

Saint Louis University Public Law Review

Volume 33

Number 2 *The 2013 National Conference on Prison
Higher Education Hosted by the Saint Louis University
Program (Volume XXXIII, No. 2)*

Article 17

2014

Ping! The Admissibility of Cellular Records to Track Criminal Defendants

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Recommended Citation

Wells, Alexandra (2014) "Ping! The Admissibility of Cellular Records to Track Criminal Defendants," *Saint Louis University Public Law Review*: Vol. 33 : No. 2 , Article 17.
Available at: <https://scholarship.law.slu.edu/plr/vol33/iss2/17>

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PING!
THE ADMISSIBILITY OF CELLULAR RECORDS TO TRACK
CRIMINAL DEFENDANTS

I. INTRODUCTION

On a cold night in November, Defendant went to a friend's house to play a game of poker.¹ At some point during that game, two of the six friends began arguing with Defendant over cheating. Defendant claimed that he then left for home and, at that time, all his friends were still alive. For the rest of the night, Defendant claimed he was at home with his girlfriend. His girlfriend even corroborated that story, but Defendant's cell phone told a different story. According to the cell phone, Defendant went back to the friend's house for several minutes, drove all across town to a deserted field for quite a few more minutes, and finally went home.

In reality, one of Defendant's friends was killed while Defendant's cell phone was at the friend's house. Worse, the victim's body was found in a burnt car in the same abandoned field the cell phone says Defendant was for several minutes. Nothing else places Defendant at either location during the estimated time frames. At trial, no physical evidence was presented, nor did any witnesses testify Defendant was there. The only witness that testified was a police officer. This police officer's only task was to explain the cell phone's story using the cellular records. He placed dots on a map where the cell phone "pinged" information off these elusive things called cell towers. However, the police officer did not know what a cell tower was; he had no idea how it worked; and he did not know which accuracy errors are often present. The police officer testified, and the Defendant was convicted of murder in the first degree and sentenced to life in prison without the possibility of parole.

Currently there are over six billion cell phone subscriptions.² This means there are almost as many cell phone subscriptions as there are people in the world.³ In fact, about 35 percent of households in the United States *only* have a

1. The events described here are similar but not exactly like *State of Missouri v. Jerome Williams*, No. 1022-CR06040-01 (2012) (still on appeal). See *St. Louis- Man is charged in slaying*, ST. LOUIS POST-DISPATCH, Nov. 16, 2010, at A3.

2. *World Has About 6 Billion Cell Phone Subscribers, According To U.N. Telecom Agency Report*, HUFFINGTON POST (Oct. 11, 2012), http://www.huffingtonpost.com/2012/10/11/cell-phones-world-subscribers-six-billion_n_1957173.html.

3. *Id.*

wireless phone, a figure that has more than doubled in the last five years.⁴ As cell phone usage continues to grow, cell phone carriers have developed and built more sophisticated cellular towers in order to meet demands.⁵ At the same time, cell phones have become a very useful tool for law enforcement agencies.⁶ Since people, like Defendant above, carry their cell phones everywhere and now use them for so many different tasks,⁷ law enforcement agencies have begun using this information for a wide range of investigative tasks.⁸ One common task, illustrated above, is to use the cell phone as a tracking device.⁹ In fact, under demands from Congress during recent Congressional hearings, cell phone carriers have reported a staggering 1.3 million demands for their customers' information in 2011 alone.¹⁰ While these numbers are certainly startling and raise significant privacy concerns, for a criminal defendant, the concerns have a far more substantial impact.¹¹

As law enforcement agencies request this information more and more, in turn, lawyers have begun using this information *in trial* more and more.¹² According to criminal defense attorney Mark Geragos, these cellular records have become "one of the most important developments in technology in the courtroom in the last five years."¹³ With the influx of cellular location information in trial, a wide array of questions are raised, and courts are struggling to answer them, often coming to conflicting and confusing conclusions.¹⁴ Should these records be admissible evidence in trial?¹⁵ And, even if admitted for a limited purpose, should only an expert be permitted to testify on the meaning of the cellular records?¹⁶

4. *Wireless Quick Facts*, CTIA: THE WIRELESS ASS'N, <http://www.ctia.org/advocacy/research/index.cfm/aid/10323> (last visited May 22, 2014).

5. *See infra* text accompanying notes 68–77.

6. Eric Lichtblau, *Police Are Using Phone Tracking as a Routine Tool*, N.Y. TIMES, Apr. 1, 2012, at A1 (stating law enforcement tracking of cellphones has become "a powerful and widely used surveillance tool for local police officials, with hundreds of departments, large and small, often using it aggressively with little or no court oversight . . .").

7. Chuck Jones, *What Do People Use Their Cell Phones For Besides Phone Calls?*, FORBES (Nov. 29, 2012), <http://www.forbes.com/sites/chuckjones/2012/11/29/what-do-people-use-their-cell-phones-for-beside-phone-calls/>.

8. Lichtblau, *supra* note 6, at A20.

9. *See infra* Part II.C.

10. In fact some claim this is a conservative estimate while the actual figure is much more significant. Eric Lichtblau, *More Demands on Cell Carriers in Surveillance*, N.Y. TIMES, July 9, 2012, at A1.

11. *See infra* Part V.

12. *See infra* Part V.

13. Martha Neil, *Cell Phone Calls Can Make, Break Cases*, ABA JOURNAL (Jul. 16, 2007), http://www.abajournal.com/news/article/cell_phone_calls_can_make_break_case/.

14. *See infra* Part V.

15. *See infra* Parts III, IV.

16. *See infra* Parts IV, V.

In order to answer these questions, this article will first provide background information, including what cellular technology can be used for tracking, what cell towers are, and finally, how cell signals (or “pings”) are translated into the caller’s location.¹⁷ Next, it will examine the constitutional and evidentiary arguments surrounding the admission of cellular technology.¹⁸ Furthermore, given that most courts have now determined cellular records are admissible, this article will then examine the procedure for admitting cellular records as courts differ substantially on how to categorize this evidence—as either lay or expert testimony.¹⁹ As a result, this article will finally conduct a case study illustrating how these courts differ and their ultimate conclusions.²⁰

II. THE SCIENCE OF CELL TOWERS

There are the two main methods used in cellular tracking: global positioning systems (GPS) and cell site data. While this article will focus on the usage of historical cell site data, it is important to first explain the other common cellular tracking method, GPS, and why the potentially more accurate option is most often unavailable. This will be followed by a discussion on cell towers, including how they operate and, specifically, how a cellular signal is turned into an estimate location. Finally, this section will examine the various factors influencing the accuracy of the locations and new technology’s impact on these factors.

A. *What Cellular Information Can Be Used for Tracking?*

There are two main methods of cellular tracking: (1) Global Positioning Systems and (2) cell site data—which include both real-time and historical data.²¹ Global positioning systems, or GPS, are a satellite-based navigation system quickly growing in popularity.²² There, a receiver on the satellite picks up a signal delivered from a GPS chip in the cellular phone.²³ The delivery speed is then converted into distance²⁴ giving a very accurate reading of the

17. *See infra* Part II.

18. *See infra* Part III.

19. *See infra* Part IV.

20. *See infra* Part V.

21. Aaron Blank, *The Limitations and Admissibility of Using Historical Cellular Site Data to Track the Location of a Cellular Phone*, 18 RICH. J.L. & TECH. 3, 7 (2011).

22. Adam Koppel, *Warranting A Warrant: Fourth Amendment Concerns Raised by Law Enforcement’s Warrantless Use of GPS and Cellular Phone Tracking*, 64 U. MIAMI L. REV. 1061, 1063–64 (2010).

23. Richard B. Langley, *In Simple Terms, How Does GPS Work?*, UNIV. OF NEW BRUNSWICK (Feb. 16, 2008), <http://gge.unb.ca/Resources/HowDoesGPSWork.html>; Koppel, *supra* note 22, at 1063.

24. Koppel, *supra* note 22, at 1063 (stating “this process of determining a position from measurements of distances is known as trilateration (as opposed to triangulation)”).

cell phone's location.²⁵ However, while almost 90 percent of the U.S. population has a cell phone, only about one in six of those phones have GPS capabilities.²⁶ Further, GPS is generally only capable of tracking a location when the cell user is explicitly using a location-based application on the phone.²⁷ Lastly, even GPS has potential pitfalls: the largest being that it is reliable only when the phone is in view of the satellites used to run GPS.²⁸ Consequently, not only is GPS completely unavailable for a large portion of the population, but for those that do have GPS capability, it is dependent on the carrier's usage and location at that specific time.

Secondly, both real-time cell site data and historical cell site data use cellular technology to locate the cell user. While they are extremely similar, they differ in the time the signal, or "ping," received and recorded by a tower is observed.²⁹ Real-time cell site data is obtained through viewing the cell phone's activity and signals in real time, meaning at that instant.³⁰ Thus, this largely happens when police officers survey a *particular* cell phone's activity.³¹ On the other hand, historical cell site data, the issue discussed in this article, is information obtained after the cell phone's activity is recorded using the cell companies' records of that activity.³² However, the question remains: how do these towers record and translate "pings"? And further, how do those "pings" then become location information? In order to answer these questions, it is necessary to discuss what a cell tower is and the technology that is used to turn signals into locations: both triangulation and the simpler "mapping" process.

25. Blank, *supra* note 21, at 7 (stating GPS tracking is accurate up to just a few meters). This accuracy has recently been brought into question. See *Geolocation Privacy and Surveillance (GPS) Act: Hearing on H.R. 2168 Before the Subcomm. on Crime, Terrorism, and Homeland Sec. of the H. Comm. on the Judiciary*, 112th Cong. 6–7 (2012) [hereinafter Statement of Professor Matt Blaze] (statement of Professor Matt Blaze).

26. Martin A. Dolan et al., *Improving Your Criminal Practice: Use of Cell Phone Records and GPS Tracking*, 24 CBA REC. 38, 39 (2010).

27. Statement of Professor Matt Blaze, *supra* note 25, at 10–11.

28. *Id.* at 12.

29. Blank, *supra* note 21, at 8.

30. See Kyle Malone, *The Fourth Amendment and the Store Communications Act: Why the Warrantless Gathering of Historical Cell Site Location Information Poses No Threat to Privacy*, 39 PEPP. L. REV. 701, 710 (2012).

31. *Id.* at 710.

32. *Id.*; Kevin McLaughlin, *The Fourth Amendment and Cell Phone Location Tracking: Where Are We?*, 29 HASTINGS COMM. & ENT. L.J. 421, 431 (2007).

B. What Are Cellular Towers?

Cell phones are like two-way radios.³³ They require a transceiver to transmit the phone calls, and those transceivers are called cell sites or cell towers.³⁴ Cell towers are typically arranged in order to cover an area the shape of a hexagon, forming a structure that looks much like a honeycomb with the cell tower in the middle of three different hexagonal areas.³⁵ This shape is better than other potential configurations, such as a circle, as it allows the towers to leave no area without service.³⁶ Since cell phones, even those merely on “on-mode” transmit a signal every seven seconds and continue to scan all the surrounding towers for the one with the strongest signal,³⁷ the basic structure of the towers needs to accommodate the potential inflow and outflow of signals at all times.³⁸

Furthermore, with the annual number of minutes used at an all-time high of over 2.3 trillion and the annual number of text messages at over 2.2 trillion, cell towers are receiving more and more cell “pings”³⁹ every year.⁴⁰ As a result, there are a vast number of cell sites in the United States, and more are manufactured every year.⁴¹ As of June 2012, there were over 280,000 cell sites in the United States.⁴² This was an increase of about 75,000 cell towers, or 27 percent, over the past five years and an increase of about 155,000 cell towers, or 55 percent, over the past ten years.⁴³ The more urban and populated areas have more cell towers to accommodate the traffic, while rural areas have far fewer towers, covering much more distance—potentially even thirty miles.⁴⁴

33. 3 CLIFFORD S. FISHMAN & ANNE T. MCKENNA, WIRETAPPING & EAVESDROPPING; SURVEILLANCE IN THE INTERNET AGE § 28:2.

34. *Id.*

35. *Id.*; S. REP. NO. 99-541, at 9 (1986).

36. See Tom Farley & Mark van der Hoek, *Cellular Telephone Basics*, PRIVATELINE (Jan. 1, 2006), http://www.privateline.com/mt_cellbasics (demonstrating the value of the hexagon shape in preventing no-service areas via diagrams).

37. FISHMAN & MCKENNA, *supra* note 33.

38. This process is called a “hand-off,” which is where one cell tower will “hand-off” the signal to another cell tower with a stronger signal, which allows for better service. Blank, *supra* note 21, at 5.

39. See *Commonwealth v. Pitt*, No. 2010-0061, 2012 WL 927095, at *1 (Mass. Supp. Feb. 23, 2012).

40. See *Wireless Quick Facts*, *supra* note 4.

41. *Id.*

42. *Id.*

43. *Id.*

44. Urban areas could have a cell tower every one-half to one mile, while rural areas could have a single tower covering an area of three to five miles. Blank, *supra* note 21, at 4–5.

C. *How Do These “Pings” Turn into Locations?*

In order for these cell towers to be useful in trial, the pings and records need to be able to provide location information. Triangulation is one of the common methods of locating the cell phone and it offers a “fair degree of precision.”⁴⁵ This method is particularly common in urban and suburban areas as it is only possible when a cellular phone pings off two or more towers simultaneously.⁴⁶ Multiple towers are necessary to complete the triangle between the cell phone itself and the other two towers.⁴⁷ From this triangle connection, trigonometry and a mathematical equation are used to position the cell phone’s distance from the other two towers.⁴⁸ The denser the cell sites are, the more accurate the location reading will be.⁴⁹ This is true for two main reasons: first, the closer the towers are together, the smaller the triangle between the towers and the cell phone will be, thus affording less potential for error; and second, the closer the towers are, the more likely they overlap in area coverage, which in turn results in more triangles allowing for triangulation of the cell phone.⁵⁰

While triangulation is common, it is not the only method of determining the location of a phone. What is most often the source of contention, and the focus of this article, is a simple mapping system.⁵¹ This is where someone, often the detective in criminal trials⁵² or a records custodian from the cellular company,⁵³ takes historical cell tower records and makes a map of the calls and the towers that received those calls.⁵⁴ This is all based on a belief that a call will ping to the tower that is closest to the cell phone.⁵⁵ Thus, by mapping the towers which accepted the specific calls, one can locate the general vicinity of

45. *In re* Application of the U.S. for Prospective Cell Site Location Info. on A Certain Cellular Tel., 460 F. Supp. 2d 448, 451 (S.D.N.Y. 2006).

46. *Id.* at 451–52.

47. *Id.* at n.3.

48. *Id.*

49. Blank, *supra* note 21, at 9.

50. *See* Blank, *supra* note 21, at 8–9; Langley, *supra* note 23 (explaining triangulation and GPS trilateration in greater detail).

51. *See, e.g.*, *United States v. Evans*, 892 F. Supp. 2d 949, 951 (N.D. Ill. 2012); *United States v. Kale*, 445 F. App’x 482, 485–86 (3d Cir. 2011); *United States v. Feliciano*, 300 F. App’x 795, 800–01 (11th Cir. 2008); *State v. Robinson*, 724 N.W.2d 35, 61–62 (Neb. 2006); *Malone v. State*, 73 So. 3d 1197, 1201 (Miss. Ct. App. 2011); *Perez v. State*, 980 So. 2d 1126, 1131 (Fla. Dist. Ct. App. 2008).

52. *Tetso v. State*, 45 A.3d 788, 797 (Md. Ct. Spec. App. 2012); *Kansas v. Fleming*, No. 106, 104, 2012 WL 4794560, at *3 (Kan. App. Oct. 5, 2012); *Wilder v. State*, 991 A.2d 172, 180 (Md. Ct. Spec. App. 2010).

53. *State v. Wright*, No. 08–1737, 2010 WL 200052, at *4 (Iowa Ct. App. Jan. 22, 2010); *Woodward v. State*, CR-08-0145, 2011 WL 6278294, at *14 (Ala. Crim. App. Dec. 16, 2011).

54. *Woodward*, CR-08-0145, 2011 WL 6278294, at *14.

55. *Id.*

the caller.⁵⁶ However, this belief has one large fundamental flaw: cell signals go to the tower with the strongest signal, which is not always the cell tower geographically closest to the cell phone.⁵⁷

In fact, an extensive list of factors can affect signal strength of a cellular tower beyond the location of the cell phone.⁵⁸ First, various technical characteristics can affect signal strength.⁵⁹ These factors include the technical characteristics of the cell sites themselves, such as the number of sites available, the maintenance or repairs being performed, the height of the cell tower, the height of the cell tower above sea level, the wattage output, and finally, the range of coverage.⁶⁰ Further, technical characteristics of the antennas on the cellular sites may also have an effect.⁶¹ These antenna factors include the number of antennas on the cell tower, the angle and direction the antenna is facing, the height of each antenna, and the call traffic processed through each antenna.⁶² The last technical characteristic that can affect signal strength is the technical aspects of the phone itself.⁶³ These include both the wattage output and generation of the phone's broadband capability, essentially the age of the phone.⁶⁴ Even beyond these twelve factors surrounding the technical aspects, environmental and geographical factors, such as weather, topography, and urban development can have significant effects on the signal strength.⁶⁵ Additionally, the location of those using a cellular phone, either indoor or outdoor, can also affect signal strength.⁶⁶ Even the time of day can affect signal strength as calls during rush hours can be redirected due to overcrowded towers.⁶⁷

D. *How Accurate is Mapping?*

This vast list begins to demonstrate the potential accuracy problems with tracking a person using cell tower data, specifically when the method is mapping rather than triangulation. However, some experts, specifically

56. *Id.*

57. Blank, *supra* note 21, at 5–6.

58. *Id.* at 6.

59. *Id.*

60. *Id.*

61. *Id.*

62. *Id.*

63. Blank, *supra* note 21, at 6.

64. *Id.*

65. *Id.*

66. *Id.* at 7.

67. Anemona Hartocollis, *When the Trill of a Cellphone Brings the Clang of Prison Doors*, N.Y. TIMES, July 16, 2007, at B1.

Professor Matthew Blaze,⁶⁸ say the rapid growth of cellular popularity may significantly improve the accuracy of cell tower data.⁶⁹ As technology advances, the reliability of the towers has become greater.⁷⁰ New technology even allows towers to pinpoint a cellular phone's longitude and latitude by "correlating the precise time and angle at which a given device's signal arrives at multiple sector base stations."⁷¹ Beyond these technological advances, as cellular companies continue to build towers to meet rising demand, the towers continue to cover smaller and smaller areas, thus increasing the accuracy of the data.⁷² In fact, some towers are now designed simply to cover a few levels of one building, and, therefore, it would be possible to pinpoint not only the general location but also the specific floor where from which the call was made.⁷³ It is true the trend towards more advanced and smaller towers has grown in urban areas while the more rural areas remain largely the same with large towers covering as much area as possible.⁷⁴ However, almost 80 percent of the U.S. population lives in an urban area,⁷⁵ and crime often localizes in urban areas.⁷⁶ Consequently, quite often "it is no longer valid to assume that the cell [tower] will give only an approximate indication of a user's location."⁷⁷

Even given these technological advances, defense attorneys continue to argue the cellular records present too many accuracy issues.⁷⁸ However, determining the weight and accuracy of evidence are decisions for a jury, not a judge.⁷⁹ For example, when witness testimony at trial is inconsistent with

68. Professor Matt Blaze has a PhD in Computer Science, an MA in Computer Science from Princeton University, an MA in Computer Science from Columbia University, and a BS from City University of New York Hunter College. He currently teaches Computer and Information Science at the University of Pennsylvania and specializes in computer security, cryptograph, network communications, and surveillance technology. See *Matthew Blaze*, UNIV. OF PENN.: ENG'G, <http://www.seas.upenn.edu/directory/profile.php?ID=8> (last visited May 22, 2014).

69. Statement of Professor Matt Blaze, *supra* note 25, at 12.

70. *Id.* at 19.

71. *Id.* at 16.

72. The smaller the area a tower covers, the more reliable the tower is. Thus, as Blaze argues, the more towers there are, the more reliable cellular data is. *Id.* at 13–18.

73. *Id.* at 15.

74. *Id.*

75. U.S. DEP'T OF TRANSP.: FED. HIGHWAY ADMIN., *U.S. Population Living in Urban vs. Rural Areas*, http://www.fhwa.dot.gov/planning/census_issues/archives/metropolitan_planning/cps2k.cfm (last visited May 22, 2014).

76. See generally U.S. CENSUS BUREAU, TABLE 307: CRIMES AND CRIME RATES BY TYPE AND GEOGRAPHIC COMMUNITY: 2009 (2012), <http://www.census.gov/compendia/statab/2012/tables/12s0307.pdf>.

77. Statement of Professor Matthew Blaze, *supra* note 25, at 20.

78. *United States v. Fama*, No.12-CR-186 (WFK), 2012 WL 6102700, at *2 (E.D.N.Y. Dec. 10, 2012).

79. *Schiebert v. State*, 451 P.2d 15, 17 (Okla. Crim. App. 1969).

previous testimony, a jury decides whether that witness testimony is accurate. A jury then decides, given any accuracy issues, how much weight to give that evidence. Similarly, a jury should decide the accuracy of cellular records in establishing a caller's location. The location of the caller is a question of fact, not of law. Thus, while it remains true that a call pinging off tower A does not always mean the caller was located near tower A,⁸⁰ these accuracy issues should not be grounds for preventing the cell records' admission into evidence. As a result, these disputes about location should be made by the finder of fact. Thus, they are best left in closing arguments before a jury rather than motions in limine before a judge.

Still, these new technological advances raise a different problem as many argue cellular records and mapping testimony should be limited to experts. However, before that more highly debated argument is addressed, it is important to examine more preliminary constitutional and evidentiary hurdles. Therefore, this article will next examine the constitutional arguments for excluding cellular records, focusing on the Sixth and Fourth Amendments. That will be followed by an examination of the two evidentiary arguments for exclusion which the courts are rejecting: relevance and hearsay.

III. THE ARGUMENTS COURTS REJECT: CONSTITUTIONAL & EVIDENTIARY

Surrounding the usage of cellular records is a wide array of potential arguments against admission of the records into evidence. These arguments can be generally grouped into two classifications: constitutional issues and evidentiary issues. Nonetheless, most of these arguments face certain failure or are simply ignored by the courts. In the following section, the constitutional arguments of the Sixth and Fourth Amendments are examined. That analysis is followed by a discussion of the evidentiary issues of relevancy and hearsay.

A. *What Constitutional Arguments Must Cellular Records Overcome?*

1. Cellular Records Present No Confrontation Issue Since They are a Valid Business Record

There is a wide range of arguments surrounding the admission of cell tower records into court, and two such arguments are based on constitutional grounds. First, the Confrontation Clause, located in the Sixth Amendment of the United States Constitution, states that a criminal defendant has the right "to be confronted with the witnesses against him."⁸¹ The Supreme Court held in *Crawford v. Washington* that this amendment conferred the *procedural* right of

80. Statement of Professor Matt Blaze, *supra* note 25, at 12–13, 18–19.

81. U.S. CONST. amend. VI.

cross-examination of testimonial statements for a criminal defendant.⁸² Further, while “testimonial” has proven to be a confusing term, the Supreme Court held that a hearsay statement properly admitted as a business record⁸³ does not qualify as a “testimonial” statement.⁸⁴ In *United States v. Yeley-Davis*, the Tenth Circuit established that cellular business records specifically present no Confrontation Clause issue.⁸⁵

2. Obtaining Cellular Records is Not a Search as there is No Reasonable Expectation of Privacy

Many argue these records are obtained in violation of the Fourth Amendment and, as such, are unconstitutional searches. This issue is more uncertain since the federal courts have had difficulty applying the *Katz* test to the present issue.⁸⁶ In *Katz v. United States*, the Supreme Court established there is no Fourth Amendment protection when there is no reasonable expectation of privacy.⁸⁷ In a series of cases following this decision, the Supreme Court has held in many instances there is no reasonable expectation of privacy when a person voluntarily provides information to a third party.⁸⁸ More specifically, the Supreme Court, in *Smith v. Maryland*, authorized pen registers without a search warrant, allowing police to obtain every number dialed from a cell phone.⁸⁹ The court reasoned that privacy is lost when the caller chooses to make a call, thus allowing the cell phone company to use that now public information.⁹⁰

However, the issue with cell site data is more complicated than disclosure of a phone number as many argue making a phone call does not demonstrate a

82. *Crawford v. Washington*, 541 U.S. 36, 60–61 (2004) (reversing the previous reliability test from *Ohio v. Roberts* as too amorphous and establishing a procedural guarantee of a defendant’s right to cross-examine any testimonial statements).

83. See discussion *infra* Part III.B.2.

84. *Crawford*, 541 U.S. at 56.

85. *United States v. Yeley-Davis*, 632 F.3d 673, 678 (10th Cir. 2011). It seems, however, that evidence that could indicate a defendant’s location would also indicate a right to confront the cellular company.

86. Blank, *supra* note 21, at 39–41.

87. *Katz v. United States*, 389 U.S. 347, 360–61 (1967) (Harlan, J., concurring).

88. See generally *United States v. White*, 401 U.S. 745 (1971); *Cal. Bankers Ass’n v. Shultz*, 416 U.S. 21 (1974); *United States v. Miller*, 425 U.S. 435 (1976); *Smith v. Maryland*, 442 U.S. 735 (1979).

89. *Smith v. Maryland*, 442 U.S. at 745.

90. See *id.* at 744–45. Note that while *Smith v. Maryland* authorizes such pen registrations without a warrant, federal statute prohibits it. See 18 U.S.C. § 2703(c) (2006); 47 U.S.C. § 1002(a)(2) (2006); *In re Application of the U.S. for Prospective Cell Site Location Information On A Certain Cellular Telephone*, 460 F. Supp. 2d 448, 460–61 (S.D.N.Y. 2006); *Transmission by a Wireless Carrier of Information Regarding a Cellular Phone User’s Physical Location to Public Safety Organizations*, 20 Op. O.L.C. 315, 317–18 (1996).

person intended to disclose their location every time their phone pings off a tower. Thus, the question becomes: while the numbers dialed from a phone are not private, does the same rule apply the caller's *location*? Due to the Supreme Court's silence thus far on this issue,⁹¹ the district courts are coming to conflicting results.⁹² While a small number of courts hold there is no such voluntary transfer of location information,⁹³ the majority of district courts have instead held that there is no Fourth Amendment violation by obtaining these cellular records.⁹⁴ In *United States v. Benford*, the court provided an extensive review, explaining that historical cell site data is similar to pen registrations and banking records in that the caller voluntarily used the equipment and, therefore, ran the risk that the call records would be given to police.⁹⁵ Consequently, the majority of jurisdictions hold that obtaining cellular records is not a violation of the Fourth Amendment.

B. Are Cellular Records Irrelevant Hearsay?

1. Cellular Records are Relevant to Prove a Defendant's Location

There are many arguments for keeping potentially inaccurate historical cell site records out of trial, and a large portion of these arguments circle around evidentiary issues. As with all evidentiary issues, the first hurdle is relevancy.⁹⁶ At first glance, there would not appear to be any relevancy issues with these cell tower records as they certainly have some "tendency to prove" the defendant's location.⁹⁷ However, it is important to remember that "if the phone

91. The Supreme Court recently began addressing cellular tracking concerns. The case, however, centered on GPS tracking and the illegal plantation of the GPS tracking device. Therefore, it would appear that decision will not offer significant guidance for obtaining cellular records. *See United States v. Jones*, 132 S. Ct. 945, 949 (2012).

92. Blank, *supra* note 21, at 39–41.

93. *In re Historical Cell Site Data*, 747 F. Supp. 2d 827, 837–38 (S.D. Tex. 2010) (focusing on the extra protections afforded to homes from unreasonable searches and holding the cell records often came from the home, thus violating this protection), *vacated*, 724 F.3d 600 (5th Cir. 2013).

94. *See, e.g.*, *United States v. Dye*, No. 1:10CR221, 2011 WL 1595255 (N.D. Ohio Apr. 27, 2011); *United States v. Velasquez*, No. CR08-0730 WHA, 2010 WL 4286276 (N.D. Cal. Oct. 22, 2010); *United States v. Benford*, No. 2:09 CR 86, 2010 WL 1266507 (N.D. Ind. Mar. 26, 2010); *United States v. Suarez-Blanca*, No. 1:07-0023-MHS/AJB, 2008 WL 4200156 (N.D. Ga. Apr. 21, 2008); *In re Applications of the U.S. for Orders Pursuant to Title 18, United States Code, Section 2703(d)*, 509 F. Supp. 2d 76 (D. Mass. 2007); *United States v. Graham*, 846 F. Supp. 2d 384, 389 (D. Md. 2012).

95. *Benford*, 2010 WL 1266507, at *2.

96. Joseph A. Greenaway, Jr., *The Evidence Rules Every New Trial Lawyer Should Know*, 36 A.B.A. SEC. LITIG. 3, 4 (Summer 2010).

97. Under the Federal Rules of Evidence, which has been adopted by many states, a piece of evidence is relevant if it: (a) has any tendency to make a fact more or less probable; and (b) is a fact of consequence. FED. R. EVID. 401(a)–(b).

is not surgically implanted,” it is impossible to prove that the defendant had the phone on him.⁹⁸ While the records are relevant if they can prove the defendant’s general location at a key time, they are most likely irrelevant if they only show where the defendant’s phone was located.⁹⁹

Specifically, in cases of pre-paid cellular phones, the question of who had the phone becomes even more clouded. Because pre-paid cell phones do not require a contract,¹⁰⁰ they are commonly bought using a fake name, making them useful in committing crimes.¹⁰¹ Moreover, prepaid phone carriers target low income customers¹⁰² who may find a “monthly bill . . . not practical.”¹⁰³ Considering there is a long established correlation between socio-economic status and crime,¹⁰⁴ the argument is that pre-paid cell phones present a larger relevancy concern than the annual contractual cell phones. However, those making this argument appear to have missed a crucial point: simply by obtaining the cellular records, it becomes clear whether the phone is pre-paid or a contractual phone. It is then easy to see how a detective, or anyone conducting a reasonable investigation, could verify who actually had possession of the phone by contacting other numbers in the records. Still, in cases where the cell phone is confiscated at arrest, the phones themselves are obtained from the defendant.¹⁰⁵ Thus, in many cases, the argument that the defendant was not in possession of the phone runs rather thin. Still, courts confronted with direct testimony raising this precise issue have not used relevancy as a basis for their review of the evidentiary issue, thus demonstrating the unlikelihood of success relevancy arguments hold.¹⁰⁶

98. Hartocollis, *supra* note 67, at B2 (quoting Jeff M. Fischbach, “an electronic evidence analyst and chief executive of Second Wave, a consulting firm”); 3 FISHMAN & MCKENNA, WIRETAPPING AND EAVESDROPPING § 28:12.

99. Blank, *supra* note 21, at 14.

100. Arthur Hughes, *Glossary of Telecom Marketing Terms*, DATABASE MKTG. INST., <http://www.dbmarketing.com/2010/03/glossary-of-telecom-marketing-terms/> (last visited May 22, 2014).

101. Blank, *supra* note 21, at 15–16.

102. Mark E. Budnitz et al., *Deceptive Claims for Prepaid Telephone Cards and the Need for Regulation*, 19 LOY. CONSUMER L. REV. 1, 42 (2006).

103. Christopher Soghoian, *Caveat Venditor: Technologically Protected Subsidized Goods and the Customers Who Hack Them*, 6 NW. J. TECH. & INTELL. PROP. 46, 58 (2007).

104. See generally Lacey McLaughlin, *The Poverty-Crime Connection*, JACKSON FREE PRESS (Oct. 19, 2011), <http://www.jacksonfreepress.com/news/2011/oct/19/the-poverty-crime-connection/>.

105. *Compare* Wilder v. State, 991 A.2d 172, 179 (Md. Ct. Spec. App. 2010) with *People v. Roby*, No. 301608, 2011 WL 5067252, at *1 (Mich. Ct. App. Oct. 25, 2011).

106. In *State v. Hayes*, No. M2008–02689–CCA–R3–CD, 2010 WL 5344882, at *6 (Tenn. Crim. App. Dec. 23, 2010), the detective who introduced the historical cell site mapping evidence admitted the “cell phone records did not show who was actually using the phone in question.” The court, however, went on to hold there was no error by the trial court in admitting the evidence, not on relevancy grounds, instead based on the proper lay opinion of testimony. *Id.* at

Consequently, an argument against the relevancy of this historical cell site data holds little water, both in theory and with the courts.

2. Cellular Records are Valid Business Records

One other possible argument, albeit very weak, is a hearsay objection. However, numerous cases have held historical cell site records are admissible hearsay under the business records exception.¹⁰⁷ This exception provides for admission of business records if: the record was made near the time the information was transmitted by someone with knowledge; the record was kept in course of regularly conducted activity of business; making the records was regular business practice; and the information does not lack trustworthiness.¹⁰⁸ It is well established that cell phone records are recorded as the cell towers receive the information, and thus are contemporaneous records.¹⁰⁹ Hearsay arguments on the admission of cellular records stem largely from the purpose for which they are recorded and kept by the cellular companies. If a document is kept solely for potential usage at trial, it is believed to lack trustworthiness and, therefore, falls outside the business records exception.¹¹⁰ Still, while one potential usage may be to locate and track the defendant, cellular companies have very legitimate business reasons for maintaining the information.¹¹¹ Cell phone companies need this information simply to bill customers properly and to track call volume.¹¹² Because of these legitimate, non-trial related purposes for recording, courts have rarely excluded cellular records due to hearsay.¹¹³ Accordingly, the historical cell site records are legitimate business records and hearsay arguments face very little chance of success.

IV. THE DIFFERENCE BETWEEN LAY & EXPERT TESTIMONY

While both relevancy and hearsay have been argued, neither argument holds much possibility of success.¹¹⁴ However, there remains one potential

*10. And although the court mentions the detective's testimony, it does not appear a claim of irrelevancy was used as grounds for reversal. *See id.*

107. FED. R. EVID. 803(6).

108. FED. R. EVID. 803(6).

109. *See* Blank, *supra* note 21, at 8.

110. *Palmer v. Hoffman*, 318 U.S. 109, 113 (1943).

111. *In re* Application of the U.S. for Prospective Cell Site Location Info. On A Certain Cellular Tel., 460 F. Supp. 2d 448, 451 (S.D.N.Y. 2006).

112. *Id.*

113. *See, e.g.,* *United States v. Sanchez*, 586 F.3d 918, 928–29 (11th Cir. 2009); *United States v. Green*, No. 10-10300, 2010 WL 3401485, at *3 (11th Cir. Aug. 31, 2010); *United States v. Yeley-Davis*, 632 F.3d 673, 679 (10th Cir. 2011); *Mikell v. Brian*, No. CV409-171, 2010 WL 6797007, at *25 (S.D. Ga. Nov. 9, 2010); *Fry v. State*, 885 N.E.2d 742, 747–49 (Ind. Ct. App. 2008); *State v. Hood*, 984 N.E.2d 1057, 1065 (Ohio 2012).

114. *See supra* Part III.B.

evidentiary issue, and it is in this argument that the case law presents significant chaos and confusion.¹¹⁵ Most cases that dispute the usage of cellular records, dispute the records not because of their *admission*, but rather they dispute the *way* in which they are ultimately admitted.¹¹⁶ As a result of these disputes, the true question surrounding cellular records is: must an expert witness testify in order to properly admit cellular records into evidence? Consequently, to answer this question, the rules of evidence for both lay and expert testimony must be examined. This will be followed by an explanation of the importance in the distinction, specifically focusing on three concerns surrounding the distinction between lay and expert opinion.

A. *What is Lay Testimony vs. Expert Testimony? An Introduction*

1. Basic Requirements of Rules 701 and 702

While each state can set their own rules for evidentiary concerns, and thus each have different rules on lay testimony and expert opinion, by and large the states model their rules after the Federal Rules of Evidence.¹¹⁷ The Federal Rules governing lay opinion and expert testimony are Rules 701 and 702.¹¹⁸ First, in order for a lay witness's testimony to be admissible, it must comply with three requirements: it must be rationally based upon the witness's own perception; helpful to clearly understanding the witness's testimony or to determining a fact in issue; and not based on scientific, technical, or other specialized knowledge which is left within the scope of expert testimony.¹¹⁹ On the other hand, in order to admit expert testimony, Rule 702 requires the evidence to be scientific, technical, or specialized.¹²⁰ Further, there are several reliability requirements placed on the expert evidence: first, the testimony itself must be based on sufficient facts or data; second, the testimony must be based on reliable principles and methods; and third, the expert must have applied the principles and methods of the specialized information reliably to the present case.¹²¹ Additionally, the witness must be qualified as an expert witness through their knowledge, skill, experience, training, or education.¹²² And

115. *See infra* Part V.

116. *See infra* Part V.

117. Paul F. Kirgis, *A Legisprudential Analysis of Evidence Codification: Why Most Rules of Evidence Should Not Be Codified – But Privilege Law Should Be*, 38 LOY. L.A. L. REV. 809, 809 (2004).

118. FED. R. EVID. 701–702.

119. FED. R. EVID. 701; *Malone v. State*, 70 So. 3d 1197, 1201 (Miss. App. 2011).

120. FED. R. EVID. 702.

121. *Id.*

122. *Id.*

finally, just as lay testimony, an expert's testimony must be helpful to the jury in deciding the issues of the case.¹²³

2. Both Lay & Expert Testimony Must Be Helpful to the Jury

The evidence must first be "helpful" to the jury in that the evidence "helps" the trier of fact in understanding the issues or evidence submitted.¹²⁴ While this has been called the "touchstone" of Rule 702,¹²⁵ the requirement also stems from basic relevancy requirements.¹²⁶ If the expert's testimony is not "helpful," (i.e., it does not make any fact more or less probable) then it is not relevant and therefore inadmissible.¹²⁷ However, as relevancy simply requires the evidence to have "any tendency" to make a fact more or less probable, this is not a difficult hurdle to either lay or expert testimony.¹²⁸

3. Specialized, Scientific, & Technical Information is Reserved to Expert Witnesses Only

Once the evidence has been deemed "helpful," the first step in distinguishing between lay and expert testimony is to determine what type of testimony will be offered—will the witness discuss something that is specialized, scientific, or technical? In order to facilitate answering this question, the Federal Rules of Evidence Advisory Committee, in a 2000 amendment, cited *State v. Brown*,¹²⁹ and provided 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 specialist in the field.'"¹³⁰ Thus, while a lay witness can testify to things learned through their personal

123. *Id.*; *BioCore, Inc. v. Khosrowshahi*, 183 F.R.D. 695, 699 (D. Kan. 1998) (stating "the touchstone of Fed.R.Evid. 702 . . . is the helpfulness of the expert testimony, i.e. whether it 'will assist the trier of fact to understand the evidence or to determine a fact in issue.'" (citing *United States v. Downing*, 753 F.2d 1224, 1235 (3rd Cir. 1985)).

124. *BioCore*, 183 F.R.D. at 699; FED. R. EVID. 701.

125. *Biocore*, 183 F.R.D. at 699.

126. *Id.*

127. *See* FED. R. EVID. 401.

128. While "helpfulness" can present larger issues, this analysis will not focus on those issues as they are tangential to the purpose of this article—the admissibility and implications of cellular records. *See* *Thompson v. State*, No. 01-10-00398-CR, 2012 WL 668937, at *6-7 (Tex. App. Mar. 1, 2012); *See also* *United States v. Rahm*, 993 F.2d 1405, 1409 (9th Cir. 1993) (explaining the various factors used to examine the evidence's assistance to the jury).

129. *State v. Brown*, 836 S.W.2d 530, 549 (Tenn. 1992).

130. FED. R. EVID. 701 advisory committee's note; *United States v. Kale*, 445 F. App'x 482, 485 (3d Cir. 2011).

experiences,¹³¹ those things learned only through specialized training must be left to the specialist and admitted through expert testimony.¹³²

4. Expert Testimony has Three Reliability Requirements

Once the evidence is determined to be specialized testimony obtained through training, the testimony must be admitted through expert opinion. The next step will be to determine the reliability of the evidence, thus ensuring the expert evidence conforms to Rule 702's restrictions.¹³³ While there must be sufficient facts relied upon by the expert, and those facts must then be reliably applied to the present case,¹³⁴ the more difficult burden lies with in determining the reliability of the specialized information itself.¹³⁵ To determine if specialized knowledge is in fact reliable, courts hold one of two types of hearings.¹³⁶ Either the court will conduct a *Daubert* Hearing¹³⁷ or, for those states that have not chosen to adopt the new federal standard in *Daubert*,¹³⁸ a *Frye* Hearing.¹³⁹ The older standard used in *Frye* allows experts in the specific field to set the reliability standard by holding that if the expert's approach is "generally accepted" within the field, it is sufficiently reliable.¹⁴⁰ While many state courts continue to apply this "general acceptance" reliability standard,¹⁴¹ all federal courts now apply *Daubert's* standard.¹⁴² This reliability test sets the judge as "gatekeeper" and identifies several factors to be examined by the judge when determining reliability: whether the theory or technique has been

131. See *infra* Part IV.C.

132. Most arguments surrounding the admission of cellular records focus on this particular issue—is the evidence specialized, scientific, or technical. See *infra* Part V.

133. FED. R. EVID. 702.

134. See FED. R. EVID. 703 for more information on what establishes that an expert has a sufficient factual basis.

135. FED. R. EVID. 702; See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

136. See *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923); *Daubert*, 509 U.S. at 579.

137. See *Daubert*, 509 U.S. at 579 (establishing the rule determining the reliability of a specialized, scientific, or technical piece of evidence in federal courts); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

138. *Frye*, 293 F. at 1013. While *Daubert* superseded *Frye*, many states still apply a *Frye* standard and therefore it is important to analyze. See, e.g., *State v. Bigger*, 254 P.3d 1142 (Ariz. Ct. App. 2011); *King v. State*, 89 So. 3d 209 (Fla. 2012); *Butler v. Union Carbide Corp.*, 712 S.E.2d 537 (Ga. Ct. App. 2011); *In re Girard*, 294 P.3d 236 (Kan. 2013); *Montgomery Mut. Ins. v. Chesson*, 51 A.3d 18 (Md. Ct. Spec. App. 2012); *Doe v. Archdiocese of St. Paul and Minneapolis*, 817 N.W.2d 150 (Minn. 2012); *Betz v. Pneumo Abex, LLC*, 44 A.3d 27 (Pa. 2012).

139. See *Frye*, 293 F. at 1014.

140. *Id.*

141. See, e.g., *Bigger*, 254 P.3d at 1142; *King*, 89 So. 3d at 209; *Butler*, 712 S.E.2d at 537; *In re Girard*, 294 P.3d at 236; *Montgomery Mut. Ins.*, 51 A.3d at 18; *Archdiocese of St. Paul*, 817 N.W.2d at 150; *Betz*, 44 A.3d at 27.

142. See *Daubert*, 509 U.S. at 579.

tested, whether it has been subject to peer review and publication, the technique's error rate, the existence of standards controlling the technique's application, and whether the theory or technique has been generally accepted in the relevant scientific community.¹⁴³ The Supreme Court in *Daubert* was very clear in its reasoning that these factors must be flexible and must be examined carefully for each case.¹⁴⁴ As both tests are meant to be applied subjectively, they have caused significant discourse among the courts.¹⁴⁵

5. Experts Must Qualify under Rule 702

One more step to admitting expert testimony would be to qualify the witness as an expert.¹⁴⁶ While this can be the center of some dispute,¹⁴⁷ many witnesses can qualify as an expert.¹⁴⁸ The rule states a witness can be qualified as an expert by "knowledge, skill, experience, training, or education . . ." ¹⁴⁹ Therefore, a person who has a doctorate in engineering will mostly likely be qualified to testify about the structure of a home, something that would not surprise most people. However, a construction worker, with no formal education, may, through his personal experiences, skill, knowledge, and training, be just as qualified to discuss the structure of a home.¹⁵⁰

In conclusion, the distinction between lay and expert opinion testimony under the evidentiary rules can be difficult. However, a step-by-step approach helps to clarify the different and various requirements in admitting each type of testimony. Thus, the process requires: first, the evidence must comply with relevancy standard and thus be helpful to the trier of fact; second, the information must be classified as specialized, scientific, or technical; and finally, if it is such evidence, one must ensure the evidence conforms to reliability standards. However, the question remains: why do courts care? Why is there so much importance placed on the type of witness who testifies?

B. *Why is the Distinction between Lay & Expert Testimony So Significant?*

There are many reasons why the distinction between lay and expert testimony is strictly upheld, but two initial reasons are the reliability

143. *Id.* at 592–94.

144. *Id.* at 594–95.

145. *See generally* Robert M. Whitney, *A Practicing Lawyer's Guide to the Application of Daubert and Kumho*, 23 AM. J. TRIAL ADVOC. 241, 253 (1999) (discussing the numerous factors to be applied during a *Daubert* hearing and the increased pressure on the court to "screen" this evidence).

146. FED. R. EVID. 702.

147. *See infra* Part IV.C.

148. *See* FED. R. EVID. 702.

149. *Id.*

150. *See id.*

requirements placed on experts¹⁵¹ and the significance of expert testimony to jurors.¹⁵² One significant concern surrounding lay testimony is the absence of strict reliability requirements.¹⁵³ Specifically, the Federal Rules of Evidence Advisory Committee has remarked that the rules have “been amended to eliminate the risk that the reliability requirements [established for experts under] Rule 702 will be evaded through the simple expedient of proffering an expert in lay witness clothing.”¹⁵⁴ While the reliability requirements for expert testimony can be difficult and tedious to comply with,¹⁵⁵ they are there for a reason and cannot be avoided by disguising otherwise expert testimony using a lay witness.¹⁵⁶ Another significant reason which distinguishes between lay and expert testimony is the potential impact expert witnesses can have on a jury.¹⁵⁷ Since experts can exhibit a substantial amount of influence over juries simply by their very nature as experts, they have the potential to unduly influence a jury.¹⁵⁸ Therefore, distinguishing a witness as lay or expert holds great weight in trial both because lay testimony does not have the same reliability safeguards as expert testimony and because jurors are greatly impacted by an experts’ testimony.

However, one final reason has presented problems in trial: if a witness testifies without the specialized, scientific, or technical knowledge expected of an expert, how can the witness be sufficiently cross-examined?¹⁵⁹ This issue is best demonstrated through a hypothetical. At a civil trial for a car accident, the plaintiff testifies, through his experience, the brakes in his car stop in about two seconds. However, when the defense cross-examines the plaintiff, he doesn’t know what type of brakes are in the car, how old his breaks are, how different speeds can affect the time it takes for the car to stop, and so on. While it may be true that everyday people who have been driving cars for years have some knowledge about car brakes, they do not have sufficient information to allow for cross-examination and thus for testimony in trial. In criminal trials, where a defendant has the constitutional right to confront, and therefore cross-examine, all witnesses against him,¹⁶⁰ this issue is even greater. Consequently,

151. See FED. R. EVID. 702 advisory committee’s note.

152. MICHAEL H. GRAHAM, HANDBOOK OF FEDERAL EVIDENCE 589–90 (7th ed. 2012).

153. See FED. R. EVID. 701 advisory committee’s note.

154. *Id.*

155. See *supra* Part IV.A.

156. See FED. R. EVID. 701 advisory committee’s note.

157. *United States v. Anderson*, 851 F.2d 384, 393 (D.C. Cir. 1988) (stating “there is often an inherent danger with expert testimony unduly biasing the jury ‘[b]ecause of its aura of special reliability and trust.’”) (quoting *United States v. Amaral* 488 F.2d 1148, 1152 (9th Cir. 1973)).

158. GRAHAM, *supra* note 152, at 589–637.

159. See *Wilder v. State*, 991 A.2d 172, 189 (Md. Ct. Spec. App. 2010).

160. U.S. CONST. amend. VI. See also *Crawford v. Washington*, 541 U.S. 36, 68–69 (2004).

expert testimony is often necessary to allow for a sufficient opportunity to cross-examine the witness.

C. Is a Police Officer a Valid Expert Due to Experience-Based Opinions?

In light of these issues, courts are careful to distinguish between lay and expert testimony. Still, one difficulty arises when courts have to consider what is often termed “experience-based opinion.”¹⁶¹ Experience-based opinion, which was demonstrated above by the construction worker hypothetical, is where a witness has unusual experience-based knowledge not common to the everyday person, which would usually place their testimony in the expert category.¹⁶² However, because the witness obtained his or her knowledge and experience outside the realm of specialized training, courts have struggled to place this testimony under either lay or expert opinion.¹⁶³ During a 2000 amendment, the Federal Rules of Evidence Advisory Committee attempted to give guidance and noted that lay opinion is restricted to everyday reasoning.¹⁶⁴ But this raised a significant question for courts: what about police officers? Police officers know things through their “everyday reasoning” that others are incapable of understanding—should this knowledge be imparted through lay or expert opinion?

While noting the line is difficult to draw, courts such as the Ninth Circuit in *United States v. Figueroa-Lopez* have recognized police officers can serve dual roles providing both lay and expert testimony since the late 1990s.¹⁶⁵ In fact, some courts have allowed police officers to testify as lay witnesses “based upon their particularized knowledge garnered from years of experience within the field.”¹⁶⁶ Thus, some courts are allowing police officers to testify without the reliability standards imposed on expert testimony and, as such, are potentially misleading the jury with unreliable information. Further, as these officers often do not have training on the specialized, scientific, or technical aspects of cell towers, they are ill equipped to provide full testimony on both direct examination and cross-examination.

161. See Anne Bowen Poulin, *Experience-Based Opinion Testimony: Strengthening the Lay Opinion Rule*, 39 PEPP. L. REV. 551, 553 (2012).

162. See FED. R. EVID. 702 advisory committee’s note.

163. *Id.*

164. FED. R. EVID. 701 advisory committee’s note.

165. *United States v. Figueroa-Lopez*, 125 F.3d 1241, 1246 (9th Cir. 1997).

166. *Tampa Bay Shipbuilding & Repair Co. v. Cedar Shipping Co.*, 320 F.3d 1213, 1223 (11th Cir. 2003); *United States v. Page*, 521 F.3d 101, 105 (1st Cir. 2008); *Wilder v. State*, 991 A.2d 172, 197 (Md. Ct. Spec. App. 2010); *United States v. Feliciano*, 300 F. App’x 795, 800–01 (11th Cir. 2008). *But see* *People v. Roby*, No. 301608, 2011 WL 5067252, at *2 (Mich. Ct. App. Oct. 25, 2011) (holding the personal experience of the officer allowed him to be certified as an expert).

V. THE ADMISSION OF CELLULAR RECORDS USING LAY OR EXPERT TESTIMONY? COURTS EXPRESS CONFLICTING ANSWERS

Even with guidance from the Federal Advisory Committee, which has attempted to make clear distinctions between lay and expert testimony, courts continue to struggle with finding the line between the two. When courts apply these evidentiary rules and principles to cellular records and cellular tower tracking technology, they almost invariably become stuck at the initial step in the distinction between lay and expert testimony: is this technology specialized, scientific, or technical? In fact, cases as far back as *United States v. Sepulveda* in 1997 have found this evidence sufficiently reliable and therefore admissible.¹⁶⁷ While *Sepulveda* did not provide much rationale for admitting evidence surrounding cellular technology,¹⁶⁸ just a few years later, in 2000, the Georgia Supreme Court, in *Pullin v. State*, admitted cellular records, holding “the basic principles of cellular telephone technology [have been] widely accepted.”¹⁶⁹ Further, the court in *Pullin* noted the technology had reached a sufficient stage of “verifiable certainty” and therefore was admissible.¹⁷⁰ Consequently, there is little discussion over whether this evidence is admissible or even reliable.¹⁷¹ In fact, more recently courts have completely ignored contentions arguing that this evidence is either new or that the underlying science is questionable.¹⁷² Moreover, those courts examining the qualifications of an expert witness admitting expert opinion have allowed both a records custodian¹⁷³ and police detective¹⁷⁴ to testify. Thus, when the cell records are in fact admitted through an expert, the courts find few issues with the evidence.¹⁷⁵

167. *United States v. Sepulveda*, 115 F.3d 882, 890 (11th Cir. 1997).

168. *See id.*

169. *Pullin v. State*, 534 S.E.2d 69, 71 (Ga. 2000).

170. *Id.*

171. *United States v. Jones*, 918 F. Supp. 2d 1, 7 (D.D.C. 2013) (holding “where the science is well understood . . . the court need not hold an evidentiary hearing” to determine the reliability of the science).

172. *See People v. Wells*, No. A112173, 2007 WL 466963, at *11 (Cal. Ct. App. Feb. 14, 2007) (stating “it is simply not true, as defendant contends, that the use of cell phones to locate a caller is new to the law. Cell phone evidence has been introduced for that purpose in a number of cases across the country. . . without any concern for the validity of the underlying science.”).

173. *See Cooper v. State*, 45 So. 3d 490, 493 (Fla. Dist. Ct. App. 2010) (holding custodian of cell records from cellular company qualified since, through his position, he had worked with the records and dealt with customer billing and technical support, and therefore he had knowledge of the interplay between the towers and transmission station).

174. *See People v. Roby*, No. 301608, 2011 WL 5067252, at *3 (Mich. Ct. App. Oct. 25, 2011) (holding detective who had only two-day training course qualified since that training was all that was available and, he had previously used this technology in past cases).

175. *People v. Hammock*, No. 277672, 2008 WL 4330176, at *2 (Mich. Ct. App. Sept. 23, 2008).

Consequently, the issue of cellular site data does not surround the actual technology or even the witness testifying regarding the validity of the evidence. Rather, courts have conflicting and often vague answers to the most basic question surrounding lay and expert testimony: is an expert even needed to admit cellular records and location information? More specifically, are cellular records and cellular tracking specialized, scientific, or technical information requiring an expert? To demonstrate the various conclusions courts have come to, this article will next conduct a case-study. This case-study will begin first with a few key cases from various jurisdictions which provide sufficient rationale for analysis. Next, the case-study will conduct an in-depth analysis of *Wilder v. Maryland*, examining where the Maryland courts have drawn a line and subsequently leading a few other jurisdictions to follow Maryland's steps.

A. *Expert Required vs. Lay Okay? Courts Present Uncertain Answers*

One such jurisdiction addressing cellular technology and the expertise involved is Nebraska. In *State v. Robinson*, the court examined a case where the defendant had been convicted of murder in the first degree.¹⁷⁶ The defendant argued the admission of cellular records via a cellular provider's employee was error because the records were technical and specialized and, as such, required a *Daubert* hearing.¹⁷⁷ However, the court vehemently rejected this argument, stating the "records contained nothing even resembling expert opinion testimony . . ."¹⁷⁸ Further, the court found the employee simply explained cellular records, as his testimony was limited to only what the documents stated.¹⁷⁹ Specifically, the court held the witness made no extension off the cellular records, and as such was merely conveying facts.¹⁸⁰ However, during cross-examination at trial, the cellular employee went beyond the discussion of the records and simply explaining the facts.¹⁸¹ There, the employee began explaining how cell signals could be diverted from specific towers and various reasons for possible diversion.¹⁸² The processes of cell towers and the description of factors controlling a cell's signal direction are beyond a simple explanation of what was contained in the cell records.¹⁸³ Still, the court disregarded this information, rather they went on to state "even if [the

176. *State v. Robinson*, 724 N.W.2d 35, 48 (Neb. 2006).

177. *Id.* at 67–68.

178. *Id.* at 69.

179. *Id.*

180. *Id.*

181. *Id.* at 64.

182. *Robinson*, 724 N.W.2d at 64.

183. *See Wilder v. State*, 991 A.2d 172, 195 (Md. Ct. Spec. App. 2010). *See also* Ryan W. Dumm, Comment, *The Admissibility of Cell Site Location Information in Washington Courts*, 36 SEATTLE U. L. REV. 1473, 1480–81 (2013).

employee's] testimony was based on 'scientific, technical, or other specialized knowledge,' there is little doubt that it assisted the trier of fact to understand the evidence and that [the employee] would have been qualified as an expert."¹⁸⁴ Thus the court confused the issue and, rather than addressing the true nature of the testimony, fell back on the harmless-error standard of appellate review for evidentiary issues.¹⁸⁵ By making such a decision, *Robinson* left future courts with little guidance.

This confusion continued two years later in the Eleventh Circuit. In *United States v. Feliciano*, the court held a police detective's testimony concerning the location of the defendant using cellular records was not expert testimony.¹⁸⁶ In that case, the defendant was on trial for distribution of cocaine.¹⁸⁷ During trial, the police detective testified about cell tower sites for the *express purpose* of establishing the location of the cellular phone and thereby the owner of that phone.¹⁸⁸ The court, while specifically noting the testimonial purpose, found the detective's testimony was properly admitted as a lay opinion since he simply reviewed the cellular records.¹⁸⁹ In fact, as the court accepted the detective had no personal knowledge of cell towers beyond what he read in the cellular records, it simultaneously allowed the detective to testify to the location of the caller.¹⁹⁰ Thus, rather than simply explaining documents to the jury in order to make the potentially complicated cell records more understandable, the police detective went beyond the records and testified that the cell towers were capable of indicating the caller's location. Consequently, the Eleventh Circuit fell into the same trap as Nebraska, holding that since the detective did not provide an opinion beyond what he was capable of reading in the cell records, his testimony was not expert opinion.¹⁹¹

This trap continued in the Florida courts as well. In *Perez v. State*, the defendant was on trial for attempted murder.¹⁹² At trial, the state called a cellular company's records custodian to offer lay testimony demonstrating the defendant was in the "general" vicinity of the crime.¹⁹³ The court upheld the admission of lay testimony, holding an expert was not necessary as the witness "simply factually explained the contents of the phone records."¹⁹⁴ Further, the court held the testimony was only general background information as it did not

184. *Robinson*, 724 N.W.2d at 69.

185. *Id.*

186. *United States v. Feliciano*, 300 Fed. App'x. 795, 801 (2008).

187. *Id.* at 797.

188. *Id.* at 801.

189. *Id.*

190. *Id.*

191. *Id.*

192. *Perez v. State*, 980 So. 2d 1126, 1128 (Fla. Dist. Ct. App. 2008).

193. *Id.* at 1131.

194. *Id.* (quoting *Gordon v. State*, 863 So.2d 1215, 1219 (Fla. 2003))

reveal the “precise” location of the defendant.¹⁹⁵ Instead, the phone records gave the defendant’s general location, which was no more precise than a one–three mile radius.¹⁹⁶ While holding the witness only conveyed that which was in the cell records, the court also stated the testimony served to “*explain* the concept of a cell site and how it generally related to cellular telephone company records.”¹⁹⁷ The court in *Perez* found that a juror’s own knowledge, experience, and familiarity with the addresses of cell towers could lead the juror to “determine the location of the tower without the need for the expert testimony.”¹⁹⁸ However, assuming for the moment that lay persons understand cell towers and can locate them on a map, this does not mean a lay person would understand how that cell tower’s location then translates into the defendant’s location. It also does not mean a lay person understands the potential accuracy issues with that technology. However, the court in *Perez* still held the usage of cellular records to locate a defendant did not require expert testimony.¹⁹⁹

Lastly, the Missouri courts examined a peculiar factual twist in determining the necessity of an expert to admit cellular records, eventually holding the defendant was not an expert and therefore not able to testify regarding cellular tower technology. In *State v. Manzella*, during a first degree murder trial, the state introduced expert testimony through a cellular company’s employee.²⁰⁰ This employee was a radio frequency performance engineer working for Cingular Wireless, and he testified to the defendant’s location the morning of the murder using the cell records and tower information.²⁰¹ The defendant did not appeal the admission of this evidence, rather the defendant argued he was denied an opportunity to testify himself about his cellular records.²⁰² During trial, the defendant argued that he attempted to rebut the expert testimony by taking the stand himself, claiming through his many years as a cell phone owner, he held personal knowledge of cellular towers and therefore could testify as a lay witness.²⁰³ The appellate court upheld the trial court’s determination that, while the defendant could testify about his cellular bill (such as calls made and charges received), the defendant lacked sufficient knowledge of a cellular tower’s functioning.²⁰⁴ Thus, ultimately the court, quoting the trial court’s reasoning, held that

195. *Id.*

196. *Id.*

197. *Id.* (emphasis added).

198. *Perez*, 980 So. 2d at 1132.

199. *Id.* at 1131.

200. *State v. Manzella*, 128 S.W.3d 602, 608–09 (Mo. Ct. App. 2004).

201. *Id.* at 608.

202. *Id.* at 605.

203. *Id.* at 608–09.

204. *Id.* at 609.

“testimony regarding cellular towers was outside the realm of common knowledge” and denied the admission of defendant’s lay testimony.²⁰⁵ While the court never expressly stated that an expert would be needed to admit the cellular records, it drew a line by prohibiting testimony from a witness who lacked sufficient knowledge of the technical information surrounding cellular towers.²⁰⁶

This line became definite in the Missouri court’s most recent opinion, *State v. Patton*.²⁰⁷ There, the defendant had been convicted of several counts of murder in the first degree, armed criminal action, assault, and burglary.²⁰⁸ During trial, several eye-witnesses and the defendant’s cell mate testified he was the assailant, but the defendant had an alibi in the form of his cousin and girlfriend, who testified he was out of town at the time of the murders.²⁰⁹ To combat this alibi, the state introduced the defendant’s cell records through the creation of a map which plotted the cell record’s information showing the location of each “ping.”²¹⁰ Further, the state offered testimony from a lay witness who testified “that several factors affect whether a phone connects to a particular site, but a phone will usually connect to the closest one”²¹¹ The defendant appealed, arguing testimony regarding cell site data is too technical and scientific for a lay witness.²¹² The court made a clear distinction between the creation of a map using no more than the cell records and testifying to the location of the defendant.²¹³ Specifically, once the witness testified to the ultimate connection between the ping’s location and the defendant’s location, a connection which is at the very least arguable and “misleadingly simple,” the testimony required an expert.²¹⁴ Furthermore, drawing an inference that a person is located where their phone pings from a tower, “without the aid of specialized experience or knowledge in the field of cellular communications, [the testimony] comes too close to mere speculation.”²¹⁵ Consequently, the court held any testimony regarding a person’s location using historical cell site

205. *Id.*

206. *Manzella*, 128 S.W.3d at 609.

207. *State v. Patton*, No. ED 98051, 2013 WL 5530599, at *4 (Mo. Ct. App. Oct. 8, 2013).

208. *Id.* at *1.

209. *Id.*

210. *Id.*

211. *Id.* at *4.

212. *Id.* at *2.

213. *Patton*, 2013 WL 5530599, at *4 (reasoning the creation of the map itself was not scientific and thus did not require a *Frye* hearing as the defendant claimed).

214. *Id.*

215. *Id.*

data is beyond common knowledge and, as a result, requires expert testimony.²¹⁶

The Nebraska court, Eleventh Circuit Court of Appeals, Florida court, and Missouri court provide general background and are just a few examples of the many jurisdictions currently grappling with the issue of cellular records and expert testimony.²¹⁷ These cases demonstrate the confusion surrounding the distinction between lay and expert opinions when applied to cellular records. Further, they show the distinction many courts, like those of Nebraska, Florida, and the Eleventh Circuit, attempt to make between simply conveying the cellular records to the jury and explaining what those records then mean.²¹⁸ In cases like *Robinson*, *Feliciano*, and *Perez*, courts have held the testimony only required the witnesses to read the records.²¹⁹ However, since witnesses in all three cases not only read the records to the jury, but then drew the ultimate conclusion that the records could show the caller was in a specific location, these three courts have based their decisions on an incorrect reading of the trial records.²²⁰

While many courts continue to base their holdings significantly on such an artificial distinction, the Maryland Court of Appeals drew a clear line and distinguished lay and expert testimony in regards to cellular technology.²²¹ Further, in making its decision, the court specifically examined both the state and defense pre-trial arguments.²²² Ultimately, the Maryland court decided in *Wilder v. State* that an expert is required to admit cellular records when their sole purpose is to identify the defendant's location during the crime alleged.²²³

216. *Id.* However, the conviction was not reversed since the court found the significant evidence and eye-witness testimony sufficient to support the conviction and, therefore, any error with the cell records was harmless. *Id.* at *5.

217. *See, e.g.*, *United States v. Evans*, 892 F. Supp. 2d 949, 954 (N.D. Ill. 2012) (holding an expert is necessary to explain how cellular networks operate, but lay testimony is okay when the witness only explains the call data records or the location of cell towers in relation to other locations relevant to the crime); *United States v. Kale*, 445 F. App'x 482, 485–86 (3d Cir. 2011) (indicating *in dicta* an expert is necessary to admit cellular records to locate a defendant); *Malone v. State*, 73 So. 3d 1197, 1201 (Miss. Ct. App. 2011) (holding the issue was without merit and finding lay testimony is sufficient since the custodian was simply explaining the cellular records); *Woodward v. State*, 123 So. 3d 989, 1017 (Ala. Crim. App. 2011) (holding in a case of first impression for Alabama that an expert is not necessary to admit cellular records since the witness did not testify to the “exact” location of the caller); *State v. Hayes*, No. M2008-02689-CCA-R3-CD, 2010 WL 5344882, at *10 (Tenn. Crim. App. Dec. 23, 2010) (holding the detective offering lay testimony was not error since he merely testified to the cellular records and then plotted those locations on a map).

218. *See supra* Part V.A.

219. *See supra* notes 176–206 and accompanying text.

220. *See supra* notes 176–205 and accompanying text.

221. *See Wilder v. Maryland*, 991 A.2d 172, 197–98 (Md. Ct. Spec. App. 2010).

222. *Id.* at 188–91.

223. *Id.* at 197.

B. *Wilder v. State: Where Does Maryland Draw the Line?*

1. Facts of *Wilder*

In *Wilder v. State*, Audrey Wilder (“Defendant”) was convicted in Baltimore County, Maryland, of first degree assault, reckless endangerment, and use of a handgun in commission of a crime of violence.²²⁴ These charges stemmed from an early morning shooting on July 25, 2007, at the home of Robert Lee Williams Jr.²²⁵ While the incident happened in the very early morning, around 2:00 a.m., Williams Jr. saw the shooter’s car, which he identified as Defendant’s Volvo.²²⁶ However, Williams Jr. was unable to identify either the driver of the car or how many people occupied the vehicle.²²⁷

At trial, the State primarily relied upon the contested cellular records and subsequent tower locations.²²⁸ Additionally, a neighbor, Troy Wallace, provided eyewitness testimony as he was awake at the time of the shooting.²²⁹ However, just as William Jr. saw only the car, Wallace too was only able to identify the shooter’s car as the Defendant’s Volvo and did not see who was driving the vehicle.²³⁰ Furthermore, the State offered evidence demonstrating the long history of issues between Jones, a resident of William Jr.’s house, and Defendant.²³¹ In fact, Defendant had been barred from coming to Williams Jr.’s property due to the severity of past “incidents” with Jones.²³²

On the other hand, during the police investigation, Detective Hanna asked Defendant about his location during the shooting.²³³ Defendant stated that he was at a cousin’s house from 10:00 p.m. in the evening until he was arrested.²³⁴ To support this position, the defense offered testimony from Dwayne McKenzie, Defendant’s cousin, who then provided an alibi for the Defendant.²³⁵ Lastly, Wilder’s mother took the stand to provide pictures of the

224. *Id.* at 176.

225. *Id.* at 176–77.

226. *Id.* at 178.

227. *Wilder*, 991 A.2d at 178.

228. *Id.* at 191.

229. *Id.* at 179.

230. *Id.* Wallace specifically stated he had seen the Defendant driving that Volvo on numerous occasions, thus bolstering William Jr.’s identification of Defendant’s car. *Id.*

231. *Id.* at 177–78.

232. *Id.* at 178–79. Over objection, the court allowed Williams Jr.’s wife to testify these “incidents” were in fact occasions when Defendant physically assaulted, or “hit on” Jones. *Id.*

233. *Wilder*, 991 A.2d at 180.

234. *Id.*

235. *Id.* McKenzie testified he went to clubs with Wilder late in the evening and early morning on the nights and early morning of the shooting. Further, he stated they went back to his

Volvo at night, thus demonstrating the difficulties of accurate identification.²³⁶ Still, the jury found none of this evidence persuasive, ultimately finding the defendant guilty.²³⁷

2. Defense vs. Prosecution: The Arguments for Expert Testimony on Cell Tower Technology

During pre-trial evidentiary motions, the defense moved to exclude Detective Hanna's lay testimony on the cell tower tracking technology.²³⁸ Defendant did not challenge the reliability of the science, rather he argued the documents were hearsay and, in the alternative, an expert was needed to admit the records.²³⁹ Furthermore, Defendant stressed an inability to cross-examine a lay witness about significant issues surrounding cell tower tracking technology.²⁴⁰ Specifically, he argued a lay witness would be inept at explaining tower *information*, including where towers are located, how close the towers are to each other, and, most importantly, what controls which tower a cellular signal will ping.²⁴¹ In opposition, the prosecution simply stated that Detective Hanna was "not going to render any opinion whatsoever, neither expert nor lay nor otherwise."²⁴² Moreover, the prosecution discussed the "mapping"²⁴³ Detective Hanna had completed for trial, arguing such technique only requires the witness to read the records.²⁴⁴

The defense continued to point out there was more than simple "mapping" going on, arguing the prosecution was claiming Defendant was in the general location and such information was "highly technical."²⁴⁵ Additionally, the defense noted the significance of this information in that the cellular records were "an extremely large part of the State's case . . . because . . . no eyewitness . . . actually [saw Wilder] doing it."²⁴⁶ However, the trial court

home at about 4 a.m., and then McKenzie borrowed the car to take a companion home, returning to his house at about 4:30, where Wilder was asleep on the couch. *Id.*

236. *Id.* at 180.

237. *Id.* at 176.

238. *Id.* at 187–91.

239. *Wilder*, 991 A.2d at 188–89.

240. *Id.* at 189.

241. *Id.*

242. *Id.* at 190.

243. *See supra* notes 51–57 and accompanying text.

244. *Wilder*, 991 A.2d at 190. The prosecutor stated the "certified records show inbound calls, outbound calls, [and] the duration of the call. They show the date that the call was made, they show the originating number, they show the number the call was placed to or came from, and they also show a code that corresponds to a longitude and latitude coordinates that can be plotted on a map to show cell tower locations." *Id.* Thus, because the records provide all this information, the prosecution argued mapping required someone simply read the records. *Id.*

245. *Id.* at 190–91.

246. *Id.* at 191.

ultimately held the defense's argument was "too sketchy" and admitted Detective Hanna's lay testimony since the detective was not going to "express any opinion" but merely plot points on a map from certified records.²⁴⁷

During trial, while the court had admitted the evidence under the assumption no opinion would be made, Detective Hanna's testimony expressed location evidence numerous times.²⁴⁸ At the outset, Hanna testified that he "utilized the cellular telephone tracking to determine that Wilder was in the vicinity of the Williams home at the time of the shooting."²⁴⁹ Further, Hanna testified the mapping exhibit he created from the cellular records depicted "Wilder's whereabouts around the time of the shootings."²⁵⁰ Next, Hanna indicated that this mapping tool had been used many other times as a "successful tool in locating or finding a lot about a person," which indicates both that cellular towers show a specific location *and* that this tool has been used consistently and accurately.²⁵¹ Finally, Hanna testified that the records showed Wilder's phone was pinging off towers during the time and in the location of the shooting, rather than where his alibi witness claimed.²⁵² Wilder was convicted as a result of this evidence and later appealed his conviction, claiming he was denied a fair trial through Hanna's lay testimony.²⁵³

2. Conviction Overturned: Expert is Necessary to Admit Cellular Records

To reach a decision, the Maryland Court of Appeals reviewed several issues. Initially, they reviewed precedent from other jurisdictions cited by both parties, specifically *Perez* and *Manzella*.²⁵⁴ In examining this precedent, the court reviewed both the pre-trial motion arguments and trial testimony from the lay police officers.²⁵⁵ Finally, the Maryland court also looked at the appellate standard of review for evidentiary issues—harmless error.²⁵⁶ Ultimately, while the appellate court acknowledged precedent outside the Maryland jurisdictions, it expressly rejected that precedent and held an expert is necessary to admit cellular tracking technology.²⁵⁷

In addressing contrary decisions surrounding expert testimony and cellular records, the court reviewed *Perez*, specifically noting the Florida court's position that the lay witness simply explained contents of a phone record and

247. *Id.*

248. *See id.*

249. *Id.* at 187.

250. *Wilder*, 991 A.2d at 180.

251. *Id.* at 192.

252. *Id.* at 195.

253. *See id.* at 176.

254. *Id.* at 197–99.

255. *Id.* at 189–91, 192–95.

256. *Wilder*, 991 A.2d at 200.

257. *Id.* at 197.

general background information interpreting the cell records.²⁵⁸ Further, the court addressed *Manzella*, noting the emphasis the Missouri court placed on the distinction between location technology and basic aspects of a cellular bill, such as calls made and charges to the carrier.²⁵⁹ Given these conflicting cases, the court in *Wilder* found that while cellular technology is becoming generally understood, the subject matter does not need to be “beyond the ken of laymen” for an expert to be necessary.²⁶⁰ Consequently, considering Detective Hanna’s “testimony *implicated* much more than mere telephone bills” since he *expanded off* the cellular records to ultimately suggest he knew Wilder’s location, the testimony required an expert.²⁶¹ Specifically, the court held that Hanna’s procedure required specialized knowledge of cellular towers and was beyond the knowledge of a juror.²⁶² Likewise, by using his training and experience while explaining the mapping procedure, Hanna should have been qualified as an expert.²⁶³

Accordingly, *Wilder* held that the trial court should have required the prosecutor use an expert to admit cellular and mapping location testimony into evidence.²⁶⁴ However, before reversing the trial court’s decision, *Wilder* examined the harmless error standard of review against the trial court’s error in allowing the lay testimony.²⁶⁵ Given that the jury could have reasonably used this evidence in finding the defendant guilty, especially considering the alibi defense raised by the defendant, the trial court found the error was not harmless and required reversal.²⁶⁶

In conclusion, the court noted that Hanna’s testimony “was used for the *sole* purpose of placing Wilder at or near the scene of the shooting . . . That, we believe, is compelling.”²⁶⁷ Consequently, the court in *Wilder* was careful to draw a distinction between simply reading records and expressing opinion from those records.²⁶⁸ Rather than allowing a lay witness to testify about cellular records he personally knew nothing about, the court mandated that an

258. *Id.* at 197–98 (citing *Perez v. State*, 980 So. 2d 1126, 1131–32 (Fla. Dist. Ct. App. 2008)).

259. *Id.* at 199 (citing *State v. Manzella*, 128 S.W.3d 602, 608–09 (Mo. Ct. App. 2004)).

260. *Id.* (quoting Lynn McClain, 6 MARYLAND EVIDENCE § 702:3 at 735–36 (2001 & 2009 Supp.)).

261. *Id.* at 199–200 (emphasis added).

262. *Wilder*, 991 A.2d at 199–200.

263. *Id.* at 200.

264. *Id.*

265. *Id.*

266. *Id.*

267. *Id.* (emphasis added).

268. *See Wilder*, 991 A.2d at 196, 200.

expert witness testify to admit the highly technical cellular tracking technology.²⁶⁹

VI. ANALYSIS: EXPERT TESTIMONY NEEDED TO ADMIT CELLULAR TRACKING TECHNOLOGY

As a result of *Wilder*, Maryland has become one of the few states with an absolute rule on cellular records.²⁷⁰ *Wilder* was correct to draw a line forcing courts to admit cellular records only through expert testimony. This is true for two significant reasons: first, the technology is specialized, scientific, and technical, and therefore is expert testimony; and second, lay witnesses are without sufficient information for the defense to cross-examine.

First, and most significantly, tracking defendants through cellular records and cell site data is in fact specialized, scientific, and technical information. Cellular towers themselves are highly technical and are advancing. Furthermore, how cell towers work to create historical cell site data, and therefore a location of a caller, is even more complicated and requires a fundamental understanding of cellular towers' functionality. While many lay persons own cell phones,²⁷¹ it is unlikely they understand how cellular signals are transmitted to cell towers. Further, it is unlikely an average person either knows or understands how that cell tower transmits and records the signal. Finally, the average cell phone user is certainly not going to know the vast list of factors influencing how their cell phone pings to a specific tower.²⁷²

Knowing how to use a cell phone and what a cell phone bill looks like does not qualify a person to testify about the technology beyond the basic cellular functions.²⁷³ This was made clear in *Manzella*, where the Missouri court held that a defendant was not qualified to testify to cellular tower technology simply because he was a cell phone user.²⁷⁴ This decision demonstrates how courts such as Nebraska in *State v. Robinson*, Florida in *Perez v. State*, and the Eleventh Circuit in *United States v. Feliciano*, which allow lay testimony largely because no expertise is required to read a cellular record, are simply missing the point.²⁷⁵ While cellular records may contain location information, they do *not* contain a column stating "caller located at . . ."²⁷⁶ In order to use cellular records to track a defendant, the witness must infer from those records—which only indicate a call pinged off a specific tower—that the caller

269. *Id.* at 200.

270. *See supra* Part V.A.

271. *See* Lichtblau, *supra* note 10.

272. *See supra* notes 58–66 and accompanying text.

273. *See* *State v. Manzella*, 128 S.W.3d 602, 609 (Mo. Ct. App. 2004).

274. *Id.*

275. *See supra* notes 176–200 and accompanying text.

276. *Wilder v. State*, 991 A.2d 172, 190 (Md. Ct. Spec. App. 2010).

was in the same location as the tower.²⁷⁷ Such inferences require information above and beyond the cellular records themselves, contrary to *Perez*, *Feliciano*, and *Robinson*, and therefore require expert testimony.²⁷⁸

Furthermore, these records are possibly the only evidence placing the defendant at the scene of the crime.²⁷⁹ In fact, in both cases there were alibi defenses,²⁸⁰ making the cellular records particularly critical. As such, the records provide a crucial piece of evidence for the state while the defense must attempt to cross a lay witness who lacks any knowledge of the technology's failures. Such a situation highlights the second fundamental flaw with lay testimony on cellular records—the inability to cross examine the witness. While no confrontation issue is present,²⁸¹ a defense attorney cannot ask a police officer, who has only read the cell records, any of the following questions: how does a cell tower receive a call? What factors influence what towers a call will ping off? How many towers are in the area? What are rush hours for this area? Is the tower in question owned by the same cell company as the caller? How many antennas are on the specific cell tower? How old is the cell tower? What kind of maintenance is done on the specific cell tower? Was maintenance happening on the day in question? All of these questions can have a significant impact on the weight a jury would give the evidence, and a lay witness is not qualified to answer them.

Moreover, a prosecutor can benefit from calling an expert to testify. As previously mentioned, experts have a significant impact on a jury;²⁸² therefore, any expert testimony could carry more weight simply because of the witness chosen to testify. Additionally, when a witness is asked any of the questions listed above and is then unable to answer, a jury could reasonably begin to question the witness. Picture a scenario where a witness is cross-examined and asked “what is a cell tower”? Now what if that witness has no idea? How does that impact the testimony they just gave on the cell records and mapping technique for locating the defendant? Such a situation demonstrates how a lay witness ignorance can damage not only the defense, but also the prosecution. Finally, an expert is more likely to understand new technological advances like those explained by Matthew Blaze.²⁸³ Such advances, according to Blaze, increase the accuracy of the cellular records.²⁸⁴ This information then cuts the

277. *See id.* at 194 (describing trial testimony that demonstrates that the cell phone records do not list the address of the caller, rather the address of the towers).

278. *See Patton*, 2013 WL 5530599, at *4 (holding such inferences rise too close to the level of “mere speculation”).

279. *See supra* Part I; *Wilder*, 991 A.2d at 191.

280. *Wilder*, 991 A.2d at 180.

281. *See supra* Part III.A.1.

282. *See supra* part IV.B.

283. *See* Statement of Professor Matt Blaze, *supra* note 25, at 12.

284. *Id.* at 13–19.

defense's largest argument against the cell records in half since any inaccuracy argument loses steam once an expert testifies the records can accurately identify a person's location up to a specific floor of a particular building.

As a result, not only is an expert witness required to testify about the highly technical cellular towers, but prosecutors benefit from such testimony just as the defense benefits. Specifically, contrary to courts' decisions in Florida and Nebraska, being a cell phone user does not mean the person understands the cell phone technology. Just because a person can turn on their phone does not mean they then understand historical cell site data, mapping, or cellular towers. What's more, experts allow for complete cross-examination, and consequently they provide complete testimony creating a greater impact on a jury. Therefore, Maryland was correct in *Wilder v. State* to draw a line limiting lay testimony on cell towers and to require an expert to admit cell site data through cellular records.

VII. CONCLUSION

As each month passes, courts continue to encounter this precise question, and they continue to find conflicting answers.²⁸⁵ Furthermore, many of these cases are being denied appellate review.²⁸⁶ Given that cellular records can sometimes supply the only piece of evidence tying a defendant to a particular location at a particular time, the evidence is of critical importance at trial. As constitutional and most evidentiary arguments continue to find little success, courts will continue to debate lay testimony versus expert testimony regarding the use of cell phone records as a locator device. However, because this evidence is specialized and technical, it should be reserved to an expert witness. By reserving cellular tower information to an expert, those like Defendant above²⁸⁷ will be ensured their constitutional right to a fair trial.

ALEXANDRA WELLS*

285. See cases cited *supra* note 217.

286. See, e.g., *State v. Hayes*, No. M2008-02689-CCA-R3-CD, 2010 WL 5344882, at *1 (Tenn. Crim. App. Dec. 23, 2010), *reh'g denied* (May 25, 2011); *Woodward v. State*, No. CR-08-0145, 2011 WL 6278294, at *1 (Ala. Crim. App. Dec. 16, 2011); *Saenz v. State*, No. 13-10-00216-CR, 2011 WL 578757, at *1 (Tex. App. Feb. 17, 2011); *People v. Roby*, No. 301608, 2011 WL 5067252, at *1 (Mich. Ct. App. Oct. 25, 2011).

287. See *supra* Part I.

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