**REL: January 8, 2021**



# SUPREME COURT OF ALABAMA

## OCTOBER TERM, 2020-2021

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## 1190490

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## Ex parte Marcus King George

## PETITION FOR WRIT OF CERTIORARI TO THE COURT OF CRIMINAL APPEALS

## (In re: Marcus King George

## v.

## State of Alabama)

## (Tuscaloosa Circuit Court, CC-18-886; Court of Criminal Appeals, CR-18-0435)

**1190498**

**Ex parte Alyssa Sue Watson**

**PETITION FOR WRIT OF CERTIORARI TO THE COURT OF CRIMINAL APPEALS**

**(In re: Alyssa Sue Watson**

**v.**

**State of Alabama)**

**(Tuscaloosa Circuit Court, CC-18-887; Court of Criminal Appeals, CR-18-0377)**

MENDHEIM, Justice.

Marcus King George and Alyssa Sue Watson petitioned this Court for writs of certiorari to review the Court of Criminal Appeals' decision in Watson v. State, [Ms. CR-18-0377, Jan. 10, 2020] ___ So. 3d ___ (Ala. Crim. App. 2020), affirming the Tuscaloosa Circuit Court's judgments convicting Watson and George of felony murder (murder committed during the course of a kidnapping in the first degree), see § 13A-6-2(a)(3),

Ala. Code 1975, and sentencing them to 30 years' imprisonment. Significant to the State's case against Watson and George was the testimony of Allison Duncan, an intelligence analyst with the Alabama Law Enforcement Agency ("ALEA"), analyzing the historical cell-site data of Watson's and George's cellular telephones. The Court of Criminal Appeals concluded that Duncan's testimony analyzing historical cell-site data was lay testimony admissible under Rule 701, Ala. R. Evid., and determined that Rule 702, Ala. R. Evid., had no application to Duncan's testimony. At the request of Watson and George, we granted certiorari review in both cases to consider as an issue of first impression whether testimony analyzing historical cell-site data is expert or lay testimony. More specifically, we must determine as an issue of first impression whether Duncan's testimony analyzing the historical cell-site data of Watson's and George's cellular telephones was "scientific" testimony and, thus, subject to the admissibility requirements of Rule 702(b), Ala. R. Evid.

Facts and Procedural History

A full summary of the underlying facts, which are not in dispute and all of which are not necessary to decide the issue before us, may be found in Watson, supra. In short, on November 1, 2015, Steven George ("Steven"), Chylli Bruce, and Mike Belcher were "working on bikes and getting high" at Wee Racing, a motorcycle-repair shop owned by Belcher's father. Samantha Payne, Watson, and George later arrived at Wee Racing. Without Payne's permission, Steven, Watson, and George then took Payne's automobile to steal the battery and catalytic converter out of it. After stealing the parts and destroying Payne's automobile, Steven, Watson, and George went to Belcher's residence.

In the meantime, at Wee Racing, Belcher forced Payne into his vehicle and, along with Bruce, drove to Belcher's residence. At Belcher's residence, Belcher took Payne out of his vehicle and began beating her, apparently because Belcher believed that Payne had been talking to the police about Belcher's sale of methamphetamine. After arriving at Belcher's residence, George suggested going to another location. Belcher and Watson then forced Payne into Belcher's vehicle, and the entire group

drove to property believed to belong to Watson's family. Once at the property, Belcher again beat Payne and tied her up.

Subsequently, the group forced Payne into the trunk of Belcher's vehicle and drove to the Talladega National Forest. While driving to the Talladega National Forest, Belcher's vehicle, which Belcher was driving and in which Payne, Bruce, and Steven were riding, ran out of gas; Watson and George were traveling in a separate vehicle. Bruce used Belcher's cellular telephone to call Watson and inform Watson that Belcher's vehicle had run out of gas. Bruce and Steven then began walking away from Belcher's vehicle to find gasoline. At that time, Belcher took Payne into the forest and murdered her.

Watson and George were subsequently indicted based on their participation in Payne's kidnapping and murder; both pleaded not guilty. Before trial, the State indicated its intention to call Duncan as an expert witness to testify regarding the relevant historical cell-site data at issue in the case. Watson and George argued that such testimony was scientific testimony and requested a pretrial hearing to determine whether Duncan's testimony met the relevant admissibility requirements under

Rule 702(b). The trial court granted Watson's and George's request for a pretrial hearing. At the hearing, the trial court heard testimony from Duncan and from defense witness Manfred Schenk, an expert in radio frequencies and cellular technology. A detailed recitation of both Duncan's testimony and Schenk's testimony is necessary for our analysis.

In Schenk's opinion, testimony pertaining to historical cell-site data is scientific testimony. Schenk explained the complex process by which an antenna on a cellular tower connects to a signal sent by a cellular telephone and the numerous factors that impact such a connection. Schenk explained that, at the time a call is made from a cellular telephone, the cellular telephone emits an omnidirectional radio-frequency signal that connects "to a multiplicity of towers within the area." Once the signal is connected to a multiplicity of cellular towers, Schenk explained, a centralized computer -- called a "mobile switching center," which "controls ... all of the towers and all of the antennas on the towers that are under its jurisdiction ... or control" -- performs an evaluation to determine to which cellular tower the signal from the cellular telephone should connect. Schenk explained:

> "[The cellular towers] will, in fact, then communicate in contact with the mobile switching center; and the mobile switching center will then make an evaluation in what is called, in engineering terms, 'SINR,' which is an acronym that stands for signal divided by interference plus noise ratio. So a ratio is developed for each particular cell tower within the area, in the vicinity, in order to determine which tower is the clearest tower that that particular communication should be connected to. So when that evaluation is done and then the clearest tower selected, then the frequency channels are assigned and then the telephone handset is notified that, this is your frequency that you're going to use in order to communicate. And that particular frequency is then connected to a specific cell tower, and that's how that particular connection is made."

Schenk answered in the negative when he was asked whether a "cellular telephone always selects the tower that is nearest to the person making the call." Schenk further stated:

> "There is no measurement capability within the radio frequency spectrum in order to indicate as to, quote, unquote, what the distance is. So when we're talking about nearest, we're making an assumption of distance measurement. And there is no distance component. All there is is signal and signal strength component.
>
> "Now, obviously there's a correlation between signal strength and distance. But an actual distance we do not know."

Schenk further testified that a cellular telephone can connect to an antenna on a cellular tower that is as far as 21.75 miles away. Schenk also provided the following explanation concerning antennas when asked if an antenna on a cellular tower is "designed to be omnidirectional":

> "If it's a single antenna and designed to be omnidirectional, then yes. If it's a sectored, then the idea is that the emphasis is that the predominant energy lobe is being projected in a particular direction. Now, that's a little bit -- that gets into an, obviously, probability theory and how much energy and what particular direction because antennas are not so precise in terms of the way that they radiate out their energy. The majority of it would be in what they call the 'front lobe' of that particular antenna.
>
> "However, there is lower levels of signal on what they call 'side lobes' that emanate from an antenna. And, you know, if there's a sufficient amount of energy there, there's no reason for your individual cellphone to perhaps lock onto one of those particular side lobes as easily or whatever as in a main front lobe.
>
> "In addition, in the further complications, if you're fairly close to the antenna, there is an electronic phenomenon of the antenna where they, in fact, radiate what they call 'back lobes.' So the point is you could be behind an antenna, if you're fairly close to the tower, that, in fact, an energy exists there and you could potentially, in fact, even connect to what is called a 'back lobe.' And with the energies that we're talking about, practically anything is possible. So the fact that we have these sectored antennas, it's not a very good indication in regard to direction.

> "....
>
> "Q. Okay. ... Let's say there are three antennas on a tower, one is located on the south part of the tower, your cell signal hits that antenna. Does that necessarily mean that you are south of the antenna?
>
> "[Schenk:] In most cases, the answer is yes. But as I explained, not absolutely necessarily so because, as I said, the phenomenon exists that there is a smaller radiation pattern that goes to the rear of the antenna, which is what I call the 'back lobe' for that particular antenna."

Schenk responded "[s]urely" when asked: "[T]he theory for being able to project where a cellphone was being received or was being directed from, would that be some type of scientific theory?"

The trial court also heard Duncan testify at the pretrial hearing. Her testimony, which is necessary to our analysis, is summarized extensively below. Watson and George argued that Duncan's proposed testimony was scientific testimony and did not meet the requirements for admissibility under Rule 702(b); the State argued that Duncan's testimony was not scientific in nature but was, at most, technical in nature. The trial court concluded that the testimony the State sought to present from

Duncan was not scientific testimony and, thus, that the admissibility requirements of Rule 702(b) did not apply to her testimony.

The Court of Criminal Appeals summarized the facts and procedural history relevant to the admission of Duncan's trial testimony analyzing historical cell-site data:

> "At trial, Duncan testified about her qualifications in analyzing cell-phone-call details. Duncan stated that she had bachelor's degrees in political science and homeland security, master's degrees in homeland security and emergency management, and that she had been an intelligence analyst at the Alabama Law Enforcement Agency ('ALEA') since 2012. Duncan said that she had a wide variety of duties at ALEA, but that she specialized in social-media investigations and analysis of cell-phone-call details. As part of her job, she regularly interacted with cellular providers and, as a result of those interactions and her training, she had learned generally how cellular signals connect to cellular towers when calls are placed on a cellular device. Duncan also testified that she had completed three courses in using the PenLink computer-software program to analyze and map cell-site-location information from cellular records -- a program she said was reasonably relied on in the field of call-detail analysis and that many law-enforcement agencies used -- and that she was certified to use the software."

Watson, ___ So. 3d at ___. The Court of Criminal Appeals did not state whether Duncan was qualified as an expert witness. At trial, Duncan answered affirmatively when asked if she considered herself "to be an

expert in call detail record analysis." George's trial attorney objected to Duncan's characterization of herself as an expert. In response, the State stated that it had "not tendered [Duncan] as an expert at this point." The trial court stated that it did not "like tendering experts because you're asking me to comment on somebody's -- that's commenting on evidence ... So please don't do that." The State agreed not to tender Duncan as an expert. The trial court then overruled the objection lodged by George's trial attorney.

Later, during the trial, George's trial counsel objected to the State's motion to admit a map that was based, in part, on the cellular-telephone activity of Watson; it is undisputed that Watson's cellular-telephone records had not been admitted into evidence. The State responded, in pertinent part: "Judge, this witness, if she were qualified as an expert -- which the State would contend that she is -- would be able to, according to Rule 703[, Ala. R. Evid.], rely on data information that had not been admitted into evidence in order to reach her conclusion." The trial court overruled the objection lodged by George's trial counsel and admitted the map into evidence, allowing Duncan to rely upon data that had not been

admitted into evidence. Watson's trial counsel later made a similar objection to a portion of Duncan's testimony in which she relied upon the map that was based, in part, on Watson's cellular-telephone records, which, to reiterate, had not been admitted into evidence. The State argued in response that Duncan "can use information and data in formulation of her opinion" and that she "can rely on data and information not in evidence because she is an expert." The trial court overruled the objection lodged by Watson's trial counsel.

The Court of Criminal Appeals summarized the remainder of Duncan's testimony as follows:

> "Duncan testified that when a person places or receives a call using a cellular device, the call is routed through a cellular tower. Cellular towers generally have a range -- a radius of approximately 20 miles -- within which calls can connect to the tower, and towers are generally divided into three sectors, each sector facing a different direction and generally having its own approximately 20-mile radius within which calls can connect to that sector. Duncan said that calls are generally, but not always, routed through the tower closest to the location of the device. She admitted that she did not know exactly how cellular providers determined which of multiple towers a cellular signal would be routed through,[6] but she said that various factors could prevent the signal from routing through the closest tower, including the number of signals trying to connect to the tower, nearby topography, the

strength of the tower, and the radio frequency of the tower. She also said that the signal could switch between towers during a call and that, if the person travels during the call, the call will 'be passed off from tower to tower.'

"According to Duncan, call details from cellular providers identify the cellular towers and the sectors of the towers the calls were routed through, as well as the latitude and longitude of the cellular towers. Duncan testified that the PenLink software uses the information identifying the cellular tower and its location and plots on a map the locations of the cellular towers the calls were routed through. Using the information regarding what sector of the tower each call was routed through and based on the assumption that calls are routed through the tower closest to the cellular device, the map includes shaded areas in the shape of pie pieces emanating out from the tower location in the direction from which the signal came, within which the cellular device was 'most likely' located at the time of the call. Duncan said that the Penlink software does not alter the information from the call details but 'simply reads the information' to create the map. Duncan admitted that the shaded areas on the computer-generated map do not represent the range of the towers and that she did not, in fact, know the exact range of any towers, only the approximate range, because the exact range of a tower is proprietary information known only by the cellular provider.[7]

"Duncan input into the PenLink software the information from the call details of Watson's, George's, and Belcher's cell phones and the software generated two maps,[8] which we have examined. As noted previously in this opinion, the maps generated by the software indicated that numerous calls were placed to or received by Watson's, George's, and Belcher's cell phones between 1:00 a.m. and 10:00 a.m. on November 2,

2015, that were routed through towers located near Wee Racing, Belcher's residence, the property identified as belonging to Watson's family, and the area where Payne's body was found. Duncan admitted that, if the testimony at trial that Steven and Bruce were near the area where Payne's body was found when they used Belcher's cell phone to make calls between 7:30 a.m. and 8:00 a.m. was true, the majority of those calls had not, in fact, been routed through the tower closest to that location but to another nearby tower. She also admitted that she could not testify to the exact location of Watson's, George's, or Belcher's cell phones when any of the calls were made.

"_____

"[6]At the pretrial hearing, Duncan indicated that there are so many cellular towers that most areas are within the range of multiple towers at the same time. Her testimony at trial about how signals connect to towers was based on the idea that there are multiple towers to which a signal could connect.

"[7]At the pretrial hearing, Duncan testified that the shaded areas represent a 3- to 5-mile radius, not the approximate 20-mile range of the towers because, she said, with so many towers with overlapping ranges, it is '[m]ost likely' that a cellular signal will switch to another, closer, tower if the device moves more than 3 to 5 miles away from the tower. Schenk testified at the pretrial hearing that because the shaded areas did not represent the full range of the towers, the maps were misleading and inaccurate. Schenk did agree, however, that towers have a maximum range of approximately 20 miles.

> "[8]One map was color-coded to reflect the three different devices. The other was not color-coded but included the locations relevant to the crime -- Wee Racing, Belcher's residence, the property identified as belonging to Watson's family, and the location where Payne's body was found."

Watson, ___ So. 3d at ___ (citations to the record omitted).

On appeal to the Court of Criminal Appeals, Watson and George argued "that the testimony elicited from Duncan was scientific evidence, that the State failed to lay the proper predicate for its admission under Rule 702(b), Ala. R. Evid., and that Duncan was not qualified as an expert." Watson, ___ So. 3d at ___. The Court of Criminal Appeals determined that Duncan's testimony was lay testimony and, thus, admissible. In analyzing this issue, the Court of Criminal Appeals discussed Rules 701 and 702, Ala. R. Evid. Rule 701 provides:

> "If the witness is not testifying as an expert, the witness's testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness and (b) helpful to a clear understanding of the witness's testimony or the determination of a fact in issue."

Rule 702 provides, in relevant part:

> "(a) If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to

> determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.
>
> "(b) In addition to the requirements in section (a), expert testimony based on a scientific theory, principle, methodology, or procedure is admissible only if:
>
> "(1) The testimony is based on sufficient facts or data;
>
> "(2) The testimony is the product of reliable principles and methods; and
>
> "(3) The witness has applied the principles and methods reliably to the facts of the case." [1]

In determining if Rule 701 or 702 applied to Duncan's testimony, the Court of Criminal Appeals divided her testimony into two categories. First, the Court of Criminal Appeals noted that Duncan had testified concerning the locations of the cellular towers through which the calls at issue were routed. The Court of Criminal Appeals, relying upon Woodward v. State, 123 So. 3d 989 (Ala. Crim. App. 2011), which is

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[1]We note that "[t]he language in [Rule 702](b)(1), (b)(2), and (b)(3)[, Ala. R. Evid.,] is identical to language added to Rule 702 of the Federal Rules of Evidence in response to the United States Supreme Court's decision in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993)." Advisory Committee's Notes to Amendment to Rule 702, Ala. R. Evid., Effective January 1, 2012.

discussed below, concluded that Duncan's testimony concerning the locations of the cellular towers through which the calls at issue were routed was lay testimony and, thus, admissible under Rule 701.

Second, the Court of Criminal Appeals noted that Duncan had testified concerning how cellular signals connect to cellular towers and how to determine the most likely location of a cellular device based on such connections. The Court of Criminal Appeals stated:

> "We reach the same conclusion with respect to Duncan's testimony about her knowledge of how cellular signals connect to cellular towers and to the portion of the computer-generated maps that included shaded areas indicating the 'most likely' location of the cellular devices based on the assumption that the devices connected to the closest cellular tower. In Perez v. State, 980 So. 2d 1126 (Fla. Dist. Ct. App. 2008), Florida's Court of Appeals for the Third District upheld the admission of similar testimony from a lay witness:
>
> > "'At trial, over defense objection, cellular telephone records custodians were permitted to testify from the cell phone records of Miguel Perez [the defendant's brother], [Hector] Laurencio [an accomplice], and [another accomplice] as to the time of calls between the three and also as to the physical location of the cell towers receiving and transmitting each call. The records custodian from Sprint–Nextel testified that persons making and receiving cell calls would physically be not more than three miles from the receiving tower.

> " '....
>
> " 'The defendant ... contends that the trial court abused its discretion in allowing cellular telephone records custodians to testify that persons who placed cell phone calls would be within a certain distance (one to three miles) from the cell towers identified with those calls. ...
>
> " '....
>
> " 'We find that the testimony of Donna Plasmir and Janan Chandler, the records custodians from Sprint–Nextel and Metro PCS, did not constitute expert testimony under section 90.702, Florida Statutes (2007), and therefore was properly admitted. As in Gordon v. State, 863 So. 2d 1215, 1219 (Fla. 2003), the record demonstrates that Plasmir "simply factually explained the contents of phone records." As in Gordon, the custodians factually compared the locations on the phone records to locations on the cell site maps. Plasmir testified that a typical cell site covered an area of one to three miles. She then stated that the record for a particular cell phone details the actual cell tower off of which the call bounces. This testimony constituted general background information interpreting the cell phone records which did not require expert testimony. It did not reveal the precise location within that one to three mile radius from which the calls were generated. It only served to explain the concept of a cell site and how it generally related to cellular telephone company records. Moreover, there was no direct evidence presented by the defendant to dispute

> these generalized facts or question their validity. Compare United States v. Sepulveda, 115 F.3d 882 (11th Cir. 1997) (holding that scientific cell site analysis is necessary to determine liability for unauthorized use of cellular air time). A juror's own knowledge, experience and familiarity with the addresses of the receiving cell towers themselves as shown on the site map coupled with the familiarity of the location of the origin of the calls were sufficient for each juror to determine the location of the tower without the need for expert testimony. See McGough v. State, 302 So. 2d 751 (Fla. 1974). Therefore, the trial court did not abuse its discretion in overruling the defendant's objections and denying the defendant's motion for mistrial where the cell phone records and accompanying testimony were properly introduced.'

"980 So. 2d at 1129-32 (footnote omitted). As the Kansas Court of Appeals has recognized:

> " 'Interpreting cell phone data and locating calls within a particular geographic area on a map based on the location of the cell towers used in those calls is not complex, but a relatively simple process. It requires little more than understanding that cell phones generally connect to the nearest tower location and then applying that principle to facts supplied by the cell phone provider.'

"State v. Fleming, 286 P.3d 239 (Kan. Ct. App. 2012) (unpublished disposition). See also State v. DePaula, 170 N.H. 139, 152-55, 166 A.3d 1085, 1096-99 (2017).

"We agree with the reasoning in Perez and Fleming.[9]

"_____

"[9]We recognize that the majority of jurisdictions that have addressed this issue have held otherwise, see, e.g., State v. Johnson, 238 W. Va. 580, 797 S.E.2d 557 (2017), and the cases cited therein, but we are unpersuaded by those cases."

Watson, ___ So. 3d at ___. In summary, the Court of Criminal Appeals concluded that Duncan's testimony was lay testimony, essentially determining that Duncan did not need to be qualified as an expert witness to offer her testimony.

Watson and George petitioned this Court for certiorari review. We granted certiorari review to consider as an issue of first impression whether testimony analyzing historical cell-site data is lay or expert testimony. More specifically, as is discussed in more detail below, we must determine whether testimony analyzing historical cell-site data is scientific evidence.

Standard of Review

In Mazda Motor Corp. v. Hurst, 261 So. 3d 167 (Ala. 2017), this Court applied the following standard of review in determining whether evidence offered by an expert witness was scientific evidence:

> "'"[A]n expert witness' competence to testify is an inquiry substantially within the discretion of the trial judge. [An appellate court] will not disturb the trial judge's finding of expert qualifications vel non, unless there is a clear abuse of this discretion."' Slay v. Keller Indus., Inc., 823 So. 2d 623, 625 (Ala. 2001) (quoting Cobb v. State, 50 Ala. App. 707, 710, 282 So. 2d 327, 329 (1973))."

261 So. 3d at 177.[2]

Discussion

In these cases, the Court of Criminal Appeals determined that all of Duncan's testimony is lay testimony admissible under Rule 701. Duncan's testimony is undisputedly opinion testimony and was based upon her

[2]Watson and George argue that, "[w]hen applying undisputed facts[,] such as witness qualification, to the law 'the ore tenus rule is inapplicable, and the ... Court will sit in judgment on the evidence de novo.' Stiles v. Brown, 380 So. 2d 792, 794 (Ala. 1980)." Watson's brief at p. 4; George's brief at p. 6. Stiles v. Brown, 380 So. 2d 792 (Ala. 1980), involved the admission of evidence in a probate case involving a will dispute. Mazda is the relevant case that controls the standard of review in these cases.

analysis of historical cell-site data. Watson and George assert that the Court of Criminal Appeals erred in concluding that Duncan's testimony is lay testimony admissible under Rule 701, arguing, instead, that Duncan's testimony is scientific expert testimony subject to the requirements of Rule 702(b). Accordingly, Watson and George argue that Duncan was required to be qualified as an expert witness under Rule 702(a) and, further, that her scientific testimony had to pass the admissibility requirements set forth in Rule 702(b). The State argues that Duncan was qualified as an expert and that her testimony is expert testimony, but not scientific testimony, making Rule 702(b) irrelevant in

this case.[3] Alternatively, the State argues that Duncan's testimony was lay testimony admissible under Rule 701.

The crux of the parties' disagreement is over whether Duncan's testimony is scientific testimony. Rule 702(b) provides, in pertinent part, that

> "expert testimony based on a scientific theory, principle, methodology, or procedure is admissible only if:
>
> "(1) The testimony is based on sufficient facts or data;
>
> "(2) The testimony is the product of reliable principles and methods; and
>
> "(3) The witness has applied the principles and methods reliably to the facts of the case."

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[3]The State argues extensively in an effort to demonstrate that Duncan was properly permitted to testify as an expert witness under Rule 702(a), i.e., as a nonscientific expert witness. However, that argument appears to be entirely irrelevant in this case. Watson's and George's sole argument on appeal is that Duncan's testimony is scientific testimony; they make no other substantive argument. If Watson and George fail in their sole argument, then the Court of Criminal Appeals' decision must be upheld, even if the Court of Criminal Appeals was incorrect in determining that Duncan testified as a lay witness rather than as a nonscientific expert witness. Accordingly, we need not address the State's arguments pertaining to the applicability of Rule 702(a).

The trial court determined that Duncan's testimony is not scientific testimony and, thus, the trial court did not require the State to meet the admissibility requirements of Rule 702(b). The Court of Criminal Appeals likewise concluded that Duncan's testimony is not scientific (or even expert) testimony and affirmed the trial court's admission of Duncan's testimony. On certiorari review before this Court, Watson and George argue that Duncan's testimony is scientific testimony; the State disagrees. The sole issue for us to determine at this point is whether Duncan's testimony is scientific testimony -- that is, whether Duncan's testimony is "based on a scientific theory, principle, methodology, or procedure." Rule 702(b). If we conclude that it is not scientific testimony, then we may affirm the Court of Criminal Appeals' decision. If, however, we determine that Duncan's testimony is scientific testimony, the case must be remanded for the trial court to consider, for the first time, whether Duncan's testimony met the admissibility requirements of Rule 702(b).[4]

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[4]We note that the State presents argument that, assuming this Court determines Duncan's testimony is scientific, Duncan's testimony would meet the admissibility requirements of Rule 702(b). However, we need not consider that argument at this time because, assuming we

In Mazda, supra, this Court explained some general principles supporting the above framework:

> "The United States Supreme Court in Daubert [v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993),] drew a distinction between 'scientific' evidence and 'technical[] or other specialized knowledge.' See Daubert, 509 U.S. at 590 n.8. ... Before the amendment to Rule 702, Ala. R. Evid., our courts drew the same distinction when addressing whether a specific type of evidence was considered 'scientific' for purposes of the standard set out in Frye v. United States, 54 App. D.C. 46, 293 F. 1013 (1923).[15]
>
> "_____
>
> "[15]It has been observed that 'during the drafting of the final version [of the bill amending § 12–21–160, Ala. Code 1975], consideration was also given to the fact that Alabama had already developed substantial case law defining "scientific evidence" relative to the Frye standard.' The Honorable Ben H. Brooks III and K. Megan Brooks, Alabama's Version of Daubert -- A Legislative History, 74 Ala. Law. 44, 46–47 (Jan. 2013)."

261 So. 3d at 183. Further, in an Alabama Lawyer article quoted with approval by this Court in Mazda, it is stated:

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conclude that Duncan's testimony is scientific testimony, the case must be remanded for the trial court to make an initial determination as to whether Duncan's testimony meets the admissibility requirements of Rule 702(b).

> "Application of Rule 702[, Ala. R. Evid.,] will require Alabama courts to distinguish 'scientific' experts and evidence from 'non-scientific' experts and evidence. This is a critical determination because scientific evidence is the only species of expert testimony subjected to scrutiny under Rule 702(b) and the Daubert [v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993),] test. Stated differently, it is the proffer of purported scientific evidence that 'triggers' a Daubert inquiry.
>
> "As amended, Rule 702 requires courts to make two separate but related determinations regarding scientific evidence. First, pursuant to the first sentence in Rule 702(b), the trial court must determine whether proffered expert testimony purports to be scientific.[17] If so, a Daubert admissibility inquiry is triggered, and the trial court then must determine whether the purportedly scientific evidence is 'reliable' -- that is, meets the three-pronged admissibility standard imposed by Rule 702(b)(l)-(3). Neither the Daubert opinion nor Federal Rule of Evidence 702 provides guidance in drawing the line between scientific and non-scientific evidence for these purposes. The Daubert opinion focused on the second issue[:] whether purportedly scientific evidence was reliable and admissible. Federal Rule 702 does not address the distinction between scientific and non-scientific evidence because it was unnecessary; at the time Federal Rule 702 was amended federal courts applied Daubert's admissibility principles to all Rule 702 experts.
>
> "Fortunately, this task is not new to Alabama courts. Because the Frye [v. United States, 54 App. D.C. 46, 293 F. 1013 (1923),] general acceptance test also applies to scientific evidence only, Alabama courts were required to make this same distinction under Frye. Accordingly, a well-developed line of Alabama judicial authority exists that address whether a specific type of expert or evidence is considered 'scientific' for

> purposes of applying the Frye standard. Previous Alabama case law developed under the Frye standard will remain instructive -- if not controlling -- for determining whether expert testimony is scientific and subject to Rule 702(b)'s Daubert-based admissibility standard. The language used in Rule 702(b) to describe scientific evidence subject to the Daubert standard -- 'expert testimony based on a scientific theory, principle, methodology, or procedure' -- is the same language Alabama courts have used when describing scientific testimony subject to the Frye standard.
>
> "_____
>
> "[17]See Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589 (1993) (observing that the Federal Rules of Evidence place limits on the admissibility of 'purportedly scientific evidence') (emphasis added). Cf. Swanstrom v. Teledyne Cont'l Motors. Inc., 43 So. 3d 564, 580 (Ala. 2009) ('[A] person who offers an opinion as a scientific expert must prove that he relied on scientific principles, methods, or procedures that have gained general acceptance in the field in which the expert is testifying.' (quoting Slay v. Keller Indus., Inc., 823 So. 2d 623, 626 (Ala. 2001))) (emphasis added)."

Robert J. Goodwin, An Overview of Alabama's New Daubert-Based Admissibility Standard, 73 Ala. Law. 196, 199 (May 2012) (footnotes omitted).

We must determine whether Duncan's testimony is "based on a scientific theory, principle, methodology, or procedure." Rule 702(b). The difficulty of such a task has been recognized by practitioners in this state:

> "Rule 702(b) applies to expert testimony only if it is 'based on a scientific theory, principle, methodology or procedure.' [Rule 702(b), Ala. R. Evid.] Thus, Rule 702(b) does not apply to expert testimony based on 'technical' or 'other specialized knowledge.' Deciding whether a particular expert's testimony is or is not scientific is a difficult issue for Alabama judges and lawyers. 'Scientific' is not defined in Rule 702, and, after decades of applying the Frye [v. United States, 54 App. D.C. 46, 293 F. 1013 (1923),] standard (which applied only to novel scientific testimony), it is 'apparent that Alabama courts have not attempted to narrowly define the phrase "scientific test or experiment," ' but rather 'have been content to determine on a case-by-case basis whether proffered testimony implicates a scientific test or experiment.'[30]
>
> "_____
>
> "[30]See Robert J. Goodwin, Fifty Years of Frye in Alabama: The Continuing Debate over Adopting the Test Established in Daubert v. Merrill Dow Pharmaceuticals, Inc., 35 Cumb. L. Rev. 231, 245-46 (2005)."

Terrence W. McCarthy and Brooke G. Malcom, Alabama's Daubert Amendment: An Overview of the Current State of the Law and Resources for the Practitioner, 79 Ala. Law 254, 260 (July 2018). That said, the following excerpt from Carmichael v. Samyang Tire, Inc., 131 F.3d 1433

(11th Cir. 1997), is helpful in determining what is and is not scientific evidence:[5]

> "What, then, is the difference between scientific and non-scientific expert testimony? In short, a scientific expert is an expert who relies on the application of scientific principles, rather than on skill- or experience-based observation, for the basis of his opinion. See Daubert [v. Merrell Dow Pharmaceuticals, Inc.], 509 U.S. [579,] 590, 113 S. Ct. [2786,] 2795 [(1993)]. As the Sixth Circuit explained in Berry v. City of Detroit:

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[5]In an Alabama Lawyer article, it was noted that certain federal decisions are instructive in determining if evidence is "scientific":

> "A ... resource is federal decisions handed down after Daubert [v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993)], but before the Daubert rule was extended to include all (i.e., including non-scientific) expert testimony. When Daubert was decided in 1993, most federal courts initially applied its holding -- as Ala. R. Evid. 702(b) does now -- exclusively to 'scientific' evidence. Six years later, in Kumho Tire [Co. v. Carmichael, 526 U.S. 137 (1999)], the United States Supreme Court extended the Daubert standard to all expert testimony proffered under Fed. R. Evid. 702. Thus, federal decisions during that six-year window can be instructive, as federal courts were faced -- as Alabama courts are now -- with determining whether proffered expert testimony was or was not 'scientific.' "

Terrence W. McCarthy and Brooke G. Malcom, Alabama's Daubert Amendment: An Overview of the Current State of the Law and Resources for the Practitioner, 79 Ala. Law 254, 260 (July 2018) (footnotes omitted).

> " 'The distinction between scientific and non-scientific expert testimony is a critical one. By way of illustration, if one wanted to explain to a jury how a bumblebee is able to fly, an aeronautical engineer might be a helpful witness. Since flight principles have some universality, the expert could apply general principles to the case of the bumblebee. Conceivably, even if he had never seen a bumblebee, he still would be qualified to testify, as long as he was familiar with its component parts.
>
> " 'On the other hand, if one wanted to prove that bumblebees always take off into the wind, a beekeeper with no scientific training at all would be an acceptable witness if a proper foundation were laid for his conclusions. The foundation would not relate to his formal training, but to his firsthand observations. In other words, the beekeeper does not know any more about flight principles than the jurors, but he has seen a lot more bumblebees than they have.'

"25 F.3d 1342, 1349-50 (6th Cir.1994); see also Sorenson v. Robert B. Miller & Assoc., Inc., Nos. 95-5085, 95-5086, [Sept. 10, 1996 (6th Cir. 1996) (not published in Federal Reporter)] (applying Berry). Thus, the question in this case is whether [the expert's] testimony is based on his application of scientific principles or theories (which we should submit to a Daubert analysis) or on his utilization of personal experience and skill with failed tires (which we would usually expect a district court to allow a jury to evaluate). In other words, is the testimony at issue in this case more like that of a beekeeper applying his experience with bees or that of an

> aeronautical engineer applying his more generalized knowledge of the scientific principles of flight?"

131 F.3d at 1435-36 (footnote omitted). As in Carmichael, the question for this Court is whether Duncan's testimony is based on her application of scientific principles or theories (which would require a determination of reliability under Rule 702(b)) or on her utilization of personal experience and skill with historical cell-site data.[6]

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[6]In addition to certain federal decisions,

> "a well-developed line of Alabama cases exist which address whether a specific type of expert testimony is 'scientific' or 'nonscientific' for purposes of applying the Frye [v. United States, 54 App. D.C. 46, 293 F. 1013 (1923),] standard. Previous judicial authority developed under the Frye standard regarding whether expert testimony is, or is not, 'scientific' should remain instructive -- if not controlling -- for determining whether expert testimony is scientific and subject to the Daubert-based admissibility standard."

Charles W. Gamble, Terrence W. McCarthy, and Robert J. Goodwin, Gamble's Alabama Rules of Evidence: A Trial Manual for Making and Answering Objections § 702 at 393 (3d ed. 2014) (footnotes omitted). Despite the relevance of the Frye progeny of cases in determining whether evidence is scientific or nonscientific, the parties have not included any discussion of this line of cases or provided any analysis of it.

Watson and George argue that Duncan's testimony is based on her application of scientific principles. In support of their argument, Watson and George rely upon numerous cases, but the most compelling and comprehensive is State v. Johnson, 238 W. Va. 580, 797 S.E. 2d 557 (2017), in which the Supreme Court of Appeals of West Virginia provided the following exhaustive and well researched discussion of testimony regarding historical cell-site data -- the exact same kind of evidence at issue in the present case:

> "In this proceeding, we are concerned only with historical cell site data. As noted above, cell phone service providers create and maintain records of cell phone interaction with cell phone towers. See United States v. Johnson, No. 14-CR-00412-TEH ... (N.D. Cal. Aug. 24, 2015) ('Carriers keep records of these connections for each customer.... This is referred to as "historical cell site" data, and can be used to identify a customer's general location at a given time.'). It has been observed that a 'cell service provider collects and stores historical cell site data for its own business purposes, perhaps to monitor or optimize service on its network or to accurately bill its customers for the segments of its network that they use.' In re U.S. for Historical Cell Site Data, 724 F.3d 600, 611-12 (5th Cir. 2013). 'That same information makes it possible to identify at least the general location of a cell phone at the time the phone connects to a tower.' State v. Simmons, 143 A.3d 819, 825 (Me. 2016).

"It has been recognized that 'courts that have been called upon to decide whether to admit historical cell-site analysis have almost universally done so.' United States v. Hill, 818 F.3d 289, 297 (7th Cir. 2016). However, 'courts that have addressed whether testimony which purports to locate people based on cellular data is lay or expert testimony are divided.' Collins v. State, 172 So. 3d 724, 739 (Miss. 2015). In a majority of reported cases, experts were used to provide testimony of historical cell site data; while in a minority of reported cases, lay testimony was allowed in some circumstances. For example, the Seventh Circuit has indicated 'that testimony about historical cell-site analysis is expert testimony.' United States v. Hill, 818 F.3d 289, 296 (7th Cir. 2016). See also United States v. Reynolds, 626 Fed. Appx. 610, 614 (6th Cir. 2015) (expert used to testify about historical cell site data). Accord United States v. Schaffer, 439 Fed. Appx. 344, 347 (5th Cir. 2011); United States v. Yeley-Davis, 632 F.3d 673, 684 (10th Cir. 2011); United States v. Frazier, No. 2:15-CR-044-GMN-GWF ... (D. Nev. Sept. 16, 2016); United States v. Elima, No. SACR 16-00037-CJC ... (C.D. Cal. June 22, 2016); United States v. Serrano, No. 16-CR-169 (WHP) ... (S.D.N.Y. June 9, 2016); United States v. Cervantes, No. 12-CR-00792-YGR ... (N.D. Cal. Sept. 22, 2015); United States v. Johnson, No. 14-CR-00412-TEH ... (N.D. Cal. Aug. 24, 2015); United States v. Pembrook, 119 F. Supp. 3d 577, 596 (E.D. Mich. 2015); United States v. Freeman, No. 06-20185 ... (E.D. Mich. May 4, 2015); United States v. Mack, No. 3:13-CR-00054 MPS ... (D. Conn. Nov. 19, 2014); Jimenez v. Walker, No. C 08-05489 YGR PR ... (N.D. Cal. Sept. 13, 2012); United States v. Evans, 892 F. Supp. 2d 949, 957 (N.D. Ill. 2012); United States v. Allums, No. 2:08-CR-30 TS ... (D. Utah Mar. 24, 2009); People v. Hollinquest, 190 Cal. App. 4th 1534, 1544, 119 Cal. Rptr. 3d 551, 559 (2010); Pullin v. State, 272 Ga. 747, 748-49, 534 S.E.2d 69, 71 (2000); People v. Fountain, 407 Ill. Dec. 185, 62 N.E.3d 1107, 1126 (Ill. App. Ct.

2016); State v. Benson, No. 15-1895 ... (Iowa Ct. App. Dec. 21, 2016); State v. Marinello, 49 So. 3d 488, 509 (La. Ct. App. 2010); Wilder v. State, 191 Md. App. 319, 991 A.2d 172, 179 (2010); Burnside v. State, 352 P.3d 627, 637 (Nev. 2015); People v. Swint, 20 N.Y.S.3d 294, 48 Misc. 3d 1231A (N.Y. Crim. Ct. 2015); Commonwealth v. Latham, No. 2702 EDA 2010 ... (Pa. Super. Ct. Mar. 17, 2014); Holder v. State, No. 05-15-00818-CR ... (Tex. App. Aug. 19, 2016). The court in Collins, supra, explained the necessity for requiring experts to inform the jury of historical cell site data:

> " '[W]hile the technology underlying cell identification is not extremely difficult to understand, utilizing cell identification to locate a person does require specialized knowledge regarding such technology -- namely, knowledge regarding the various antennas on cell sites and the cell site coverage range and how those interact to determine the entire area in which a cell phone user might have been located while making a cell phone call. Illustrating that cell identification requires specialized knowledge are the facts that Detective Sims had to take a sixteen-hour course on how to use cellular technology in law enforcement and that he used specialized software acquired at this course to determine the locations of Collins and Jenkins on the night of Jenkins's murder.'

"Collins, 172 So. 3d at 741. A commentator addressed the issue more thoroughly as follows:

> " '[The court in Wilder v. State, 191 Md. App. 319, 991 A.2d 172 (2010),] 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, 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.'

"[Alexandra] Wells, Ping! [The Admissibility of Cellular Records to Trace Criminal Defendants], 33 St. Louis U. Pub. L. Rev. [487] at 516 [(2014)].

"A case illustrating the rejection of the use of lay testimony to provide the jury with evidence of historical cell site data is State v. Patton, 419 S.W.3d 125 (Mo. Ct. App. 2013). In Patton, the defendant was convicted of first-degree murder, first-degree burglary, and armed criminal action. On appeal, the defendant argued that the trial court committed reversible error in allowing the prosecutor to use a lay witness

to provide historical cell site data. The appellate court found that it was error to use lay testimony, but that the error was harmless in light of the evidence of the defendant's guilt. The opinion addressed the need for expert testimony to inform the jury of historical cell site data as follows:

> "'We recognize that cellular phones are a subject of everyday experience, and that little technical knowledge is required to understand that a phone will connect to the cell site with the strongest signal. Yet to opine, as the State's lay witness did here, that the strongest signal generally comes from the closest site is misleadingly simple. In fact, it is impossible to determine from historical cell site data alone that a phone was closest to the cell site processing the call, and at best these records only indicate that a phone was located somewhere within a cell site's geographic coverage area. A cell phone may be in range of several sites simultaneously, and a multitude of factors influence which site among them will have the strongest signal. The technical features of the cell site, geography, and the workings of the cell phone itself may result in connections from as far away as thirty miles or as close as thirty feet. Thus, knowing the location of the cell site to which a phone connects permits an expansive range of inferences as to where the phone actually is. We think that drawing such an inference without the aid of specialized experience or knowledge in the field of cellular communications comes too close to mere speculation.

> " 'Here, the State introduced evidence of the locations of the cell sites used by Patton's phone in order to place Patton near the crime scene at the time of the shootings.... To narrow down the area in which Patton's phone must have been to have connected to a particular cell site -- i.e., to proffer testimony actually probative of whether Patton was in one area rather than the other -- required analysis of the many variables that influence cell site signal strength. Such analysis amounts to opinion testimony that is properly the province of an expert. Thus, we hold that the trial court erred by failing to require an expert witness to testify as to the location of Patton's phone in relation to the cell sites to which it connected.'

"Patton, 419 S.W.3d at 131-32 (citations omitted).

"The decision in State v. Payne, 440 Md. 680, 104 A.3d 142 (2014), addressed the complexity of historical cell site data analysis. In Payne, two co-defendants were tried together and convicted of first-degree felony murder, kidnapping, and use of a handgun in the commission of a felony. One of the issues raised on appeal was that a police officer rendered an opinion as a lay witness as to the location of the cell towers through which the defendants' cell phones connected on the night of the murder and their location relative to the crime scene. The defendants argued that this opinion had to be rendered by an expert. The appellate court agreed as follows:

> " 'In the present case the State asserts that ... Detective Edwards did not render an opinion as to the location of Payne's and Bond's cell phones and that he merely read Sprint Nextel's business records and followed its directions in interpreting

> the data. We disagree. Detective Edwards engaged in a process to derive his conclusion that Payne's and Bond's cell phones communicated through the Menlo Park and Balmoral Towers cell towers that was beyond the ken of an average person; his conclusions regarding the communication path also required that he be qualified as an expert witness. Although the State urges that a 'layperson with the same phone records and instructions could have determined the location of the cell sites' ..., additional training and experience were required to parlay the process from which Detective Edwards derived the communication path of each call.
>
> " 'A Call Detail Record contains a string of data unfamiliar to a layperson and is not decipherable based on "personal experience".... Detective Edwards, however, apparently relied on his experience to hone in on the entries in the Call Detail Records "pertinent" to the case. To understand, furthermore, the technical language of the entries in a Call Detail Record so that he could eliminate "extraneous" data in the records, Detective Edwards had to have relied on "knowledge, skill, experience, training or education." ...
>
> " 'Once Detective Edwards had culled the records, he further relied on his knowledge and experience to understand the significance of a "LAC ID" and "Cell ID" and how they related to identifying a particular cell tower amongst a cellular provider's records. Detective Edwards's testimony was that of an expert, because Call

> Detail Record entries are not entries typical of a cell phone bill where a juror could "rely upon his or her personal experience" to understand their meaning....
>
> " 'Detective Edwards needed to be qualified as an expert in order to also opine regarding the Menlo Drive and Balmoral Towers cell towers. Using the data he derived from his experience and expertise, Detective Edwards urged that he had determined the location of the cell towers through which Payne's and Bond's cell phone connected on the night of the murder and their location relative to the crime scene, which only an expert could derive, based upon the fact that a cell phone may connect to several towers during a call which may not be recorded.'

"Payne, 440 Md. at 700-02, 104 A.3d at 154-55 (footnote and citations omitted).

"As previously noted, a few courts have treated historical cell site data analysis as proper lay testimony under certain conditions. See, e.g., United States v. Feliciano, 300 Fed. Appx. 795 (11th Cir. 2008) (expert not required); Perez v. State, 980 So. 2d 1126 (Fla. Dist. Ct. App. 2008) (same); State v. Fleming, 286 P.3d 239 (Kan. Ct. App. 2012) (same); State v. Robinson, 272 Neb. 582, 724 N.W.2d 35 (2006) (same), abrogated on other grounds by State v. Thorpe, 280 Neb. 11, 783 N.W.2d 749 (2010); State v. Daniel, 57 N.E.3d 1203 (Ohio App. 2016) (same). The decision in United States v. Evans, 892 F. Supp. 2d 949 (N.D. Ill. 2012), provides a good example of the circumstances in which some courts permit a lay witness to testify about historical cell site data. In Evans, the prosecution sought to call an FBI special agent to testify about

the operation of cellular networks and how to use historical cell site data to determine the general location of a cell phone at the time of a particular call. The agent relied upon what is called the 'granulization' theory[12] to opine that phone calls placed from the defendant's cell phone could have come from the building where the victim was held for ransom. The trial court held an evidentiary hearing to determine whether the proposed evidence and analysis were admissible as expert testimony or lay testimony. In determining the admissibility of the proposed testimony, the trial court ruled as follows:

> " 'Lay witness testimony is admissible under Rule 701 when it is rationally based on [a] witness's perception or based on a process of reasoning familiar in everyday life.... Understanding how the aforementioned factors affect a cell phone's ability to connect [to] a particular tower, however, cannot be said to be within the perception of the untrained layman. Rather, this type of understanding demands scientific, technical, or other specialized knowledge of cellular networks and results from a process of reasoning which can be mastered only by specialists in the field.... Special Agent Raschke may therefore provide lay opinion testimony concerning (1) the call data records obtained for Evans's phone and (2) the location of cell towers used by Evans's phone in relation to other locations relevant to the crime; but if he wishes to testify concerning (1) how cellular networks operate, i.e., the process by which a cell phone connects to a given tower or (2) granulization theory he must first meet the demands of Rule 702 and Daubert.'

> "Evans, 892 F. Supp. 2d at 953-54 (footnotes, internal quotations, and citations omitted).
>
> "It has been recognized that the decision in Evans, and the position of courts that follow Evans, attempts to make a distinction 'between simply conveying the cellular records to the jury and explaining what those records then mean.' Wells, Ping!, 33 St. Louis U. Pub. L. Rev. at 511. See State v. Wyman, 107 A.3d 641, 648 (Me. 2015) ('Specialized knowledge is not necessary ... when a witness conveys only the factual information displayed on cell phone billing records.'). We reject the minority approach to this issue because lay 'witnesses ... not only read the records to the jury, but the[y] dr[a]w the ultimate conclusion that the records could show the caller was in a specific location[.]' Wells, Ping!, 33 St. Louis U. Pub. L. Rev. at 511.
>
> "_____
>
> "[12]See United States v. Pembrook, 119 F. Supp. 3d 577, 596-97 (E.D. Mich. 2015) ('[T]he theory of granulization involved (1) identifying the cell tower, sector, and sector-coverage direction used by the phone during the relevant time period; (2) estimating the range of each [sector's] coverage based on the proximity of the tower to other towers in the area, and (3) predicting where the coverage area of one tower will overlap with the coverage area of another.' (internal quotations and citation omitted))."

Johnson, 238 W. Va. at 585-89, 797 S.E. 2d at 562-66 (emphasis added).

The State, on the other hand, argues that Duncan's testimony is "based on her training and experience with [call-detail-records[7]] analysis, not on a scientific theory." State's brief at p. 23. The State notes that Duncan never claimed during the course of her testimony that she is a scientist or that her conclusions are based upon a particular scientific theory or principle. Instead, the State argues that Duncan "relied on her specialized knowledge of cell service providers to assume that a call generally connects to the closest tower." Id. at pp. 24-25. In support of its argument, the State directs this Court's attention to various cases in which "comparable areas of analysis are properly deemed nonscientific expert evidence." Id. at pp. 25-26. The State notes that the Court of

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[7]At the pretrial hearing, Schenk provided the following explanation of "call-detail records":

> "A call detail record is a recording of a particular cellular instrument as it connects to a particular antenna. And what is provided is the calling telephone; where are you calling to; the time, the date, and the time of day that, in fact, that is made; whether it's an incoming or outgoing call; and the amount of time that that particular call -- what the duration of that particular call; and then, ultimately, the cellular tower and antenna that connected that particular call."

Criminal Appeals has determined that "crime-scene analysis," "firearm and ballistic analysis," "handwriting analysis," and "luma-lite testing" are all areas of analysis that are considered to be "admissible nonscientific expert evidence." Id. at p. 26. However, the State provides no reasoning as to why the mentioned areas of analysis should be considered comparable to historical-cell-site-data analysis.

The State cites Mazda, supra, in support of its argument. In Mazda, the plaintiff offered an expert witness in support of its tort claims against the defendant. The defendant objected to the admission of the expert witness's testimony, arguing that the expert witness's testimony was "scientific testimony" and, thus, needed to meet the admissibility requirements of Rule 702(b). The trial court disagreed with the defendant and determined that the expert witness's testimony was not scientific testimony and, thus, was not subject to Rule 702(b). The defendant appealed.

On appeal, the defendant argued, among other things, that the trial court had erred in determining that the expert witness's testimony was

not scientific testimony under Rule 702(b). This Court summarized the defendant's specific argument as follows:

> "Significantly, [the defendant] does not argue that [the expert witness's] testimony should have been subject to the requirements of Rule 702(b)[, Ala. R. Evid.,] because it was 'expert testimony based on a scientific theory, principle, methodology, or procedure.' Instead, [the defendant] contends that Rule 702(b) should apply because '[the expert witness] repeatedly represented his own opinion to be "scientific." ' In other words, according to [the defendant], whether [the expert witness's] testimony actually was scientific in nature is irrelevant; all that matters is that [the expert witness] purportedly portrayed his opinion to be scientific in nature, and the trial court therefore should have subjected it to the requirements of Rule 702(b)."

Mazda, 261 So. 3d at 179. This Court did not find the defendant's argument convincing, noting that the expert witness "never claimed in his testimony that he was a scientist or that his conclusions were based upon a particular scientific theory or principle." Id. at 182. As a result, the Court concluded that the expert witness's testimony was not subject to the admissibility requirements of Rule 702(b) based solely on the expert witness's alleged assertions that he was a scientist and that he had applied scientific theory or principle. This Court went on to state the following:

"In fact, it is apparent from a fair reading of [the expert witness's] testimony as a whole that all of his conclusions were based upon his own specialized knowledge and experience in and with automotive technology and the automotive industry and not 'on a scientific theory, principle, methodology, or procedure.' Rule 702(b), Ala. R. Evid. [The expert witness] stated that he used the same methodology he has used for decades in evaluating the alleged design defect and the cause of the fire in this case. He twice inspected and photographed the subject [vehicle]. He reviewed accident-scene photographs taken by the police, and he factored in witness and expert deposition testimony. He used measuring equipment to map the crush of the subject [vehicle], and he compared it to an exemplar [vehicle] so that he could measure how far various component parts were displaced from their original locations during the accident. He relied upon his specialized knowledge of failure analysis as well as his experience with fuel tanks in studying automotive fuel-fed fires. Accordingly, [the expert witness's] testimony represented the application of his knowledge and experience to the testimony from other witnesses and to comparisons of the subject [vehicle] and other vehicles.

"The United States Supreme Court in Daubert [v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993),] drew a distinction between 'scientific' evidence and 'technical[] or other specialized knowledge.' See Daubert, 509 U.S. at 590 n.8. The [Michigan Millers Mutual Insurance Corp. v.] Benfield[, 140 F.3d 915 (11th Cir. 1998),] court itself noted the same distinction. See Benfield, 140 F.3d at 920 n.15 (stating that 'if an expert's testimony is based on his experience, and not on science, then such non-scientific expert testimony is not to be held to the Daubert standard'). Before the amendment to Rule 702, Ala. R. Evid., our courts drew the same distinction when addressing whether a specific type of evidence was considered

'scientific' for purposes of the standard set out in Frye v. United States, 54 App. D.C. 46, 293 F. 1013 (1923). See, e.g., Barber v. State, 952 So. 2d 393, 417 (Ala. Crim. App. 2005) (determining that 'because print identification involves subjective observations and comparisons based on the expert's training, skill, or experience, ... it does not constitute scientific evidence and ..., therefore, Frye does not apply'); Minor v. State, 914 So. 2d 372, 400 (Ala. Crim. App. 2004) (holding expert's testimony not subject to Frye because it 'was not a scientific theory, but was merely [the expert's] opinion based on his experience and training as a pediatric trauma surgeon'); and ArvinMeritor, Inc. v. Johnson, 1 So. 3d 77, 92 (Ala. Civ. App. 2008) (noting a 'physician's opinion as to causation is as much an "art" as a science, based on factors not readily quantifiable and derived, instead, from the witness's overall experience, skill, and training as a physician'). See also Robert J. Goodwin, An Overview of Alabama's New Daubert–Based Admissibility Standard, 73 Ala. Law. 196, 199 (May 2012) (noting that, '[a]s a general proposition, the determination of what is scientific in other Daubert states (and in pre–Kumho Tire [Co. v. Carmichael, 526 U.S. 137, 119 S. Ct. 1167, 143 L. Ed. 2d 238 (1999),] federal court decisions) is guided by precedent and principles developed under the Frye standard, and distinguish between specialized and technical knowledge, which is not considered scientific and subject to the Daubert test, and scientific evidence, which, of course, is subject to Daubert,' and citing multiple cases).

"The trial court understood this distinction when it analyzed the nature of [the expert witness's] testimony. Based on its understanding of this distinction, the trial court concluded that [the expert witness's] testimony that the subject [vehicle] contained a design defect that caused the post-collision fire was based upon his technical knowledge and

> long experience in the automotive industry, not upon a scientific theory or principle."

Mazda, 261 So. 3d at 183-85 (footnotes omitted).

The State argues that Duncan's testimony is akin to that of the expert witness in Mazda because, the State argues, Duncan did not claim to base her testimony on a scientific theory or principle and, in fact, her testimony was not based on a scientific theory or principle. The State argues that Duncan's testimony was based on her technical knowledge and experience. The State notes that Duncan was trained in historical-cell-site-data analysis and that she "based her conclusions on her 'interactions with cell service providers and [her] training,' R. 846; see also R. 886 ('[Duncan:] Based on my training and communications with the phone providers, that is the assumption I make. Yes, sir.')." State's brief at p. 24. The State further argues that

> "Duncan relied on her specialized knowledge of cell service providers to assume that a call generally connects to the closest tower. R. 846 ('Q. And based on your interactions with cell service providers and your training, do you have knowledge about how a cellphone device would connect to a tower when a call is placed? [ Duncan:] Yes. Q. And how is that done? [Duncan:] ... [G]enerally speaking, the closest

> tower to your device will pick up your phone call and transmit your call.')."

State's brief at pp. 24-25. The State argues that "Duncan did not need to apply (and did not apply) scientific principles or testing to read or interpret the [call-detail records] or to determine which tower and sector serviced a specific call -- though ... training and experience made it easier and more efficient for her to do so." State's brief at p. 27.

The State appears to focus solely on the aspect of Duncan's testimony pertaining to the call-detail records, which is the information concerning details such as when a call was placed, to which telephonic device the call was placed, and which cellular tower the call was transmitted through. The issue in this case, however, goes beyond that information and concerns whether that data is a reliable indication of the location of the cellular device from which a call was made at the time the call was made. In answering that question, Duncan offered testimony beyond simply recounting call-detail records and the location of cellular towers. For instance, Duncan first offered testimony about her expertise and training. Duncan testified that "she had learned generally how

cellular signals connect to cellular towers when calls are placed on a cellular device." Watson, ___ So. 3d at ___. Duncan further testified that she had received extensive training for the PenLink computer software, which is a software program "reasonably relied on in the field of call-detail analysis." Id. Duncan's testimony concerning the particular facts of these cases is necessarily based on her expertise and training. Although Duncan could not definitively determine the exact location of Watson's or George's cellular telephones when any of the calls at issue were made, Duncan did testify concerning the PenLink map that purports to indicate the direction from which the calls connected to the antennas on the cellular towers. Duncan also testified as to the physical characteristics of cellular antennas and towers and the various factors that could prevent the signal of a cellular telephone from routing through the closest cellular tower, "including the number of signals trying to connect to the tower, nearby topography, the strength of the tower, and the radio frequency of the tower." Watson, ___ So. 3d at ___. Duncan offered testimony explaining how, if a person is traveling while making a call from a cellular telephone, the signal from a cellular telephone could switch between

antennas and towers during a call. In her testimony, Duncan explained that she had a knowledge regarding the manner in which the signal from a cellular telephone connects to an antenna on a particular cellular tower and, applying that knowledge, she offered her opinion as to how the signals from the calls at issue connected to cellular towers. It is apparent that Duncan's testimony went far beyond merely explaining call-detail records.

As explained by Schenk in the pretrial hearing, although it is not difficult to understand generally that a signal from a cellular telephone connects to an antenna on a cellular tower when a call is placed from a cellular device, it is a complicated and scientific process by which a signal from a cellular telephone actually connects to a specific antenna on a cellular tower. Schenk also testified that determining from which direction a signal from a cellular phone connects to an antenna requires application of scientific theory. The PenLink software, for which Duncan received extensive training, purported to determine the direction from which the signals from Watson's and George's cellular telephones connected to a particular antenna; based on Schenk's testimony, such a

determination requires the application of scientific theory. That conclusion is further bolstered by the fact that the signals from Watson's and George's cellular telephones did not connect to an antenna on the closest cellular tower on the day of Payne's murder but, rather, connected to an antenna and cellular tower farther away. Duncan's testimony analyzing the historical cell-site data offered at least some explanation of how a signal from a cellular telephone connects to an antenna on a cellular tower, which direction a signal comes from, how signals from cellular telephones transfer from one tower to another during a call, and the various factors that impact to which cellular tower a cellular-telephone signal connects. Duncan further testified that she had knowledge regarding how cellular-telephone signals connect to cellular towers. Duncan did more than simply testify as to the location of cellular towers.

We find Watson's and George's argument convincing and, in accordance with the vast majority of courts throughout the nation, determine that Duncan's testimony analyzing the historical cell-site data at issue in these cases was scientific testimony. In Carmichael, the

Eleventh Circuit Court of Appeals stated that "a scientific expert is an expert who relies on the application of scientific principles, rather than on skill- or experience- based observation, for the basis of his opinion." 131 F.3d at 1435. Duncan offered opinion testimony on matters concerning cellular technology that went beyond simply presenting the call-detail records of Watson's and George's cellular telephones. Duncan's testimony was not based on "skill- or experience-based observation," id., but, rather, as explained by Schenk and the extensive authority set out in Johnson, supra, was based, at least in part, on scientific principles. This conclusion is further supported by the fact that Duncan testified that "she had learned generally how cellular signals connect to cellular towers when calls are placed on a cellular device." Watson, ___ So. 3d at ___. Duncan's testimony applied scientific principles to determine the location of Watson and George at the time of Payne's murder. We conclude, based on the above-summarized evidence and authority, that such testimony involves the application of scientific principles; Duncan's testimony was based on more than her training and observations.

We note that the parties cite some Alabama precedent that they assert is relevant to this issue. As noted by the parties, Woodward v. State, 123 So. 3d 989 (Ala. Crim. App. 2011), is one of the only cases in Alabama concerning the admission into evidence of historical cell-site data. In Woodward, which was decided before section (b) of Rule 702 was added by amendment effective January 1, 2012, the State offered the testimony of lay witnesses to establish the fact that a criminal defendant was in the proximity of a crime scene at the time the crime was committed. One of the lay witnesses provided the following relevant testimony:

> "Defense counsel then asked [the lay witness] a series of questions about the configurations of cell-phone towers and she answered those questions, but when defense counsel asked about the configurations of the antennas on the cell-phone towers, [the lay witness] testified that an engineer would know that information. [The lay witness] testified that her company's cell-phone towers have two or three 'sectors,' which she said 'refers to which side of the tower the call was hitting off of.' ... [The lay witness] was able to identify from the records admitted into evidence which sector a call had been routed through; however, she also testified that [a radio-frequency] engineer might be able to better determine the location of a caller by knowing which sector a call used."

Woodward, 123 So. 3d at 1014. The criminal defendant argued that the trial court had erred in allowing the two lay witnesses "to offer their opinions as to the meaning of the cell-phone records and maps, rather than testifying about matters within their personal knowledge. Specifically, [the criminal defendant] argue[d] that [the two lay witnesses] were erroneously permitted to testify that the cell-phone records indicated the locations of the callers at certain times." 123 So. 3d at 1016.

Noting that no Alabama court had considered this issue, the Court of Criminal Appeals relied upon dicta from States v. Hayes, No. M2008-02689-CCA-R3-CD, Dec. 23, 2010 (Tenn. Crim. App. 2010) (not published in S.W. 3d), an unpublished decision of the Tennessee Court of Criminal Appeals:

> "Although our research has disclosed no Alabama case that addresses this issue, the Tennessee Court of Criminal Appeals addressed a similar issue in dicta when a defendant argued that the trial court had erred in permitting a detective to testify as an expert regarding cell-phone towers. State v. Hayes, No. M2008-02689-CCA-R3-CD, Dec. 23, 2010 (Tenn. Crim. App. 2010) (not published in S.W.3d). The Tennessee Court of Criminal Appeals rejected the argument, stating:
>
> > " 'The detective merely testified that he saw the locations of the cell phone towers listed on the

> cell phone records and plotted those locations on a map. He inferred that the defendant traveled near those towers. Detective Fitzgerald explicitly stated that he was not an expert in how the cell phone towers worked. We conclude that a layperson could plot the locations of the towers on a map and draw the same inference; therefore, his testimony did not require specialized knowledge as contemplated by Tennessee Rule of Evidence 702, which governs expert testimony, and the trial court did not err by allowing the testimony.' "

Woodward, 123 So. 3d at 1016-17. The Court of Criminal Appeals adopted the reasoning from State v. Hayes and concluded that the lay witnesses at issue in Woodward "testified based on their review of the records of the cell-phone company each worked for as a records custodian and based on their personal knowledge of the manner in which those records are generated and recorded. Neither [of the lay witnesses'] testimony required specialized knowledge." 123 So. 3d at 1017. The Court of Criminal Appeals further noted that each of the lay witnesses was "able to explain to the jury which cell-phone tower a call went through when the call was made but was not able to give the exact location of the caller when the call was made." Id.

In Woodward, the lay witnesses' testimony explaining which cellular towers the calls at issue were routed through and the location of those cellular towers was based on their "review of the records ... and ... on their personal knowledge." 123 So. 3d at 1017. The Court of Criminal Appeals specifically stated that the lay witnesses' testimony did not require "specialized knowledge." Id. In the present cases, however, Duncan did offer testimony that required specialized knowledge. As explained above, Duncan testified that she had knowledge of the scientific process concerning the manner in which a signal from a cellular telephone connects to a cellular antenna and the various factors that can affect such a connection, and, applying that knowledge, she offered her opinion as to how the signals from the calls at issue connected to cellular towers. The lay witness in Woodward specifically declined to offer such testimony and noted that a radio-frequency engineer would be better able to answer such questions. That fact distinguishes the testimony offered in Woodward from that offered by Duncan in the present case.

We note that the parties also discuss Hinkle Metals & Supply Co. v. Feltman, 280 So. 3d 1031 (Ala. 2019), and Greene v. State, 241 So. 3d 755

(Ala. Crim. App. 2017), in their briefs; those cases are distinguishable and offer no guidance on how to answer the question before us. In Hinkle, a civil tort case, an automobile operated by an employee of a company struck a pedestrian, causing the pedestrian to sustain injuries; the employee was driving his personal vehicle at the time of the accident. The pedestrian sued the employee and the company, seeking damages under various theories of civil liability. At trial, the pedestrian presented expert testimony analyzing the historical cell-site data of the employee's cellular telephone in order to demonstrate that the employee was in the vicinity of the accident at the time the accident occurred. The company filed a motion to strike the expert testimony under Rule 702(a), arguing that the testimony would not be helpful to the jury. The trial court denied the company's motion to strike.

On appeal, the company argued that the trial court had erred in denying its motion to strike, again arguing that the expert's testimony did not satisfy the requirements of Rule 702(a) because, the company argued, it was not helpful to the jury. This Court disagreed, stating:

"[The company] argues that [the expert witness's] testimony could not assist the trier of fact to understand the evidence or to determine a fact in issue because, according to [the company], [the expert witness's] opinion 'was little more than speculation that [the employee] was in a certain geographic area at the time calls were placed from his phone.' This Court has not previously addressed the admissibility of expert testimony based on historical cell-site analysis. We note that [the company] does not discuss any authority from other jurisdictions this Court might find persuasive on the issue.

"In United States v. Hill, 818 F.3d 289 (7th Cir. 2016), the United States Court of Appeals for the Seventh Circuit discussed at length whether the admission of expert testimony involving historical cell-site analysis violated Rule 702, Fed. R. Evid., which, like Alabama's rule, requires that an 'expert's scientific, technical, or other specialized knowledge ... help the trier of fact to understand the evidence or to determine a fact in issue.' The court in Hill noted that '[t]he admission of historical cell-site evidence that overpromises on the technique's precision -- or fails to account adequately for its potential flaws -- may well be an abuse of discretion,' but it found that the expert's testimony in that case 'on both direct and cross-examination made the jury aware not only of the technique's potential pitfalls, but also of the relative imprecision of the information he gleaned from employing it in [the] case.' 818 F.3d at 299. Thus, it held that the trial court did not exceed its discretion in admitting the expert's testimony because the testimony provided was relevant, probative, and 'somewhat helpful to the trier of fact.' Id.

"We reach the same conclusion here. The record in the present case does not indicate that any 'overpromising' occurred. On cross-examination, [the expert witness] openly

> acknowledged the limitations inherent in applying the historical cell-site analysis. It was the jury's responsibility to determine the weight to accord [the expert witness's] testimony. Bell v. Greer, 853 So. 2d 1015, 1018 (Ala. Civ. App. 2003) (noting that '[i]t is the jury's responsibility, not this court's, "to determine the credibility of the evidence, to resolve conflicts therein, to find the facts, and to express its findings in its verdict." Jones v. Baltazar, 658 So. 2d 420, 422 (Ala. 1995).'). [The company] has not demonstrated that the trial court exceeded its discretion in refusing to exclude [the expert witness's] testimony under Rule 702(a), Ala. R. Evid.[8]
>
> "_____
>
> "[8]We note that [the company] omits any discussion of subsection (b) of Rule 702, which provides that expert testimony based on scientific theory, principle, methodology, or procedure must be based on sufficient facts or data, must be the product of reliable principles and methods, and must be the product of reliable application of such principles and methods."

Hinkle, 280 So. 3d at 1038-39 (emphasis added; some footnotes omitted).

Hinkle provides little value in answering the question currently before this Court. As indicated in footnote 8 in Hinkle, the decision in Hinkle was not based on the applicability of Rule 702(b) and a determination regarding whether testimony analyzing historical cell-site data is scientific testimony. The only issue in Hinkle was whether the

expert witness's testimony analyzing historical cell-site data was helpful to the jury in that case. Hinkle is distinguishable from the present case.

In Greene, supra, a criminal defendant requested a continuance of his trial based on his expert witness's sudden unavailability for trial. As part of its case against the criminal defendant, the State relied heavily on historical cell-site data in placing the criminal defendant within the vicinity of the scene of the crime. The criminal defendant retained his expert to dispute his alleged location based on historical cell-site data. The trial court refused to grant the criminal defendant a continuance to secure a new expert, and the criminal defendant appealed.

On appeal, the sole issue was whether the trial court had erred in refusing to grant the criminal defendant's motion to continue the trial. In analyzing that issue under the applicable standard of review set out in Dove v. State, 178 So. 3d 889 (Ala. Crim. App. 2014), regarding a trial court's ruling on a motion to continue, the Court of Criminal Appeals determined that "expert testimony interpreting and analyzing [the criminal defendant's] cell-phone records and cell-tower data would have

been material and competent in this case." Greene, 241 So. 3d at 759. In so concluding, the Court of Criminal Appeals stated:

> "Here, a review of the record shows that there was little physical evidence or eyewitness testimony placing [the criminal defendant] at the scene of [the victim's] shooting. In fact, the bulk of the State's case centered on historical call data derived from [the criminal defendant's] cell-phone records. During the hearing on [the criminal defendant's] motion for a continuance, the State tried to minimize the role of expert testimony in interpreting this data by asserting that 'there's no science involved,' 'no opinions involved,' and that 'it's not even an expert field.' ... The State's reliance on its own expert's testimony analyzing and interpreting this data, however, suggests otherwise.
>
> "Additionally, the circuit court, following a pretrial hearing to determine the admissibility of the State's expert's testimony, determined that the information contained in those records was 'beyond the knowledge or experience possessed by lay persons' and found Special Agent Frith to be an expert witness on the matter. ... Thus, the circuit court concluded that the analysis and interpretation of those records required expert testimony.
>
> "Because the State sought to show that [the criminal defendant] was in the vicinity of the shooting based on which cell tower 'pinged' when he made a cellular telephone call, the materiality of this evidence is clear in this case. The testimony that [the criminal defendant] expected his expert witness to give would have provided a different interpretation and analysis of the data discussed by the State's expert. Most importantly, such testimony could have called into question the State's allegation that [the criminal defendant] was in the

> area at the time [the victim] was shot. Because such testimony would have been material and competent, the first factor from Dove [v. State, 178 So. 3d 889 (Ala. Crim. App. 2014),] is satisfied here."

Greene, 241 So. 3d at 759-60.

Although there is some language in Greene suggesting that testimony regarding historical cell-site data can be provided by an expert, there is no holding in Greene indicating that expert testimony analyzing historical cell-site data is scientific testimony or even that an expert witness is required to proffer such evidence. Greene dealt solely with whether the trial court in that case should have granted the criminal defendant's motion to continue. In reversing the trial court's decision to deny that motion, the Court of Criminal Appeals merely determined that the criminal defendant's expert witness's testimony analyzing historical cell-site data would have been material and competent. Greene offers nothing of substance concerning the issue currently before this Court.

## Conclusion

Based on the foregoing, we reverse the Court of Criminal Appeals' judgments and remand the cases to that court with instructions to remand

the cases to the trial court for a hearing to be held to determine whether Duncan's scientific testimony satisfies the admissibility requirements of Rule 702(b).

1190490 -- REVERSED AND REMANDED WITH INSTRUCTIONS.

1190498 -- REVERSED AND REMANDED WITH INSTRUCTIONS.

Bolin, Bryan, and Sellers, JJ., concur.

Shaw, J., concurs in the result.

Wise and Mitchell, JJ., concur in part and dissent in part.

Parker, C.J., and Stewart, J., dissent.

SHAW, Justice (concurring in the result).

I concur in the result. I agree that, under the specific facts and evidence presented in these particular cases, the testimony by State's witness Allison Duncan based on historic cell-site data as to where cellular telephones were physically located when calls were made was "testimony based on a scientific theory, principle, methodology, or procedure" for purposes of Rule 702(b), Ala. R. Evid. However, it is not clear to me yet that such will always be the case in light of differences in cellular-tower construction, changes in technology and equipment, and different direction-location methods discussed in the record below but not at issue in these cases.

That said, testimony that cellular telephones generally, but not always, connect to the closest cellular tower is based on technical or specialized knowledge and, thus, is not subject to the admissibility requirements of Rule 702(b). Further, testimony based on historic cell-site data as to which cellular tower a cellular telephone connected to and the location of that tower is lay testimony that is not subject to Rule 702.

I agree that, on remand, the trial court should determine whether Duncan's testimony met the requirements of Rule 702(b). I note that the requirements of Rule 702(b) can be satisfied only through expert testimony.

MITCHELL, Justice (concurring in part and dissenting in part).

This Court granted certiorari review to consider for the first time whether historical cell-site analysis requires expert -- rather than lay -- testimony. I concur with the main opinion to the extent it determines that historical cell-site analysis requires expert testimony. But because of our limited grant of certiorari review in this case, I dissent from the main opinion's additional analysis and its remand instructions to the Court of Criminal Appeals. Though Chief Justice Parker and I are aligned in our view of the scope of our Court's certiorari review, I write separately from him to explain how I understand Rule 702, Ala. R. Evid., to operate and the role that science plays in a trial court's determinations under that rule.

Threshold Question: Expert or Lay?

When a party proffers opinion testimony, a trial court must answer a key threshold question: is the testimony offered by the witness expert or lay testimony? This is important because the classification of the witness determines which rule applies. If the testimony is expert testimony, the trial court must proceed under the gatekeeping protocols

required by Rule 702 to admit it. If the court determines that the testimony is not expert testimony, the court may still admit it if the requirements of Rule 701, Ala. R. Evid., are met -- that is, if the testimony is admissible as a lay opinion.

The difference between expert-opinion and lay-opinion testimony is established by the text of the rules. Rule 702 covers testimony based only on "scientific, technical, or other specialized knowledge." Mirroring that rule, Rule 701 permits a trial court to admit opinion testimony "[i]f the witness is not testifying as an expert." Thus, if the testimony is not based on scientific, technical, or other specialized knowledge, it is not expert but instead lay testimony that can only be admitted under the requirements of Rule 701.

At this stage of the inquiry, it is unnecessary to determine if the proffered testimony is "scientific," "technical," or "other specialized knowledge." Rule 702(a). Rather, a trial court must determine if the testimony fits into the genus described by the rule: specialized knowledge similar to science or another technical field. See Antonin Scalia & Bryan A. Garner, Reading Law: The Interpretation of Legal Texts, § 32 at 199

(Thomson/West 2012) ("Where general words follow an enumeration of two or more things, they apply only to persons or things of the same general kind and class specifically mentioned." "The principle of ejusdem generis ... implies the addition of similar after the word other.").

Here, as the Chief Justice correctly determines, it is unnecessary to determine whether the evidence proffered by the State was "scientific." On this procedural posture, it is sufficient to hold that historical cell-site analysis requires expert testimony because it falls within the scope of "scientific, technical, or other specialized knowledge."

Rule 702 Analysis

Despite our limited grant of certiorari review and because I disagree with the analytical pathway taken by the main opinion, I provide my own understanding of how Rule 702 functions and the instructions I would give to the Court of Criminal Appeals on remand.

Rule 702 provides:

> "(a) If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.

> "(b) In addition to the requirements in section (a), expert testimony based on a scientific theory, principle, methodology, or procedure is admissible only if:
>
> > "(1) The testimony is based on sufficient facts or data;
> >
> > "(2) The testimony is the product of reliable principles and methods; and
> >
> > "(3) The witness has applied the principles and methods reliably to the facts of the case."

I understand Rule 702 to involve a two-tiered inquiry, beginning with section (a) and proceeding to section (b) only when necessary. Put simply, Rule 702(a) concerns the qualifications of the person testifying, while 702(b) concerns the reliability of the proffered scientific expert's processes.

Determining whether expert testimony is admissible always starts with Rule 702(a). Section (a) deals with whether the witness is qualified to testify to the matters for which he or she is proffered.[8] The

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[8]Rule 702(a) also requires that the testimony "assist the trier of fact to understand the evidence or to determine a fact in issue." Although this is a determination that must be made before the testimony is deemed admissible, no party in this case disputes that -- if properly admitted -- historical cell-site analysis would help the jury. Therefore, a detailed

determination of qualification necessarily raises the question of what the expert is proffered for. In other words, does the nature of the testimony require "scientific," "technical," or "other specialized knowledge"? Based on the answer to this threshold question, Rule 702(a) provides that a witness "qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise." (Emphasis added.) Thus, the trial court must determine what qualifications are sufficient based on the subject matter of the testimony proffered.

A determination that the proffered testimony is "scientific" is therefore particularly relevant under section (a). The content of the testimony informs the qualification analysis. If proffered testimony is determined to be scientific -- as opposed to technical or a similar type of specialized knowledge -- it alters the types of qualifications the proffered witness must establish.[9] But ultimately, the trial court's determination

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discussion of the helpfulness requirement is not necessary here.

[9]I therefore respectfully disagree with the Chief Justice's assessment that "the only analytical relevance of whether testimony is specifically 'scientific' is to determining whether it is subject to the requirements of

of a witness's qualification under Rule 702(a) is reversible only when the trial court exceeds its discretion.

If an expert cannot satisfy the qualification requirements of Rule 702(a), the analysis is over and the testimony is inadmissible. If, on the other hand, Rule 702(a) is satisfied and the proffered testimony is "based on a scientific theory, principle, methodology, or procedure," then the trial court must proceed to the methodological inquiries of Rule 702(b).

Rule 702(b) does not concern the witness's qualifications but rather the reliability of his or her methods. It requires the trial court to ensure that the properly qualified scientific expert's testimony is based on sufficient facts and data, is the product of reliable principles and methods, and is the result of properly applying the reliable principles and methods

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Rule 702(b)." ___ So. 3d at ____ n.11. (Parker, C.J., dissenting). Although a finding that testimony is scientific under section (a) necessarily subjects the testimony to the requirements of section (b), see Mazda Motor Corp. v. Hurst, 261 So. 3d 167, 183-84 (Ala. 2017), a determination that testimony is "scientific" is still relevant under section (a) because it weighs on the types of "knowledge, skill, experience, training, or education" a witness may need to be deemed qualified.

to the facts at issue. This determination of reliability is again reversible only if the trial court exceeds its discretion.

In sum, the trial court must first categorize the content of the proffered testimony to properly assess the qualifications of its proponent. If the trial court makes an initial determination that the proffered expert testimony is scientific in nature, the court must decide whether the witness is qualified as a scientific expert under Rule 702(a). If the witness is so qualified, the court must consider whether the proffered testimony meets the reliability requirements of section (b). Once the requirements of both sections are satisfied, then -- and only then -- may the scientific expert relay his or her opinions to the court.

Conclusion

The main opinion correctly determines that the subject matter covered by Duncan -- historical cell-site analysis -- requires expert testimony. The Court of Criminal Appeals therefore erred by concluding that Duncan's testimony was lay testimony not subject to Rule 702. As a result, that court never addressed the petitioners' Rule 702(a) argument about whether Duncan was qualified to provide expert testimony

concerning historical cell-site analysis or their Rule 702(b) argument about whether her testimony -- if found to be scientific -- was based on reliable principles and methods that were properly applied to the facts of the case.[10]

Chief Justice Parker is also correct about the scope of our review. Our grant of certiorari review was narrow. Though in this special writing I explain my understanding of Rule 702 and how it treats scientific experts, I do not determine whether historical cell-site analysis is scientific, whether Duncan was qualified to testify as an expert, or whether her methods were reliable. That would be beyond the scope of our certiorari review. But now that we have decided that testimony

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[10]The main opinion indicates that the petitioners' sole argument on appeal is that Duncan's testimony is scientific and that they have made "no other substantive argument." ___ So. 3d at ___ n.3. I disagree. The petitioners have argued that Duncan was unqualified under Rule 702 (a) at each step along the way: at trial, before the Court of Criminal Appeals, and before this Court. (C. 155; George's brief to the Court of Criminal Appeals at 39; Watson's brief to the Court of Criminal Appeals at 35; George's brief to this Court at 11-12; Watson's brief to this Court at 6-7.) We chose, however, to limit our review to the narrow issue of the expert-lay distinction. Therefore, this argument is properly preserved and can be considered on remand.

regarding historical cell-site analysis is expert testimony, the Court of Criminal Appeals must reckon with Duncan's ability to competently relay that information to a jury.

Accordingly, I would remand the cases to the Court of Criminal Appeals for it to consider the petitioners' Rule 702(a) argument and to determine whether the trial court exceeded its discretion by concluding that Duncan was qualified to testify as an expert. To do so, the Court of Criminal Appeals would need to determine if historical cell-site analysis is "scientific," or merely "technical" or "other specialized knowledge." Based on that determination, if the Court of Criminal Appeals concludes that the trial court exceeded its discretion in allowing Duncan to testify as an expert, it should then determine whether that error was harmless or requires reversal of the trial court's judgments. Further, if the Court of Criminal Appeals concludes that historical cell-site analysis is scientific and that the trial court did not exceed its discretion in determining that Duncan was qualified to testify as an expert, it should remand the cases to the trial court for consideration of whether Duncan's testimony satisfies

the reliability requirements of Rule 702(b), a determination which the trial court has yet to make.

Wise, J., concurs.

PARKER, Chief Justice (dissenting).

The main opinion goes well beyond the sole issue on which this Court granted certiorari review -- whether testimony about historical cell-site analysis is expert or lay testimony. If the Court were limiting its ruling to this issue, our disposition of these cases would be very different.

This Court sometimes grants certiorari review on specific issues raised by the petitioner. See Rule 39(f) and (g)(2), Ala. R. App. P. When we do, "it is our policy to restrict review to the issues upon which we granted the petition." Ex parte State Dep't of Revenue, 993 So. 2d 898, 900 (Ala. 2008) (See, J., concurring specially). This approach makes procedural sense: if an issue is not expressly or fairly included in our grant of review, then it is not before us.

Here, our orders granting the certiorari petitions provided: "[T]he Petition for Writ of Certiorari is GRANTED to consider as an issue of first impression whether testimony about historical cell-site analysis is expert or lay testimony. The Writ is denied as to all other grounds." (Capitalization in original.) We thus expressly limited our review to the

question on which the Court of Criminal Appeals based its decision: whether this type of testimony is expert or lay.

This expert/lay question is a threshold question that must be answered before the evidentiary questions addressed by the main opinion and other special writings. In other words, only after determining that testimony is expert testimony (the first half of Rule 702(a), Ala. R. Evid.) does it become necessary to analyze whether the witness is qualified to give it (the second half of Rule 702(a)) and whether it is scientific (the first half of Rule 702(b)). See, e.g., United States v. Hill, 818 F.3d 289, 296 (7th Cir. 2016) ("In our view, this [testimony about cell-tower operation] fits easily into the category of expert testimony, such that Rule 702[, Fed. R. Evid.,] governs its admission.").[11] For this reason, the question whether

[11]Moreover, a court's determination of whether testimony is expert or lay does not require determining whether the testimony is scientific. Expert testimony is testimony about "scientific, technical, or other specialized knowledge." Rule 702(a). The presence of the word "other" within that phrase means that, grammatically, "specialized knowledge" is the general category, and "scientific ... knowledge" and "technical ... knowledge" are types of knowledge within that category that implicitly indicate its scope. See generally Antonin Scalia & Bryan A. Garner, Reading Law: The Interpretation of Legal Texts 140-43 ("Grammar Canon"), 199-213 ("Ejusdem Generis Canon") (Thomson/West 2012). So,

testimony is expert or lay does not encompass the questions of qualification and science. Nevertheless, the main opinion goes past the expert/lay question on which we granted certiorari review and proceeds to the Rule 702(b) question of whether the testimony was scientific. I cannot see how this squares with our policy of self-limitation to the question granted.[12]

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to determine whether testimony is expert testimony, a court needs only to determine whether it is about "specialized" knowledge. It is unnecessary to also determine whether it is specifically about "scientific," "technical," or "other" specialized knowledge. Further, "scientific" in Rule 702(a) is synonymous with "based on a scientific theory, principle, methodology, or procedure" in Rule 702(b). See Mazda Motor Corp. v. Hurst, 261 So. 3d 167, 183-84 (Ala. 2017) (distinguishing "scientific" knowledge" testimony from testimony about "technical[] or other specialized knowledge" for purposes of determining whether the testimony is "based on a scientific theory, principle, methodology, or procedure" under Rule 702(b); citing various authorities). Therefore, the only analytical relevance of whether testimony is specifically "scientific" is to determining whether it is subject to the requirements of Rule 702(b).

[12]My view might be different if the main opinion were answering a question that were logically preliminary to, or inextricably intertwined with, the question on which we granted certiorari review. For example, if we grant a certiorari petition on a question of first impression and it is necessary to decide what standard of review applies to our analysis of that question, the standard-of-review issue may be considered fairly included in our grant. But here no such conditional relationship exists between the issue on which we granted review and the issue addressed. Indeed, the relationship is the opposite: the expert/lay question on which review was

There are good reasons to limit ourselves to the questions on which we grant certiorari review. For example, here the Rule 702(b) question of scientific testimony was not even ruled on by the Court of Criminal Appeals, see Watson v. State, [Ms. CR-18-0377, Jan. 10, 2020] ___ So. 3d ___, ___ (Ala. Crim. App. 2020), or clearly asserted as a ground for review in the certiorari petitions, see George's petition at pp. 3-4, 7-11; Watson's petition at pp. 1-2, 6-8. Presumably that is why we did not grant review on that question. We are a court of review, not first view. For this reason, we generally ought not to decide a question of first impression on certiorari review before the lower appellate court has decided it. See Ex parte Stewart, 518 So. 2d 118, 122 (Ala. 1987).[13] Moreover, allowing the parties to expand the issues after the grant, as the Court does here, lets the parties control our certiorari process. We should not relinquish that

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granted is preliminary to the science question addressed.

[13]See also Cutter v. Wilkinson, 544 U.S. 709, 718 n.7 (2005) ("The [Court of Appeals] ... did not rule on respondents' further arguments. Respondents renew those arguments in this Court. ... Because these [issues] were not addressed by the Court of Appeals, and mindful that we are a court of review, not of first view, we do not consider them here." (internal citation omitted)).

control, especially in this avenue of review that we have so closely guarded.

I would answer only the question on which we granted certiorari review: whether testimony about historical cell-site analysis is expert or lay testimony. If the answer is that some or all of it was expert testimony in these cases, I would reverse the decision of the Court of Criminal Appeals and remand the cases to that court. That court could then address any remaining issues related to the admissibility of the testimony, with further argument from the parties if appropriate.[14]

[14]I agree with Justice Mitchell's helpful summary of the operation of Rules 701 and 702. I simply disagree with his proposed disposition of directing the lower court to address the questions of qualification and science. Those questions are beyond the scope of our review and, therefore, our disposition.

STEWART, Justice (dissenting).

This Court granted certiorari review of the Court of Criminal Appeals' decision on the applicability of expert-witness requirements to testimony regarding historical cell-site analysis. I agree with the main opinion insofar as it holds that the nature of such testimony is expert testimony and not lay testimony. I further agree with the main opinion insofar as it concludes that the testimony at issue is scientific and should be analyzed under Rule 702, Ala. R. Evid. I dissent, however, because the main opinion stops at this analytical juncture and does not address Alabama's unique dichotomy between "scientific" evidence under Rule 702(a) and the subset of "expert testimony based on scientific theory, principle, methodology, or procedure" under Rule 702(b). By its express terms, Rule 702(a) applies to all "scientific, technical, or other specialized knowledge," and Rule 702(b) adds additional requirements when the proposed testimony is "based on a scientific theory, principle, methodology, or procedure." Examining the testimony in this case within this framework of Alabama's rule pertaining to expert testimony, I believe that the trial judge acted appropriately and that the trial court's decision

to allow the testimony should be affirmed, albeit for different reasons than those expressed by the Court of Criminal Appeals in Watson v. State, [Ms. CR-18-0377, Jan. 10, 2020] ___ So. 3d ___ (Ala. Crim. App. 2020).

Before the January 1, 2012, amendment to Rule 702 to add section (b) to the rule, trial-court judges examined scientific expert testimony under the general standard applicable to all expert testimony, as originally set forth in Frye v. United States, 54 App. D.C. 46, 293 F. 1013 (1923), and now encapsulated in Rule 702(a) (commonly referred to as "the Frye standard"). After the adoption of Rule 702(b), certain types of scientific testimony must be evaluated under a different standard, as originally set forth in Daubert v. Merrill Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) (commonly referred to as "the Daubert standard"). The federal courts (and all other states) have folded all scientific testimony into the Rule 702(b), Daubert analytical framework. See Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). Alabama, however, stands alone with scientific testimony first being analyzed under the requirements of Rule 702(a) and then, in some circumstances, subject to the additional requirements of Rule 702(b).

All of this leaves to the trial judge the task of determining, first, whether the proposed scientific-evidence testimony is admissible under Rule 702(a) and, then, depending on the type of scientific evidence, whether the testimony is also admissible under Rule 702(b). In making the determination whether Rule 702(b) applies, the trial judge must evaluate whether the testimony is capable of being tested by the scientific method -- which has its own set of rigorous rules, such as developing a hypothesis and producing results that can be tested by peers and that are capable of repetition -- as is reflected in the language of Rule 702(b). Not all scientific evidence is capable of being tested by the scientific method. If the evidence is capable of being tested by the scientific method, the trial judge would then complete the analysis regarding whether the testimony meets the requirements set out in Rule 702(b).

In these cases, the trial judge held a hearing on the nature of the testimony proffered on historical cell-site analysis. The testimony by one expert was that the analysis was premised on "probability theory." Although it is scientific in nature, such an analysis is not capable of being tested by the scientific method. Therefore, the trial judge had to

determine the admissibility of the evidence under only Rule 702(a). My reading of the record is that is exactly what the trial judge did here. After listening to the proffered explanation of the scientific nature of the testimony, the trial court allowed the expert to testify. This was appropriate under the facts and the application of Rule 702(a). I would affirm the trial court's judgments, but on a different ground than the one relied on by the Court of Criminal Appeals. Accordingly, I respectfully dissent from this Court's decision to reverse the Court of Criminal Appeals' judgments on this issue.