

**THE STATE OF SOUTH CAROLINA
In The Supreme Court**

The State, Respondent,

v.

Donte Samar Brown, Petitioner.

Appellate Case No. 2017-000094

ON WRIT OF CERTIORARI TO THE COURT OF APPEALS

Appeal from Berkeley County
Roger M. Young, Sr., Circuit Court Judge

Opinion No. 27836
Heard June 12, 2018 – Filed August 29, 2018

AFFIRMED IN RESULT

Chief Appellate Defender Robert M. Dudek, of
Columbia, for Petitioner.

Attorney General Alan Wilson and Senior Assistant
Attorney General David Spencer, both of Columbia; and
Solicitor Scarlett A. Wilson, of Charleston, all for
Respondent.

JUSTICE KITTREDGE: The central issue before the Court concerns authentication of Global Positioning System (GPS) monitoring evidence. Specifically, is the requirement for authentication satisfied by testimony that GPS

data is accurate because "[w]e use it in court all the time"? The answer is an unqualified "no."

A Zaxby's restaurant in Goose Creek, South Carolina, was robbed by two males wearing ski masks and gloves while carrying a gun and knife, around midnight on Christmas Eve. During the robbery, a Zaxby's employee was shot by one of the robbers. As a result of law enforcement's investigation—including a traced scent trail, DNA evidence found on a ski mask and gun, an executed search warrant, and a tip that Petitioner confessed to committing the crime with Christopher Wilson—Petitioner and Wilson were arrested and charged with robbery, as well as other crimes stemming from the incident. In addition, during the course of their investigation, law enforcement discovered that Wilson was wearing a GPS ankle monitor at the time of the robbery. Wilson's GPS records reflected that he was at Zaxby's during the robbery. Wilson pled guilty prior to Petitioner's trial.

At Petitioner's trial, the State connected Wilson to Petitioner, through Wilson's GPS records and otherwise. As noted, this appeal is centered on Petitioner's challenge that the State failed to authenticate Wilson's GPS records. We hold that the State failed to properly authenticate the GPS records, and it was error to admit this evidence. Nevertheless, due to the overwhelming evidence of guilt, we affirm the court of appeals in result because this error was harmless beyond a reasonable doubt.

I.

A Zaxby's restaurant in Goose Creek was robbed around midnight on December 24, 2011, and an assistant manager was shot during the robbery. There were several employees present at Zaxby's during the time of the robbery who testified at trial. They testified that, while Zaxby's was in the process of being closed for the evening, two men wearing dark clothing, ski masks, and gloves robbed them with a gun and knife. One of the robbers shot the assistant manager as she lay on the ground. In addition, one victim testified that the assailants used a knife to rip his pants and take his wallet from his back pocket.

Within minutes of the robbery, a car narrowly avoided hitting two men dressed in dark clothing who were exiting the woods near Zaxby's, crossing the road, and running along a wooded area. The citizen relayed this information to the law enforcement officers who were gathered at the nearby Zaxby's. Based on this information, law enforcement utilized a dog from a K-9 unit to track the scent at the entrance of a subdivision across the street and, along the trail, found money

dropped at various places before the scent was lost. Law enforcement also discovered a ski mask, which was submitted for DNA testing. The scent trail ended at Wilson's residence. By the time law enforcement arrived in the vicinity of Wilson's residence, the suspects had left the area. The assailants were not apprehended that night.

Marteeka Hamilton—one of Petitioner's on-again, off-again girlfriends—testified that she received a call from Petitioner on Wilson's cell phone around midnight on the night of the robbery, asking her to pick them up near Wilson's residence because they needed a ride.¹ Hamilton testified that she picked up Petitioner and Wilson near the entrance of the subdivision around 1:00 a.m. that Christmas Eve. She testified that she overheard Wilson talking on the phone and stating that he had accidentally shot someone. She also testified that Petitioner chimed in and chastised Wilson for shooting the victim. Hamilton dropped them off at the Northwoods Mall a few miles away. Days later, Hamilton visited Petitioner and Wilson at a Motel Six near the mall and saw several shopping bags in the room.

Cynthia Garrett was Petitioner's other on-again, off-again girlfriend. Garrett testified that Petitioner confessed to her that he had robbed Zaxby's with Wilson and she relayed this information to the police. Garrett testified that, prior to the robbery, she offered to provide transportation so Petitioner could accept a job offer, but Petitioner told her that he would "rather rob than work," informed her that he was planning to do a "lick"² with Wilson, and asked to borrow Garrett's car. Garrett refused to let Petitioner borrow her car. In addition, Garrett knew Petitioner had a gun prior to the robbery and instructed him to remove it from her house. Approximately one week before the robbery, Garrett kicked Petitioner out of her home due to an argument.

On the night of the robbery, Petitioner called Garrett from Wilson's cell phone around midnight asking her to give them a ride.³ Although Garrett was unaware at the time why Petitioner and Wilson needed a ride and Petitioner offered a couple hundred dollars for it, she refused. Garrett testified that Petitioner became angry

¹ During trial, cell phone records from Wilson's phone were admitted to corroborate this testimony.

² Garrett explained that the word "lick" is a term used to describe a robbery.

³ Again, during trial, cell phone records from Wilson's phone were admitted to corroborate this testimony.

and hung up the phone. Petitioner then called Hamilton, as discussed above, and she gave Petitioner and Wilson a ride.

Regarding Garrett's tip to law enforcement, the assigned investigator sent officers to the Motel Six where Garrett said Petitioner had stayed after the robbery and they confirmed that Petitioner had checked in there. In addition, the dollar amount that Garrett provided as being stolen during the robbery closely matched the one that law enforcement obtained from management at Zaxby's.

At that time, the assigned investigator submitted the DNA on the ski mask found at the scene for comparison with Wilson's DNA. The forensic test results revealed it was a match. Based upon their advancing investigation—including Garrett's statement and Wilson's DNA on the ski mask—law enforcement obtained a search warrant for Wilson's residence.

While executing the search warrant, law enforcement discovered Petitioner alone in Wilson's house. During their search, officers located the gun used during the robbery.⁴ In addition, they found a knife matching the description of the one used during the crime and a social security card for one of the victims whose wallet had been stolen during the robbery.

Thereafter, law enforcement requested a DNA analysis on various items, including the gun recovered at the residence. The State's DNA expert testified that the test results revealed Petitioner's DNA could not be excluded from the handle of the gun although approximately 97.8% of the population could be excluded. As the expert explained,

We can conclude that all of the peaks in [Petitioner's] DNA profile could be found in the mixture profile from the handle of the gun, so we have to report that he is a possible contributor. . . . If all of his data peaks are there, he is one of those people -- he's either one of those unlucky people that, you know, came to the attention of the police and just by coincidence all of his data peaks are there, or he handled the gun. Those are the two possibilities.

⁴ Ballistic results were admitted at trial, which revealed the gun matched a casing found at Zaxby's.

The expert concluded, "The most likely explanation for this mixture profile is that Christopher Wilson and [Petitioner] . . . both handled the gun. We could not exclude Christopher Wilson or [Petitioner]."

While Petitioner was incarcerated and awaiting trial, Lanier Daniels was his cellmate. During this time, Petitioner confessed to Daniels that he planned and committed the robbery with Wilson. In particular, Daniels testified that Petitioner said he was "the one who set up the whole thing" and Petitioner explained to him "what had happened at Zaxby's that night" and "how they got away." Daniels testified that Petitioner said he was upset with Wilson because Wilson shot his uncle's girlfriend—the assistant manager—during the robbery. Daniels testified that Petitioner disclosed "his baby mother"—Hamilton—picked Wilson and Petitioner up after the robbery. Petitioner told Daniels that he was arrested while "he was at a friend's house" and "getting rid of the gun."

In addition, the State entered Wilson's cell phone records at trial, without objection, which reflected that Wilson's phone was used to call Hamilton and Garrett during the time periods that they testified Petitioner had called them and stated that he needed a ride for himself and Wilson on the night of the robbery.

Law enforcement also discovered that Wilson was wearing a GPS ankle monitor and requested the GPS records from the South Carolina Department of Probation, Pardon, and Parole Services (the "Department"). The GPS records, which are the focus of this appeal, purportedly placed Wilson at Zaxby's just prior to and during the time of the robbery. During trial, the State submitted Wilson's GPS records, to which Petitioner objected on the basis that the State was unable to authenticate the records or comply with the business records exception. *See* Rules 803(6) and 901, SCRE. The trial court overruled the objections and admitted the GPS records.

II.

The State presented Agent Steward Powell's testimony to authenticate the GPS records. Agent Powell testified that he is a probation agent with the Department and explained that his job duties include supervising offenders after they are sentenced. Part of the supervision involves the use of GPS monitoring systems. In particular, concerning the matter of authentication, the following colloquy occurred on direct examination:

Q. And what does [your job duty involving GPS monitoring] entail?

A. There is a GPS monitor affixed to the ankle of the offender, and their movements are tracked wherever they go.

Q. How do they work?

....

A. The State has a GOC, general operations center, in Columbia. These offenders are tracked, 24 hours a day, seven days a week so they're always monitored. Us field agents -- and what I mean is someone like me at a local office, we can log on to our computers and see in realtime where these offenders are.

Q. Is that information recorded?

A. It's recorded and it's archived.

Q. How is it recorded?

A. It's recorded by a third party vendor [Omni Link] that supplied the software and the hardware, the actual ankle monitor, for the system.

Q. *Is that information accurate?*

A. *It is very accurate. We use it in court all the time.*

(emphasis added). The GPS records were admitted into evidence.

The jury found Petitioner guilty of criminal conspiracy, burglary second degree, three counts of armed robbery, and five counts of kidnapping; however, the jury found Petitioner not guilty of possession of a weapon during the commission of a violent crime and attempted murder (or the lesser charge of assault and battery of a high and aggravated nature). Petitioner was sentenced to prison and he appealed to the court of appeals.

The court of appeals affirmed Petitioner's convictions and sentences in an unpublished opinion pursuant to Rule 220, SCACR, finding no abuse of discretion

in the admission of the GPS evidence and, in any event, any error was harmless beyond a reasonable doubt. *State v. Brown*, Op. No. 2016-UP-447 (S.C. Ct. App. filed Nov. 2, 2016). Petitioner filed a petition for a writ of certiorari, which we granted.

III.

"The admission or exclusion of evidence is a matter addressed to the sound discretion of the trial court and its ruling will not be disturbed in the absence of a manifest abuse of discretion accompanied by probable prejudice." *State v. Douglas*, 369 S.C. 424, 429, 632 S.E.2d 845, 847–48 (2006) (citations omitted).

"An abuse of discretion occurs when the conclusions of the trial court either lack evidentiary support or are controlled by an error of law." *Id.* at 429–30, 632 S.E.2d at 848 (citations omitted).

IV.

The main issue before this Court is whether Agent Powell's testimony was sufficient to authenticate the GPS records. We hold that the GPS records were not properly authenticated.⁵ We do not doubt that Agent Powell was a proper witness and likely able to lay the necessary foundation. But in terms of establishing the accuracy of the GPS records, Agent Powell simply observed the GPS records are accurate because "[w]e use it in court all the time." Such a response provides no assistance in assessing the accuracy of the GPS records. Without this component of authentication satisfied, it was error to admit this evidence.

It is black letter law that evidence must be authenticated or identified in order to be admissible. *See State v. Rich*, 293 S.C. 172, 173, 359 S.E.2d 281, 281 (1987) (noting prior to the adoption of the rules of evidence that an exception to the hearsay rule does not "absolve the offering party from the usual requirements of authentication"). Upon adoption of the South Carolina Rules of Evidence, this

⁵ Because we agree with Petitioner that the trial court erred in admitting the GPS records, it is not necessary to address Petitioner's other challenges to this evidence. *Futch v. McAllister Towing of Georgetown, Inc.*, 335 S.C. 598, 613, 518 S.E.2d 591, 598 (1999) (stating an "appellate court need not address remaining issues when disposition of prior issue is dispositive" (internal citation omitted)).

common law rule was codified at Rule 901, SCRE.⁶ *See State v. Anderson*, 386 S.C. 120, 128–132, 687 S.E.2d 35, 39–41 (2009). This rule specifically provides, "The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims." Rule 901(a), SCRE. In addition, the rule contains examples⁷ of "authentication or identification conforming with the requirements of this rule." Rule 901(b), SCRE. The method at issue here is:

(9) *Process or System*. Evidence describing a process or system used to produce a result and showing that the process or system produces an accurate result.

Rule 901(b)(9), SCRE.

The State acknowledges that it is required to authenticate the GPS records, but argues that this burden is not high. We agree, and moreover, we acknowledge that the reliability or operation of GPS technology in general is not genuinely disputed. *See, e.g., Commonwealth v. Thissell*, 928 N.E.2d 932, 938 n.15 (Mass. 2010) (reviewing the origins of GPS technology as a "U.S.-owned utility that provides users with positioning, navigation, and timing [PNT] services" and consists of three segments maintained by the United States Air Force). This general acceptance of GPS technology does not, however, translate to the State getting a pass from making a minimum showing that the GPS records it seeks to introduce into evidence are accurate.

Here, the testimony of Agent Powell failed to authenticate because it shed no light on the accuracy of the GPS records. The State's argument that authentication was fulfilled through other means fails to appreciate the nature of GPS records and that

⁶ "With the exception of subsection (b)(10) . . . this rule is identical to the federal rule." Note, Rule 901, SCRE. This remains true even after the Federal Rules of Evidence were restyled in 2011 as there was "no intent to change any result in any ruling on evidence admissibility." Fed. R. Evid. 901 advisory committee's note to 2011 amendment.

⁷ Rule 901 provides examples of authentication "[b]y way of illustration only, and not by way of limitation." Rule 901, SCRE.

these records are generated and result from, at least in part, the process or system used by a machine.⁸

As recognized by the Fourth Circuit Court of Appeals, "Any concerns about the reliability of such machine-generated information is addressed through the process of authentication" *United States v. Washington*, 498 F.3d 225, 231 (4th Cir. 2007). "When information provided by machines is mainly a product of 'mechanical measurement or manipulation of data by well-accepted scientific or mathematical techniques,'" then "a foundation must be established for the information through authentication, which Federal Rule of Evidence 901(b)(9) allows such proof to be authenticated by evidence 'describing [the] process or system used to produce [the] result' and showing it 'produces an accurate result.'" *Id.* (citation omitted).⁹

Other persuasive authority supports this approach. *See, e.g.*, Subdivision (b)(9)—Process or System, 31 Fed. Prac. & Proc. Evid. § 7114 (1st ed. Apr. 2018) (stating "Rule 901(b)(9) governs the authentication of data produced by a machine purporting to measure or detect something, such as a radar gun, a breathalyzer, a *global positioning system device*, and the like" (emphasis added)); *see also* Rule

⁸ Moreover, the State failed to meet the authentication requirements for the other subitems it proposes—through testimony of a witness with knowledge, a showing of distinctive characteristics, or as a public record—because Agent Powell did not pull the GPS records, the GPS records did not reflect Wilson's name on every page, the pages were not in sequential or even chronological order, the records contained inconsistent serial numbers as well as various unexplained time and date gaps, and the records did not reflect compliance with the statute requiring that the Department use a "web-based computer system that actively monitors and *records a person's location at least once every minute twenty-four hours a day.*" S.C. Code Ann. § 23-3-540 (Supp. 2017); *see also* Rule 901(b)(1), (4), (7), SCRE.

⁹ *See United States v. Espinal-Almeida*, 699 F.3d 588, 610 (1st Cir. 2012) (finding a serial number sufficient to identify the GPS device, but evaluating whether the GPS data was properly authenticated under Rule 901(b)(9), FRE, because it is the provision "typically . . . employed to authenticate data generated by a mechanism" as "evidence derived from the operation of a machine or instrument normally depends for its validity on the premise that the device was in proper working order" (citations omitted)); *see also United States v. Lizarraga-Tirado*, 789 F.3d 1107, 1110 (9th Cir. 2015) (similar); *United States v. Lamons*, 532 F.3d 1251, 1265 (11th Cir. 2008) (similar)).

902(13), FRE (allowing "[a] record generated by an electronic process or system that produces an accurate result" to be certified). Thus, we hold that the State needed to present "[e]vidence describing [the] process or system used to produce" the GPS records and "showing that the process or system produces an accurate result" in accordance with Rule 901(b)(9), SCRE, to authenticate Wilson's GPS records in this case.

We emphasize that "[n]o elaborate showing of the accuracy of the recorded data is required"; however, the State must make *some* showing to authenticate the records. *People v. Rodriguez*, 224 Cal. Rptr. 3d 295, 309 (Ct. App. 2017). Other jurisdictions have allowed GPS records to be authenticated by someone who has general knowledge and experience with the system used, explains how the records are generated, and confirms the accuracy of the result. *See, e.g., United States v. Brooks*, 715 F.3d 1069, 1077–79 (8th Cir. 2013) (affirming, as to the specific device's accuracy, that the GPS records were authenticated because the Government's witness "had been trained by the company, he knew how the device worked, . . . he had demonstrated the device for customers dozens of times," other testimony confirmed the device's accuracy, and any brief lapse in the device's transmission was explained); *United States v. Espinal-Almeida*, 699 F.3d 588, 612–13 (1st Cir. 2012) (stating "[t]he issues surrounding the processes employed by the GPS and software, and their accuracy, were not so scientifically or technologically grounded that expert testimony was required to authenticate the evidence, and thus the testimony of . . . someone knowledgeable, trained, and experienced in analyzing GPS devices, was sufficient to authenticate the GPS data and software generated evidence" given the "testimony about the processes employed by both the GPS and the software"); *Rodriguez*, 224 Cal. Rptr. 3d at 309–10 (holding the GPS data was properly authenticated through the sergeant's testimony as he "testified about his familiarity and knowledge of how the ankle monitor transmitted defendant's location through GPS data, the computer software used to track the ankle monitor and the GPS data, and how the GPS report was generated" as well as "testified about the accuracy and reliability of the GPS report generated from the ankle monitor's signals"); *State v. Kandutsch*, 799 N.W.2d 865, 875–76 (Wis. 2011) *superseded by statute on different grounds*, Wis. Stat. § 907.02, *as recognized in In re Commitment of Jones*, 911 N.W.2d 97 (May 4, 2018) (finding "the State was permitted to authenticate and lay a foundation for the EMD report by providing testimony describing the electronic monitoring system and the process by which the daily summary reports are generated and showing that this process produces an accurate result" through the department of correction's agents, who were familiar with its operation and testified regarding the installation of the specific device and its accuracy).

One jurisdiction, North Carolina, appears to use the same or similar vendor as the one used in this case—Omni Link—and has found an officer's testimony sufficient to authenticate GPS records. In *State v. Jackson*, 748 S.E.2d 50 (N.C. Ct. App. 2013), an individual, wearing an electronic monitoring device, was accused of sexually assaulting a victim. At trial, the State introduced evidence from the defendant's electronic monitoring device in order to place the defendant at the scene of the assault. *Id.* at 53. On appeal, the court evaluated whether the GPS tracking evidence was properly authenticated. 748 S.E.2d 50. The court stated, "Regarding the specific electronic monitoring device worn by defendant, [a trained sergeant] identified the device as the Omni-Link 210." *Id.* at 54. The sergeant "described the different components of the device" and "testified about how the device operates using a combination of GPS signals and cell phone triangulations to track the location of the electronic monitoring device at least every four minutes." *Id.* In addition, he explained how the "tracking data is then uploaded from the device to a secured server where it is stored" and "that the device primarily uses GPS signals, which are very accurate, usually within four to ten meters." *Id.* He also testified that he "never had any issue with the accuracy of the data." *Id.* at 54. Moreover, the court noted that the sergeant "described how he retrieved the data for defendant's electronic monitoring device for [the specific dates at issue] and produced the event log entered into evidence." *Id.* The court held that the evidence was properly authenticated and admitted. *Id.* at 55.

After reviewing various authorities, we require that a witness should have experience with the electronic monitoring system used and provide testimony describing the monitoring system, the process of generating or obtaining the records, and how this process has produced accurate results for the particular device or data at issue. As noted, the witness need not be an expert.¹⁰ However,

¹⁰ See, e.g., *Johnson v. State*, 179 A.3d 984, 995 (Md. 2018) (recognizing "[c]ourts in other jurisdictions have admitted evidence derived from GPS tracking devices over objections to the lack of technical expertise of the sponsoring witness," such as "tracking reports from GPS devices concealed in currency stolen from banks, data reports from GPS monitoring devices worn by probationers, and data on a GPS device seized from drug smuggling boat," and rejecting "a categorical rule that expert testimony is required whenever location and duration information derived from a GPS device is offered into evidence" (citing *Brooks*, 715 F.3d 1069; *United States v. Thompson*, 393 Fed. Appx. 852, (3d Cir. 2010); *Jackson*, 748 S.E.2d 50; *Thisell*, 928 N.E.2d 932; *Espinal-Almeida*, 699 F.3d 588 (footnotes omitted))).

even under the minimally burdensome test we set forth, Agent Powell failed to properly authenticate the accuracy of the GPS records. Thus, it was error for the trial court to admit this evidence because the GPS records were not properly authenticated.

V.

Despite this error, we hold that the error was harmless beyond a reasonable doubt due to the overwhelming evidence of guilt presented against Petitioner.

"Generally, appellate courts will not set aside convictions due to insubstantial errors not affecting the result." *State v. Pagan*, 369 S.C. 201, 212, 631 S.E.2d 262, 267 (2006). "Where 'guilt has been conclusively proven by competent evidence such that no other rational conclusion can be reached,' an insubstantial error that does not affect the result of the trial is considered harmless." *State v. Byers*, 392 S.C. 438, 447, 710 S.E.2d 55, 60 (2011) (citing *Pagan*, 369 S.C. at 212, 631 S.E.2d at 267). "A harmless error analysis is contextual and specific to the circumstances of the case." *Id.* at 447–48, 710 S.E.2d at 60. "Where a review of the entire record establishes the error is harmless beyond a reasonable doubt, the conviction should not be reversed." *State v. Price*, 368 S.C. 494, 499, 629 S.E.2d 363, 366 (2006).

Under the circumstances presented in this case and based on the evidence described in the first section of this opinion, the error did not contribute to the verdict and was harmless beyond a reasonable doubt.

VI.

In sum, we hold the State failed to authenticate the GPS records because Agent Powell's testimony—"[w]e use it in court all the time"—failed to authenticate the GPS evidence concerning its accuracy. However, the error was harmless beyond a reasonable doubt. The court of appeals is affirmed in result.

AFFIRMED IN RESULT.

BEATTY, C.J., HEARN, FEW and JAMES, JJ., concur.