

**THE STATE OF SOUTH CAROLINA
In The Court of Appeals**

The State, Respondent,

v.

Justin Jamal Warner, Appellant.

Appellate Case No. 2017-001313

Appeal From Anderson County
R. Lawton McIntosh, Circuit Court Judge

Opinion No. 5717
Heard December 11, 2019 – Filed April 8, 2020

AFFIRMED

Chief Appellate Defender Robert Michael Dudek, of
Columbia, for Appellant.

Attorney General Alan McCrory Wilson, Deputy
Attorney General Donald J. Zelenka, Senior Assistant
Deputy Attorney General Melody Jane Brown, Senior
Assistant Attorney General W. Edgar Salter, III, all of
Columbia; Assistant Attorney General Samuel Marion
Bailey, of Bluffton; and Solicitor David Rhys Wagner,
Jr., of Anderson, all for Respondent.

HILL, J.: Justin Jamal Warner appeals his convictions for murder, attempted armed robbery, and possession of a weapon during a violent crime. He challenges the trial court's admission of expert testimony regarding cell site location information (CSLI), denial of his motion to suppress evidence of his cell phone

records, denial of his motion for a pretrial hearing as to his probation officer's identification of him from a surveillance video, and admission of five maps created by the expert depicting cell tower locations Warner's phone had accessed. Finding no error in any of these rulings, we affirm.

I.

At 10:13 p.m. on April 30, 2015, a surveillance camera at the BP convenience store at Exit 40 on Interstate 85 in Anderson County recorded a person entering the store. The person approached the cashier, Mradulaben Patel (who owned the store with her husband of thirty-eight years, Pravinchandra). The person appeared to ask about buying a cigar and can then be seen flipping open his wallet and presenting it to Ms. Patel, presumably showing his identification. When Ms. Patel presented the cigar, the person handed Ms. Patel payment, and, as Ms. Patel opened the cash register, the person pulled a handgun from his pants pocket, pointed it at Ms. Patel, and attempted to reach into the cash register drawer. When Ms. Patel tried to push the gun away, the person shot her. The person left the store and wiped down the front door handle with his shirt. The incident took less than three minutes. Ms. Patel died several days later.

After releasing a portion of the video to local media, police received a Crimestoppers tip identifying Justin Jamal Warner as the perpetrator and relaying remarkable detail about the crime. Police discovered Warner's date of birth matched the date of birth Ms. Patel entered into the cash register seconds before the murder. Investigators also discovered Warner was on probation in Georgia, so they sent clips of the video to his probation officer, Nathan Goolsby, who identified Warner as the perpetrator. Warner's palm print from his probation file was matched to a latent palm print taken from the counter beside the cash register.

Warner turned himself in to the probation office. He arrived in a silver Dodge Challenger, a search of which revealed a "flip" style wallet similar to the wallet seen in the video. Police also found cigar wrappers in the car bearing a purchase price of ninety-nine cents, the same price of the cigars the cash register receipt showed Ms. Patel sold moments before being killed. Police further determined the Challenger was similar to a car seen on a store surveillance video facing the parking lot shortly before the crimes occurred. They also noted the suspect in the surveillance video appeared to have markings on his upper arm consistent with tattoos Warner has in the same area.

An Anderson County magistrate issued a search warrant to T-Mobile for Warner's cell phone records. At trial, the State offered FBI Special Agent David Church as

an expert in historical cell site analysis and cell phone record analysis. Warner objected, contending Church's methodology of linking phone records to a cell phone's location did not meet the threshold reliability standard Rule 702, SCRE, requires for expert testimony. The trial court overruled Warner's objection, and Church gave opinion testimony that Warner's phone had "pinged" off T-Mobile cell towers near the crime scene shortly before and after Ms. Patel was shot. The jury deliberated a little over two hours before finding Warner guilty on all counts.

II.

A. Admissibility of CSLI Expert Opinion Testimony

Warner asserts the trial court erred in admitting Church's expert testimony interpreting the CSLI evidence, arguing it did not meet the reliability requirement of Rule 702, SCRE. We review evidentiary rulings for abuse of discretion, meaning we will only disturb them if they have caused prejudice and are the result of legal error or have inadequate factual support. *Fields v. J. Haynes Waters Builders, Inc.*, 376 S.C. 545, 555, 658 S.E.2d 80, 85–86 (2008).

i. CSLI Evidence and Methodology

Before we address whether Church's testimony cleared the reliability hurdle of Rule 702, SCRE, we take a step back to consider the background of CSLI evidence. Cell phones operate much like two way radios, connecting with other phones by way of radio frequency signals that are picked up and transmitted by the carrier's cell phone towers. A typical basic tower has a three sided antenna with each side covering a 120 degree "wedge." The term "cell" or "cellular" derives from the design of the calling networks, which are divided into hexagon-shaped geographic areas called cells, much like a honeycomb. The cell tower is located at the spot where three cells meet. Blank, *The Limitations and Admissibility of Using Historical Cellular Site Data to Track the Location of a Cellular Phone*, 18 Rich. J. L. & Tech. 3, 5 (2011). The coverage area of a cell generally depends upon the number of antennas on the tower, the height of the antenna, its elevation above sea level, topography, and obstructions. "One cell may cover an area up to thirty miles from the site, for a total coverage area of approximately 2,700 square miles." *Id.* In urban areas, cell sites may exist every one-half to one mile, while in rural areas they may be several miles or more apart.

When a call is made, the cell phone connects or "pings" to the cell tower with the strongest signal, which is generally the closest tower. But not always. Signal

strength can depend on many things, including the height of the cell tower, wattage output of the phone or the tower antenna, the angle and direction of the antenna, maintenance, range of coverage, network traffic, topography, and whether the phone is outdoors or indoors. *Id.* at 7.

Church described how cell phone records track the number being called; the date, time, and duration of the call; and the approximate location of the phone at the time of the call. He explained the cell phone carrier maintains records of the addresses and coordinates of its cell towers, which he matches to the phone records and then creates a map depicting the geography of the relevant calling history. Church testified he had over 800 hours of training in CSLI, including training by all the major cell phone carriers with their compliance personnel and network engineers. As a certified FBI instructor, he has taught CSLI analysis to state, local, and federal agencies. Church has worked on over 150 investigations and testified as an expert on CSLI eleven previous times.

When explaining why CSLI analysis was reliable, Church testified cell phone companies keep records for billing purposes to ensure efficient network operation and customer satisfaction. He also explained carriers are required to be able to provide the tower a phone used when it called 911, so emergency personnel can locate the caller's approximate location. The trial court pointedly asked Church, "[Y]ou said to [the solicitor], yes, it's reliable. Besides the boilerplate response, how do you determine that it's, in fact, reliable?" Church replied in part,

[U]sing common sense and investigative knowledge and your expertise in knowing how a network operates, determine where to go look for a phone. And we successfully do that, you know, every week, our unit does. So to me . . . the practical application of it is the best study.

Church was careful to note CSLI evidence can only show the approximate location of a phone at a given time. He analyzed Warner's call records and the location of the cell towers Warner's phone had pinged. He ascertained which side of the tower was being used and the direction the radio signal emitting from the tower was traveling. From this, Church created a report that included a series of maps illustrating the route Warner's phone traveled on April 30, the date of the crime. The maps depicted the phone's tower usage and showed that between 7:53 p.m. and 9:45 p.m. Warner's phone traveled north along I-85 from the Atlanta area to just north of the crime scene and then north to the Pelham Road area in Greenville.

The phone then began traveling south along I-85. At 10:11 p.m., the phone pinged the north side of a tower located south of I-85 near Highway 25. This tower is located three-and-a-half miles north of the crime scene, as the crow flies. At 10:19 p.m., the phone used the northern side of a tower located near the exit where I-85 and Highway 81 intersect. This tower stands two-and-a-half miles south of the crime scene. Church noted a phone could be anywhere in that general area, even a bit behind the direction the tower sector was pointing, given radio waves are not linear. Church concluded that, in his opinion, the phone was in the "general vicinity" of the crime scene around the time the crime occurred, though of course he could not say who had the phone.

ii. Rule 702, SCRE Reliability Requirements for Expert Opinion Evidence

Before admitting expert testimony, trial courts, as the gatekeepers of evidence, must ensure the proffered evidence is beyond the ordinary knowledge of the jury; the witness has the skill, training, education, and experience required of an expert in his field; and the testimony is reliable. *Watson v. Ford Motor Co.*, 389 S.C. 434, 445–46, 699 S.E.2d 169, 174–75 (2010); Rule 702, SCRE. If the trial court is satisfied the proposed expert evidence meets these criteria, it must then consider whether the probative value of the evidence is substantially outweighed by its potential for unfair prejudice or other Rule 403, SCRE, considerations. *State v. Council*, 335 S.C. 1, 20, 515 S.E.2d 508, 518 (1999).

CSLI evidence is more technical in nature than scientific. It still falls within Rule 702, SCRE, and must be screened for reliability. *State v. White*, 382 S.C. 265, 274, 676 S.E.2d 684, 688 (2009); *see also State v. Prather*, Op. No. 27954 (S.C. Sup. Ct. filed Mar. 11, 2020) (Shearouse Adv. Sh. No. 10 at 30). Due to the wide range of nonscientific fields and topics, our supreme court has declined to set forth general reliability guidelines, instead opting to consider each case on its facts. *White*, 382 S.C. at 274, 676 S.E.2d at 688.

In South Carolina, a trial court minding the Rule 702 gate must assess not only (1) whether the expert's *method* is reliable (i.e., valid), but also (2) whether the *substance* of the expert's testimony is reliable. *See Council*, 335 S.C. at 20, 515 S.E.2d at 518 (trial court must determine whether underlying science is reliable); *Watson*, 389 S.C. at 446, 699 S.E.2d at 175 (trial court "must evaluate the substance of the testimony and determine whether it is reliable"). South Carolina has not adopted *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 594–95 (1993), by name, nor has it revised Rule 702, SCRE, to incorporate the *Daubert* framework. Nevertheless, our approach is "extraordinarily similar" to the

federal test. Young, *How Do You Know What You Know?*, 15 S.C. Law. Rev. 28, 31 (2003).

In *Daubert*, the United States Supreme Court declared the "overarching subject" of the Federal Rule of Evidence 702 inquiry to be "the scientific validity—and thus the evidentiary relevance and reliability—of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate." 509 U.S. at 594–95. Four years later, the Court walked this declaration back a few steps, noting conclusions and methodology are "not entirely distinct from one another." *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). *Joiner* held the trial court did not abuse its discretion under Rule 702 by excluding the testimony of medical experts whose conclusions were not supported by the data and experiments upon which they relied. As the court explained: "Nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *Id.*

The substance of an expert's testimony is reliable if it adheres to the rigors of the method. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999). As long as the trial court is satisfied the expert's testimony consists of a reliable method faithfully and reliably applied, the gate of admissibility should be opened. The correctness of the conclusion reached by an expert's faithful application of a reliable method (and the credibility of the expert who reached it) is for the jury, for the trial judge must remain at the gatepost and not tread on the advocate's or the jury's turf. *State v. Jones*, 423 S.C. 631, 639–40, 817 S.E.2d 268, 272 (2018) ("There is always a possibility that an expert witness's opinions are incorrect. However, whether to accept the expert's opinions or not is a matter for the jury to decide. Trial courts are tasked only with determining whether the basis for the expert's opinion is sufficiently reliable such that it be may offered into evidence.").

Warner's reliability challenge is single-minded: he appeals the trial court's qualification of Church only on the ground that the CSLI methodology is unreliable. Church testified *in limine* that eleven courts had qualified him as an expert. The number of times a court has qualified a witness as an expert or found a method reliable will almost never be relevant to the trial court's Rule 702 task, as what matters is the method's endorsement by the relevant field, not the bench. See *Daubert*, 509 U.S. at 593–95 (explaining reliability of scientific evidence can be shown by acceptance of method by relevant scientific community).

When the trial court asked Church why CSLI was reliable, in addition to the response we earlier quoted, Church added, "the best way we know it's reliable is because we do this on a daily basis. . . . and we regularly find people that we are looking for, or help look for, by analyzing those records." This answer may appear to resemble the "*ipse dixit*"¹ of the expert" that *Joiner* found fatal to reliability. But on closer inspection, Church's reply reveals the root of CSLI's reliability: it works.

We conclude the trial court was well within its discretion in admitting Church's CSLI testimony as a reliable expert opinion. Church's expertise was based on his vast experience with historical cellular records, as well as his knowledge of and experience with how cellular phones, towers, and networks operate. The reliability of the CSLI methodology was demonstrated by Church's own experience. The text of Rule 702 states expertise can be based on experience. Indeed, the terms "non-scientific expert testimony" and "experience based expert testimony" are interchangeable. *See White*, 382 S.C. at 270 n. 4, 676 S.E.2d at 686 n. 4. After all, expert and experience share the same Latin root, *experi* (to test; to try). *See also Kumho*, 526 U.S. at 156 (stating that "no one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience").

The reliability of experience-based expertise is often proven by its success. *See, e.g., White*, 382 S.C. at 271, 676 S.E.2d at 687 (dog handler deemed reliable in part because of his record of some 750 tracks with the same dog). A leading commentator has stressed that when an expert's opinion is based on inferences derived from historical facts (and that—along with the technical knowledge of how cell networks work—is all CSLI is, in essence), a judge should measure reliability as follows: "[T]he judge should insist on a foundation demonstrating that the expert's technique 'works'; that is, the methodology enables the expert to accurately make the determination as to which she proposes to testify. The foundation must include a showing of the results when the technique was used on prior occasions. Do the outcomes demonstrate a connection between facts *A* and *B*?" 1 *McCormick on Evidence* § 13 (8th ed.) (2020). Church's testimony about his successful results did precisely that. Our supreme court has emphasized the importance of empirical

¹ The phrase "*ipse dixit*," which translates as "he himself said it," was coined by Cicero, who used it to belittle the reasoning and argumentative powers of the followers of Pythagoras. When asked to justify their positions, the followers would just say "*ipse dixit*," opting out of the merits of the debate altogether. Cicero, *De Natura Deorum*, I.V. (H. Rackham trans., Loeb Classical Library 1933).

verification to reliability. *See, e.g., State v. Chavis*, 412 S.C. 101, 108, 771 S.E.2d 336, 339 (2015) ("[E]vidence of mere procedural consistency does not ensure reliability without some evidence demonstrating that the individual expert is able to draw reliable results from the procedures of which he or she consistently applies.").

In this sense of requiring proof of accuracy, Rule 702 echoes Rule 901(b)(9), SCRE, which requires that before a process or system can be authenticated, it must be shown the process or system "produces an accurate result." This burden is not met by a witness who claims a report produced by the system is accurate because "we use it in court all the time." *State v. Brown*, 424 S.C. 479, 487–88, 818 S.E.2d 735, 739–40 (2018) (holding such testimony insufficient to authenticate GPS records). Church went much further than the hapless witness in *Brown*. Church explained how CSLI enjoyed universal acceptance in the cellular industry as well as the law enforcement community. *See State v. Harvey*, 932 N.W.2d 792, 808 (Minn. 2019) (finding CSLI reliable based in part on industry providers' "vested interest in maintaining accurate records" for billing and for 911 purposes).

We therefore affirm the trial court's admission of Church's CSLI testimony, and join the many other jurisdictions that have deemed CSLI reliable enough to pass the Rule 702 gate. *See, e.g., United States v. Hill*, 818 F.3d 289, 298 (7th Cir. 2016) ("Historical cell-site analysis can show with sufficient reliability that a phone was in a general area, especially in a well-populated one. The technique requires specialized training, which Agent Raschke has and has employed successfully on hundreds of occasions." (citation omitted)); *United States v. Medley*, 312 F. Supp. 3d 493, 502 (D. Md. 2018) (concluding government met burden of showing CSLI evidence was "accurate enough and well accepted enough within the appropriate fields of science, technology and specialized knowledge to allow admissibility"); *Holbrook v. Commonwealth*, 525 S.W.3d 73, 80–82 (Ky. 2017) (accord). These three decisions offer the best analysis of CSLI, and they all conditioned their approval of its admissibility on the witnesses' caveat that his opinion as to location relied upon the assumption that the cell phone has connected with the closest tower. Church made the same concession. We find no error.

III.

A. Identification Testimony of Non-Eyewitness

Warner next claims his due process right to a fair trial was violated when the State asked Goolsby to view the video and then used him as an identification witness at

trial. Due process prevents the State from using evidence so unreliable that it offends fundamental conceptions of justice and ordered liberty. *Perry v. New Hampshire*, 565 U.S. 228, 237 (2012). When the police arrange a pretrial, out-of-court identification procedure where an eyewitness to the crime identifies the defendant, due process concerns are triggered only when the procedure is both suggestive and unnecessary. *Id.* at 238–39; *Neil v. Biggers*, 409 U.S. 188, 196–201 (1972). Accordingly, when a defendant challenges a pretrial identification, the first matter the trial court must decide is whether the identification was the result of a police procedure that was both unnecessary and suggestive. If it was not, the inquiry ends. *State v. Wyatt*, 421 S.C. 306, 310, 806 S.E.2d 708, 710 (2017). But, if the procedure was unnecessary and suggestive, due process requires suppression of the eyewitness identification if the procedure created a "substantial likelihood of irreparable misidentification." *Biggers*, 409 U.S. at 198 (quoting *Simmons v. United States*, 390 U.S. 377, 384 (1968)). The trial court must therefore determine whether, despite the unnecessary and suggestive police conduct, the eyewitness identification is nevertheless reliable.

Whether an eyewitness identification is reliable enough to be admitted is a mixed question of law and fact within the trial court's discretion, but where the evidence admits of a single reasonable inference, the question is one of law for this court. *State v. Moore*, 343 S.C. 282, 288, 540 S.E.2d 445, 448 (2000). In *Perry*, the United States Supreme Court clarified that due process does not require pretrial screening of all eyewitness identifications, only those procured by needlessly suggestive state action. 565 U.S. at 232–33 (holding due process not implicated when eyewitness identified defendant on scene without police suggestion). Our supreme court has interpreted *Perry* as requiring a preliminary judicial inquiry (and generally a hearing) "once it is contended that an identification is obtained under unnecessarily suggestive circumstances arranged by state action, regardless of the witness's prior knowledge of the accused." *State v. Liverman*, 398 S.C. 130, 140, 727 S.E.2d 422, 427 (2012) (due process required pretrial identification hearing where out of court identification procedure consisted of suggestive show-up, even though eyewitness had long known accused).

Like the eyewitness in *Liverman*, Goolsby knew the defendant before the crime. Unlike the witness in *Liverman*, Goolsby was not an eyewitness to the crime. This court has held the *Neil v. Biggers* due process inquiry does not apply to a non-eyewitness. *State v. McGee*, 408 S.C. 278, 286–87, 758 S.E.2d 730, 734–35 (Ct. App. 2014). Further, even if delivery of the surveillance video here amounted to "state action," we disagree it was unnecessary. The State did not create the video. The State's use of it was necessary under the circumstances. At the time of their

contact with Goolsby, the police had just received the Crimestoppers' tip, and the investigation was at a critical point. The armed perpetrator of a violent crime was still on the run and had already traveled between at least two states. It would have been impractical for the police to produce an array of videos recreating the crime scene, casting different actors as the perpetrator, before sending them to Goolsby. *See Wyatt*, 421 S.C. at 314–15, 806 S.E.2d at 712 (questioning whether less suggestive procedures were realistic alternatives, as under the circumstances "a lineup would be unworkable"); *see also Simmons v. United States*, 390 U.S. 377, 384–85 (1968) (police display of photos of bank robbery suspects to bank employee victims day after robbery necessary; it was "essential for the FBI agents swiftly to determine whether they were on the right track, so that they could properly deploy their forces in Chicago and, if necessary, alert officials in other cities"); *United States v. Sanders*, 708 F.3d 976, 987 (7th Cir. 2013) (holding single photographic "show-up" was necessary when armed felon at large as police "could not have produced a significantly less suggestive procedure without sacrificing critical time"); *see generally* LaFave, et al., *Criminal Procedure* § 7.4(b) (4th ed. 2003).

Even if sending the video to Goolsby was unnecessarily suggestive, we are confident Goolsby's identification was reliable. *See Manson v. Brathwaite*, 432 U.S. 98, 114 (1977) ("[R]eliability is the linchpin" of the due process inquiry). Without disclosing he was Warner's probation officer, Goolsby told the jury he had spent time with Warner every month over the past nine or so months, usually for fifteen to thirty minutes each time. He testified he was sure of his identification because he was familiar with Warner's gait, the way he carried himself, and the way he held his hands and shoulders, and Warner had the same height and build as the person on the video. *See, e.g., State v. Hall*, 940 A.2d 645, 650, 653–54 (R.I. 2008) (single photo of suspect shown to police officer who identified defendant as suspect was neither suggestive nor unnecessary; suspect was object of ongoing manhunt, and experienced officer was less likely to be affected by a "suggestive procedure"). As *Liverman* noted, a witness's prior knowledge of the accused "remains a significant factor in determining reliability" and mitigates even the extreme suggestiveness of a show-up. 398 S.C. at 135, 141–42, 727 S.E.2d at 424, 427–28 (concluding eyewitness's in-court identification had origins independent of suggestive taint of police orchestrated show-up, as eyewitness was acquaintance and former neighbor of defendant and had known him since elementary school). We affirm.

IV.

A. Application of Exclusionary Rule to pre-*Carpenter* Warrantless Search of Cell Phone Records

Warner next contends the trial court erred in denying his motion to suppress the cell records the State obtained from T-Mobile. At trial, Warner maintained the search warrant issued by the magistrate was invalid because the records were housed in New Jersey, and the magistrate's jurisdiction stopped at the Anderson County border. S.C. Code Ann. § 17-13-140 (2014). The trial court agreed and found the warrant invalid. The State did not challenge this ruling. However, the trial court still denied Warner's motion to suppress, ruling Warner had no expectation of privacy in the T-Mobile records based on the third party doctrine. *See United States v. Miller*, 425 U.S. 435, 443 (1976). As the trial court noted, the Fourth Circuit had recently used the third party doctrine to uphold the warrantless collection of cell phone records. *See United States v. Graham*, 824 F.3d 421, 437–38 (4th Cir. 2016).

While this appeal was pending, the United States Supreme Court decided *Carpenter v. United States*, 138 S. Ct. 2206, 2217 (2018), which held a person has a legitimate expectation of privacy in his cell phone records held by a third party. The court therefore held *Miller* did not apply to cell phone records, and the government could only obtain them by complying with the Fourth Amendment. We do not doubt *Carpenter* applies retroactively to Warner's appeal. *See Griffith v. Kentucky*, 479 U.S. 314, 328 (1987).

Warner bases his claim solely on the Fourth Amendment, so the question becomes what remedy *Carpenter* provides him. The United States Supreme Court separates the retroactivity of a decision from the issue of the remedy. *Davis v. United States*, 564 U.S. 229, 243–44 (2011) ("[T]he retroactive application of a new rule of substantive Fourth Amendment law raises the question whether a suppression remedy applies; it does not answer that question."). In *Davis*, the Court faced the issue of whether the remedy of suppression should be applied where the search of the defendant was authorized at the time it was performed under the automobile exception to the Fourth Amendment recognized by *New York v. Belton*, 453 U.S. 454 (1981), but became unconstitutional after *Arizona v. Gant*, 556 U.S. 332 (2009). The search of Mr. Davis occurred two years before *Gant* but while *Gant*'s direct appeal was pending. In a 7-2 decision, the Court refused to apply the exclusionary rule to the retroactive Fourth Amendment violation. The Court noted the single purpose of the exclusionary rule is to "deter future Fourth Amendment violations." *Id.* at 236–37. When the officer's actions are taken in objective good faith or involve only isolated simple negligence, the benefit of deterrence is

dwarfed by the "heavy toll" the exclusionary system costs the justice system and society. *Id.* at 237–39. The Court noted there is no deterrent effect when the Fourth Amendment error is made by judges rather than police, as the rule was designed only to redress the officer's misconduct. To apply the *Gant* rule to the search of Mr. Davis that was authorized by *Belton* when it was performed, the Court reasoned, would penalize police for the Fourth Amendment misreadings of appellate courts. The South Carolina Supreme Court has followed *Davis*. See *State v. Brown*, 401 S.C. 82, 96, 736 S.E.2d 263, 270 (2012). Although *Davis* has taken on withering criticism, mainly for what some perceive as its sabotage of retroactivity, see LaFave, *Search and Seizure: A Treatise on the Fourth Amendment* § 1.3(h) (5th ed. 2012), we are obligated to follow it.

Although the officers exceeded the Fourth Amendment when they obtained Warner's cell phone records without a valid warrant, in light of *Miller's* validity at the time of the search, their conduct was not a deliberate or reckless transgression. Like the search in *Davis*, the search of Warner's records was not wrongful at the time it was made, and no deterrent value accrues from suppressing the evidence under these specific circumstances. Our conclusion is in accord with many state and federal courts that have confronted the retroactivity of *Carpenter* and whether CSLI records obtained without a valid warrant before *Carpenter* should be subject to the exclusionary rule. See *United States v. Chavez*, 894 F.3d 593, 608 (4th Cir. 2018); *United States v. Goldstein*, 914 F.3d 200, 203–07 (3d Cir. 2019); *Reed v. Commonwealth*, 834 S.E.2d 505, 510–12 (Va. Ct. App. 2019). We therefore affirm the denial of Warner's motion to suppress.

V.

A. Admissibility of Rule 1006, SCRE Summary

Shortly after Church testified about the path of travel of Warner's cell phone, the State sought admission of five maps from his report. Four of the maps showed the location of the cell towers pinged by Warner's phone along I-85 between Atlanta and the Anderson/Greenville area, included the time of access, an arrow pointing the direction of travel, and an explanation that the "arrow indicates direction of travel." The fifth map depicted the location and angle of two tower "wedges" Warner's phone had accessed near the crime scene. The trial court overruled Warner's objection to the maps and admitted them as evidence. Warner claims foul, arguing the maps unduly highlighted Church's testimony and allowed the State to introduce independent evidence that went beyond the underlying source documents.

Rule 1006, SCRE, provides in part that the "contents of voluminous writings, recordings, or photographs which cannot conveniently be examined in court may be presented in the form of a chart, summary, or calculation, provided the underlying data are admissible into evidence." The party seeking to admit a summary must demonstrate (1) the contents of the documents upon which the summary is based are so voluminous it would be inconvenient to examine them in court; (2) the underlying documents are admissible in evidence; (3) the summary is a faithful rendering of the underlying data, and any inferences it contains are supported by the contents and are neutral and non-argumentative; and (4) the originals or duplicates of the underlying documents have been made reasonably available to the other parties. Rule 1006 should be interpreted in light of its intended purpose as an exception to the best evidence rule of Rule 1002, SCRE. This does not mean a summary may not include anything not in the contents of the underlying documents; it may contain fair inferences and conclusions supported by the documents. 2 *McCormick on Evidence* § 241 (8th ed. 2020). But the more inferences a summary chart contains, the less likely it will be admissible under Rule 1006, the more likely it will draw an objection based on other grounds (including Rule 403, SCRE), and the more likely the trial court will decide not to admit the summary as an exhibit but restrict it to being a demonstrative aid.

The evidence underlying the maps came from Warner's phone records and the T-Mobile tower list, both of which had been admitted. The phone records comprise seventy-five pages of data, displayed in a format so technical that they appear as near gibberish to the untrained eye. The most a non-expert could glean from them would be the date, time, and duration of the calls (provided one has a familiarity with Coordinated Universal Time and how to translate it to Eastern Standard Time, taking into account Daylight Savings Time). The address of the tower locations had to be established by cross-referencing the T-Mobile tower list. *See Crowley v. Spivey*, 285 S.C. 397, 412, 329 S.E.2d 774, 783 (Ct. App. 1985) (affirming admission of summary of thirty-one pages of telephone records where trial court concluded summary chart "would save the jury from having to decipher for themselves the long and somewhat confusing" records) (pre-SCRE case); *United States v. Yousef*, 327 F.3d 56, 157–58 (2d Cir. 2003) (affirming admissibility of summary of telephone calls made by suspects in 1993 World Trade Center bombing).

The maps accurately summarized these already admitted records. Warner's real beef seems to be with the arrow that alleged the direction of travel of Warner's phone. But, as we have said, a summary chart is not inadmissible just because it

carries an inference supported by the underlying evidence. *United States v. Spalding*, 894 F.3d 173, 184–86 (5th Cir. 2018). The text of Rule 1006 authorizes admissibility of not just a "summary" of underlying admissible data but also a "chart" or "calculation." A calculation is an inference based on underlying data, and Church's placement of the locations of the towers Warner's phone pinged along I-85 is his calculation of the movement of Warner's phone in time and space. He took raw data already in evidence—the phone and tower records—and superimposed it on a Google Earth map that included a directional arrow, a format the jury could better understand. *See 6 Weinstein's Evidence* § 1006.03 (2d ed. 2019) ("Calculations are admissible to distill quantitative information from a large quantity of material."); *see also United States v. Clements*, 588 F.2d 1030, 1039 (1979) (affirming admissibility of summary calculating gross revenue of gambling operation gleaned from 3,000 phone calls). We recognize charts, powerpoints, and other visual depictions of evidence can be powerful; even when they have not been admitted, jurors often ask (in vain) to see them during deliberations. A trial court must therefore be vigilant in ensuring a Rule 1006 summary is an accurate portrayal of the underlying evidence, and that any inferences and conclusions are faithful to that evidence and are not mere placards of argument. *2 McCormick on Evidence*, § 241 (8th ed. 2020); Mueller & Kirkpatrick, *Federal Evidence* 1107 (3d ed. 2003) (summary "must fairly condense the underlying material and cannot embellish with information not contained in the originals. It cannot be a jury argument in disguise" (footnotes omitted)). We conclude the maps were accurate and unembellished portrayals containing fair inferences well anchored to the underlying, admitted documents. The trial court exercised sound discretion over the maps, requiring the State to remove certain captions and conclusions from them before allowing them into evidence.

It would have likewise been within the trial courts vast discretion to have not admitted the maps, but only allowed them as demonstrative aids, and instructing the jury of their limited purpose. Some courts call such aids "pedagogical devices," but we won't. *See United States v. Bray*, 139 F.3d 1104, 1111–12 (6th Cir. 1998); *United States v. Janati*, 374 F.3d 263, 273 (4th Cir. 2004). Rule 611(a), SCRE, arms the trial court with the power to ensure evidence is presented in a manner "effective for the ascertainment of truth" and avoids wasting time. The trial court—so better attuned to the rhythms of the trial than we are—has wide discretion over the choice of whether a summary should be admitted, excluded, or allowed only as a demonstrative aid. At any rate, Warner suffered no prejudice; the maps were cumulative to records already in evidence and Church's testimony. We affirm.

AFFIRMED.

LOCKEMY, C.J., and KONDUROS, J., concur.