

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

The State, Respondent,

v.

Charles Allen Cain, Petitioner.

Appellate Case No. 2015-001983

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**ON WRIT OF CERTIORARI TO THE COURT OF APPEALS**

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Appeal from Spartanburg County  
R. Lawton McIntosh, Circuit Court Judge

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Opinion No. 27694  
Heard October 20, 2016 – Filed January 5, 2017

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**REVERSED**

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Thomas J. Rode, of Thurmond Kirchner & Timbes, P.A.,  
of Charleston; and Chief Appellate Defender Robert  
Dudek, of Columbia, both for Petitioner.

Attorney General Alan Wilson and Senior Assistant  
Attorney General David Spencer, both of Columbia; and  
Solicitor Barry J. Barnette, of Spartanburg, all for  
Respondent.

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**JUSTICE FEW:** Charles Allen Cain appeals his conviction for trafficking in methamphetamine. He argues the State produced insufficient evidence as to the quantity of drugs required for trafficking, and thus the trial court erred when it denied his motion for a directed verdict. The court of appeals found the core of

Cain's argument was not preserved for appellate review, and affirmed. We find Cain's argument is preserved, and the court of appeals erred by affirming the denial of the directed verdict motion. We reverse.

## I. Facts and Procedural History

In January 2012, deputies of the Spartanburg County Sheriff's Office went to 371 Dakota Street near the City of Spartanburg to serve a bench warrant on Travis Kirby. Charles Cain and Tiphani Parkhurst were renting a bedroom in the house and answered the door. After some discussion, Cain gave the deputies permission to enter. While searching for Kirby, the deputies discovered equipment used to manufacture methamphetamine. The deputies called Beth Stuart, a forensic chemist employed by the Sheriff's Office, to investigate the scene. Although Stuart did not find any methamphetamine, she did find evidence of ingredients used to manufacture methamphetamine. This evidence included empty packages of Sudafed, which Stuart determined once contained 19.2 grams of pseudoephedrine. Using a scientific theory known as stoichiometry,<sup>1</sup> Stuart calculated that 19.2 grams of pseudoephedrine could theoretically produce 17.67 grams of methamphetamine, if Cain manufactured the methamphetamine with maximum efficiency. Based on Stuart's analysis, the State charged Cain and Parkhurst with trafficking in methamphetamine under subsection 44-53-375(C) of the South Carolina Code (Supp. 2016). Under that subsection, a defendant is guilty of trafficking if the State proves the defendant "knowingly . . . attempts . . . to . . . manufacture . . . ten grams or more of methamphetamine." *Id.*

Cain made a pretrial motion to dismiss, a directed verdict motion, and he renewed the directed verdict motion at the close of the evidence, all on the basis that the State did not present sufficient evidence to prove the required quantity of methamphetamine to establish trafficking under subsection 44-53-375(C). The trial court denied the motions. The jury found Cain and Parkhurst guilty of trafficking in methamphetamine.

Cain appealed to the court of appeals raising three issues. He argued (1) the trial court erred in admitting Stuart's testimony into evidence; (2) the trial court erred in denying Cain's directed verdict motion because the State did not prove Cain had custody and control of the means of manufacturing the methamphetamine; and (3)

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<sup>1</sup> Stoichiometry is "the study of *quantitative* relationships involving the substances in chemical reactions." Daniel L. Reger, Scott R. Goode & David W. Ball, *Chemistry: Principles and Practice* 92 (3rd ed. 2010).

the trial court erred in denying Cain's directed verdict motion because the State did not present sufficient evidence of the requisite quantity of methamphetamine for a conviction for trafficking. The court of appeals reached the merits of the first two issues, and affirmed. *State v. Cain*, 413 S.C. 508, 527, 533, 776 S.E.2d 374, 384, 387 (Ct. App. 2015). The central issue of Cain's appeal was the sufficiency of the State's evidence of quantity—the third issue—which Cain described in his brief to the court of appeals as "whether an attempted trafficking conviction may be based solely on expert testimony that it was 'theoretically' possible that the accused could have committed the offense." The court of appeals found this issue was not preserved for appellate review. 413 S.C. at 530-31, 776 S.E.2d at 385-86. We granted certiorari only to review the court of appeals' decision as to the third issue.<sup>2</sup>

## II. Evidence of Quantity

Subsection 44-53-375(C) permits the State to prove trafficking based on a variety of factual scenarios. One element the State must prove in all scenarios is the quantity of "ten grams or more." *Id.* Commonly, the State meets its burden on this element by proving the quantity of the methamphetamine itself. In this case, however, the sheriff's deputies found no methamphetamine. Therefore, to prove Cain guilty of trafficking the State was required to prove he attempted to manufacture the requisite quantity. The State relied exclusively on Stuart to prove the element of quantity, as there is no other evidence in the record of the quantity of methamphetamine Cain attempted to manufacture.

Cain argues Stuart's testimony is insufficient because it proves only the theoretical quantity of drugs a person could have produced at maximum efficiency; it does not prove the quantity Cain could realistically have intended to manufacture. Without evidence showing Cain could actually have produced ten grams or more of methamphetamine with the equipment and ingredients he had at his disposal, Cain argues, the trial court erred in denying his motion for directed verdict. We agree.

As background to her testimony about quantity, Stuart described the equipment and ingredients found at the scene, and how Cain would have used them in the "one pot" method of manufacturing methamphetamine. As Stuart explained, a person using the one pot method fills a two-liter drink bottle with various ingredients until a chemical reaction takes place. The bottle Cain used was an

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<sup>2</sup> The issues we identify as the second and third correspond to subparts B and A of section II of the court of appeals' opinion. 413 S.C. at 528-33, 776 S.E.2d at 384-87.

empty liquor bottle. The first step of the one pot method is to crush Sudafed pills and put the pseudoephedrine into the bottle. Then, Cain would have dumped ammonia, lighter fluid, lithium strips from batteries, and water into the liquor bottle and waited for a chemical reaction. Stuart explained that after an hour or so, Cain would have poured the liquid out of the liquor bottle into a separate bottle. That liquid is methamphetamine base. To produce the end product, Cain would have dumped muriatic acid, which is commonly found in drain cleaners, and salt into another bottle to produce acid gas. When the acid gas is mixed with the liquid base, it forms a white powder that is the end product—methamphetamine. Stuart testified Cain's method did not take place under laboratory conditions, and admitted that calling his operation a "meth lab" was a "misuse of the word lab."

As to the quantity of methamphetamine that could be produced from this method, Stuart and the solicitor had the following exchange:

Q: Now, if you take the 19,200 milligrams of either the Sudafed you found or the empty Sudafed that had been there . . . and you were going to attempt to manufacture methamphetamine, and you got a one hundred percent yield . . . how much methamphetamine could you manufacture?

A: 17.67 grams.

. . . .

Q: And that's under laboratory conditions?

A: Yes.

Q: Let's say you only got an 80 percent yield . . . [h]ow much could you manufacture?

A: 14.13 grams.

Q: How about a 75 percent yield?

A: 13.25 grams.

Q: How about a 70 percent yield?

A: 12.36 grams.

Q: What about a 65 percent yield?

A: 11.48 grams.

Q: Still more than ten grams?

A: Yes, sir.

Q: So . . . if you were going to get at least a two-thirds return on what you put in, you would still manufacture more than ten grams?

A: Yes.

This testimony was the only evidence the State offered as to the quantity involved in Cain's alleged trafficking in methamphetamine.

"It is a fundamental concept of criminal law that the State must prove beyond a reasonable doubt all the elements of the offense charged against the defendant." *State v. Brown*, 360 S.C. 581, 590, 602 S.E.2d 392, 397 (2004). The State may not obtain a conviction when its proof as to any one element requires the jury to speculate or guess whether the defendant engaged in the conduct the legislature sought to criminalize. *State v. Brown*, 267 S.C. 311, 316, 227 S.E.2d 674, 677 (1976) (stating "the motion for a directed verdict should be granted where evidence . . . is such as to permit the jury to merely conjecture or to speculate"); *see also Hanahan v. Simpson*, 326 S.C. 140, 149, 485 S.E.2d 903, 908 (1997) (stating "verdicts may not be permitted to rest upon surmise, conjecture, or speculation"); *State v. Hyder*, 242 S.C. 372, 379, 131 S.E.2d 96, 100 (1963) ("We have held that suspicion, however strong, does not suffice to sustain a conviction."). The "attempt[] . . . to manufacture . . . methamphetamine" is criminalized under subsection 44-53-375(B) of the South Carolina Code (Supp. 2016) without regard to quantity. Subsection 44-53-375(C) criminalizes such an attempt as "trafficking" only when the State proves the quantity he attempted to manufacture was "ten grams or more." However, subsection 44-53-375(C) does not criminalize the theoretical possibility of manufacturing ten grams or more of methamphetamine.

Stuart's testimony proves it was theoretically possible to manufacture 17.67 grams of methamphetamine from 19.2 grams of pseudoephedrine if the process was conducted at one hundred percent efficiency. However, Stuart specifically acknowledged the quantity of 17.67 grams was calculated on the assumptions of "ideal laboratory conditions" with "pure products" used by a "trained chemist." Stuart admitted Cain did not have ideal laboratory conditions, and the State offered no evidence Cain even knew how to manufacture methamphetamine. There is no other evidence in the record to support the validity of Stuart's assumptions. Stuart's testimony also proves the quantity of methamphetamine Cain could have manufactured at various lower levels of efficiency. However, Stuart's testimony provides no basis for calculating the level of efficiency Cain could actually have reached under the circumstances that existed in the house. In fact, Cain's counsel specifically asked Stuart on cross examination, "There's no way to tell, from what you had there, how much [the defendants] were actually getting from their work?" Stuart replied, "No, sir."

This answer left the jury in the position of having to speculate as to Cain's efficiency at making methamphetamine, and therefore having to guess at how much of the drug he attempted to manufacture. As we stated in *Brown*, "the motion for a directed verdict should be granted where evidence . . . is such as to permit the jury to merely conjecture or to speculate." 267 S.C. at 316, 227 S.E.2d at 677. Because the State offered no evidentiary basis on which the jury could have determined—without speculating—the quantity of methamphetamine Cain attempted to manufacture, the trial court was required to grant Cain's motion for a directed verdict, and the court of appeals erred by affirming.

Courts in other jurisdictions have also found that evidence of a theoretical amount produced at maximum efficiency is insufficient proof of the quantity element. In *United States v. Eide*, 297 F.3d 701 (8th Cir. 2002), the defendant was convicted of attempting to manufacture five grams or more of methamphetamine. 297 F.3d at 702. On appeal, he argued the government's evidence was not sufficient as to quantity, and thus "he should be resentenced on the included offense of simple attempted manufacturing." 297 F.3d at 704. As in Cain's case, the government in *Eide* did not find any methamphetamine in the defendant's residence, but it did find pseudoephedrine and equipment commonly used to manufacture methamphetamine. 297 F.3d at 702-03. Therefore, the government relied on expert testimony to establish the quantity of methamphetamine the defendant attempted to manufacture. 297 F.3d at 703-04.

The government's expert was Patricia Krahn, a chemist from the Iowa Division of Criminal Investigation. 297 F.3d at 703. She testified the 27.6 grams of pseudoephedrine found at the defendant's residence could theoretically produce "the highest possible yield" of 25.39 grams of methamphetamine. 297 F.3d at 703-04. The Eighth Circuit found this evidence insufficient, stating, "Quantity yield figures should not be calculated without regard for the particular capabilities of a defendant and the drug manufacturing site." 297 F.3d at 705. *See also United States v. Anderson*, 236 F.3d 427, 430 (8th Cir. 2001) (stating "the relevant inquiry is not what a theoretical maximum yield would be, or even what an average methamphetamine cook would produce, but what appellants themselves could produce"); *United States v. Eschman*, 227 F.3d 886, 890 (7th Cir. 2000) (holding "courts cannot quantify yield figures without regard for a particular defendant's capabilities when viewed in light of the drug laboratory involved"); *Buelna v. State*, 20 N.E.3d 137, 146 (Ind. 2014) (holding testimony must be "accurately tailored to the specific manufacturing conditions, ingredients, and skill of the accused").

In *Eide*, after rejecting the government's evidence of theoretical maximum yield, the Eighth Circuit focused on the expert's explanation of "the particular methamphetamine manufacturing processes" the defendant used, and her testimony "that his lithium ammonia reduction process was capable of producing a 40 to 50 percent yield." 297 F.3d at 705. The court stated, "This yield would have resulted in producing 10.1 to 12.6 grams of actual methamphetamine." 297 F.3d at 704. The court affirmed the conviction because it found, "The particularized nature of Krahn's testimony, combined with additional evidence suggesting that Eide was experienced in the manufacture of methamphetamine, were sufficient for a jury to find beyond a reasonable doubt that Eide was a good cook capable of producing a 40 to 50 percent yield." 297 F.3d at 705.

Unlike the expert testimony in *Eide*, Stuart's testimony provided the jury no basis on which to determine how much methamphetamine Cain could actually have produced. If Cain were a "good cook" like Eide, "capable of producing a . . . 50 percent yield," he would have manufactured 8.83 grams of methamphetamine, and thus, he could not be guilty of trafficking.

We review the denial of a directed verdict motion in a criminal case under the any evidence standard of review. "If there is any direct evidence or any substantial circumstantial evidence reasonably tending to prove the guilt of the accused, the Court must find the case was properly submitted to the jury." *State v. Harris*, 413 S.C. 454, 457, 776 S.E.2d 365, 366 (2015) (quoting *State v. Brandt*, 393 S.C. 526,

542, 713 S.E.2d 591, 599 (2011)). In this case, the State presented some evidence of quantity. As we have explained, however, subsection 44-53-375(C) does not criminalize the theoretical possibility of manufacturing "ten grams or more" of methamphetamine. Because the State did not establish the level of efficiency Cain could have actually achieved in his attempt to manufacture methamphetamine, the jury was forced to speculate as to whether Cain could have actually produced the requisite quantity. Under this circumstance, we find the State presented "no evidence" that Cain attempted to manufacture ten grams or more of methamphetamine. The trial court erred in not granting Cain's directed verdict motion.

### III. Issue Preservation

We now turn to the court of appeals' holding that Cain's argument was not preserved for appellate review. Our appellate courts have consistently found issues preserved for review when the issue was raised to and ruled upon by the trial court. *See, e.g., State v. Williams*, 417 S.C. 209, 228 n.10, 789 S.E.2d 582, 592 n.10 (Ct. App. 2016) ("In order for an issue to be preserved for appellate review, it must have been raised to and ruled upon by the trial judge." (quoting *State v. Dunbar*, 356 S.C. 138, 142, 587 S.E.2d 691, 693 (2003))). While a party may not argue one ground at trial and another ground on appeal, *State v. Bailey*, 298 S.C. 1, 5, 377 S.E.2d 581, 584 (1989), we do not require a party to use the same language on appeal as it did at trial, *Herron v. Century BMW*, 395 S.C. 461, 466, 719 S.E.2d 640, 642 (2011). We find Cain's argument at trial and his argument on appeal were the same: that Stuart's testimony was not sufficient to prove the quantity element of "ten grams or more." Thus, the argument before us now is preserved for appeal because it was raised to and ruled upon by the trial court. *See Williams*, 417 S.C. at 228 n.10, 789 S.E.2d at 592 n.10.

Cain repeatedly argued at trial the State's evidence as to quantity was not sufficient. In a pretrial motion to dismiss, Cain argued, "I don't think there's anything in [subsection 44-53-375(C)] or in South Carolina law that says you can take a theoretical yield<sup>3</sup> based on the evidence found and make it into a trafficking case." Cain continued, "I just think that if the case would go forward it would go forward as a manufacturing as opposed to trafficking case." In drawing this

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<sup>3</sup> Theoretical yield is "the maximum quantity of product that can be obtained from a chemical reaction, based on the amounts of starting materials." Reger, Goode & Ball, *supra* note 1, at 118. However, the amount actually produced "is always less than the theoretical yield." *Id.* at 123.

distinction between trafficking and simple manufacturing, which under subsection 44-53-375(B) contains no element of quantity, Cain necessarily focused the trial court's attention on the sufficiency of the State's evidence on the quantity element. The solicitor clearly understood the argument to relate to quantity, stating "we would argue that [Cain and Parkhurst] are attempting to manufactur[e] methamphetamine and the attempt to manufacture [is] more than, the theoretical yield of more than 10 grams in this case, the maximum theoretical yield is just about 17 grams." The trial court took the motion to dismiss under advisement.

Cain also focused on quantity when he made his motion for a directed verdict. He argued,

Your Honor, we'd make a motion for directed verdict. The testimony has been presented that there is some type of something going on in this house, some ingredient in this house that has been identified as a meth lab with some yield. In optimal conditions, maybe, to be a little over 17 grams.

He continued his argument by drawing the same distinction between simple manufacturing and trafficking. He stated,

I think the evidence that has been presented is, at this point . . . not sufficient for at least trafficking . . . [b]ut it's certainly the—it's too speculative to present the trafficking. So, if we don't have—if we have enough to present to the jury, I submit we have—it would be for manufacturing as opposed to trafficking.

In denying the motion, the trial court specifically referred back to the previous discussion about "theoretical yield," indicating the trial court understood the directed verdict motion to address the sufficiency of the State's evidence on the element of quantity. *See State v. Kromah*, 401 S.C. 340, 353, 737 S.E.2d 490, 497 (2013) (holding the issue was preserved when the trial court immediately appeared to understand the objection was a renewal of a previous argument); *State v. Hendricks*, 408 S.C. 525, 531, 759 S.E.2d 434, 437 (Ct. App. 2014) (holding an issue was preserved in part because the trial court immediately understood the basis of the objection).

After all the evidence had been presented, the parties began another discussion of the quantity element. The trial court stated,

I think you're protected on the record, but I am denying the motion based on the plain reading of the statute, and based on the case of persuasive authority<sup>[4]</sup> that was handed in by [the solicitor]. I think theoretical yield would be an appropriate analysis in this case.

At first glance, the ruling appears to relate only to the motion to dismiss. However, later in the transcript the trial court clarified it understood Cain to have renewed his directed verdict motion—on the basis of quantity—and that when it ruled, the trial court denied the motion to dismiss and the renewed directed verdict motion.

On appeal, Cain made the same argument—theoretical yield is not sufficient evidence of quantity—but he complimented the argument by describing what evidence would be sufficient. In doing so, he used a term he had not used at trial—“potential yield.” Cain used the term potential yield to describe for the court of appeals the quantity of methamphetamine a person could *actually* produce given his level of expertise in light of all the conditions present at the time. He used the term to draw a contrast between evidence that would be sufficient and the

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<sup>4</sup> The “persuasive authority” to which the trial court referred was an unpublished opinion from the Iowa court of appeals, *State v. Knapp*, No. 08-1918 (Iowa Ct. App. Dec. 17, 2009). The solicitor earlier relied on *Knapp* to support the State's argument that theoretical yield evidence is sufficient to prove the quantity element. *Knapp* supports neither the State's argument nor the trial court's ruling. While it is true the State relied on theoretical yield evidence in *Knapp*, the Iowa court of appeals affirmed based on the expert's testimony of what actual yield the defendant could have achieved. *Knapp*, slip op. at 8. The defendant in *Knapp* possessed enough pseudoephedrine to produce a “theoretical yield of 15.4 grams of methamphetamine.” *Knapp*, slip op. at 3. However, the expert estimated the defendant could “actually produce between six and seven grams of pure methamphetamine.” *Id.*

theoretical yield evidence offered by the State, which he argued was not sufficient.<sup>5</sup> This was the same argument Cain made in his pre-trial motion to dismiss, his directed verdict motion, and his renewed directed verdict motion. Regardless of the labels used by Cain, his argument on appeal was the same argument repeatedly raised to and ruled upon by the trial court. Thus, we find the court of appeals erred in holding Cain's argument is not preserved for review.

#### **IV. Conclusion**

We find the State produced insufficient evidence as to the quantity of drugs involved in Cain's alleged trafficking in methamphetamine. Accordingly, the court of appeals' decision—and Cain's conviction for trafficking—are **REVERSED**.

**BEATTY, C.J., KITTREDGE, HEARN, JJ., and Acting Justice Costa M. Pleicones, concur.**

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<sup>5</sup> Other courts have used the terms "theoretical yield" and "potential yield" to draw the same contrast between the quantity of drugs that can be manufactured at maximum efficiency (theoretical yield) and the quantity that could actually be produced given the limitations of the system used and the expertise of the person making the drugs (potential yield). *Compare United States v. Weaver*, 425 F. App'x 267, 268-69 (4th Cir. 2011) (discussing "theoretical yield"), *and United States v. Chase*, 499 F.3d 1061, 1069 (9th Cir. 2007) (same), *and State v. Hooks*, 777 S.E.2d 133, 136 (N.C. Ct. App. 2015) (same), *with Knapp*, No. 08-1918, slip op. at 8 (discussing "potential yield"). We suggest the term "potential yield" is confusing, and if it is necessary to label the concept Cain sought to describe, a term such as "actual yield" would be more useful.