency*, 84 DEF. COUNS. J. 2, https://www.iadclaw.org/publications-news/defensecounseljournal/judicial-notice-an-underappreciated-and-misapplied-tool-of-efficiency/ [https://perma.cc/MMQ5-5SFE] ("One of the major areas of debate in recent years is whether internet sources are judicially noticeable. Some courts have permitted judicial notice of online information, some have permitted it with caution, and others have refused. Here, the distinctions are primarily focused on whether the information comes from an official government-sponsored website or a private website, such as Wikipedia."); Coleen M. Barger, *Challenging Judicial Notice of Facts on the Internet Under Federal Rule of Evidence 201*, 48 U.S.F. L. REV. 43 (2013); William J. Cantrell, *Taking Judicial Notice in the Internet Age*, ABA: LITIG. NEWS (May 25, 2010), https://apps.americanbar.org/litigation/litigationnews/top_stories/052510-judicial-notice-internet-second-circuit.html [https://perma.cc/XE82-VX2R]; Michael Hutter, *Judicial Notice of Website Information*, *Evidence*, N.Y.L.J. (Online)(June 2, 2016).

49. Bellin & Ferguson, *supra* note 48.

there remains substantial risk of inaccurate information entering a proceeding and uncertainty as to an online source's accuracy.[50]

III. EXAMPLES OF JUDICIAL NOTICE OF SCIENTIFIC FACTS

While the *Daubert* opinion itself leaves room for judicial notice of scientific information, little attention has been paid to post-*Daubert* cases in which scientific materials were judicially noticed, especially the reasoning that courts used in reaching such conclusions.[51] This Part provides examples of categories of scientific facts and information that courts have judicially noticed. Each case cited is a federal case decided after 1993, when the Supreme Court decided *Daubert*. Although it is not possible to provide a comprehensive collection of every case where courts judicially noticed some form of scientific facts,[52] these examples provide an important glimpse into how judicial notice has been applied in a number of general categories of scientific information. In particular, attention is paid to *how* courts explain their decisions to take judicial notice, especially the source or sources it relies on as ones whose "accuracy cannot reasonably be questioned." The goal here is to provide a more critical survey of the landscape of judicial notice; the merits of taking judicial notice of these sources is argued in greater detail in Part IV.

A. JUDICIAL NOTICE OF ATTRIBUTES OF MEDICATIONS

Courts frequently apply judicial notice to attributes of medications or compounds. An archetypical example is a Tenth Circuit Court of Appeals case, *Stephens v. Miller*, where the court took

50. *Id*. at 1165–7; *see also* Dorfman & Zogby, *supra* note 48 ("Even when requesting the court judicially notice a government website, however, remember to provide the court with information sufficient to show the source can be trusted.").

51. *See supra* Part I.

52. One may ask — *why* is it so difficult to cultivate a comprehensive catalog of cases where judicial notice is taken of scientific materials? The most important reason is that there is no requirement that a court explicitly say when it is taking judicial notice. There are many instances where a court has essentially judicially noticed a fact, without explicitly saying so. *See* Kiernan, *supra* note 8 (noting that Chief Justice Warren Burger stated in a concurrence to *Roe v. Wade/Doe v. Bolton* that he felt the majority had not exceeded the scope of judicial notice). Notably, the majority opinion did not mention the words "judicial notice." *See also* U.S. v. Ganias, 824 F.3d 199 (2d Cir. 2016) (going into great technical detail regarding computer storage technology, but never explicitly taking judicial notice of these facts).

judicial notice of the intended purposes of several medications.[53] The court wrote:

> Under Rule 201 of the Federal Rules of Evidence, we take judicial notice that Zyprexa helps manage symptoms of schizophrenia, the manic phase of bipolar disorder and other psychotic disorders; Celebrex treats acute pain and arthritis; Flexeril is a muscle relaxant prescribed to relieve muscle spasms; Topamax is an anti-epileptic drug also used to treat migraines; Anusol treats hemorrhoids; Colace and Metamucil treat constipation; and Motrin treats fever and pain including pain caused by arthritis and migraines. *See* http://www.pdrhealth.com/home/home.aspx.[54]

The exact source from which a court takes judicial notice of such facts is not always this clear. In the *Stephens* excerpt above, one immediately notices the citation to the online version of the *Physician's Desk Reference*. The *Physician's Desk Reference*[55] is a common source that courts use to take judicial notice,[56] on the grounds that it is a "source[ ] whose accuracy cannot reasonably be questioned."[57]

---

53. Stephens v. Miller, 297 Fed. Appx. 719, 722 n.4 (10th Cir. 2008).

54. *Id.*

55. The Physician's Desk Reference is a publication that provides information about drugs, prescriptions, and medications, and is extremely well-regarded in the field. *See* MUELLER & KIRKPATRICK, *supra* note 17, § 2:5 ("For at least certain types of information, unimpeachable sources include many kinds of books that have long served as authoritative references. Among those that qualify are . . . standard reference books such as Gray's Anatomy and the Physician's Desk Reference.").

56. *See* U.S. v. Dillavou, No. 3:08-po-042, 2009 WL 230118 (S.D. Ohio Jan. 30, 2009) ("Relevant case law indicates it is proper to take judicial notice of the content of the PDR when it is relevant to some fact in issue. . . .No case law was discovered disapproving of the PDR."); *see also* Purkey v. Green, 28 Fed.Appx. 736, 742 n.4 (10th Cir. 2001); Paulin v. Figlia, 916 F. Supp.2d 524, 529 n.1 (S.D.N.Y. 2013); Ariola v. Onondaga Cnty. Sheriff's Dept., No. 9:04-CV-1262, 2007 WL 119453, at *7 n.61 (N.D.N.Y. Jan. 10, 2007); Freeman v. Knight, No. 04CV00148MSKPAC, 2005 WL 1896245, at *14 n.4 (D. Colo. Aug. 8, 2005); Golden v. Berge, No. 03-C-0403-C, 2003 WL 23221483, at *7 (W.D. Wis. Sept. 25, 2003); Schar v. Hartford Life Ins. Co., 242 F. Supp.2d 708, 711 (N.D. Cal. 2003).

57. It can be ambiguous whether courts are actually leaning on this prong. In *United States v. Howard*, the Ninth Circuit took judicial notice of "medical facts regarding Percocet and Percodan." United States v. Howard, 381 F.3d 873, 876 n.1 (9th Cir. 2004). Judicial notice appeared in the footnote to a sentence stating: "Both Percocet and Percodan contain the active ingredient oxycodone, an opioid with attributes similar to morphine and which may impair the mental and physical abilities required for the performance of potentially hazardous tasks." *Id.* at 880. After this sentence, in the text of the opinion, the court cited to the *Physician's Desk Reference*. However, in the footnote for this sentence, addressing its decision to take judicial notice, the court cited using a "see" signal to

Courts also take judicial notice of attributes of medications without providing any citation for where these facts originated. For instance, in *Sandiford v. Astrue*, a federal district court in Florida took judicial notice "that Neurontin and other medications prescribed for Plaintiff, can cause side effects such as dizziness, drowsiness, blurred vision, and cognitive problems," but never cited any scientific authority to support this.[58] A case in the Southern District of California demonstrates an even more pronounced lack of authority for a judicially noticed fact .[59] The opinion has fourteen footnotes, all of which contain judicial notice of different scientific facts.[60] From footnote one ("The Court takes judicial notice that Unasyn and Flagyl are antibiotics.") to footnote fourteen ("The Court takes judicial notice that phenobarbital is a barbiturate medication."), no authorities are cited in the opinion as the source of this information.[61]

Falling between citing the authoritative *Physician's Desk Reference* and providing no citation at all, courts cite to a range of other sources. In *Hagerty v. American Airlines Long Term Disability Plan*, a judge in the Northern District of California took judicial notice of the side effects of several medications (Lexiva, Ziagen, and Lisinopril).[62] The court cited two sources — the website of the Department of Veterans Affairs, and Drugs.com.[63] Along similar lines, a federal district judge in Maryland in *Wimbush v. Matera*, took "judicial notice that Ultram (generic name tramadol), a narcotic-like medication used to treat moderate to severe pain . . . was prescribed for at least one . . . prisoner. . . ."[64] Following the clause describing the effects of Ultram, the court included the following parenthetical: "(*see* http://www.bing.com/

---

language from an earlier opinion which said, "Well-known medical facts are the types of matters of which judicial notice may be taken." *Id.* at 880 n.7. While the court likely was relying on the *Physician's Desk Reference*, it is not entirely clear which prong of the judicial notice test the court relied upon.

58. Sandiford v. Astrue, No. 3:08-cv-294-J-MCR, 2009 WL 1773499, at *11 (M.D. Fla. June 23, 2009).

59. Gieck v. Levin, No. 05-CV-01974-H(RBB), 2010 WL 235084 (S.D. Cal. Jan. 21, 2010).

60. *Id*.

61. *Id.* at *1 n.1, 14.

62. Hagerty v. Am. Airlines Long Term Disability Plan, No. C09-3299 BZ, 2010 WL 3463620, at *2 n.4 (N.D. Cal. Sept. 3 2010).

63. *Id*.

64. Wimbush v. Matera, No. JKB-11-1916, 2012 WL 518657, at *5 n.18 (D. Md. Feb. 14, 2012).

health/article/goldstandard-GS80814/Tramadol-extendedrelease-tablets-or-capsules?q=ultram&qpvt=ultram)."[65]

B. JUDICIAL NOTICE OF CONDITIONS AND DISEASES

There is also a pattern of courts taking judicial notice of facts related to conditions or diseases. These conditions are wide-ranging, including diabetes,[66] secondhand smoking,[67] tuberculosis,[68] Graves disease,[69] the consequences of higher blood alcohol content (BAC),[70] glaucoma,[71] and the effects of anthrax.[72]

The sources cited for these facts are varied. In many instances, a court taking judicial notice pointed to medical literature and treatises. For instance, in one case, the district court cited *Steadman's Medical Dictionary*,[73] while in another opinion the Eleventh Circuit cited *The Merck Manual of Diagnosis and Therapy*.[74] Other cases utilized government reports to buttress their decision to take judicial notice, including a National Traffic and Safety Bureau report,[75] a report from the website of the National Institutes of Health,[76] and a report from the Surgeon General.[77]

---

65. *Id.* One could try to argue the court was not taking judicial notice of the attributes of the medication and is just using awkward phrasing, but at best the subject of judicial notice is left ambiguous.

66. Lolli v. Cty. of Orange, 351 F.3d 410, 419 (9th Cir. 2003) ("Diabetes is a common yet serious illness that can produce harmful consequences if left untreated for even a relatively short period of time.").

67. Davis v. Granger, No. 2:12-CV-1746, 2014 WL 3797966, at *5 n.1 (W.D. La. Aug. 1, 2014) (taking judicial notice of a report by the Surgeon General on the health effects of secondhand smoke).

68. Rahman v. Taylor, No. 10-0367 (JBS/KMW), 2011 WL 4386733, at *6 (D.N.J. Sept. 20, 2011) ("[T]he Court will partially grant Plaintiff's request to take judicial notice of specific facts regarding the development and diagnosis of tuberculosis.").

69. Harris v. H & W Contracting Co., 102 F.3d 516, 522 (11th Cir. 1996) ("We take judicial notice that Graves' disease is a condition that is capable of substantially limiting major life activities if left untreated by medication.").

70. Lennon v. Metro. Life Ins. Co., 504 F.3d 617, 623 (6th Cir. 2007) ("We can take judicial notice of the fairly obvious scientific fact that as blood-alcohol levels rise, 'so does the risk of being involved in a fatal crash.'") (internal references omitted); United States v. Sauls, 981 F. Supp. 909 (D. Md. 1997).

71. *In re* Nanton-Marie, 303 B.R. 228, 234 (Bankr. S.D. Fla. 2003) ("The Court takes notice that mild glaucoma is treated with one more serious cases with two medications and severe conditions with three or more.").

72. Widjaja v. Nicholson, No. 06-CV-00248EWNMEH, 2006 WL 2871634, at *8 (D. Colo. Oct. 4, 2006) ("The Court takes judicial notice that human contraction of anthrax presents a significant risk of serious injury and/ or death.").

73. *Id*.

74. *Harris*, 102 F.3d at 522.

75. *Lennon*, 504 F.3d at 623.

76. Lolli v. Cty. of Orange, 351 F.3d 410, 419 (9th Cir. 2003).

As with some cases involving medications and chemicals, there are also cases where no authority is specifically noted in the opinion.[78]

C. JUDICIAL NOTICE OF INFORMATION FROM THE *DSM*

For psychologists and psychiatrists, the *DSM* (the *Diagnostic and Statistical Manual of Mental Disorders*) is an indispensable text used to diagnose mental disorders.[79] The most recent edition of the *DSM*, the *DSM-5*, was published in 2013.[80] Given how ubiquitous this text is for those practicing in the field, it is not surprising that the *DSM* has received attention as a source to be used for judicial notice in federal courts.[81]

Judicial notice of these materials occurs by treating the *DSM* as an authoritative source under the second prong of Rule 201(b). For instance, in *United States v. Long*, the Court of Appeals for the Fifth Circuit took judicial notice of the *DSM-IV*'s diagnostic criteria for schizotypal personality disorder while reviewing the district court's decision not to provide a jury instruction for an insanity defense.[82] While the court conceded that there was an expert available to testify in regard to the definition, taking judicial notice to "support" the doctor's testimony, it relied on Rule 201(b)(2) for admission of these criteria.[83] The court explained that "[w]e take judicial notice of these as the *DSM-IV*'s authorita-

77. Davis v. Granger, No. 2:12-CV-1746, 2014 WL 3797966, at *5 n.1 (W.D. La. Aug. 1, 2014).

78. *In re* Nanton-Marie, 303 B.R. 228, 234 (Bankr. S.D. Fla. 2003).

79. THE DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, SUBSTANCE-RELATED AND ADDICTIVE DISORDERS, preface (Am. Psychiatric Ass'n 5th ed. 2013). [Hereinafter DSM-5]. *See also* AM. PSYCHIATRIC ASS'N, *DSM-5: Frequently Asked Questions*, https://www.psychiatry.org/psychiatrists/practice/dsm/feedback-and-questions/frequently-asked-questions [https://perma.cc/AKY8-BYN3] ("The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) is the handbook used by health care professionals in the United States and much of the world as the authoritative guide to the diagnosis of mental disorders. *DSM* contains descriptions, symptoms, and other criteria for diagnosing mental disorders.").

80. DSM-5 at introduction.

81. *See, e.g.*, Jacobs v. N.C. Admin. Office of the Courts, 780 F.3d 562, 565 n.2 (4th Cir. 2015); United States v. Long, 562 F.3d 325, 334 n.22 (5th Cir. 2009); United States v. Murdoch, 98 F.3d 472, 479 (9th Cir. 1996) (Wilson, J., concurring); Aldridge v. Thaler, No. H-05-608, 2010 WL 1050335, at *29 n.28 (S.D. Tex. March 17, 2010); Guzman v. Lamaque, No. CIV S-04-0700 FCD GGH P., 2009 WL 900729, at *11 n.12 (E.D. Cal. March 31, 2009); Gough v. Metropolitan Life Ins. Co., No. 3:03-0158, 2003 WL 23411993, at *2 (M.D. Tenn. Nov. 21, 2003).

82. *Long*, 562 F.3d at 334 n.22.

83. *Id.*

tive nature makes the criteria 'capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned.'"[84]

The way in which courts use information from the *DSM* varies. In *Gough v. Metropolitan Life Insurance Company*, a Tennessee federal district court took care to specify the extent to which it was using the *DSM*; it stated clearly that it was not trying to make its own diagnosis, but was purely referring to the *DSM* only to understand the conditions described.[85] The Fourth Circuit in *Jacobs v. North Carolina Administrative Office of the Courts* chose to judicially notice an older version of the *DSM*, even after a newer edition had already been published.[86] The court cited the *DSM* for the definition of social anxiety disorder in the narrative of the facts of the case.[87] The court took judicial notice of *DSM-IV*, an older text, "because the expert witnesses in this case applied the diagnostic criteria of the DSM-IV."[88] A concurring opinion to a Ninth Circuit Court of Appeals decision drew heavily upon the *DSM-IV*'s definition of a "personality disorder" in deciding whether the defendant was suffering from a mental disease or defect.[89]

IV. PROBLEMS WITH THE CURRENT APPROACH TO JUDICIAL NOTICE OF SCIENTIFIC FACTS

One may posit that judicial notice of scientific facts serves as an overall benefit rather than a hindrance. It allows for faster proceedings, quickly addressing issues that, in all likelihood, are

84. *Id.*

85. *Gough*, 2003 WL 23411993, at *2 ("Defendant correctly contends that it is not the role of the Court to use the DSM-IV-TR to diagnose medical conditions. The Court will reference the DSM-IV-TR only insofar as it is necessary to understand and to determine the reasonableness of Defendant's decision to deny Plaintiff's claim for long term disability benefits.").

86. *Jacobs*, 780 F.3d at 565 n.2.

87. *Id.*

88. *Id.*

89. United States v. Murdoch, 98 F.3d 472, 479 (9th Cir. 1996) (Wilson, J., concurring) ("My conclusion is based, in large part, on interpreting what a diagnosis of personality disorder NOS signifies about a person's mental state. That is, what does the psychiatric shorthand mean? To answer this question, I take judicial notice of the diagnostic standards in the American Psychiatric Association's Diagnostic and Statistical Manual.").

not controversial.[90] The effort of bringing a witness to simply state the side effects of a medication or that an illness will worsen if untreated could be wasteful of the court's and the litigant's time. The cost of litigation in a trial is directly related to the time spent in a proceeding and the number of witnesses. If scientific facts were called into question, in the words of one treatise, "to permit verdicts based upon a jury's rejection of such a fact would be to tolerate irrational and unjust verdicts."[91] Also, in appellate cases, judicial notice may allow for a court to reach a determination on a matter without needing to remand a case back to the district court for a *Daubert* hearing. Sending a case back to obtain an expert for a small fact, one that may be generally agreed upon, is burdensome. In addition, misuse of judicial notice could be addressed via the procedural protections contained in Rule 201 itself or on appeal. Seeing these drawbacks of adding additional hurdles, questionable instances of judicial notice of scientific information may not seem worthy of deeper analysis.

This Note does not reject the validity of these points, but stresses the need to look closely at the process by which judicial notice is taken of scientific facts and seek out the challenges that appear. The benefits described above must be considered against the need to ensure reliability of the information admitted and the processes for its admission. These challenges are serious, and warrant further investigation. In Part IV.A, this Note discusses instances where Rule 201 is overextended with respect to scientific facts and can cite to unreliable sources, while Part IV.B discusses the possibility that facts could be address inconsistently, and something judicially noticed in one courtroom could be barred under *Daubert* in another.

A. MISAPPLICATION OF RULE 201

In a number of cases cited above, the judicial notice standard appears to have been overextended. One instance where someone could cast doubt on the fact noticed is in *Jacobs*, where the court judicially noticed an *older* version of the *DSM*.[92] The *DSM*'s con-

90. *See* 1 FISHMAN & MCKENNA, *supra* note 1, § 2:3 ("The reasons underlying judicial notice of adjudicative fact are efficiency and justice. To require a litigant to offer evidence of such a fact would be wasteful of time and resources.").

91. *Id*.

92. Jacobs v. N.C. Admin. Office of the Courts, 780 F.3d 562, 565 n.2 (4th Cir. 2015).

tents can change between editions, making it plausible that an outdated version of a treatise would be susceptible to critiques of the accuracy of its facts. The American Psychiatric Association itself notes that "[t]he previous version of *DSM* was completed nearly two decades ago; since that time, there has been a wealth of new research and knowledge about mental disorders."[93] The *DSM*'s approach to the disorder they took judicial notice of — social anxiety disorder — was changed in between *DSM-IV* and *DSM-5*.[94] While the court justifies taking judicial notice of *DSM-IV* because that is what an expert had used in their testimony, it is unclear why for purposes of judicial notice one would use outdated information.

More commonly, concerns arise as courts deem an increasing number of sources to be ones whose "accuracy cannot reasonably be questioned." This avenue of Rule 201(b) seems like a prime route to bring in scientific facts, given that an authoritative scientific treatise could easily be a source under this standard. However, in several cases there *was* some basis for one to question the source's accuracy, and thus taking judicial notice under Rule 201 was inappropriate.

For instance, the *DSM* itself cautions against overreliance on the text in a courtroom setting. *DSM-5* contains a "Cautionary Statement for Forensic Use of DSM-5," which reads:

> Although the DSM-5 diagnostic criteria and text are primarily designed to assist clinicians in conducting clinical assessment, case formulation, and treatment planning, DSM-5 is also used as a reference for the courts and attorneys in assessing the forensic consequences of mental disorders. As a result, it is important to note that the definition of mental disorder included in DSM-5 was developed to meet the needs of clinicians, public health professionals, and research investigators rather than all of the technical needs of the courts and legal professionals. It is also important to note that DSM-5 does not provide treatment guidelines for any given disorder.[95]

---

93. *See* AM. PSYCHIATRIC ASS'N, *supra* note 79.

94. *See* Heimberg et al., *Social Anxiety Disorder in DSM-5*, 31 DEPRESSION AND ANXIETY 472, 472 (2014).

95. *DSM-5*, *supra* note 79, Cautionary Statement for Forensic Use of DSM-5.

The *DSM* explains that it can help decisionmakers gain a better understanding of a disease and its attributes, but the Cautionary Note still maintains that "there is a risk that diagnostic information will be misused or misunderstood. These dangers arise because of the imperfect fit between the questions of ultimate concern to the law and the information contained in a clinical diagnosis."[96] These considerations would seem to make for powerful challenges to a court taking judicial notice of the *DSM*. Opinions invoking the *DSM* for judicial notice rarely mention this cautionary note; in one that does, *Aldrige v. Thaler*, it quotes the cautionary note in a footnote, and does not seem otherwise to integrate it into the judicial notice analysis.[97]

Similarly, other of the authorities relied upon in cases mentioned above stretch the meaning of "sources whose accuracy could not reasonably be questioned." The Maryland District Court's citation to a link from to Bing.com is notably insufficient; not only does the website it leads to no longer exist, causing one to doubt its authoritativeness, there is no evidence of where the information came from and how Bing.com results are viewed in the field.[98] A more credible and authoritative source should be necessary for judicial notice.[99]

---

96. *Id.*

97. Aldridge v. Thaler, No. H-05-608, 2010 WL 1050335, at *29 n.28 (S.D. Tex. March 17, 2010).

98. Hagerty v. Am. Airlines Long Term Disability Plan, No. C09-3299 BZ, 2010 WL 3463620, at *2 n.4 (N.D. Cal. Sept. 3 2010); Wimbush v. Matera, No. JKB-11-1916, 2012 WL 518657, at *5 n.18 (D. Md. Feb. 14, 2012) (the Bing.com search result).

99. One may argue that if the fact is not contestable, the source should not be important. *See* Cantrell, *supra* note 48 ("[A]s a general proposition, there is no value 'in complaining that someone found information on the Internet absent some persuasive evidence that the information itself is false or otherwise tainted,' she [Dori Ann Hanswirth, New York, cochair of the Section's Trial Practice Committee] notes."). However, this author disagrees with this suggestion. First, by the terms of Rule 201, if the source is questionable, judicial notice should only be taken if the fact is generally known. There is no mechanism under Rule 201 to bypass an inquiry into a source's reliability just because the fact appears sound if they are not generally known. Second, inconsistency would result if one avoids an inquiry into the source; judges may have different views of what information is clear and does not require a reliable source and what does. Third, by taking judicial notice, less procedure is available to litigants.

B. SURMOUNTING ONE STANDARD BUT NOT THE OTHER

1. *The Possibility of Clashing Standards*

The clearest ramification of an overexpansion of judicial notice in the courtroom arises in the extreme scenario in which a fact is judicially noticed in one court that another court would not deem admissible under the *Daubert* standard. A fact that was not sufficiently reliable would get admitted via another rule of evidence, and in a civil case, such a fact is now treated as "conclusive." Such a scenario may sound radical, but as judicial notice expands to cover more facts and sources, it may not be so far-fetched

An example of such a clash could be Drugs.com. In *Hagerty*, a California district court used this website as one of two sources from which it took judicial notice regarding a medication.[100] Imagine a case identical to *Hagerty*, but, rather than taking judicial notice, the judge decides to conduct a *Daubert* hearing on an expert witness' testimony based on this site. Should the judge decide that Drugs.com is not a sufficiently reliable source to be used by an expert to survive *Daubert*, he or she may choose to exclude said witness, despite the fact Drugs.com was judicially noticed in the *Hagerty* opinion. Such a possibility with Drugs.com is not so far-fetched. In *Glossip v. Gloss*, the Supreme Court was faced with a question of whether an expert's reliance on Drugs.com should have been approved under *Daubert*.[101] While the court decided that the district court did not abuse its discretion by allowing consideration of Drugs.com, its conclusion was driven by the fact that the expert used multiple sources and that the litigant had failed to identify errors on the site that would raise doubts as to its accuracy.[102] Should a litigant find errors on "drugs.com" and convince a judge that there were doubts as to the site's accuracy,[103] an inconsistent outcome would result.

---

100. *Hagerty*, 2010 WL 3463620, at *2 n.4.

101. Glossip v. Gloss, 135 S. Ct. 2726, 2744–5 (2015).

102. *Id.*

103. While this author cannot point to examples of errors on Drugs.com, the website itself acknowledges possible errors in its editorial policy: "Drugs.com acknowledges that errors and omissions in drug information may occasionally occur. As our mission is to provide the most accurate, up-to-date drug information on the Internet, we ask our visitors to alert us immediately to any errors in content, including incorrect or misleading statements. . . . We aim to correct site-content errors within 48 hours." *Editorial and Content Policy*, DRUGS.COM, https://www.drugs.com/support/editorial_policy.html [https://perma.cc/6MGV-ASWU] (last visited April 21, 2018).

Another example could occur with the *DSM*. For instance, in *Long*, the court took judicial notice of the *DSM*'s criteria for schizotypal personality disorder.[104] It did so on the ground that this information was contained in the *DSM*, which it deemed to be a sufficiently reliable source.[105] Alternatively, had the *DSM*'s criteria for schizotypal personality disorder been evaluated under *Daubert*, one could attempt to argue in a *Daubert* hearing that the *DSM* is insufficiently reliable. While the *DSM* has "general acceptance," a lawyer could challenge it on the other *Daubert* factors, questioning how testable schizotypal personality disorder is and the error rate for identification. If a judge were to be convinced by these arguments and were to decide that an expert seeking to testify on the basis of the *DSM* did not pass under *Daubert*, an incongruous result to *Long* would have occurred. Evidence barred under *Daubert* in one courtroom could nonetheless be admitted through judicial notice in another, creating a striking inconsistency depending on which judge one faces.

As judicial notice continues to expand, and as judges begin to take judicial notice of increasingly broader ranges of material, such circumstances could become increasingly common. If this begins to occur, significant problems will result.

2. *Consequences of a Potential Clash*

First and foremost, one worries about unpredictability. As judges approach judicial notice in a more flexible manner, it becomes more likely that they will have different approaches to what they will notice.[106] What if one judge finds a source to be particularly authoritative, while another sees greater doubts? As the standards for judicial notice and *Daubert* begin to blur into one another, even greater unpredictability is created. What *standard* gets applied could vary from judge to judge. Will a judge decide to judicially notice a fact or have it go through *Daubert*? It would be more difficult for litigants to plan their trial strategy with such uncertainty. In the extreme scenario, facts judicially noticed in one courtroom could fail under *Daubert* in

104. United States v. Long, 562 F.3d 325, 334 n.22 (5th Cir. 2009).
105. *Id.*
106. *See* Onstott, *supra* note 18, at 485 ("The lack of consistency and competency in judicially noticing scientific principles may consequently affect public trust of the legal profession.").

another, which would create quite uneven, and thus unfair, results.

Inconsistent opportunities for cross-examination would also emerge. By Rule 201(d), "[t]he court may take judicial notice at any stage of the proceeding." As a result, judicial notice can be taken after any opportunity for cross-examination. Parties would thus lose the chance to challenge potentially problematic scientific evidence. While the evidence might initially seem to be indisputable, a litigant might nonetheless try to raise doubts. One could easily imagine a lawyer using a *Daubert* hearing to mount a compelling argument against the *DSM* being used as a sufficiently authoritative source. However, such an opportunity is lost if judicial notice is taken, especially on appeal.[107]

Given the immense certainty that will be ascribed to a judicially noticed fact, the stakes in a civil case are particularly high. Unpredictability in civil cases is thus particularly problematic, as it could dramatically affect the litigants' strategy.[108] Judicial notice could easily play a role in a judge's evaluation of the sufficiency of facts in a motion to dismiss or a motion for summary judgment. For instance, under the recently heightened standards for surviving motions to dismiss after *Bell Atlantic Corp. v. Twombly* and *Ashcroft v. Iqbal*,[109] judicial notice could be used as a tool by both sides in a case. Judge Posner's use of facts from outside of the proceeding (in a very similar manner to judicial notice) in *Rowe* to uncover issues of material fact is a perfect example of how judicial notice could play a role in these instanc-

107. There could also be Confrontation Clause issues from the use of judicial notice. The Committee on the Judiciary mentioned the Sixth Amendment right to trial by jury when it amended Rule 201(g) to make it so a jury does not need to accept judicially noticed facts as conclusive in criminal cases. The Committee said that forcing a criminal jury to do this was "contrary to the spirit of the Sixth Amendment right to a jury trial." FED. R. EVID. 201 advisory committee's note to the 1974 enactment. While Rule 201(e) provides some opportunity to be heard when a court takes judicial notice, one wonders if an argument could be made that judicial notice of scientific facts takes away the opportunity for cross examination offered by *Daubert*. FED. R. EVID. 201(e).

108. *See supra* Part I (noting that Rule 201(f) requires that a jury in a civil trial be instructed to treat a judicially noticed fact as conclusive).

109. 2-12 JAMES WM. MOORE ET AL., MOORE'S FEDERAL PRACTICE –CIVIL § 12.34 (updated through March 2017); Bell Atl. Corp. v. Twombly, 550 U.S. 544 (2006); Ashcroft v. Iqbal, 556 U.S. 662 (2009); *see also* Kiernan, *supra* note 8, at 4 ("In the post-*Twombly* and post-*Iqbal* world, where the Supreme Court has freed the trial courts to conduct a more searching inquiry at the motion-to-dismiss stage, the early deployment of materials that properly are subject to judicial notice may give a defendant even firmer grounds for a dismissal.").

es.[110] Whether a judge applies a looser judicial notice standard or uses *Daubert* could have a tremendous impact on the outcome of a civil case.

V. SOLUTIONS

With the foregoing problems in mind, the question remains how best to address them. Scholars have proposed amendments or edits to Rule 201 to try to narrow its scope. For instance, in "Judicial Notice and the Law's 'Scientific' Search for Truth," Onstott proposes the creation of a new federal rule, Rule 201 ½, "specifically for scientific and technical judicial notice questions."[111] In effect, his proposal incorporates *Daubert*-like factors into the judicial notice inquiry.[112] He also suggests creating new officers of the court — "neutral scientific advisers" — to help judges evaluate scientific information.[113] However, while creating an entirely new rule or amending Rule 201 could be effective, these solutions may push too far and begin to invade the judge's gatekeeping function on these issues. These changes also may be unrealistic or difficult to pass.

A more functional solution would be to encourage judges to be more detailed in their reasoning for taking judicial notice. In many opinions, the decision to take judicial notice of a scientific fact occurs hastily, usually at most in a sentence or two. Footnotes like in *Gieck* — "The Court takes judicial notice that Unasyn and Flagyl are antibiotics"[114] — leave too much unknown and ambiguous. If judges were to lay out the steps they went through in taking take judicial notice, it would provide more clarity and an invaluable record to work from on an appeal. This

110. *See* Rowe v. Gibson, 798 F.3d 622, 629 (7th Cir. 2015) ("There is a high standard for taking judicial notice of a fact, and a low standard for allowing evidence to be presented in the conventional way, by testimony subject to cross-examination, but is there no room for anything in between? Must judges abjure visits to Internet web sites of premier hospitals and drug companies, not in order to take judicial notice but to assure the existence of a genuine issue of material fact that precludes summary judgment?").

111. *See* Onstott, *supra* note 18, at 487. Onstott's Rule 201 ½ would read: "Based on current scientific understanding, the principle clearly and convincingly appears reliable because of 1. observed consistency during rigorous testing, 2. acceptance as apparently reliable by nearly all people in that specific field, and 3. without significant objection by people in science or technology generally." *Id.*

112. *Id.*

113. *Id.*

114. *See* Gieck v. Levin, No. 05-CV-01974-H(RBB), 2010 WL 235084 n.1–14 (S.D. Cal. Jan. 21, 2010).

would also create a self-enforcing mechanism to be sure there is a clear basis for taking judicial notice. By having judges track their steps, it would be much harder to take shortcuts in making these conclusions.

Judges should apply *Daubert* considerations for the judicial notice of scientific facts. While the rule does not require it explicitly, the *Daubert* factors could arguably be part of a "reasonable dispute" inquiry. For instance, when a court evaluates whether to judicially notice a scientific fact, the judge could ask whether the source has been peer reviewed and inquire about its error rate. Litigants should press judges as to whether they would admit such material would be admissible under *Daubert.* Acknowledging *Daubert* in a judge's analysis will elucidate how these two standards operate alongside one another and would lead to greater consistency.

Citing precedents from other judges and circuits could also be helpful in ensuring consistency. Creating a clearer sense of what materials have been judicially noticed or deemed "well-known" in other places can help confirm that a certain source is indisputable. While one court can complete the heavy lifting of a *Daubert* hearing, future courts can draw on this work and ground the decision to take judicial notice in precedent.

Thus, the key is transparency in the decision-making process under Rule 201, and a greater awareness and recognition of how Rule 201 operates alongside Rule 702. A superb example of such an approach is seen in *United States v. Martinez*, an Eighth Circuit case decided not long after *Daubert*.[115] The court was evaluating the use of DNA evidence, and talked about judicial notice and *Daubert* hand in hand:

> We must now consider what effect *Daubert* has on the admissibility of DNA evidence. The Second Circuit recently examined the general theory underlying DNA fingerprinting as well as the specific techniques employed by the FBI, and concluded that in the future courts could take judicial notice of their reliability. *See United States v. Jakobetz*, 955 F.2d 786, 799–800 (2d Cir. 1992). Although *Jakobetz* was written before *Daubert,* the court employed a reliability approach to Rule 702 similar to that taken in *Daubert.* We conclude

115. U.S. v. Martinez, 3 F.3d 1191 (8th Cir. 1993).

> that the Second Circuit's conclusions as to the reliability of the general theory and techniques of DNA profiling are valid under the Supreme Court's holding in *Daubert*, and hold that in the future courts can take judicial notice of their reliability. If new techniques are offered, however, the district court must hold an *in limine* hearing under the *Daubert* standard as set out above.[116]

The court made several positive moves in this paragraph. First, the court did not consider judicial notice in isolation. Rather, the court showed awareness that these two standards had a role to play alongside one another. The court then seemed to refuse to take judicial notice unless the evidence would have survived *Daubert*, ensuring no potential clashes. Third, the court clearly outlined the steps in its analysis, and relied on precedents of what had been judicially noticed in other courts. Finally, the opinion was not over-expansive with its use of judicial notice, limiting itself to only judicially noticing what it felt was established, and leaving the door open for future *Daubert* inquiry on newer aspects.

VI. CONCLUSION

The concerns raised in this Note touch on broader themes related to how courts grapple with the evolution of legal doctrines. Judicial notice of scientific materials reflects the ongoing attempt to balance efficiency with consistency. While it can be a useful shortcut and could save significant time and costs, judicial notice presents a tradeoff. In return for these efficiency benefits, one must consider how far to go with such flexibility, and how much one can allow in on these grounds. Judicial notice of scientific materials is an example of such tradeoffs, as it saves time to avoid having a *Daubert* hearing, but risks allowing unreliable science into the courtroom or a judicial opinion.

A similar concern is the challenge of line-drawing. Dating back to *Frye*, courts have acknowledged the difficult issue of where to set boundaries for admissibility of scientific materials. As the D.C. Circuit explained in *Frye*, "[j]ust when a scientific principle or discovery crosses the line between the experimental

116. *Id.* at 1197.

and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized . . ."[117] Similar language is invoked in the Supreme Court's opinion in *Daubert*, where judicial notice could be applied to things so "firmly established" to have crossed the threshold into definite reliability.[118] There are difficult questions about where one standard should end and the next should begin. In this area, as with so many, such determinations are made after years of trial and error.

Most importantly, the judicial notice of scientific materials reflects the need to consider standards against one another, rather than in isolation. There is a strong temptation to study doctrinal threads separately, and look only at one rule or standard at a time. However, as the contours of one standard change, it is possible for standards to encroach upon each other. As this Note has described, in the context of scientific information, greater transparency is necessary to prevent the possibility of a clash between standards.

117. Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923).

118. Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 593 n.11 (1993) ("Indeed, theories that are so firmly established as to have attained the status of scientific law, such as the laws of thermodynamics, properly are subject to judicial notice under Fed. Rule Evid. 201.").