THE CONTINUING BATTLE OVER THE EPISTEMOLOGY OF LAY AND EXPERT TESTIMONY: REFLECTIONS ON LAY PROCESSES OF REASONING AND "SPECIALIZED [EXPERT] KNOWLEDGE"

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ABSTRACT

Today expert testimony is offered at the vast majority of trials. However, litigators realize that there are significant downsides to proffering their testimony as "expert" evidence rather than "lay" evidence. To begin with, the trial evidentiary standards are more demanding for expert testimony. While Rule 701 prescribes a lax standard for lay opinion testimony, Rules 702-06 impose much greater hurdles. Moreover, before trial, litigators have a powerful incentive to persuade the court that their proffered evidence is lay in character. Federal Rule of Civil Procedure 26 and Criminal Procedure 16 require extensive disclosures for proposed expert testimony. To circumvent these evidentiary and disclosure standards, litigators can be tempted to disguise expert testimony as lay evidence.

This article identifies two arguments to reinforce Rule 701(c)'s prohibition of basing lay opinion testimony on "specialized knowledge." When lay or expert witnesses opine, they often use a process of reasoning comparing a case-specific fact to a generalization. Under Rule 701, in the case of lay opinion, the witness must have personal knowledge of the case-specific fact and develop their generalization exclusively or primarily through personal experience, as when a witness familiar with the alleged author of a questioned document possesses a general sense or impression of the author's handwriting style. If the witness lacks personal knowledge of the case-specific fact or relies on sources such as texts as the source of his or her generalization, the judge should refuse to apply Rule 701 and demand that the witness's proponent run the gauntlet of Rules 702-06 and Daubert.

There is an alternative ground for refusing to allow the proponent to rely on Rule 701. The witness's testimony can run afoul of Rule 701(c) if in essence the witness is attempting to convey "specialized knowledge" to the factfinder. A split of authority has emerged. Some courts take the position that a witness's knowledge is not "specialized knowledge" if in a general sense the witness has acquired the information

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by personal experience. For example, one court went to the length of holding that a police officer may give "lay" testimony about the use of a Cellebrite device to extract data from a cellphone because the officer had personal knowledge that he connected the device to the phone and read the data displayed in the device's report. Other courts, including the Ninth Circuit in affirming Elizabeth Holmes' conviction for the Theranos fraud, take a different approach. Rather than focusing on the manner in which the witness acquires the information, these courts consider two factors relevant to the nature of the information: Is the information shared by a large percentage of the adult lay population, and is the information comprehensible to an average layperson of common knowledge? This article argues that Holmes was correctly decided and, more broadly, that the Holmes court's approach is the more sensible, purposive interpretation of "specialized knowledge" in Rules 701(c) and 702(a).

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> In [*State v.*] *Brown*, [836 S.W.2d 530, 549 (Tenn. 1992)], the court declared that the distinction between lay and expert witness testimony is that lay testimony 'results from a process of reasoning familiar in everyday life,' while expert testimony 'results from a process of reasoning that can be mastered only by specialists in the field.[1]

> [T]here is no 'on-the-job' exception to [Federal] Rule [of Evidence] 702 [governing expert testimony].[2]

1. FED. R. EVID. 701 advisory committee's note to 2000 amendment.
2. United States v. Holmes, 129 F.4th 636, 650 (9th Cir. 2025).

I. INTRODUCTION

For months the prosecution of Elizabeth Holmes for her alleged fraud at the Theranos blood-testing technology firm was front page news.[3] In federal district court Ms. Holmes's prosecution resulted in a conviction, and in early 2025, the United States Court of Appeals for the Ninth Circuit affirmed her conviction.[4] Like the earlier steps in the litigation, the lower court conviction and appellate court affirmance received national attention.[5] As the media reported, at the appellate level the government "won the war" and secured the conviction that it sought.[6] However, what received little or no attention was the fact that at the appellate level, the defense had won a major evidentiary battle even though that victory did not result in a reversal of the lower court conviction.

At trial, the prosecution had called several former Theranos laboratory directors whom the government had not designated as expert witnesses.[7] The government presented their testimony at trial without laying an expert testimony foundation.[8] At both the trial court and appellate levels, the defense objected that the trial judge should not have admitted the testimony without applying Federal Rule of Evidence 702's requirements for expert testimony.[9] The trial judge denied the objection.[10] The trial judge reasoned that the witnesses' testimony qualified for admission under Federal Rule of Evidence 701 that controls lay opinion testimony:

> If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is:
>
> (a) rationally based on the witness's perception;

3. *See, e.g.*, Erin Griffith & Erin Woo, *32 Witnesses, at Least 4 Shushes: The Elizabeth Holmes Trial by the Numbers*, N.Y. TIMES (Dec. 31, 2021), https://www.nytimes.com/2021/12/31/business/elizabeth-holmes-trial-numbers.html.

4. *Holmes*, 129 F.4th at 648, 667.

5. *See, e.g.*, Sara Randazzo & Heather Somerville, *Elizabeth Holmes Found Guilty: Live Updates*, WALL ST. J. (Feb. 25, 2022, at 19:41 ET), https://www.wsj.com/livecoverage/elizabeth-holmes-trial-theranos [https://perma.cc/T35U-BV33]; Blake Montgomery, *US Court Upholds Theranos Founder Elizabeth Holmes's Conviction*, THE GUARDIAN, (Feb. 24, 2025, at 15:33 EST), https://www.theguardian.com/technology/2025/feb/24/elizabeth-holmes-theranos-conviction [https://perma.cc/L9VH-CFR3].

6. *See* Montgomery, *supra* note 5.

7. *See Holmes*, 129 F.4th at 649–55.

8. *See id.*

9. *See id.*

10. *See id.*

> (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and
>
> (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.[11]

However, on appeal the Ninth Circuit accepted the defense's argument.[12] The appellate court did not reverse; the court upheld the conviction because the court characterized the trial judge's rulings in question as harmless errors.[13] Nevertheless, on the merits of the evidentiary issue, the defense persuaded the Ninth Circuit that in order to introduce the testimony, the prosecution ought to have run the gauntlet of Rule 702:[14]

> 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 the proponent demonstrates to the court that it is more likely than not that:
>
> (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
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> (d) the expert's opinion reflects a reliable application of the principles and methods to the facts of the case.[15]

In its landmark 1993 expert testimony decision construing Rule 702, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, the Supreme Court approvingly quoted Judge Jack B. Weinstein's observation that jurors often find such testimony "powerful."[16] Litigators—including the *Holmes* prosecutors—obviously agree because they offer such testimony so often. In a Rand Corporation study in the late 1980s, researchers studied the incidence of expert testimony in California Superior Court trials.[17] The researchers found that expert witnesses appeared at 86 percent

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11. FED. R. EVID. 701; *see Holmes*, 129 F.4th at 649.
12. *See Holmes*, 129 F.4th at 649–55.
13. *See id.*
14. *See id.*
15. FED. R. EVID. 702.
16. 509 U.S. 579, 595 (1993) (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991)).
17. Samuel R. Gross, *Expert Evidence*, 1991 WIS. L. REV. 1113, 1119, 1120 n.19 (1991).

of the trials and that on average, there were 3.3 experts per trial.[18] A later study found that the average had risen to 4.3 experts per trial.[19] Those numbers led one commentator to claim that the American trial is becoming trial by expert.[20]

Although the typical litigator believes expert testimony can be highly persuasive, they also appreciate that there are significant downsides to proffering evidence as "expert" testimony. To begin with, during the pretrial phase there are special disclosure requirements for expert testimony. Federal Rule of Civil Procedure 26 requires such disclosures as part of mandatory prediscovery disclosure,[21] and Federal Rule of Criminal Procedure 16 requires similar disclosures at the request of the defense.[22] These requirements can significantly increase the "up-front" cost of the litigation for the parties, and noncompliance with the requirements can trigger the drastic sanction of the complete exclusion of the testimony.[23] Moreover, as construed in *Daubert*, Rule 702 casts the trial judge in an important screening or "gatekeeping" role[24] to ensure that any expert testimony admitted is "reliable."[25] It speaks volumes that when the dust settled in all three of the cases in the so-called *Daubert* trilogy, including: the seminal *Daubert* decision, the 1997 *Joiner* decision,[26] and the 1999 *Kumho* decision;[27] the proffered expert testimony was ultimately excluded. In a 2000 decision, reflecting on this line of authority, the Court declared that *Daubert* had established an "exacting" standard of reliability.[28] In order to circumvent these pretrial and trial requirements, the proponent of testimony has an understandable incentive to label their testimony "lay" rather than "expert."

Illicit attempts to evade the pretrial and trial requirements for expert testimony became commonplace after the enactment of the Federal Rules in

18. *Id.* at 1119.
19. RONALD J. ALLEN ET AL., EVIDENCE: TEXT, PROBLEMS, AND CASES 649 (5th ed. 2011).
20. William T. Pizzi, *Expert Testimony in the US*, 145 NEW L.J. 82 (1995).
21. FED. R. CIV. P. 26(a)(2).
22. FED. R. CRIM. P. 16(a)(1)(G).
23. FED. R. CIV. P. 26 advisory committee's notes to 1983 amendment; FED. R. CIV. P. 37(c)(1).
24. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 597 (1993).
25. *Id.*
26. Gen. Elec. Co. v. Joiner, 522 U.S. 136 (1997).
27. Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999).
28. Weisgram v. Marley Co., 528 U.S. 440, 455 (2000).

1975.[29] The attempts "reached such epidemic proportions"[30] that Federal Rule of Evidence 701 was amended in 2000. The original version of Rule 701 did not include subdivision (c), the provision that testimony may not be admitted as lay evidence under Rule 701 if the testimony is "based on scientific, technical, or other 'specialized knowledge' within the scope of Fed.R.Evid. 702."[31] The expression, "scientific, technical, or other specialized knowledge," in Rule 701 also appears in the text of Rule 702.[32] The Advisory Committee Note accompanying the 2000 amendment to Rule 701 expressly states:

> Rule 701 has been amended to eliminate the risk that the reliability requirements set forth in Rule 702 will be evaded through the simple expedient of proffering an expert in lay witness clothing . . . . By channeling testimony that is actually expert testimony to Rule 702, the amendment also ensures that a party will not evade the expert witness disclosure requirements set forth in Fed.R.Civ.P. 26 and Fed.R.Crim P. 16 by simply calling an expert witness in the guise of a layperson.[33]

Although the Advisory Committee Note forcefully expressed the intent to end litigants' efforts to smuggle in expert testimony disguised as lay evidence, the *Holmes* case indicates that the drafters' intent has not been fully realized.[34] Indeed, the Ninth Circuit accused the government of attempting to "evade" Rule 702 "by labeling" the laboratory directors lay witnesses.[35] The thesis of this Article is that the Ninth Circuit reached the correct result in *Holmes*. Simply stated, the Ninth Circuit adopted the correct approach to defining "specialized knowledge."

To develop this thesis, the Article proceeds in three steps. Part II of the Article elaborates on litigators' practical incentive to convince a court to characterize their proffered evidence as lay testimony rather than expert.[36] Parts III and IV then identify two different grounds on which a trial judge may reject a

29. Michael H. Graham, *Lay Opinion Testimony and Expert Opinion Testimony Differentiated; "Specific Knowledge" Expert Witness Opinion Testimony; Proposed Amendments to Fed.R.Crim.Proc. 16 (a)(1)(G) and Fed.R.Evid. 701 and 702*, 52 CRIM. L. BULL. 1108 (2016) ("[P]rosecutors frequently have attempted to avoid disclosure requirements and incidentally the reliability requirements inherent in expert witness testimony by proffering police officer expert testimony as lay witness testimony").

30. *Id.* ("This illicit practice, also present in civil cases, had reached such epidemic proportions that in the year 2000, Fed.R.Evid. 701 was amended . . . .").

31. *Id.*

32. FED. R. EVID. 701(c), 702(a).

33. FED. R. EVID. 701 advisory committee's notes to 2000 amendment.

34. *See* United States v. Holmes, 129 F.4th 636, 649–50 (9th Cir. 2025).

35. *See id.*

36. *See infra* Part II.

litigator's spurious contention that the testimony in question is lay in nature.[37] Part III develops the argument that there is an insufficient foundation under Rule 701 to permit the expert to form a proffered opinion by relying on a lay process of reasoning.[38] Part IV identifies an alternative ground for rejecting the litigator's effort even when the witness does not contemplate expressly testifying to an "opinion."[39] Part IV identifies the argument that the information the witness proposes testifying to amounts to "specialized knowledge" within the intendment of that expression in Rules 701(c) and 702(a).[40] Both arguments can assist the trial judge in determining whether proffered evidence is "expert" testimony that must satisfy Rule 702. Hopefully, by laying out both arguments, this Article will help judges maintain the distinction between lay and expert testimony and more fully achieve the intent of the 2000 amendment to Rule 701.

II. LITIGATORS' PRACTICAL INCENTIVES TO CIRCUMVENT THE EXPERT TESTIMONY RULES: THE DISTINCTIVE TREATMENT OF LAY AND EXPERT TESTIMONY DURING THE PRETRIAL PHASE AND AT TRIAL

A. *Trial*

1. *Rule 602*

The common law developed a series of preferential exclusionary rules to maximize the reliability of the evidence submitted to the trier of fact.[41] By way of example, the common law preferred that witnesses appear in person to testify in the hearing of the jury and subject themselves to cross-examination; the common law implemented this preference by devising the hearsay rule restricting the use of the out-of-court statements of potential witnesses.[42] Likewise, the common law preferred that parties produce original writings in court for the trier's inspection; therefore, the common law adopted the best evidence rule limiting the use of secondary evidence of a document's contents.[43] Finally, the common law preferred that witnesses testify to facts rather than opinions to allow the trier to decide independently what inferences, if any, to draw from the facts.[44] The model

37. *See infra* Parts III, IV.

38. *See infra* Part III.

39. *See infra* Part IV.

40. *See infra* Part IV; FED. R. EVID. 701(c), 702(a).

41. RONALD CARLSON ET AL., EVIDENCE: TEACHING MATERIALS FOR AN AGE OF SCIENCE AND STATUTES 507 (9th ed. 2023).

42. *Id.*

43. *Id.*

44. *Id.*

underlying this preference is that the witness adequately describes the fact and the trier then makes the decision as to the inferences, if any, supported by the facts.[45] To enforce that preference, the common law prescribed limitations on opinion testimony by both lay and expert witnesses.[46] None of these preferential rules are categorical in nature; the rules yield when the proffered evidence is reliable and there is some necessity for resorting to the non-preferred type of evidence.[47] For the most part, the Federal Rules of Evidence incorporate this scheme.

The starting point for analyzing the Federal Rules' restrictions on opinion testimony is Rule 602 governing factual testimony:

> A witness may testify to a matter only if evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter. Evidence to prove personal knowledge may consist of the witness's own testimony. This rule does not apply to a witness's expert testimony under Rule 703.[48]

In the words of the Advisory Committee Note, the requirement for a showing of a factual witness's personal or firsthand knowledge is "a 'most pervasive manifestation' of the common law insistence upon 'the most reliable sources of information.'"[49] If the litigant is content to have a witness testify to a factual observation, the only foundation needed is Rule 602: The witness testifies that they had an opportunity to observe a fact or event, actually observed, and can presently recall the observation.[50]

2. *Rule 701*

However, suppose the proponent is not content with the witness's mere recitation of perceived fact. Can the proponent take the next step and elicit the witness's opinion about the significance of the fact? As previously stated, preferential rules such as the opinion doctrine yield to a showing of reliability and some element of necessity. Rule 701 is illustrative.[51] Rule 701(a) provides that to

45. *Id.*

46. *Id.*

47. *Id.*

48. FED. R. EVID. 602. The last sentence refers to Rule 703 of the Federal Rules of Evidence. In some instances, Rule 703 allows experts to base their opinions on out-of-court reports about case-specific facts. *See* FED. R. EVID. 703 advisory committee's note to 1972 proposed rules.

49. FED. R. EVID. 602 advisory committee's note to 1972 proposed rules (citation omitted).

50. *See id.*

51. *See* FED. R. EVID. 701.

be admissible, a lay opinion must be "rationally based on the witness's perception."[52] A Rule 701(a) showing is a circumstantial guarantee of the reliability of the opinion.[53] For its part, Rule 701(b) supplies the element of necessity.[54] As previously stated, under the common law model at the first step, the witness provides a full description of the fact or event; and at the second step, the trier decides which inferences to draw.[55] However, suppose that the model breaks down at step one because the witness cannot completely articulate their sensory data to put the trier in as good a position to decide whether to draw an inference. The Advisory Committee Note to Rule 701 explains that a lay opinion is "helpful" under Rule 701(b) when the witness will have "difficulty in expressing themselves in language which is not that of an opinion or conclusion."[56]

Consider two categories of lay opinions that are routinely admitted under Rule 701. The first category includes "short-hand rendition" or "collective fact" lay opinions.[57] Opinions on topics such as the speed of a passing car fall into this category. It is assumed that most American adults have had enough experience driving cars, riding in cars, and observing cars to form reliable estimates of the speed of nearby automobiles. However, it would be impossible for the witness to articulate all the prior observations underlying their estimate or impression; as a practical matter, the witness cannot verbalize every detail of either the observation of the passing car or the memories of all the prior driving experiences they compared the passing car to.[58] The stark choice is barring the witness's testimony or permitting them to testify in opinionated terms. Sensibly, Rule 701 selects the second opinion.[59]

The second category includes "skilled lay observer" lay opinions.[60] This category includes opinions on topics such as the identification of another person's handwriting style. If the witness has had repeated opportunities to observe another person's handwriting under trustworthy circumstances, the witness probably possesses the ability to reliably determine whether a document is written in that person's handwriting style. The witness might have frequently seen that person

52. FED. R. EVID. 701(a).

53. *See id.*

54. *See* FED. R. EVID. 701(b).

55. *See* CARLSON ET AL., *supra* note 41 and accompanying text.

56. FED. R. EVID. 701 advisory committee's note to 1972 proposed rules.

57. 1 MCCORMICK ON EVIDENCE § 11, at 88 (9th ed. 2025).

58. *See* Graham, *supra* note 29 (noting the witness cannot place the jury "into a position of equal vantage . . . .") (citation omitted)).

59. *See* FED. R. EVID. 701.

60. MCCORMICK, *supra* note 57, at 89–90.

write or repeatedly exchanged correspondence with that person. Again, the witness cannot verbalize all the factual data they are relying on. It is the rare case in which the witness has retained all the prior examples of the person's handwriting, and it would be virtually impossible for the witness to articulate all the details of the prior documents that lead the witness to conclude that the person authored the questioned document. Once again, the choice is denying the jury the benefit of the witness's testimony or admitting the testimony even though it is couched as an opinion. Here too Rule 701 makes the defensible choice to deem the opinion "helpful" and admissible.[61]

3. *Rules 702–706*

Rule 701 admits lay opinion when the common law model breaks down at step one: The witness cannot verbalize all the factual data to put the trier in as good a position as the witness was at the time of the prior observation. The model can also break down at step two: Even if the trier receives all the relevant factual data, the trier may be unable to decide what inferences to draw. Suppose that in order to establish a decedent's time of death (TOD), the proponent wants to elicit testimony regarding:

> a cadaver's postmortem lividity. The proponent might be able to show the jury a large set of high quality, color photographs of the body from multiple perspectives. Yet, the jurors lack the knowledge to make heads or tails of the significance of the discoloration in the lower regions of the body where the blood pools under the force of gravity. The jurors need the pathologist's expert insight to appreciate that the extent of the livor mortis can serve as a basis for estimating the decedent's time of death . . . .[62]

When the proponent seeks to elicit a lay opinion, Rules 602 and 701 are the only rules that the proponent must satisfy.[63] In sharp contrast, when the proponent desires to elicit an expert opinion, a much larger set of restrictions—Rules 702–706—come into play.[64] The expert often derives the opinion by syllogistic reasoning.[65] Thus, a psychiatrist might testify along these lines:

> Major premise: If the patient displays symptoms A and B, the patient is probably suffering from mental illness C.

61. *See* FED. R. EVID. 701.

62. CARLSON ET AL., *supra* note 41, at 699.

63. *See* FED. R. EVID. 602, 701.

64. *See* FED. R. EVID. 702–706.

65. Edward J. Imwinkelried, *The 'Bases' of Expert Testimony: The Syllogistic Structure of Scientific Testimony*, 67 N.C. L. REV. 1, 21 (1988).

Minor premise: The patient's case history includes symptoms A and B.

Conclusion: The patient is probably suffering from mental illness C.[66]

Daubert and Rule 702(c) require the proponent to establish the reliability of the expert's major premise, that is, the general methodology, technique, or theory that the expert is relying on.[67] Rule 703 provides that the expert may fill out the minor premise with case-specific information from one of three types of reliable sources: the witness's personal knowledge, assumptions in hypothetical questions if other witnesses have supplied admissible testimony of the assumed fact, or third-party reports when it is the customary, reasonable practice of the members of the witness's specialty to consider such data.[68] Thus, as the Advisory Committee Note to Rule 703 explains, a testifying doctor could rely on: personal observation of a patient's symptom, an ambulance attendant's prior testimony about the symptom, or a nurse's report of the symptom to the doctor.[69] Rule 704 addresses the wording of the expert's conclusion.[70] Notably, in criminal cases, Rule 704(b) restricts expert testimony about a defendant's state of mind.[71]

The upshot is that when the proponent seeks to introduce evidence as an expert opinion rather than a lay opinion, the proponent must ordinarily lay a far more extensive foundation to satisfy Rules 702–704 than to comply with Rules 602 and 701.[72] Moreover, the proponent should assume that the trial judge has read *Daubert*, including the Court's endorsement of Judge Weinstein's view that the judge "exercises more control over experts than over lay witnesses" because expert

66. CARLSON ET AL., *supra* note 41, at 700.

67. FED. R. EVID. 702(c); Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 594–95 (1993).

68. *See* FED. R. EVID. 703 advisory committee's note to 1972 proposed rules.

69. *See id.*

70. *See* FED. R. EVID. 704.

71. FED. R. EVID. 704(b) ("In a criminal case, an expert witness must not state an opinion about whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense. Those matters are for the trier of fact alone."). The Supreme Court recently construed Rule 704(b). *See* Diaz v. United States, 602 U.S. 526, 531–38 (2024) (discussing Rule 704(b) and its departure from "ultimate issue" rule that many states followed previously).

Although they are not directly relevant to the topic of this article, Rules 705 and 706 are also part of the legislative scheme governing expert testimony. *See* FED. R. EVID. 705, 706. Rule 705 addresses the question of whether the proponent must elicit the witness's description of the underlying facts and data before inviting the witness's opinion. FED. R. EVID. 705. Rule 706 deals with court-appointed experts. FED. R. EVID. 706.

72. *See* FED. R. EVID. 602, 701–704.

testimony can be "quite misleading because of the difficulty in evaluating it."[73] The proponent realizes that if the judge classifies the testimony as expert, the judge may subject the testimony to rigorous scrutiny.

B. *Pretrial*

Precisely because expert testimony can be difficult to evaluate, the rules for both Civil and Criminal procedure provide for extensive pretrial disclosures when the proponent contemplates calling an expert witness. In the case of a lay witness, the only items that the witness's proponent may have to disclose early on are the witness's name, address, phone number, and the general subject of their testimony.[74] In the case of expert witnesses, the opponent is entitled to much more.

1. *Federal Rule of Civil Procedure 26*

Rule 26 recognizes two types of experts, and the proponent's disclosure obligations vary with the type of expert.[75] The expert disclosure obligations are part of Rule 26's mandatory prediscovery disclosure duties that automatically come into play as soon as suit is filed; there is no need for the opposing party to proactively request discovery of this material.[76]

Rule 26(a)(2)(B) governs when the expert is "one retained or specially employed to provide expert testimony in the case or one whose duties as the party's employee regularly involve giving expert testimony."[77] In other words, the provision applies to outside experts on regular retainer or hired specifically for the litigation or inside expert employees whose duties "regularly involve giving expert testimony" on behalf of their employer.[78] When the expert falls into this category, the expert must personally prepare and submit a comprehensive, six-part report to the opposing litigant containing:

> (i) a complete statement of all opinions the witness will express and the basis and reasons for them;

73. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 595 (1993) (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991)).

74. Graham, *supra* note 29 ("[W]ith respect to a lay witness, including those expected to provide opinion testimony, Fed.R.Civ.Proc. 26(a)(1)(A) requires initial disclosure of the name, address, and phone number—along with the subject of such testimony in the case in chief.").

75. *See* FED. R. CIV. P. 26.

76. FED. R. CIV. P. 26(a)(1)(A) ("without awaiting a discovery request").

77. FED. R. CIV. P. 26(a)(2)(B).

78. *See id.*

> (ii) the facts or data considered by the witness in forming them;
>
> (iii) any exhibits that will be used to summarize or support them;
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> (iv) the witness's qualifications, including a list of all publications authored in the previous 10 years;
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> (v) a list of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition; and
>
> (vi) a statement of the compensation to be paid for the study and testimony in the case.[79]

The second category includes experts whom the proponent intends to call but who do not fall within the prior category. The classic example is a treating physician.[80] The physician might be on the staff of the hospital where the patient was treated, but the hospital is not a party to the lawsuit.[81] The independent physician is not on regular retainer with either litigant, neither litigant has specially hired the physician, and their regular duties are treating patients, not supplying testimony.[82] By virtue of a 2010 amendment, Rule 26(a)(2)(C) was added.[83] Under that amendment, if the expert falls into this category, the proponent must submit a report; but it is a summary or standard, two-part report of:

> (i) the subject matter on which the witness is expected to present evidence under Federal Rule of Evidence 702, 703, or 705; and
>
> (ii) a summary of the facts and opinions to which the witness is expected to testify.[84]

2. *Federal Rule of Criminal Procedure 16*

Federal Rule of Criminal Procedure 16(a)(1)(G) entitles a defendant to extensive pretrial discovery of the prosecution's expert testimony.[85] As in the case of the first category of experts under Civil Rule 26, the proponent, in this instance, the prosecution, must submit a report describing the witness's opinions, the bases

79. FED. R. CIV. P. 26(a)(2)(B)(i)–(vi).

80. *See, e.g.*, EDWARD J. IMWINKELRIED & THEODORE Y. BLUMOFF, PRETRIAL DISCOVERY: STRATEGY AND TACTICS § 5:4 (2024–2025 ed.).

81. *See id.*

82. *See id.*

83. FED. R. CIV. P. 26(a)(2)(C) advisory committee's note to 2010 amendment.

84. FED. R. CIV. P. 26(a)(2)(C); *see also* IMWINKELRIED & BLUMOFF, *supra* note 80, § 5:4.

85. *See* FED. R. CRIM. P. 16(a)(1)(G).

and reasons therefor, and the witness's qualifications.[86] The major difference is that unlike Rule 26, Rule 16 does not create a mandatory prediscovery disclosure scheme.[87] In that respect, Rule 16 is far more traditional.[88] Consistently with the adversary ethos, the prosecution's obligation to disclose arises only "[a]t the defendant's request."[89]

The bottom line is that whether the proponent's expert testimony disclosure obligations arise under the Federal Rules of Civil Procedure or those for Criminal Procedure, they are far more extensive—and expensive and time-consuming—than the obligations for lay testimony.[90] The upshot is that like the differing trial evidentiary rules, the differing discovery rules for lay and expert testimony give the proponent a powerful motivation to convince the judge that the proffered testimony falls on the lay testimony side of the divide.[91] As previously stated, that motivation led to numerous attempts to circumvent the expert rules and the eventual adoption of Rule 701(c) in 2000.[92] Yet, if the history of the *Holmes* case is any indication, the 2000 amendment has not completely stifled those attempts.[93] Such attempts still occur on a regular basis.[94] Parts III and IV of this Article set out two different grounds on which a trial judge can block such an attempt and ensure that expert testimony receives the scrutiny that it deserves under *Daubert* and Rules 702–706.[95]

III. The First Ground for Blocking an Improper Attempt to

86. *See* Fed. R. Crim. P. 16(a)(1)(G)(iii).

87. *Contrast* Fed. R. Civ. P. 26 (requiring a party to always disclose the identity of an expert they may use at trial), *with* Fed. R. Crim. P. 16 (requiring the prosecution to make expert disclosures only if the defendant makes a request).

88. *See* Fed. R. Crim. P. 16.

89. Fed. R. Crim. P. 16(a)(1)(G)(i).

90. *See* Fed. R. Civ. P. 26; Fed. R. Crim. P. 16.

91. *See* Edward J. Imwinkelried, *Distinguishing Lay from Expert Opinion: The Need to Focus on the Epistemological Differences Between the Reasoning Processes Used by Lay and Expert Witnesses*, 68 SMU L. Rev. 73, 93 (2015) [hereinafter Imwinkelried, *Epistemological Differences*].

92. *See* Graham, *supra* note 29 and accompanying text.

93. *See* United States v. Holmes, 129 F.4th 636, 649–50 (9th Cir. 2025); *see also* Graham, *supra* note 29 (depicting that while the Advisory Committee undoubtedly hoped that the 2000 amendment would end the practice of attempting to introduce expert testimony under the guise of lay opinion, that has not been the case).

94. *See, e.g.*, Resh, Inc. v. Conrad, No. 22-cv-01427-EJD, 2025 WL 770363, at *4–5 (N.D. Cal. Mar. 11, 2025) (striking testimony of a lay witness who testified on issues that required specialized knowledge).

95. *See infra* Parts III, IV.

CIRCUMVENT THE EXPERT TESTIMONY RULES: UNDER RULE 701, THE WITNESS DOES NOT HAVE ADEQUATE BASES FOR FORMING AN OPINION BY A LAY PROCESS OF REASONING

As noted above, in 2000 Rule 701 was amended to curb the abuse of mislabeling expert testimony as lay testimony in order to evade the pretrial disclosure requirements for expert testimony and the stricter trial evidentiary standards for expert testimony.[96] The accompanying Advisory Committee Note offers some guidance as to the dividing line between lay and expert testimony:

> The amendment incorporates the distinctions set forth in *State v. Brown,* 836 S.W.2d 530, 549 ([Tenn.] 1992), a case involving former Tennessee Rule of Evidence 701, a rule that precluded lay witness testimony based on "special knowledge." In *Brown,* the court declared that the distinction between lay and expert witness testimony is that lay testimony "results from a process of reasoning familiar in everyday life," while expert testimony "results from a process of reasoning which can be mastered only by specialists in the field." The court in *Brown* noted that a lay witness with experience could testify that a substance appeared to be blood, but that a witness would have to qualify as an expert before he could testify that bruising around the eyes is indicative of skull trauma. That is the kind of distinction made by the amendment to this Rule.[97]

The focus on processes of reasoning is well-taken. In the final analysis, the witness's reason is often reducible to a comparison; more specifically, to form an opinion about the significance of a fact in the case, a lay or expert witness usually relies on a comparison between the case-specific fact and some generalization.[98] One term of the comparison is the case-specific fact.[99] The other term of the comparison is the generalization[100] that will be used to illuminate the significance of the case-specific fact. A layperson might compare the signature on a questioned document to their recollection of a good friend's handwriting style. A psychiatrist could compare a patient's case history to a set of diagnostic criteria contained in the American Psychiatric Association's official diagnostic text, the Diagnostic and Statistical Manual of Mental Disorders (DSM-V-TR).[101]

96. *See* FED. R. EVID. 701 advisory committee's note to 2000 amendment.

97. *Id.*

98. MCCORMICK, *supra* note 56, at 102–03; *see also* Imwinkelried, *Epistemological Differences*, *supra* note 91, at 86–87.

99. MCCORMICK, *supra* note 57, at 104–05.

100. *Id.* at 102–03.

101. DIAGNOSTIC AND STATISTICAL MANUAL V-TR (American Psychiatric Association, eds., 5th ed. rev. 2022).

For both terms of the comparison, the standards announced by Rule 701 differ fundamentally from those stated in Rules 702–706.[102] When the proponent cannot satisfy the Rule 701 standards for one or both terms of the comparison, the proponent may not introduce the opinion as lay evidence.[103] If the proponent wants to introduce the opinion, they will have to comply with the standards for expert testimony.[104]

A. *Lay Standards for the Two Terms of the Comparison*

Consider collective fact or shorthand rendition lay opinions.[105] As noted, this doctrine allows laypersons to opine on the speed of passing vehicles.[106]

1. *The First Term*

In this example, one term of the comparison is the observation of the vehicle in question. Rule 701(a) governs and requires that the witness on the stand has personally observed the vehicle.[107]

2. *The Second Term*

The second term of the comparison is a generalized ability to estimate vehicle speed. For the inference to qualify as lay opinion under Rule 701, the generalization must be developed "exclusively or primarily through first-hand experience such as personal observation of other examples" of moving vehicles.[108] The same would be true for skilled lay observer opinion testimony that a questioned document was written in the handwriting style of a particular person. Here, the generalization compares an impression of the person's writing style. The Advisory Committee Note to Federal Rule of Evidence 901(b)(2) indicates the generalization would need to rest on personal knowledge gained through, for example, "seeing [the supposed author] write, [or] by exchanging correspondence" with that person.[109] The witness's inability to verbalize all that data supplies the relative necessity for admitting testimony stated in opinionated, rather than strictly factual, terms.

102. *Contrast* FED. R. EVID. 701, *with* FED. R. EVID. 702–706.
103. *See* FED. R. EVID. 701.
104. *See id.*
105. *See supra* Part II.A.
106. *See supra* Part II.A.
107. MCCORMICK, *supra* note 57, at 104.
108. *Id.* at 103.
109. FED. R. EVID. 901(b)(2) advisory committee's note to 1972 proposed rules.

In the words of Rule 701(b), such opinions can be "helpful" to the trier of fact.[110] The opinions do more than convey relevant information to the jury. More importantly, since the jurors themselves have formed similar generalizations on commonplace topics such as vehicle speed and handwriting style, the jury is in an excellent position to intelligently evaluate the opinion and the surrounding circumstances to determine the weight to ascribe to the opinion.

B. *Expert Standards for the Two Terms of the Comparison*

The pertinent standards for the two terms of an expert comparison under Federal Rules 702 and 703 are radically different.[111]

1. *The First Term*

To begin, consider the first term: the case-specific fact that the expert is evaluating. Rule 703 controls.[112] Under Rule 703, as the source of case-specific information, an expert may consider (1) facts that the witness has "personally observed;" (2) facts that the witness "has been made aware of" at trial as when earlier witnesses have testified to a fact and, in a later hypothetical question, the attorney invites the expert to assume the truth of the fact that the prior witnesses testified to; and (3) out-of-court statements or secondhand reports.[113] An expert may even rely on a report that would not be independently inadmissible over a hearsay objection if, in the words of Rule 703, the report is one of "those kinds of facts or data" that "experts in the particular field would reasonably rely on . . . in forming an opinion on the subject."[114]

If the testimony is proffered as a lay opinion, the witness's proponent could rely on only the first option, that is, the witness's firsthand knowledge such as a physician's personal observation of the victim's wound.[115] However, when the testimony is proffered as an expert opinion, the proponent has two other options.[116] The wound could be an assumption in a hypothetical question posed to an expert after other witnesses such as ambulance attendants have furnished admissible evidence of the wound.[117] Alternatively, the physician could rely on a nurse's out-

110. FED. R. EVID. 701(b).
111. *Contrast* FED. R. EVID. 702, *with* FED. R. EVID. 703.
112. *See* FED. R. EVID. 703.
113. *See id.*
114. *Id.*; MCCORMICK, *supra* note 57, at 104–05.
115. *See* FED. R. EVID. 703 advisory committee's note to 1972 proposed rules.
116. *See id.*
117. *See id.*

of-court statement about the wound.[118] The Advisory Committee Note to Rule 703 cites "reports and opinions from nurses" as one of the examples of the type of secondhand reports that experts may factor into their analysis.[119]

2. *The Second Term*

While lay witnesses must derive their generalization primarily or exclusively from personal experience, experts develop their generalizations in a very different manner.[120] It would be ridiculous to require experts to derive their generalizations in the same manner as lay witnesses. Experts almost always rely on out-of-court statements such as "lectures by [their] teachers, statements in textbooks, reports of experiments and experiences of others in the same field."[121] If the expert is a physician, they might draw on information gained from attending continuing education seminars as well as from periodicals or AMA bulletins in their chosen specialty.[122] If the expert in question were a physicist, we would not require them to duplicate the experiments of Fermi or Oppenheimer before the expert could rely on the published results of those experiments.[123] "To paraphrase Sir Isaac Newton, modern experts stand on the shoulders of the giants who preceded them."[124]

The courts recognize experts' need to turn to such sources and permits them to do so under Rule 702[125] and equivalent provisions in state evidence codes.[126] In its *Daubert* decision, the United States Supreme Court recognized that to establish the reliability of their methodology, expert witnesses may point to other publications in the field such as those estimating error rates or establishing "standards controlling the technique's operation."[127] In one of its recent expert

118. *See id.*

119. *Id.*

120. *Contrast* FED. R. EVID. 701 ("If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is: (a) rationally based on the witness's perception . . . ."), *with* FED. R. EVID. 703 ("An expert may base an opinion on facts or data in the case that the expert has been made aware of . . . .").

121. JOHN MACARTHUR MAGUIRE, EVIDENCE: COMMON SENSE AND COMMON LAW 29 (1947).

122. *See* Paul D. Rheingold, *The Basis of Medical Testimony*, 15 VAND. L. REV. 473, 479–86 (1962).

123. Imwinkelried, *Epistemological Differences*, *supra* note 91, at 88.

124. *Id.* (citing ROBERT KING MERTON, ON THE SHOULDERS OF GIANTS 9 (1993), *quoted in* ERNEST E. SNYDER, HISTORY OF THE PHYSICAL SCIENCES 28 (1969)).

125. *See* FED. R. EVID. 702.

126. *See, e.g.*, IOWA R. EVID. 703 (bearing a striking similarity to Federal Rule of Evidence 702).

127. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 594 (1993).

testimony decisions, the California Supreme Court stated that to demonstrate the validity of their major premise methodology, experts may consult "a textbook, a treatise, or an academic paper — and supply the information found therein to the jury as background . . . without running afoul of the hearsay rules."[128]

C. *Given the Lay and Expert Standards for the Two Terms, When May an Inference Be Admitted Only If It Qualifies as an Expert Opinion?*

Experts and lay witnesses may sometimes opine on the same subject. For example, while Federal Rule 901(b)(2) authorizes the receipt of skilled lay observer opinion testimony on handwriting identification, in the very next subdivision, Rule 901(b)(3) permits the admission of testimony by expert questioned documents examiners.[129] Similarly, like psychiatrists, lay witnesses may testify on the subject of a person's sanity. California Evidence Code § 870(a) permits a lay witness to do so when "[t]he witness is an intimate acquaintance of the person whose sanity is in question."[130] This is a species of skilled lay observer testimony. In this case, the witness has formed a generalization about the person's baseline normal and rational behavior, rather than the person's writing style.[131] If the witness observed the person behave in a manner that deviated extremely from that baseline, the court would allow the witness to opine that the person was acting insanely on that occasion.[132]

1. *The First Term*

Suppose that the lay witness in question is a longtime acquaintance of the person whose sanity is in dispute. However, they did not observe the allegedly insane conduct. Instead, at trial earlier, a witness testified describing that conduct; and when the witness took the stand, the attorney asked the witness to hypothetically assume the truth of the conduct described by the prior witnesses. Or, alternatively, suppose that before trial the witness spoke with the individuals who had observed the conduct, and the witness contemplated basing their opinion on the other individuals' description of the person's conduct. In either event, could the witness's opinion be admitted under Rule 701? The answer is No. Again, under the Rule 701 standard governing the first term of the comparison, the witness must possess firsthand knowledge of the case-specific fact—the allegedly irrational

128. People v. Veamatahau, 459 P.3d 10, 29 (Cal. 2020).

129. FED. R. EVID. 901(b)(2)–(3).

130. CAL. EVID. CODE § 870(a) (West 2025).

131. *See, e.g.*, Christin v. Broderick (*In re* Buthmann's Estate), 131 P.2d 7, 9 (Cal. Dist. Ct. App. 1942).

132. *See id.* at 8–9; CAL. EVID. CODE § 870 (West 2025).

conduct.[133] It is true that Rule 703 permits experts to respond to hypothetical questions and rely on secondhand sources, but Rule 703 applies only when the witness qualifies as an expert under Rule 702.[134] In this version of the hypothetical, if the opinion is to be admitted, it must qualify as an expert opinion.[135] Although the witness is well-acquainted with the person in question, there is no showing that the witness is an expert. Consequently, the opinion is inadmissible.[136]

2. *The Second Term*

Consider a second variation of the hypothetical. Now the witness has observed the person's allegedly insane behavior. The witness in question had met the person briefly on a few prior occasions, but the facts could not be stretched to characterize the witness as an "intimate acquaintance" under § 870(a). However, the witness has a longstanding interest in psychiatry. Before taking the stand, they consult the DSM-V-TR. The witness discovers that the DSM-V-TR's diagnostic criteria describe a serious psychosis which has symptoms matching the person's behavior that the witness observed. Given that discovery, the witness is prepared to opine that the person was insane at the time of the behavior. Can this opinion be admitted under Rule 701? Again, the answer is No. Under the Rule 701 standard governing the second term of the comparison, the witness must derive their generalization primarily or exclusively from personal knowledge—the sort of knowledge that a longtime, "intimate acquaintance" of the person would possess.[137] The witness lacks the requisite familiarity with the person. It is true that an expert could turn to the DSM-V-TR to find the generalization to compare to the person's conduct. However, notwithstanding this witness's interest in psychiatry, the witness lacks the credentials to qualify as an expert on the subject under Rule 702.[138] The denouement is the same; once again, the witness's opinion is inadmissible.[139]

The moral is that the witness's proponent cannot evade the pretrial disclosure requirements for expert testimony or the enhanced trial evidentiary requirements if the facts do not permit the witness to form his or her opinion by a proper lay

133. *See* FED. R. EVID. 701(a).

134. Graham, *supra* note 29 ("The essential difference, however is that a qualified expert may answer hypothetical questions. . . . Thus, an expert witness may not only testify from 'facts or data . . . perceived by him,' but also from what is 'made known to him at or before the hearing.'") (citations omitted).

135. *See id.*

136. *See id.*

137. *See* FED. R. EVID. 701.

138. *See* FED. R. EVID. 702.

139. *See id.*

process of reasoning. The witness may form an admissible lay opinion only if the witness possesses personal knowledge of the case-specific fact to be evaluated (the first term) and compares that fact to a generalization derived entirely or primarily from personal experience (the second term).[140] If the proffer falls short of satisfying the standard governing either term, the proponent may not introduce the conclusion as a lay opinion.[141] If the opinion is to be admitted at all, the conclusion will have to qualify as an expert opinion.[142]

IV. The Second Ground for Blocking an Improper Attempt to Circumvent the Expert Testimony Rules: Even if the Witness does not Contemplate Expressly Testifying to an Opinion, the Witness's Testimony is Based on "Specialized Knowledge" Under Rule 702.

In the situations described in Part III, Rules 701 and 702 are obviously in play because the witness contemplates using a term such as "opinion," "inference," or "conclusion" in their testimony.[143] At first blush, one might think that expert testimony issues vanish if the witness refrains from using any of those terms. However, that is not the case. Federal Rule of Evidence 702 comes into play when an expert testifies "in the form of an opinion or otherwise."[144] The original Advisory Committee Note to Rule 702 observes:

> Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts.[145]

The Note accompanying the 2000 amendment to Rule 702 adds:

> [I]t might . . . be important in some cases for an expert to educate the factfinder about general principles, without ever attempting to apply these principles to the specific facts of the case. . . . [It is a] venerable practice . . . using expert testimony to educate the factfinder on general principles.[146]

140. *See* Fed. R. Evid. 701.
141. *See id.*
142. *See* Fed. R. Evid. 702.
143. *See supra* Part II.
144. Fed. R. Evid. 702.
145. Fed. R. Evid. 702 advisory committee's note to 1972 proposed rules.
146. Fed. R. Evid. 702 advisory committee's note to 2000 amendment.

In cases in which the witness stops short of using explicitly opinionated terminology, the dispositive question is whether the witness is conveying "scientific, technical, or other specialized knowledge" to the trier of fact.[147] Rule 701(c) expressly forbids a lay witness from doing so,[148] but using the identical language, Rule 702(a) permits an expert witness to do so if doing so "will help the trier of fact."[149] The question then is the definition of "specialized knowledge."[150] As we shall see, this question was critical in the Ninth Circuit's 2025 decision in *Holmes*.[151]

As Part IV.A explains, there are several sources of potential confusion over that definition.[152] Part IV.B points out that, given those sources, predictably the courts are divided over the proper interpretation of "specialized knowledge" in 701(c) and 702(a).[153] Part IV.B describes that split of authority.[154] Part IV.C presents a critical evaluation of the definition.[155] The Subpart argues that when a witness's testimony conveys "specialized knowledge" as defined in Part IV.C, the trial judge should refuse to admit the testimony under Rule 701.[156] This analysis thus identifies a second ground on which the judge may frustrate a litigant's improper attempt to circumvent the expert testimony rules by disguising evidence as lay testimony.

A. *The Potential Sources of Confusion Over the Meaning of "Specialized Knowledge"*

There are two sources of the confusion over the meaning of "specialized knowledge" in Rules 701(c) and 702(a).

1. *The First Source: The Differing Usage of "Lay Testimony" and "Lay*

147. *See* FED. R. EVID. 702(a).

148. FED. R. EVID. 701(c).

149. FED. R. EVID. 702(a).

150. *See* FED. R. EVID. 702 advisory committee's note to 1972 proposed rules ("[W]ithin the scope of [Rule 702] are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group sometimes called 'skilled' witnesses, such as bankers or landowners testifying to land values.").

151. *See* United States v. Holmes, 129 F.4th 636, 649 (9th Cir. 2025).

152. *See infra* Part IV.A.

153. *See infra* Part IV.B.

154. *See infra* Part IV.B.

155. *See infra* Part IV.C.

156. *See infra* Part IV.C.

Opinion" in Many of the Pretrial Disclosure Cases

As Part II.A noted, during the pretrial phase there are special disclosure requirements for expert testimony.[157] In a given case, these requirements come into play before the trial judge rules on in limine evidentiary motions or trial objections.[158] As Part II.B explained, Federal Rule of Civil Procedure 26 requires that an expert witness prepare and file a comprehensive, six-part report if the expert is on retainer, has been specially hired for the case, or has a regular duty to provide testimony for his or her employer litigant.[159] This requirement is ordinarily inapplicable to "[a] treating physician."[160] Treating physicians do not appear in such cases because a litigant has sought them out for their expertise; instead, they have a role in the litigation because they possess "ground-level involvement in the events giving rise to the litigation."[161]

However, many published opinions on pretrial disclosure do not stop at ruling that a witness in the position of a treating physician need not prepare the detailed, six-part expert witness disclosure; the courts do not merely state that the treating physician's opinions based on facts the physician perceived during treatment ought to be treated in roughly the same procedural fashion as lay testimony and opinions. Rather, the cases go farther; they often either characterize the physician as a "lay"[162] or "fact witness"[163] and describe the physician's testimony as "lay opinion." These courts do so even when the proposed testimony includes testimony on such subjects as diagnosis,[164] prognosis,[165] probable causes,[166] and future treatment.[167] For purposes of the disclosure rules, these cases

157. *See supra* Part II.A.

158. *See supra* Part II.A.

159. FED. R. CIV. P. 26(a)(2)(B); IMWINKELRIED & BLUMOFF, *supra* note 80, § 5:4.

160. Vaughn v. Carnival Corp., 571 F. Supp. 3d 1318, 1324–25 (S.D. Fla. 2021).

161. Douglas B. Bates, Chelsea R. Stanley & James L. Burt III, *Federal Rule 26(a)(2) Expert Witness Disclosures: Strategies for Composing and Attacking Expert Disclosures*, 83 J. AIR L. & COM. 67, 69–71 (2018) (footnote omitted).

162. *See, e.g.*, Debity v. Vintage Vill. Homeowners Ass'n, No. 23-5897, 2024 WL 3936828, at *4 (6th Cir. Aug. 26, 2024); Keller v. Crawford, 465 F. Supp. 3d 472, 484 (E.D. Pa. 2020).

163. *See, e.g.*, Burris v. Nassau Cnty., 332 F. Supp. 3d 596, 607–08 (E.D.N.Y. 2018); Kalaba v. Gray, 116 Cal. Rptr. 2d 570, 574 (Ct. App. 2002) (noting under the analogous California rule, the physician is "more like a fact witness").

164. *See, e.g.*, *Keller*, 465 F. Supp. 3d at 484.

165. *See, e.g.*, *id.*

166. *See, e.g.*, *Burris*, 332 F. Supp. 3d at 607.

167. *See, e.g.*, *id.*

allow the treating physician to apply their "ordinary medical training"[168] to symptoms observed during treatment to derive testimony without submitting the comprehensive expert testimony disclosure report under Rule 26.

Of course, the problem is that by trial evidentiary standards, a witness's testimony on a subject such as diagnosis or prognosis is neither lay testimony nor a lay opinion.[169] The average layperson lacks medical expertise and would usually be precluded from opining on either topic. For that matter, a treating physician cannot "perceive" or "observe" a diagnosis. They can use their senses to perceive symptoms but then must apply medical expertise—a form of specialized knowledge—to determine which disease those symptoms are characteristic of. Likewise, a treating physician cannot "perceive" a prognosis. After forming an opinion as to diagnosis, a physician can draw on the research concerning the normal course of the illness—more specialized knowledge—and arrive at a further opinion as to the futuristic diagnosis. Of course, no trial judge would allow the average layperson without medical education and training to testify to a prognosis.

It would be an overstatement to claim that all courts applying the disclosure rules deviate from the usage of "lay" and "expert" opinion that governs at trial under Rules 701 and 702. Some courts quite properly assert that while the treating physician need not file a comprehensive expert testimony report, at trial the opinions based on the physician's observations during treatment will still have to qualify as expert testimony.[170] However, the looser usage is widespread and, in some cases, has influenced the analysis of the lay-expert testimony distinction at trial.[171]

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168. Debity v. Vintage Vill. Homeowners Ass'n, No. 23-5897, 2024 WL 3936828, at *4 (6th Cir. Aug. 26, 2024).

169. Graham, *supra* note 29 ("In theory, a treating doctor may testify as a lay witness to facts, data, or opinions properly formed as a lay witness based upon personal knowledge acquired during treatment of the patient. However, given the ordinary nature of medical care, the likelihood of the treating physician having relevant testimony to offer that does not involve scientific, technical or other 'specialized knowledge' will be a rare event indeed.").

170. *See, e.g.*, Cedant v. United States, 75 F.4th 1314, 1324 n.11 (11th Cir. 2023) (citing Goodman v. Staples the Off. Superstore, LLC, 644 F.3d 817, 826 (9th Cir. 2011)) ("[A] non-retained witness forms expert opinions during the course of treatment."); Window Specialists, Inc. v. Forney Enters., Inc., 47 F. Supp. 3d 53, 59 (D.D.C. 2014) (analyzing admission of potential lay and expert testimony from the same witness).

171. Graham, *supra* note 29 ("[A]s a matter of trial convenience, it makes little sense to treat testimony from the treating physician that there was blood everywhere, or that the patient's arm was clearly broken as lay witness testimony only to then declare the treating physician an expert witness when next testifying on the basis of scientific, technical or other 'specialized knowledge' in relation to a contested issue in the case.").

2. *The Second Source: The Discussion of Testimony by Business and Landowners in the Advisory Committee Note to Rule 701*

As we have seen, the loose usage of evidentiary terms in many of the pretrial disclosure cases has tended to blur the distinction between lay and expert testimony. However, there is a second source of the confusion over the divide between lay and expert testimony. If anything, the second source is more problematic.

At common law, many courts permitted owners of real and personal property to testify to their lay opinions of the value of their property even if the owners lacked expertise in valuation.[172] Yet, one passage in the original Advisory Committee Note to Federal Rule of Evidence 702 suggested that the drafters intended to reclassify those opinions as expert testimony:

> [T]he expert is viewed, not in a narrow sense, but as a person qualified by "knowledge, skill, experience, training or education." Thus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group sometimes called "skilled" witnesses, such as bankers or landowners testifying to land values.[173]

However, the vast majority of contemporary courts have overlooked that passage and turned instead to a more extended treatment of the topic in the Advisory Committee Note accompanying the 2000 amendment to Rule 701:

> [M]ost courts have permitted the owner or officer of a business to testify to the value or projected profits of the business, without the necessity of qualifying the witness as an accountant, appraiser, or similar expert. *See, e.g., Lightning Lube, Inc. v. Witco Corp.*[,] 4 F.3d 1153 (3d Cir. 1993) (no abuse of discretion in permitting the plaintiff's owner to give lay opinion testimony as to damages, as it was based on his knowledge and participation in the day-to-day affairs of the business). Such opinion testimony is admitted not because of experience, training or specialized knowledge within the realm of an expert, but because of the particularized knowledge that the witness has by virtue of his or her position in the business.[174]

172. CARLSON ET AL., *supra* note 41, at 696–97; *see also* CAL. EVID. CODE § 813(a)(2) (West 2025) ("The value of property may be shown only by the opinions of any of the following: . . . (2) The owner or the spouse of the owner of the property or property interest being valued.").

173. FED. R. EVID. 702 advisory committee's note to 1972 proposed rules.

174. FED. R. EVID. 701 advisory committee's note to 2000 amendment.

As Professor Michael H. Graham has noted, this passage suggests that so long as a witness has, in a broad sense, personally acquired information, the information does not constitute "specialized knowledge" within the meaning of that expression in Rules 701(c) and 702(a).[175]

B. *The Differing Judicial Approaches to Defining "Specialized Knowledge"*

In light of the above passage in the Rule 701 Advisory Committee Note and the loose usage of evidentiary terminology in many of the pretrial disclosure opinions, it was expected that the courts would develop varying approaches to the definition of "specialized knowledge."[176]

1. *Courts Broadly Interpreting "Particularized Knowledge" and Narrowing the Definition of "Specialized Knowledge"*

One approach stresses the "particularized knowledge" language in the Rule 701 Note.[177] These courts take the position that if, in a broad sense, the witness has personally acquired such information "no matter the composition"[178] the witness's testimony about that information falls on the lay side of the border and does not constitute "specialized knowledge." In one line of authority, several courts have permitted employees to give lay testimony describing the procedures in place at their places of employment.[179] As in the case of the owner described in the Rule 701 Note, these witnesses have acquired "particularized knowledge . . . by virtue of his or her position in the business."[180] Some opinions have carried this line of authority quite far.

The Eleventh Circuit's 2025 decision in *United States v. Horn*[181] is illustrative. The defendant, a former registered stockbroker, was charged with

175. *See* Graham, *supra* note 29, at n.6; FED. R. EVID. 701(c), 702(a).

176. *See* FED. R. EVID. 701 advisory committee's note to 2000 amendment.

177. *See id.*; Pa. State Univ. v. Vintage Brand, LLC, 755 F. Supp. 3d 563, 595 (M.D. Pa. 2024) ("[W]hen a lay witness has particularized knowledge by virtue of her experience, she may testify—even if the subject matter is specialized or technical—because the testimony is based upon the layperson's personal knowledge, rather than on specialized knowledge within the scope of Rule 702." (quoting United States v. Savage, 970 F.3d 217, 286 (3d Cir. 2020)) (brackets and internal quotation marks omitted)).

178. *See* Graham, *supra* note 29 ("[I]t had been asserted, albeit incorrectly, that as long as the witness has personal knowledge of the basis for his or her opinion not acquired for purposes of litigation, no matter the composition of the basis, such as reliance on business records and industry experience, the witness may testify as a lay witness.").

179. *See id*. at n.6, n.8.

180. FED. R. EVID. 701 advisory committee's note to 2000 amendment.

181. 129 F.4th 1275 (11th Cir. 2025).

securities fraud.[182] At trial, the prosecution called an employee of the Financial Industry Regulatory Authority (FINRA).[183] According to the court, the witness, Melley, "explained the nature of his employment at FINRA and FINRA's role in regulating and licensing stockbrokers. . . . Melley gave a basic overview of what was tested on those exams [FINRA administered], including the definitions of securities, private placements, penny stocks, and the disclosure and ethical obligations of securities brokers."[184]

Of course, Melley's "basic overview" covered some of the nuances of an upper-division law school Securities Regulation course. Horn appealed after his conviction.[185]

On appeal, Horn contended that Melley had given expert testimony.[186] The court disagreed.[187] Although the court did not cite the Rule 701 Advisory Committee Note, the court echoed the Note's passage dealing with lay valuation testimony.[188] The court stated that Melley had testified "'based on particularized knowledge gained from [his] own personal experiences' or professional background . . . ."[189] In the court's mind, Melley's testimony consisted entirely of "layperson observations."[190] Consequently, his testimony did not constitute "specialized knowledge" that "crossed into the realm of Rule 702."[191]

One of the most forceful applications of the first approach narrowly interpreting "specialized knowledge" is the 2024 decision in *United States v. Jimenez-Chaidez*.[192] This case was a drug prosecution.[193] The government called an agent to track the defendant's movements.[194] After the police seized an accomplice's phone, the agent Edasi used a Cellebrite device to extract GPS information from the device.[195] The agent reviewed the time-stamped GPS coordinates extracted from the phone and entered the coordinates into Google

182. *Id.* at 1283, 1286.
183. *Id.* at 1287.
184. *Id*. at 1293.
185. *Id.* at 1286.
186. *Id.* at 1292–93.
187. *Id.* at 1293–94.
188. *See id.* at 1293.
189. *Id*. (citation omitted).
190. *See id*.
191. *Id*.
192. 96 F.4th 1257, 1267 (9th Cir. 2024).
193. *Id.* at 1262.
194. *See id.* at 1263.
195. *See id.* at 1262–63.

Maps to identify where the phone had been.[196] On appeal, the defense pointed out that the agent had not presented any testimony to either explain or validate Cellebrite's technical process.[197] The defense argued that the agent's evidence was expert testimony that was inadmissible without an explanation or validation of the process.[198]

Over a vigorous dissent, the majority rejected the defense's argument.[199] The majority acknowledged that lay witnesses may not testify to opinions based on "specialized knowledge."[200] However, the majority wrote that the agent's testimony was "not opinion testimony" at all.[201] The majority asserted that the agent's testimony conveyed only information "based on his own perception . . . ."[202] According to the majority, the agent possessed personal knowledge that,

> he connected Ramos's cellphone to a Cellebrite device, used the Cellebrite software to extract and "parse" the data into reports, reviewed the time-stamped GPS coordinates listed on the location-data reports, and entered those coordinates into Google Maps to identify where the cellphone had been.
>
> . . . .
>
> . . . Agent Edasi described that he plugged the cellphone into Cellebrite and that Cellebrite extracted data from the phone and generated reports . . . .[203]

The thrust of this argument is that just as a business owner may give lay valuation testimony based on information the owner has personally acquired, Agent Edasi could report the information that he gained by personally utilizing the Cellebrite device.[204]

The majority's line of reasoning in *Jimenez-Chaidez* was similar to the prosecution's line of argument in *Holmes*.[205] In *Holmes,* one prosecution witness, Dr. Kingshuk Das, had reviewed assessments of Theranos's proprietary Edison device.[206] The government urged the court to characterize Das's testimony as lay

196. *Id.* at 1267.
197. *See id.* at 1267–68.
198. *See id.*
199. *See id.* at 1268.
200. *Id.*
201. *Id.*
202. *Id.* at 1267.
203. *Id.* at 1267–68.
204. *See id.*
205. *See* United States v. Holmes, 129 F.4th 636, 649–50 (9th Cir. 2025).
206. *See id.* at 650.

in nature.[207] The government argued that in his testimony, Dr. Das merely "described personal observations made while performing his job . . . ."[208] According to the government, "as a percipient witness . . . he merely described the job he was hired to do."[209] Two other former Theranos laboratory directors, Dr. Adam Rosendorff and Dr. Mark Pandori, testified about Theranos's laboratory tests.[210] In particular, Dr. Rosendorff explained that there was a problem with Theranos's fingerstick samples; they were prone to "hemolysis," the bursting of red blood cells during collection.[211] The government contended that this testimony was lay in nature because "Rosendorff personally observed a relationship between hemolysis and the accuracy of certain Theranos tests . . . ."[212]

2. *Courts Broadly Interpreting "Specialized Knowledge"*

As we have seen, numerous courts have embraced a broad interpretation of "particularized knowledge" in the 2000 Note to Rule 701 and conversely narrowed the scope of the definition of "specialized knowledge."[213] However, that approach is not universal.

When a court invokes Rule 701 to uphold the admission of a lay witness's estimate of the speed of a passing vehicle, the court need not strain to expand the meaning of "particularized knowledge." The average adult layperson in the United States has spent a huge amount of time riding in cars and observing other cars.[214] To paraphrase the 2000 Note, the witness need not possess "specialized knowledge" that "only . . . specialists in the field" of accident reconstruction are

207. *See id.* at 650–52.

208. *See id.* at 650.

209. *Id.*

210. *See id.* at 652–54.

211. *See id.* at 652.

212. *See id.* at 653.

213. *See* FED. R. EVID. 701 advisory committee's note to 2000 amendment. *Compare* Camenisch v. Umpqua Bank, 763 F. Supp. 3d 871, 890 (N.D. Cal. 2025) (brackets and internal quotations omitted) ("[W]here a witness with specialized knowledge provides percipient testimony about common enough matters that require . . . a limited amount of expertise, then the testimony constitutes lay testimony and not expert."), *with* United States v. Derman, 143 F.4th 1148, 1210 (10th Cir. 2025) ("[L]ay witnesses may rely on 'a limited amount of expertise,' provided their 'opinions or inferences . . . could be reached by any ordinary person.'" (quoting James River Ins. Co. v. Rapid Funding, LLC, 658 F.3d 1207, 1214 (10th Cir. 2011)).

214. *See* Ellen Edmonds, *Think You're in Your Car More? You're Right. Americans Spend 70 Billion Hours Behind the Wheel*, AAA NEWSROOM (Feb. 27, 2019), https://newsroom.aaa.com/2019/02/think-youre-in-your-car-more-youre-right-americans-spend-70-billion-hours-behind-the-wheel/ [https://perma.cc/XJ3Y-J8Q2].

familiar with.[215] The witness has gathered the information underlying their generalization through personal experience. That information is shared and understood by the average layperson and does not deserve to be characterized as "specialized knowledge."

A recurring theme in many of the cases where the second approach is used to determine the witness's information is not "specialized knowledge," is that the knowledge is widely shared by the general public.[216] The Third Circuit's 2024 decision in *United States v. Sponaugle*[217] is a case on point. Like Horn, Sponaugle was charged with fraud.[218] At trial, the government called a witness, Storm, to testify to the results of the use of QuickBooks to analyze some of the pertinent records.[219] At trial, the judge admitted Storm's testimony without requiring an expert testimony foundation.[220] On appeal, the defendant argued that Storm's QuickBooks testimony had to be admitted, if at all, as expert testimony governed by Rule 702.[221]

The court rejected the defense's argument and ruled that the testimony was not expert in character because it did not rest on "specialized knowledge."[222] At the pretrial conference, even the defense "counsel acknowledged that basic bookkeeping concepts, such as ledgers, checkbooks, credits, and debits were 'pretty basic' and 'probably . . . familiar[]' with most lay people."[223]

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215. *See* FED. R. EVID. 701 advisory committee's note to 2000 amendment (quoting State v. Brown, 836 S.W.2d 530, 549 (Tenn. 1992)).

216. *See, e.g.*, United States v. Sponaugle, No. 22-2851, 2024 WL 4144069, at *4 (3d Cir. Sep. 11, 2024).

217. *Id.*

218. *Id.* at *1.

219. *See id.*

220. *See id.* at *2.

221. *See id.* at *3–4.

222. *See id.* at *5–6.

223. *Id.* at *4 n.3; *see also* Graham, *supra* note 29 ("An 'opinion a witness can reach based upon the quantity and quality of specific circumstance experience typically possessed by ordinary human beings' includes . . . 'observations of everyday occurrences,' such as speed, the nature of a substance, the meaning of a statement or 'matters within the common experience of most people,' such as the ability to do basic mathematics, . . . or drive an automobile safely."); United States v. Derman, 143 F.4th 1148, 1210–11 (10th Cir. 2025) (distinguishing between "elementary mathematical operations[,]" "straightforward, common sense calculations," "[a] mathematical calculation well within the ability of someone with a grade school education," a "simple average[,]" and "grade-school . . . addition [and] subtraction" and, on the other hand, the use of "sophisticated economic models[,]" "rolling averages, S-curves, and compound growth rates." (citations omitted)).

The court described QuickBooks as a "user-friendly" and "popular software program."[224] It was not just that the witnesses had personally used the QuickBooks software.[225] The program was not complex or specialized.[226] The steps in the software were "readily understandable procedures for an ordinary layperson."[227] The court analogized to a prior decision involving Excel spreadsheets, where another court held that the use of such spreadsheets is "within the capacity of any reasonable lay person."[228] The testimony therefore fell on the lay side of the line.

The *Holmes* court applied a similar standard, but in that case the court concluded that the testimony fell on the expert side.[229] While the *Holmes* court acknowledged that the three former Theranos laboratory directors had personally acquired information about the tests of the Theranos devices, the court emphatically announced that "there is no 'on-the-job' exception to Rule 702."[230] The "mere percipience of a witness to the facts . . . does not trump Rule 702."[231] Information does not fall on the lay side merely because the proponent can show that the witness acquired the information in a broad sense by perception or personal knowledge.[232] In the court's view, if the information in question is not familiar to the average adult, if it is to be admitted at all, the information must come in as expert testimony.[233]

The court made that view clear in its comments about the prosecution's witnesses. In the case of Dr. Das, the court accepted the defense's argument that he had presented a "sophisticated data analysis based on extensive scientific

224. *See Sponaugle*, 2024 WL 4144069, at *4 (describing QuickBooks as "user-friendly"); *id.* (quoting United States v. Ganier, 468 F.3d 920, 926 (6th Cir. 2006)) (describing QuickBooks as a "popular software program").

225. *See id.* at *5.

226. *See id.*

227. *Id.* (citing United States v. Hamaker, 455 F.3d 1316, 1331–32 (11th Cir. 2006) (holding the use of Excel Spreadsheets was "within the capacity of any reasonable layperson")).

228. *Id.*

229. *See* United States v. Holmes, 129 F.4th 636, 652 (9th Cir. 2025).

230. *Id.* at 649 (quoting United States v. Figueroa-Lopez, 125 F.3d 1241, 1247 (9th Cir. 1997)); *see* United States v. Derman, 143 F.4th 1148, 1214 (10th Cir. 2025) ("Knowledge drawn from experience in a specialized job—including, as here, a law enforcement officer's knowledge of drug trafficking patterns and practices—falls 'squarely' within the scope of expert testimony under Rule 702." (quoting United States v. Starks, 34 F.4th 1142, 1170 (10th Cir. 2022)).

231. *Id.* (quoting *Figueroa-Lopez*, 125 F.3d at 1246).

232. *See id.*; Camenisch v. Umpqua Bank, 763 F. Supp. 3d 871, 890 (N.D. Cal. 2025) ("[t]he mere percipience of a witness to the facts on which he wishes to tender an opinion does not trump Rule 702." (alteration in original) (quoting *Figueroa-Lopez*, 125 F.3d at 1246)).

233. *See id.* at 653.

training"—training not possessed by the average layperson.[234] In the case of Dr. Rosendorff, the court remarked that lacking expertise, the average layperson would certainly not know what hemolysis was or its significance.[235] That information went "beyond the common knowledge of the average layman."[236]

C. *A Critical Evaluation of the Definition of "Specialized Knowledge" in Rules 701 and 702(b)*

Which approach is sounder—the *Jimenez-Chaidez* view holding that the information the witness personally acquired about the Cellebrite extraction did not amount to "specialized knowledge" or the *Holmes* approach that information is "specialized knowledge" if it would be unfamiliar to the average layperson?[237]

1. *The Superiority of the Second Judicial Approach*

The starting point should be a careful analysis of the 2000 Rule 701 Advisory Committee Note discussing lay opinion testimony by business owners and officers.[238] What the Note does not say is as important as what the Note says. To be sure, the Note indicates that laypersons, more specifically property owners and officers, can sometimes give lay opinions as to the property's valuation without qualifying as an expert.[239] However, the Note does not announce a per se rule that any valuation testimony by a property owner or officer automatically qualifies as an admissible lay opinion.[240] Professor Graham has pointed out that adopting such a per se rule could lead to a *reductio ad absurdum*:

> If Bill Gates were to testify that divestiture of a segment of Microsoft's business would result in a loss of one billion dollars over five years concluding that he is testifying as a lay witness, i.e., "not based on scientific, technical, or other 'specialized knowledge' within the scope of Rule 702", Fed.R.Evid. 701(c), can only mean that accountants, financial consultants, economists, etc., are not experts. Since projecting such a loss is not based

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234. *Id.* at 650.

235. *Id.* at 652–53.

236. *Id.* at 653 (quoting United States v. Finley, 301 F.3d 1000, 1008, 1013 (9th Cir. 2002)).

237. *See supra* Part IV.B.

238. *See* FED. R. EVID. 701 advisory committee's note to 2000 amendment.

239. *See id.*

240. Graham, *supra* note 29, at n.9 (citation omitted) ("Of course, '[t]he rule is not without limitations. If it is demonstrated that the owner possesses no knowledge of the market price and condition of the property in question, that testimony on value may be inadmissible.'").

> upon the types of experiences common to many human beings, Bill Gates is an expert.[241]

A more sensible interpretation of the key passage in the 2000 Advisory Committee Note is that property owners and officers are allowed to give valuation testimony when they are relying on a species of knowledge that is: (a) widely shared by laypersons;[242] and (b) easily understood by laypersons. Again, the Note refers to the witness's "knowledge and participation in the day-to-day affairs of the business."[243] Consider the typical situation in which a judge allows a property owner to give a lay opinion about the value of his or her real property. What type of information is the witness ordinarily relying on? As the California Law Revision Comment to the governing California Evidence Code section states, in part, the witness may be relying on the information they gained "in [the] acquisition"[244]—that is, what they paid for the property. After becoming a property owner, the typical owner will pay occasional attention to listings of comparable nearby property in the local newspaper. In addition, in their mail they may receive advertisements from local realtors, which tout the realtor's most recent sale in the neighborhood. On occasion the owner might even attend an open house in the area or speak with neighbors who have done so. These experiences are widely shared among the general populace; even if a person is not an owner, in all probability the person has relatives and friends who have that experience. In addition, a layperson is not only likely to have some personal or vicarious experience of this nature; unlike the factors that go into assessing the economic impact of the divestment of a Microsoft department, these experiences are readily understood by the average

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241. Graham, *supra* note 29.

242. *See id.* at n.7. Although the courts rarely employ this terminology, when the witness's information fails to satisfy this factor, Professor Graham terms the witness a "specific knowledge" expert. *Id.* He cites a passage from *United States v. Kerley*. *Id.* at n.8 (citing United States v. Kerley, 784 F.3d 327, 336–40 (6th Cir. 2015)). *Kerley* approvingly cited its earlier decision, *United States v. White*. *Kerley*, 784 F.3d at 340 (citing United States v. White, 492 F.3d 380, 403 (6th Cir. 2007)). The *Kerley* court asserted that in *White*,

> [W]e concluded that the district court should not have permitted the witnesses [auditors] to testify, in general, about Medicare's structure and procedures without qualifying as expert witnesses because the topic of Medicare reimbursement procedures is beyond the knowledge of the average lay person."

Id. (citing *White*, 492 F.3d at 403–04).

243. FED. R. EVID. 701 advisory committee's note to 2000 amendment (citing Lighting Lube, Inc. v. Witco Corp., 4 F.3d 1153 (3d Cir. 1993)).

244. CAL. EVID. CODE § 813 (West 2025) law revision commission's comment to 1978 amendment.

layperson. If the issue were the value of a layperson's car, the average owner can easily take advantage of numerous internet sources such as Autotrader.[245]

Although the original Advisory Committee Note to Rule 701 avowed an intent to liberalize the admissibility of lay opinion testimony by shifting from a necessity test to a helpfulness standard,[246] the Note did not express an intent to revolutionize the law governing such testimony. Furthermore, although the 2000 Note includes the language about lay valuation opinions by owners and operators, the context is critical; the passage appears in the Note accompanying the amendment that added 701 because litigators had improperly attempted to circumvent Rule 702 by proffering "expert [witnesses] dressed in lay witness clothing."[247] It does not subvert Rule 702 to accept collective fact lay opinions on such subjects as the speed of passing autos. Such opinions pass muster because they satisfy both factors mentioned in the preceding paragraph: (a) The opinion rests on a type of experience widely shared among the general public; and (b) other laypersons are competent to comprehend and evaluate such opinions.[248] Those two factors serve to define the type of information that falls outside the ambit of "specialized knowledge." In short, the test should be the nature of the information, not the manner in which the witness acquired the information.

2. *Illustrations of the Application of the Second Judicial Approach*

As we have seen, given those two factors, the second approach to the definition of "specialized knowledge" is sounder. Positing that approach, *Sponaugle* and *Holmes* reach the correct result while *Jimenez-Chaidez* is wrongly decided.[249]

Although *Sponaugle* admitted the proffered testimony and *Holmes* excluded the testimony, the outcomes are consistent; both opinions represent proper applications of the sounder, second approach. As previously stated, *Sponaugle*[250] involved testimony about the use of QuickBooks. The court sustained the trial

245. Graham, *supra* note 29 ("Fed. R. Evid 803(17), encompasses published compilations generally used and relied upon by the public, provides a readily available hearsay exception for the foregoing Autotrader valuation and numerous similar websites available online.").

246. *See* FED. R. EVID. 701 advisory committee's note to 1972 proposed rules.

247. United States v. Johnson, 617 F.3d 286, 293 (4th Cir. 2010) (quoting United States v. Perkins, 470 F.3d 150, 156 (4th Cir. 2006)).

248. *See* Graham, *supra* note 29 ("typically possessed by ordinary human beings").

249. *See generally* United States v. Holmes, 129 F.4th 636 (9th Cir. 2025); United States v. Sponaugle, No. 22-2851, 2024 WL 4144069 (3d Cir. Sep. 11, 2024); United States v. Jimenez-Chaidez, 96 F.4th 1257 (9th Cir. 2024).

250. *See Sponaugle*, 2024 WL 4144069, at *1.

judge's decision to admit the testimony.[251] In doing so, the court stressed two factors. One was that the testimony involved "basic bookkeeping concepts . . . 'probably . . . familiar[] with most lay people'" and a "popular software program."[252] The second consideration was that the program was "user friendly" to the "average layperson" and not "complex."[253] The same two factors rationalize the admissibility of lay collective fact opinion about auto speed, and their presence in *Sponaugle* justified the court's decision to invoke Rule 701 and uphold the trial judge's decision.

While *Holmes* concluded that the trial judge had erred in admitting the testimony by the three former Theranos laboratory directors, the court's mode of analysis in *Holmes* was similar to the reasoning in *Sponaugle*.[254] In *Holmes,* the prosecution argued that the directors rested their testimony on information they had personally acquired during their service at Theranos.[255] However, the court countered that there is no "'on-the-job' exception to Rule 702."[256] The court stated: "The fact that a witness personally observes a matter does not take the witness's opinion about that matter outside the scope of Rule 702 if that opinion is the product of '*specialized* knowledge.'"[257]

After those general remarks, the *Holmes* court focused on the same two considerations that drove the decision in *Sponaugle*.[258] To begin with, in large part the former directors' testimony drew on their "background" in "clinical laboratory science" that "an average lay person" undeniably lacks.[259] Furthermore, the substance of the testimony was "beyond the common knowledge of the average layman."[260] The court underscored that "a lay person without specialized scientific training or education would not" understand the significance of the hemolysis that Dr. Rosendorff had described.[261] While in *Sponaugle* both factors cut in favor of

251. *Id.* at *4–5.

252. *Id.* at *4 n.3 (citation omitted).

253. *Id.* at *4–5.

254. *See Holmes*, 129 F.4th at 653.

255. *Id.* at 649.

256. *Id.* (quoting United States v. Figueroa-Lopez, 125 F.3d 1241, 1247 (9th Cir. 1997)); *see* United States v. Derman, 143 F.4th 1148, 1214 (10th Cir. 2025) ("Knowledge drawn from experience in a specialized job—including, as here, a law enforcement officer's knowledge of drug trafficking patterns and practices—falls 'squarely' within the scope of expert testimony under Rule 702." (quoting United States v. Starks, 34 F.4th 1142, 1170 (10th Cir. 2022)).

257. *Id.* (quoting *Figueroa-Lopez*, 125 F.3d at 1246).

258. *See id.* at 652–53.

259. *Id.* at 653.

260. *Id.* (quoting United States v. Finley, 301 F.3d 1000, 1008, 1013 (9th Cir. 2002)).

261. *See id.* at 652–53.

concluding that Storms' testimony was not based on "specialized knowledge," in *Holmes* both factors cut in the opposite direction.[262]

Given those factors, there is a strong case that *Jimenez-Chaidez* erred in sustaining the admission of the Cellebrite evidence as lay testimony.[263] As previously stated, there was a vigorous dissent in *Jimenez-Chaidez*.[264] Judge Richard D. Bennett authored the dissent.[265] Judge Bennett struck the same tone as the later *Holmes* decision: "The mere percipience of a witness to the facts on which he wishes to tender an opinion does not trump Rule 702."[266] The parallel to *Holmes* continues because in his dissent, Judge Bennett focused on the same two considerations that were critical in *Holmes* and, for that matter, in *Sponaugle* as well.[267] First, just as the former Theranos laboratory directors relied on clinical laboratory science unfamiliar to laypersons, Agent Edasi's testimony implicitly drew on "digital evidence analysis"[268] that was "not within 'the common knowledge of the average layman.'"[269] Turning to the second factor, Judge Bennett argued that without the benefit of expert guidance and lacking a background in the rudiments of digital evidence analysis, laypersons would not have a proper "'understanding' of the government's forensic tools, . . . their capabilities," and their limitations.[270] Judge Bennett therefore concluded that it was "clear error" to admit Agent Edasi's evidence as lay testimony under Rule 701.[271] Agent Edasi's testimony amounted to "specialized knowledge" within the meaning of Rule 701 and Rule 702(a). The second judicial approach to the definition of that term is sounder, and the centerpieces of that approach are the two factors that Judge Bennett and the majorities in *Holmes* and *Sponaugle* were attentive to.

V. CONCLUSION

The pretrial expert testimony disclosure rules in the Federal Rules of Civil and Criminal Procedure are obviously closely related to the expert testimony

262. *Contrast Holmes*, 129 F.4th at 652–53, *with* United States v. Sponaugle, No. 22-2851, 2024 WL 4144069, at *5 (3d Cir. Sep. 11, 2024).

263. United States v. Jimenez-Chaidez, 96 F.4th 1257, 1268 (9th Cir. 2024).

264. *See id.* at 1270–76 (Bennett J., dissenting).

265. *Id.* at 1270.

266. *Id.* at 1273 (quoting United States v. Figueroa-Lopez, 125 F.3d 1241, 1246 (9th Cir. 1997)).

267. *See id.* at 1270–76; *Holmes*, 129 F.4th at 652–53; *Sponaugle*, 2024 WL 4144069, at *5.

268. *Jimenez-Chaidez*, 96 F.4th at 1271 (Bennett J., dissenting).

269. *Id.* at 1273 (quoting United States v. Finley, 301 F.3d 1000, 1007 (9th Cir. 2002)).

270. *Id.*

271. *Id.* at 1275.

provisions in the Federal Rules of Evidence. In large part, the purpose of the former is to ensure that opposing litigants have the information they need to decide whether to object to a proponent's expert testimony and, if so, on what basis.

Yet, as a matter of policy, we certainly do not need to require the proponent and their expert to prepare the comprehensive, six-part Civil Rule 26(a)(2)(B) disclosure report in every case. It makes good sense to require less disclosure in the case of prospective witnesses such as treating physicians. On the one hand, given their education and experience, a physician can unquestionably qualify as an expert under Federal Rule of Evidence 702.[272] On the other hand, in a run-of-the-mill case, the summary, two-part Civil Rule 26(2)(C) report meets the opponent's initial discovery needs.[273] In many respects, it is justifiable to treat the treating physician much like a lay witness and limit the proponent's disclosure obligations. The opponent will have the right to conduct further discovery if they believe it is warranted. Once the opponent knows that the treating witness is likely to be a trial witness, if the monetary stakes warrant, the opponent can opt to depose the witness under Civil Rule 30.[274] Furthermore, if the proponent's pleading places a patient's condition in issue, the patient-litigant exception to the medical privilege applies.[275] Since the exception lifts the bar of the privilege, the opponent will have free access to the patient's medical records. The opponent will be able to obtain the records by requests for production or subpoenas.

As we have seen, though, the problem is that in many of the pretrial disclosure cases involving witnesses such as treating physicians, the courts have used evidentiary terminology in a loose manner. It is one thing to rule that the treating physician need not make extended disclosure regarding conclusions about diagnosis and prognosis based on the physician's observations during treatment. It is quite another matter to label those conclusions "lay" testimony or opinions. Under the first sentence of Rule 703, an expert treating physician may base a conclusion on facts such as symptoms that they have personally observed during the course of treatment.[276] However, in conventional trial evidence parlance, those conclusions are not only opinions; more to the point, they are expert opinions. A physician cannot perceive a "diagnosis" or "prognosis"; those terms refer to opinions that an expert physician can form only by applying their medical expertise to the facts of the case.

272. *See* FED. R. EVID. 702.

273. *See* FED. R. CIV. P. 26(2)(C).

274. *See* FED. R. CIV. P. 30.

275. MCCORMICK, *supra* note 57, at 103–04; 2 EDWARD J. IMWINKELRIED, THE NEW WIGMORE: A TREATISE ON EVIDENCE: EVIDENTIARY PRIVILEGES § 6.13.3 (4th. ed. 2022).

276. *See* FED. R. EVID. 703.

The problem is not only that many pretrial disclosure cases use trial evidence terms in a loose manner. To make matters worse, in all likelihood, the typical judge has spent more time reading the opinions on pretrial disclosure than those on trial evidence issues. The vast majority of cases filed in both federal and state court are disposed before trial by means such as settlement or summary judgment motions.[277] In some jurisdictions, only one percent of the civil cases filed ever reach trial.[278] It has become commonplace for commentators to refer to "the Vanishing Trial"[279] or even to proclaim "the Death of Trial."[280] The Supreme Court has written that "criminal justice today is for the most part a system of pleas, not a system of trials."[281] The pretrial phase is now the center of gravity in litigation.[282] Consequently, many judges spend time ruling on pretrial disclosure issues—and reading the pertinent published disclosure opinions—in cases in which they are never called on to make a single trial evidentiary ruling. Therefore, it is to be expected that the loose usage of trial evidence terms in many pretrial disclosure opinions will spill over and distort the subsequent analysis of evidentiary issues.[283]

While today trials are few in number, as the Introduction noted, the overwhelming majority of those trials raise expert testimony issues.[284] When the focus shifts from pretrial to trial, the presiding judges must resist the temptation to succumb to the loose usage in so many of the pretrial discovery cases. To circumvent the trial restrictions on expert testimony, a litigant may cite the loose language in the pretrial disclosure cases in order to mislead a judge into characterizing expert testimony as lay testimony exempt from *Daubert* and Rules 702–706.[285]

However, when the proponent attempts to do so, the opponent has two powerful arguments to frustrate that attempt. First, as Part III explained, when the witness compares a case-specific fact to a generalization, the opponent can argue that the proponent has not satisfied the Rule 701 standards for one or both terms of the comparison: either the witness lacks personal knowledge of the fact, the

277. IMWINKELRIED & BLUMOFF, *supra* note 80, § 1.1.

278. *Id.*

279. *See, e.g.*, Marc Galanter, *The Vanishing Trial: An Examination of Trials and Related Matters in Federal and State Courts*, 1 J. EMPIRICAL LEGAL STUD. 459, 459 (2004); Patricia Lee Refo, *The Vanishing Trial*, 1 J. EMPIRICAL LEGAL STUD. v, at v (2004).

280. *See, e.g.*, ROBERT BURNS, THE DEATH OF THE AMERICAN TRIAL 2–3 (2009).

281. Lafler v. Cooper, 566 U.S. 156, 170 (2012).

282. *See id.*

283. *See supra* Part IV.B.

284. *See supra* Part I.

285. *See* Daubert v. Merrell Dow Pharms., Inc, 509 U.S. 579 (1993); FED. R. EVID. 702–706.

witness has not derived their generalization exclusively or primarily through personal experience, or both.[286] If so, the witness is not engaged in a lay process of reasoning acceptable under Rule 701.[287]

Next, as Part IV demonstrated, the opponent can contend that the witness's testimony is based on "specialized knowledge" within the intendment of that expression in Rules 701(c) and 702(a).[288] The second judicial approach to defining "specialized knowledge" is superior. Under that approach, to establish that the witness's underlying knowledge is not "specialized," the proponent must show that the information is familiar to the average layperson and understandable to a typical layperson. The nature of the information—not its manner of acquisition—is the key. The *Holmes* court acknowledged that it is often challenging to draw the line between lay and expert testimony.[289] However, if the courts refocus on the salient factors identified in *Holmes* and *Sponaugle*—the average layperson's familiarity with the type of information and its comprehensibility to that person—the courts could take a major stride toward achieving the objective of the 2000 amendment adding subdivision (c) to Rule 701.[290] In the words of the accompanying Advisory Committee Note, the amendment targeted litigants' "manipulative conduct designed to thwart" the mandates of the Federal Rules.[291] Hopefully, by riveting on the *Holmes* factors, the courts will make headway in curbing that abuse.[292]

286. *See supra* Part III.

287. *See* FED. R. EVID. 701.

288. *See supra* Part IV.

289. United States v. Holmes, 129 F.4th 636, 649 (9th Cir. 2025) ("Drawing that line is a particularly difficult task[.]"); *see also* Graham, *supra* note 29, at n.7 ("often far from clear"), n.8 ("not [an] easy [one] to draw" (alterations in original) (citation omitted)).

290. *See generally Holmes*, 129 F.4th 636; United States v. Sponaugle, No. 22-2851, 2024 WL 4144069 (3d Cir. Sep. 11, 2024).

291. FED. R. EVID. 701 advisory committee's note to 2000 amendment.

292. *See Holmes*, 129 F.4th at 652–53.