

Tommy Whack, Jr. v. State of Maryland, No. 86, September Term 2012

CRIMINAL LAW — CLOSING ARGUMENT — IMPROPER PROSECUTORIAL COMMENT — Attorneys have a great deal of leeway during closing argument to comment on the evidence and draw reasonable inferences from it, but they may not make incorrect or misleading statements. In considering whether a mistrial is required because of improper prosecutorial comments, a court must consider the severity of the remarks, the measures taken to cure any potential prejudice, and the weight of the evidence against the defendant. The high degree of confidence that jurors place in DNA evidence, and the potential for the science and statistics underlying DNA analysis to cause confusion, warrant counsel's taking extra care when discussing DNA evidence. It is improper for a prosecutor to state during closing argument that a defendant's DNA was conclusively present at a crime scene without expert testimony to that effect and to make misleading remarks regarding the statistical significance of DNA evidence. When this occurs in a case where the DNA evidence is of central importance, a mistrial may be warranted.

Circuit Court for Prince George's County
Case No. CT081845X

IN THE COURT OF APPEALS
OF MARYLAND

No. 86

September Term, 2012

TOMMY WHACK, JR.

v.

STATE OF MARYLAND

Barbera, C.J.,
Harrell
Battaglia
Greene
Adkins
McDonald
*Bell,
JJ.

Opinion by Barbera, C.J.

Filed: August 21, 2013

*Bell, C.J., now retired, participated in the hearing and conference of this case while an active member of this Court; after being recalled pursuant to the Constitution, Article IV, Section 3A, he also participated in the decision and adoption of this opinion.

DNA is a powerful evidentiary tool and its importance in the courtroom cannot be overstated. *See Maryland v. King*, 133 S. Ct. 1958, 1966 (2013) (observing that DNA technology is “one of the most significant scientific advancements of our era” and its usefulness in the criminal justice system is “undisputed”). DNA evidence can place a defendant at the scene of a crime, providing a firm scientific foundation for a prosecutor’s case, particularly when other evidence may be lacking. Not surprisingly, jurors place a great deal of trust in the accuracy and reliability of DNA evidence. But this evidence has the potential to be highly technical and confusing in a way that could unduly affect the outcome of a trial. We consider here whether a prosecutor’s incorrect statements during rebuttal closing argument regarding DNA evidence, in a case in which that evidence was of central importance, required a mistrial.

Petitioner, Tommy Whack, Jr., was convicted of second-degree murder following a trial in the Circuit Court for Prince George’s County. During the trial, the prosecution presented several witnesses, including Petitioner’s cousin, who testified that Petitioner called the victim’s cell phone before the killing and was walking in the neighborhood where the killing took place shortly before the crime occurred. Jurors also heard from a DNA analyst who testified that she could not exclude Petitioner as being the source of DNA recovered from the passenger armrest of the truck in which the victim was shot. In rebuttal closing argument, the prosecutor told jurors that Petitioner’s DNA was present in the victim’s truck, and he claimed the statistical analysis conducted by the DNA analyst supported the State’s theory of the case. Petitioner objected to that argument as misstating the DNA evidence and

asked for a mistrial, a request the trial court denied. The Court of Special Appeals affirmed Petitioner's conviction in an unreported opinion. We granted Petitioner's petition for a writ of certiorari, *Whack v. State*, 429 Md. 303 (2012), to answer the following question:

Did the trial court abuse its discretion in denying defense counsel's motion for a mistrial after the State, in rebuttal closing argument, mischaracterized the statistical significance of the DNA evidence?

For reasons we shall explain, we answer yes to that question, reverse the judgment of the Court of Special Appeals, and direct a remand of the case for a new trial.

I.

In the early morning hours of October 21, 2008, officers from the Prince George's County Police Department responded to a 911 call about a shooting in Landover, Maryland. Sergeant Daniel Haggerty, the first to arrive, found a man lying on his back on the ground next to a pick-up truck. The man, later identified as George Jerome White, Jr., appeared to be in great pain and told Haggerty that he had been shot in his side.

Haggerty attempted to ask White questions about who had shot him, but White had trouble answering and gave only one- or two-word responses. Haggerty, aided by another officer, started to give White options that could describe his attacker, such as asking if the person was male or female. As a result of that process, Haggerty learned that White had been robbed and in what direction the gunman had fled. He also learned that the suspect was an approximately six-foot-tall black male, with light or medium skin complexion, about 20 years old, with long hair or dreadlocks. White later died from the two gunshot wounds to his torso.

Investigation revealed that, in the hour before White was shot, a series of calls were exchanged between White's cell phone and a cell phone registered to Petitioner's cousin, Bryant Whack. Eight calls were placed between the two phones from 12:06 a.m. to 1:13 a.m. on October 21, 2008, the last call having been made about twenty minutes before police arrived at the scene of the shooting.¹ At the time White was killed, Bryant Whack, a resident of Fredericksburg, Va., was in town for a funeral and staying with Petitioner in a home not far from the scene of the shooting. Bryant Whack, called by the State at Petitioner's trial, testified that he loaned his phone that night to his cousin, Petitioner, who used the phone to call a "chat line." The chat line allowed parties to call a number and talk with strangers, potentially in order to arrange a sexual encounter.

Sometime after midnight, Petitioner told Bryant Whack that he planned to meet a woman with whom he presumably had talked on the chat line. Bryant Whack decided to accompany Petitioner and they left the house, passing by a school on the way to the encounter. Bryant Whack soon lost sight of Petitioner and decided to stay at the school and wait until Petitioner returned from meeting the woman. Not long after Petitioner disappeared, Bryant Whack heard gunshots. Petitioner appeared moments later and said to Bryant Whack that "it was a dude." Bryant Whack testified that he thought the incident was "funny" because he assumed Petitioner had gone to meet a woman and learned instead that

¹ Seven of the calls were placed from Bryant Whack's phone to White's phone. Only one of the calls was made from White's phone to Bryant Whack's phone. The longest calls lasted three minutes, but most of the calls only lasted for a minute or two.

the person he had been speaking to was a man. The two returned to Petitioner's home. They did not discuss the incident further.

On October 29, 2008, Bryant Whack and Petitioner were interviewed by police.² Following the interviews, Petitioner was indicted on charges of first-degree murder, robbery, theft, and use of a handgun in the commission of a crime of violence.

The case came on for a trial before the Circuit Court for Prince George's County on August 30, 2010. In addition to hearing Bryant Whack's account of events, jurors heard from several scientific and technical witnesses called by prosecutors in an attempt to place Petitioner at the scene of the crime.³ A police evidence technician testified that he used swabs to collect potential DNA evidence from the interior and exterior door handles of the truck's passenger door, the passenger door armrest, the interior dashboard handle, the passenger seat headrest, the driver's seat, and the center console. Jessica Charak, a forensic chemist and senior DNA analyst at the Prince George's County Police Department's

² Bryant Whack initially denied leaving the house on the night of the shooting, but later told police the version of events to which he testified and is described here.

³ These witnesses included a records custodian for Sprint Nextel, who presented the list of calls from Bryant Whack's phone and testified that the calls made prior to the killing were routed through a tower located south of where White was shot. Jurors also viewed a surveillance video taken from G. James Gholson Middle School that showed two people walking by the school between the hours of 12:45 a.m. and 1:45 a.m. on October 21, 2008, corroborating Bryant Whack's statement that he walked with Petitioner by a school around that time. Additionally, an officer trained in the use of a police canine testified that he tracked a potential suspect from the truck to the parking lot of the middle school, where the scent disappeared. The officer noted that a dog can lose a scent when the person being tracked enters a vehicle or meets up with other people; prosecutors argued this was consistent with Petitioner meeting up with Bryant Whack near the school following the shooting.

Serology/DNA Laboratory, interpreted the results of the DNA tests. The parties stipulated to Charak's expertise in forensic chemistry and DNA analysis.⁴ In addition to the samples taken from the truck, Charak possessed DNA profiles obtained from the victim White and Petitioner to use as a comparison.

Charak was unable to uncover a DNA profile in the sample taken from the exterior passenger door handle of the truck, and neither White's nor Petitioner's DNA was consistent with DNA found on the interior door handle on the passenger side. Charak discovered a partial DNA profile on the interior dashboard handle and excluded Petitioner as a person whose DNA could have been discovered there. Charak also found a prominent DNA profile, described as a "major contributor" to a mixture of profiles, in the sample taken from the passenger seat headrest. The DNA of this major contributor was consistent with White's DNA. This profile was discovered along with the DNA profiles of other, unknown people, none of whom could have been Petitioner. The chance of the major DNA profile on the headrest coming from an African American other than White was one in 212 trillion; in other words, White's DNA matched the DNA profile extracted from the passenger seat headrest.

The only sample to which Petitioner could have contributed was found on the

⁴ Prior to the stipulation, Petitioner objected to the admission of the DNA evidence, arguing that it was unfairly prejudicial and lacking in weight and probative value. He contrasted the statistical certainty that White's DNA matched DNA found in the truck with the much lower probability that Petitioner's DNA matched DNA found there. The State countered that the weight to be given the evidence was for the jury to decide, and the trial court agreed, overruling the objection. The defense did not challenge Charak's methodology.

passenger door armrest. Charak explained that she analyzed 15 different locations on the DNA samples taken from the truck and compared those samples to 15 tested locations from White and Petitioner's known DNA profiles. Two samples typically require matches at all 15 locations before "we can say that something is consistent or a match," Charak stated. Charak concluded that the armrest contained a mixture of DNA from at least four people, with White's DNA being consistent with 14 of 15 tested locations in the DNA sample and Petitioner's DNA consistent with 11 of the 15 tested locations in the sample. In addition, the sample disclosed the DNA of at least two additional "unknown contributors." Charak stated she could not exclude Petitioner as a person who might have left DNA on the passenger door armrest. She explained the statistical significance of this as follows:

When it comes to mixtures, in saying that someone could potentially be included as a source of the mixture, we develop a statistic just as to how strong is that statement, what does it really mean.

In this particular case what we do with mixtures is we have already made the statement that all of the DNA types of the victim [White] are accounted for at 14 of the 15 locations. That's a factual statement based on the results. It is also a factual statement that [at] 11 of the 15 locations all of the DNA types of [Petitioner] are accounted for.

Now, the statistic that we do is on the mixture as an entire whole. So we ignore the fractions that we can say that those types are accounted for and we will calculate a statistic on everything, on every single DNA type that I was able to recover in the mixture.

In this case what this probability says is what are the chances that another random person may also have a DNA profile that could also be included as a potential source of the mixture? In this case it was one in 172 individuals in the African American population would also have potentially have a DNA profile that I would have to say that they also could have

contributed to that mixture.

* * *

With mixtures the more DNA types you have, in this case we are dealing with a mixture of potentially four individuals. The more DNA types you have the more combinations of those DNA types that any one of us could have in our own DNA profile. If you - - if I had a big pot and I throw all my DNA types into a pot and I'm randomly picking numbers out to make a DNA profile at the 15 locations, it is all the different combinations that I could potentially pick out of that pot. It comes down to one in 172 individuals.

Charak's DNA report, admitted into evidence by the prosecution, offered a further description of the statistical significance of the passenger armrest sample:

The chances of selecting an unrelated individual from a random population as a possible contributor to the mixed evidence sample at the remaining tested loci are approximately:

1 in 299 individuals in the Caucasian population
1 in 172 individuals in the African American population
1 in 467 individuals in the SE Hispanic population
1 in 754 individuals in the SW Hispanic population

Defense counsel focused most of the cross-examination of Charak on the probabilities discussed in her testimony and in the report.

Q: So you identified possibly that [Petitioner] contributed to that sample, right?

A: Right.

Q: But the possibilities that some other African American contributed to that sample would be one in 172?

A: Right.

Q: If I had 1,000 people, African Americans say, . . . the

probabilities are that I would find some of those with similar DNA profiles as the mixture found on that passenger's door armrest, right?

A: So, again, it would be that someone would potentially have their own DNA profile, all of their DNA types could potentially be accounted for in the big mixture.

Later, on re-direct examination, Charak reiterated that, when dealing with a mixture of DNA profiles, the likelihood that any particular person's DNA is a part of that mixture increases each time an additional DNA profile is added to the mix.

During the State's initial closing argument, the prosecutor mentioned the DNA evidence briefly, remarking that Petitioner "left his DNA on George Jerome White's truck on the inside door handle armrest" and Petitioner's DNA was "left on the truck." Much of the rest of the prosecutor's closing was devoted to explaining how the evidence supported Bryant Whack's account of events and left Petitioner as the only one who could have killed White.

During his closing argument, defense counsel questioned the strength of the DNA evidence, contrasting the probability of various matches made between the DNA taken from the truck and the DNA samples taken from White and Petitioner. The defense noted that the probability of the DNA from the headrest matching someone other than White was one in 212 trillion.⁵ In contrast, defense counsel argued that, when it came to the passenger door

⁵ According to the report prepared by Charak, this figure is specific to the African American population. It is even less likely, based on the probability statistics, that a person
(continued...)

armrest, “we aren’t talking in probabilities of trillions, millions, thousands We are talking one in 172.” Defense counsel elaborated:

It essentially means that for the African American population the chances of those DNA alleles⁶ being in the same row, or the same identifier as being there, they are saying it matches up with [Petitioner], but also matches up with one in 172 people. Every 173rd person would have their DNA alleles in that car. So out of 1700 people, you have ten people.

Compare that with the one in 212 trillion. Remember, ladies and gentlemen, what the DNA person said, remember what the 172 means. It says the chances of selecting an unrelated individual, an unrelated individual from a random population as a possible contributor to the mixed evidence sample at the remaining tested loci are approximately one in 172.

Defense counsel noted that the statistics were couched in the terms of “unrelated”

⁵(...continued)

who was Caucasian or Hispanic could have a DNA profile that matched the sample, according to the report.

⁶ Charak never used the word “alleles” during her testimony, but the prosecutor and defense counsel both used the word when questioning her during direct and cross-examination. The word also appears in Charak’s report, which was admitted into evidence. The Supreme Court of the United States recently explained the significance of alleles in the process of DNA analysis:

Many of the patterns found in DNA are shared among all people, so forensic analysis focuses on repeated DNA sequences scattered throughout the human genome, known as “short tandem repeats” (STRs). The alternative possibilities for the size and frequency of these STRs at any given point along a strand of DNA are known as “alleles,” and multiple alleles are analyzed in order to ensure that a DNA profile matches only one individual.

Maryland v. King, 133 S. Ct. 1958, 1967 (2013) (internal citations and quotation marks omitted) (quoting J. Butler, *Fundamentals of Forensic DNA Typing* 25, 147-48 (2009)). “Future refinements may improve present technology, but even now STR analysis makes it ‘possible to determine whether a biological tissue matches a suspect with near certainty.’” *Id.* (quoting *District Attorney’s Office for the Third Judicial Dist. v. Osborne*, 557 U.S. 52, 62 (2009)).

individuals, not relatives such as Petitioner's cousin, Bryant Whack. He suggested that Bryant Whack's DNA, had it been compared to the samples, might have been discovered in the truck. Defense counsel argued that Bryant Whack's story was inconsistent and unbelievable and posited that it was "more likely" he committed the killing than Petitioner.

The prosecutor, in his rebuttal argument, responded to the defense's suggestion that Bryant Whack, and not Petitioner, was behind the killing. The prosecutor described his interpretation of the DNA evidence in greater detail, first offering jurors a theory for how Petitioner's DNA came to be found on the passenger side armrest:

Except what happens when we get to the armrest? I submit to you the reason why [Petitioner's] DNA, and it is [Petitioner's] DNA, it is not Bryant Whack's. The reason why [Petitioner's] DNA is on the inside portion of the armrest. Remember what was happening? George White was going to meet someone. George White was going to meet someone for the first time. . . .

As that person walked up to him, what did George White do? He leans over and pushes the door open so that person can get into his truck. That is why [Petitioner's] DNA is only on the inside passenger armrest, because as [Petitioner] is standing in the inside of the door as it is open, and you know that the handgun is inside the cabin of the truck. . . .

[Petitioner's] head, his face, his body, is in that car while he is pulling the trigger killing George White, who as even [defense counsel] submits, is turning away to get away from that handgun. That's why he is on the inside of the passenger armrest. That is why he leans in and shoots. He is on the inside passenger armrest.

The State continued by reviewing the testimony of Charak, the DNA analyst, and arguing that the scientific evidence supported conviction:

Remember, [Petitioner] is the fourth sample, the only place where we have four samples. So if you remember, as Ms. Charak testified, that we know

George White, one hundred percent George White, and [defense counsel] agrees is in that headrest sample, when I add two more 50 million times less. When we add [Petitioner], and we know it's [Petitioner], when we add [Petitioner] that is why the number is 172. It is statistics again. It is a statistical lawyer trick.

[Defense counsel] wants you to say don't believe the statistics because the science says he is there, but this 172 is no less strong than that 212. [Petitioner] is there. [Petitioner] left that DNA.

Petitioner moved for a mistrial after the conclusion of closing arguments, arguing, in part, that the State misrepresented the DNA evidence. The State responded that it based its argument on a chart made during Charak's testimony. The trial court denied the motion for a mistrial, but agreed to "remind the jurors it is their recollection of the evidence and the testimony that controls." Prior to sending the jury to deliberate, the trial court delivered this general instruction, not linking it specifically to the prosecutor's comments regarding the DNA evidence.

The jury found Petitioner guilty of second-degree murder and acquitted him of first-degree premeditated murder, first-degree felony murder, robbery with a dangerous weapon, robbery, and use of a handgun in the commission of a crime of violence.⁷ Petitioner appealed his conviction to the Court of Special Appeals, which affirmed the conviction in an unreported opinion.⁸ The present appeal followed.

⁷ Before the case went to the jury, the State entered a *nolle prosequi* to a charge of theft under \$500.

⁸ The Court of Special Appeals also addressed three other questions, none of which are relevant to this current appeal.

II.

Closing arguments serve an important purpose at trial. Counsel use that portion of the trial to “sharpen and clarify the issues for resolution by the trier of fact in a criminal case” and “present their respective versions of the case as a whole.” *Lee v. State*, 405 Md. 148, 161 (2008) (quoting *Herring v. New York*, 422 U.S. 853, 862 (1975)). “The very premise of our adversary system of criminal justice is that partisan advocacy on both sides of a case will best promote the ultimate objective that the guilty be convicted and the innocent go free.” *Lee*, 405 Md. at 162 (quoting *Herring*, 422 U.S. at 862). Accordingly, we grant attorneys, including prosecutors, a great deal of leeway in making closing arguments. “The prosecutor is allowed liberal freedom of speech and may make any comment that is warranted by the evidence or inferences reasonably drawn therefrom.” *Spain v. State*, 386 Md. 145, 152 (2005) (quoting *Degren v. State*, 352 Md. 400, 429-30 (1999)).

This “liberal freedom” has limits, but “not every ill-considered remark made by counsel . . . is cause for challenge or mistrial.” *Wilhelm v. State*, 272 Md. 404, 415 (1974). Whether a reversal of a conviction based upon improper closing argument is warranted “depends on the facts in each case.” *Id.* Generally, the trial court is in the best position to determine whether counsel has stepped outside the bounds of propriety during closing argument. *Ingram v. State*, 427 Md. 717, 726 (2012). “As such, we do not disturb the trial judge’s judgment in that regard unless there is a clear abuse of discretion that likely injured a party.” *Id.* (citing *Grandison v. State*, 341 Md. 175, 225 (1995)). In deciding whether

there was an abuse of discretion, we examine whether the jury was actually or likely misled or otherwise “influenced to the prejudice of the accused” by the State’s comments. *Wilhelm*, 272 Md. at 415-16 (quoting *Reidy v. State*, 8 Md. App. 169, 172 (1969)). Only where there has been “prejudice to the defendant” will we reverse a conviction. *Rainville v. State*, 328 Md. 398, 408 (1992) (quoting *State v. Hawkins*, 326 Md. 270, 276 (1992)).

III.

Petitioner argues that “the prosecutor’s improper and misleading statements made during rebuttal closing argument so severely misstated the power, strength and significance of the DNA statistical evidence as to deprive [Petitioner of] a fair trial.” Petitioner contends that the State’s evidence did not prove conclusively that his DNA was found on the truck, but only that Petitioner could not be *excluded* as a possible contributor to the DNA sample recovered from the passenger armrest. Petitioner notes that, according to Charak’s testimony, one out of every 172 randomly selected African Americans could have contributed to the mix of DNA recovered from the armrest. Petitioner argues that the State misconstrued this evidence when it insisted, in rebuttal closing, that Petitioner’s DNA was present in the truck. Petitioner further alleges that the State erred by falsely equating the odds that the victim White’s DNA was on the headrest of the truck with the odds that Petitioner’s DNA was found on the passenger armrest. The State, unsurprisingly, maintains that the prosecution’s argument was proper and based on reasonable inferences drawn from the evidence.

Before proceeding to the merits of the parties' arguments, some background on DNA and the testing process is required. "Deoxyribonucleic acid, or DNA, is a molecule that encodes the genetic information in all living organisms." David H. Kaye & George Sensabaugh, *Reference Guide on DNA Identification Evidence*, in *Reference Manual on Scientific Evidence* 131 (3d ed. 2011). "The importance of DNA for forensic purposes is that DNA does not vary within an individual and, with the exception of identical twins, no two individuals have the same DNA configuration." *Young v. State*, 388 Md. 99, 106 (2005) (quoting *Gross v. State*, 371 Md. 334, 339 n.1 (2002)). Humans share roughly 99.9 percent of their DNA with one another, and the remaining 0.1 percent is unique to each individual. Kaye & Sensabaugh, *supra*, at 137.

As explained by Charak, the State's DNA analyst, the simplest way that DNA is recovered from a surface is if a person leaves some type of bodily fluid behind, such as blood or saliva. But a person may also leave DNA behind in the form of skin cells that are transferred from a person's body onto another surface. The strength of a sample depends in part on how long a person touches the surface, whether there is direct skin contact, whether a person has been sweating or touching his or her face or mouth repeatedly, and how long it has been since a person washed his or her hands.

Charak analyzed the samples removed from the truck and compared those to the known DNA profiles of the victim White and Petitioner. She employed a method called Short Tandem Repeat Testing (STR), which examines 15 specific places (loci) on the DNA

samples taken from the truck and the known DNA profiles of White and Petitioner to determine how frequently the DNA sequences repeat. The number of times the DNA is repeated varies between people, and this variation allows scientists to distinguish the DNA profile of one person from another. Charak explained what it would mean to have a DNA profile match a sample of unknown DNA based on her testing methods:

When you add up the totality of all 15 different locations, so it is how many repeats I have at all 15 and compare that against somebody else who has repeats at all 15, that is where we start to get into the types of numbers where we can say that something is consistent or a match.

Matching a DNA profile is not the end of the analysis process. The next step is to “estimate the statistical significance of the match, by calculating the likelihood that a random person . . . would match the crime scene sample, commonly referred to as ‘random match probability.’” *Young*, 388 Md. at 111.

The two areas of the truck that were tested, and are relevant here, are the passenger seat headrest and the passenger armrest. Charak testified that at least three DNA profiles were found on the passenger seat headrest, with White being the “major contributor” of DNA, meaning his profile was the “most apparent type.” According to Charak, the odds of someone in the African American population, other than White, having been the source of that DNA profile on the headrest was one in 212 trillion, meaning he was “the only person” who could match the DNA.

The remaining statistics related to a mixed sample on the armrest that contained more than one DNA profile. As Charak explained, the more DNA profiles present in a sample, the

more likely it is that any given person's DNA could be present. The passenger door armrest contained a mixture of at least four different DNA contributors. At least two of the DNA contributors could not be identified. A third contributor had a DNA profile that was consistent with the DNA profile of White at 14 of the 15 locations tested by Charak. The fourth contributor had a DNA profile that was consistent with the DNA of Petitioner at 11 of the 15 tested locations. The odds of randomly selecting an African American individual as a contributor to that sample were one in 172. Charak stated she could not exclude Petitioner as a source of the DNA in the mixture sample.

It is this uncertainty that the defense sought to exploit throughout the trial, and particularly in closing argument, as defense counsel floated an alternative theory of the case in which Petitioner's cousin, Bryant Whack, was the one who killed White. The defense noted that Bryant Whack's DNA was never compared to the DNA samples taken from the crime scene. The defense suggested that, had the testing been done, perhaps Bryant Whack's DNA would have been found in the truck. The State responded with the rebuttal argument at issue here.

Again, the defense's primary objections were to the prosecutor's repeated assertion that Petitioner's DNA was found in the truck and his claim that "this 172 is no less strong than that 212," seeming to indicate that one in 172 is equal to one in 212 trillion in terms of

probability.⁹ The State concedes that the prosecutor's statement regarding the probability statistics was factually incorrect, given Charak's testimony. The State argues, however, that the prosecutor's statement, that "this 172 is no less strong than that 212," was "preposterous" and no jury would ever draw the conclusion that the two statistics were the same. The State contends that this statement was meant to suggest only that the science underlying both statistics was equally strong. The State acknowledges that the prosecutor's rebuttal argument may have been "inartfully argued," but the State maintains that the prosecution did not mischaracterize the evidence. Moreover, the State notes that the expert's report was admitted into evidence, allowing the jury to examine it further if there was any confusion.

We disagree that the prosecutor's statements were merely "inartfully worded" and could be easily cleared up by consulting the expert's report. The evidence was that the DNA of one out of every 172 African Americans could be consistent with the DNA mixture found on the armrest. And based on the testing that was done, Petitioner could not be excluded

⁹ The particular passage that seemed to draw the brunt of Petitioner's attack is, again, as follows:

Remember, [Petitioner] is the fourth sample, the only place where we have four samples. So if you remember, as Ms. Charak testified, that we know George White, one hundred percent George White, and [defense counsel] agrees is in that headrest sample, when I add two more 50 million times less. When we add [Petitioner], and we know it's [Petitioner], when we add [Petitioner] that is why the number is 172. It is statistics again. It is a statistical lawyer trick.

[Defense counsel] wants you to say don't believe the statistics because the science says he is there, but this 172 is no less strong than that 212. [Petitioner] is there. [Petitioner] left that DNA.

among that number. Given that evidence, the prosecutor went too far in stating emphatically that Petitioner's DNA was present in the truck.

The prosecutor compounded that error by overstating the statistical significance of the DNA evidence by equating the odds of one in 172 with one in 212 trillion. The State is correct that no jury was likely to believe that one in 172 was literally the same as one in 212 trillion. The danger, though, was not that jurors might believe the two numbers were the same, but that the prosecutor stated the one in 172 figure was "no less strong" than the one in 212 trillion figure. The prosecutor's statement could have seriously misled the jury. The one in 212 trillion figure represented the odds that an African American *other than White* could have left a particular DNA profile on the passenger headrest, whereas the one in 172 figure reflected the odds that *any* randomly selected African American's DNA could be found in the total mixture on the armrest, including Petitioner. The declaration that this one in 172 figure was "no less strong" than the one in 212 trillion figure suggests that Petitioner's DNA "matched" the DNA taken from the armrest to the same extent that White's DNA "matched" a sample taken from the headrest.

The prosecutor's error must be considered within the larger context in which DNA evidence is treated and perceived by jurors. The public places a great deal of weight on the reliability and accuracy of DNA evidence. See Joel D. Lieberman, et. al., *Gold Versus Platinum: Do Jurors Recognize the Superiority and Limitations of DNA Evidence Compared to Other Types of Forensic Evidence?*, 14 Psychol. Pub. Pol'y & L. 27, 32 (2008) (noting that

a Gallup poll found 85 percent of those questioned believed DNA evidence to be “completely” or “very” reliable). In one series of studies, researchers concluded that DNA evidence was viewed by the public as more accurate than any other type of evidence, including fingerprints, hair fibers, and eyewitness testimony. *Id.* at 52-53. This confidence “was reduced only when the qualifications of the expert were brought into question, not when the quality of evidence was attacked.” *Id.* at 53.

The State acknowledged at oral argument before this Court that DNA does “stand alone as a potentially confusing topic.” In a case such as this, jurors are asked not only to become familiar with the science of DNA, but to interpret the DNA evidence presented through the filter of statistical analysis. “The complexity of mathematical computations used to determine the probability of a match may leave jurors with some degree of confusion and uncertainty.” Lieberman, et. al., *supra*, at 32. *See also* Kimberly Cogdell Boies, *Misuse of DNA Evidence is Not Always a ‘Harmless Error’: DNA Evidence, Prosecutorial Misconduct, and Wrongful Conviction*, 17 Tex. Wesleyan L. Rev. 403, 417 (2011) (“The formulas used to determine statistical probability of a match produce a result that is difficult for a layperson to understand.”). The result is a potentially dangerous combination: jurors place a great deal of weight on DNA evidence, but this evidence has the potential to be confusing or misunderstood.

Accordingly, counsel have a responsibility to take extra care in describing DNA evidence, particularly when it comes to statistical probabilities. The prosecutor certainly has

“liberal freedom of speech” during closing argument, *see Spain*, 386 Md. at 152, but this commentary must be grounded in the evidence or reasonable inferences drawn from the evidence. Minor misstatements from counsel are inevitable in a trial, but this was not a minor misstatement. The prosecutor wrongly asserted that Petitioner’s DNA was definitely on the armrest when the evidence demonstrated only that it *might* be present. The prosecutor also suggested that the statistical analysis backed up this assertion, urging jurors to draw an equivalency between the mathematical certainty that White’s DNA was in the truck with the probability that Petitioner’s DNA was located there. These remarks were highly improper because the statements misrepresented complicated scientific evidence that was a key part of the prosecution’s case.

We have criticized prosecutors who stray outside of the record during closing arguments. *See id.* at 156 (“Courts consistently have deemed improper comments made during closing argument that invite the jury to draw inferences from information that was not admitted at trial.”). In *Lawson v. State*, 389 Md. 570, 599 (2005), we concluded that it was inappropriate and highly prejudicial for a prosecutor to assert in closing argument that the defendant would sexually abuse his young relative if he was found not guilty because the statement was “based on facts not in evidence at trial.” We held that this statement, along with several others, taken as a whole, deprived the defendant of a fair trial. *Id.* at 604-05. *See also Lee*, 405 Md. at 168 (concluding it was improper for a prosecutor to refer to facts not in evidence when he stated that the victim’s testimony was not credible because the

victim was following “the law of the streets” by not implicating the defendant); *Spain*, 386 Md. at 156 (concluding that the prosecutor referenced facts not in evidence and improperly vouched for a police officer by stating during closing argument that the officer did not testify falsely because he would otherwise suffer adverse consequences to his career). In this case, the record does not contain testimony that Petitioner’s DNA conclusively matched the sample from the truck.

We find support in our conclusion from some of our sister courts. In *Duncan v. Commonwealth*, 322 S.W.3d 81, 86-87 (Ky. 2010), the Supreme Court of Kentucky considered an analogous situation in which the defendant challenged misstatements made by the prosecutor about the DNA evidence during cross-examination and closing argument. The defendant was accused, among other things, of kidnapping and sexually assaulting a 14-year-old girl. *Id.* at 85. At his trial, the State presented evidence of DNA samples taken from the girl’s underwear. *Id.* at 86. In separate tests, the defendant’s DNA was consistent with a DNA profile found on the underwear at seven of 10 tested locations in the first test and 10 out of 17 tested locations in the second test. *Id.* at 90-91. The jury did not learn the statistical significance of these results. *Id.* at 91. The testimony established only that the defendant was a potential contributor to a mix of DNA recovered from the underwear and could not be ruled out as the source of the DNA. *Id.*

The Supreme Court of Kentucky concluded, based on this background, that it was a “gross misrepresentation” of an expert witness’s testimony for the prosecutor to suggest on

cross-examination that the DNA would have to be wrong for the defendant's denial of the crime to be true. *Id.* This alone, the court held, rendered the trial "manifestly unfair." *Id.* In addition, the court concluded that it was improper for the prosecutor to state in closing argument that "not excluded" was the same as "included" and to suggest that the "bottom line" question was why the defendant's DNA was found in the girl's underwear. *Id.* The court held that, "given the immense weight jurors are apt to accord DNA evidence,"¹⁰ the prosecutor's statements during cross-examination and closing argument "rendered [the defendant's] trial manifestly unfair." *Id.* at 93. In reaching this conclusion, the court emphasized that the prosecution

must abide by the limitations of its own proof and not make claims that its DNA evidence is more probative than the expert's testimony has shown it to be. . . . [T]he Commonwealth may not, by underscoring the fact of the partial match, invite the jury to speculate that the match is actually more significant than the expert testified, or that evidence of the partial match by itself is sufficient to identify the defendant as the source of the crime scene DNA.

Id. at 93. *See also Commonwealth v. Mattei*, 920 N.E.2d 845, 858-59 (Mass. 2010) (holding that a new trial was warranted where testimony that the defendant was not excluded as a source of DNA was presented without a statistical explanation of the significance of that fact, and the State emphasized in closing argument that the defendant's DNA was consistent with that of a profile found at the victim's apartment); *State v. Bloom*, 516 N.W.2d 159, 169

¹⁰ The court noted further that DNA evidence is "subject to vast misunderstanding and misuse. Although at times highly probative, it can also . . . be much more modestly probative or hardly probative at all." *Duncan v. Commonwealth*, 322 S.W.3d 81, 93 (Ky. 2010).

(Minn. 1994) (“Prosecutors and trial courts are cautioned that we will not hesitate to award a new trial to a defendant if our review of the trial record reveals that quantitative or qualitative DNA identification evidence was presented in a misleading or improper way.”).

The State argues that the prosecutor’s statements, taken in context, may have been permissible under the invited response doctrine. We have explained the invited response doctrine in the following way: “[W]here a prosecutorial argument has been made in reasonable response to improper attacks by defense counsel, the unfair prejudice flowing from the two arguments may balance each other out, thus obviating the need for a new trial.” *Mitchell v. State*, 408 Md. 368, 381 (2009) (quoting *Lee*, 405 Md. at 163-64). The doctrine applies when the defense “goes outside the scope of permissible closing argument” and seeks to have the jury “draw inferences from information that was not admitted at trial.” *Id.* at 382 (quoting *Lee*, 405 Md. at 166).

The State contends that “the prosecutor’s comments were an invited response to [Petitioner’s] closing argument that suggested that Bryant Whack’s DNA was possibly found in the victim’s vehicle.” The State further maintains that the defense’s reference to the possibility of other relatives being the source of the DNA profile was “utter fabrication and misleading.”

The invited response doctrine was not triggered here. Testimony that one in 172 African Americans could have left a DNA profile on the mixture on the armrest is consistent with the argument that the DNA of Petitioner’s cousin, Bryant Whack, could have been a part

of that sample. Moreover, Charak testified that relatives may share some of the same DNA with one another, leading to Petitioner's permissible inference that some of Bryant Whack's DNA might have matched the DNA profiles in the sample in a similar manner as Petitioner's. Nothing in the State's presentation of evidence ruled out this possibility.

We must consider whether the trial court abused its discretion by not granting a mistrial in light of the prosecutor's improper comments during closing argument. "We note that a mistrial is generally an extraordinary remedy and that, under most circumstances, the trial judge has considerable discretion regarding when to invoke it." *Powell v. State*, 406 Md. 679, 694 (2008) (citing *Cooley v. State*, 385 Md. 165, 173 (2005)). "When assessing whether reversible error occurs when improper statements are made during closing argument, a reviewing court may consider several factors, including the severity of the remarks, the measures taken to cure any potential prejudice, and the weight of the evidence against the accused." *Spain*, 386 Md. at 159. A mistrial must be declared when it is "necessary to serve the ends of justice." *Powell*, 406 Md. at 694 (citing *Cooley*, 385 Md. at 173).

The State argues that, given the leeway afforded to counsel in closing arguments, the prosecutor's remarks were not so improper as to require reversal of Petitioner's conviction and a new trial. The State maintains that the prosecutor's statements regarding DNA were not designed to inflame the passions of the jury, *see Lawson*, 389 Md. at 596-99, and were confined to a portion of the rebuttal argument. Moreover, the State points out that the trial court instructed jurors several times during trial that closing arguments were not evidence

and that their recollection of the testimony and evidence controlled. Finally, the State argues that the evidence against Petitioner was strong, with jurors having heard not only DNA evidence that linked Petitioner to the crime but testimony from Petitioner's cousin, Bryant Whack, that placed Petitioner in the area at the time of the shooting.

Reversal of the judgment of conviction is warranted in this case. Identity was a central question for the jury to resolve. No one witnessed Petitioner shoot White or saw him at the scene of the crime. Instead, the State relied on circumstantial evidence, much of it taken from the testimony of Bryant Whack, to suggest that Petitioner was the one who shot White. Bryant Whack placed Petitioner near the scene of the crime shortly before the shooting; he further testified that it was Petitioner, not he, who was using the cell phone at the time calls were exchanged between that phone and White's phone. Bryant Whack also gave the jurors a plausible explanation for how Petitioner might have encountered White: he stated that Petitioner had called a chat line and decided to meet a woman he met while talking on the phone. Surveillance camera footage from the nearby middle school verified a portion of Bryant Whack's story. Additionally, the description White gave police of the man who shot him appeared to be consistent with Petitioner's appearance at the time of the crime.

It was the DNA evidence, though, that potentially provided the missing link between these strands of evidence and the crime scene itself. As we have noted, the prosecutor's statement that Petitioner's DNA was conclusively found on the truck was incorrect based on

the evidence presented at trial. The prosecutor compounded the error by discussing the statistics behind the DNA analysis in a misleading manner. From the prosecutor's statements, jurors could have concluded that the DNA evidence *proved* Petitioner touched the passenger armrest in the truck. In actuality, the evidence showed only that Petitioner could not be *excluded* as a source of DNA in the truck, i.e., he *might* have touched the armrest.

Cautionary instructions sometimes can take the sting out of a prosecutor's improper comments. In *Spain*, 386 Md. at 156, a prosecutor stated during closing argument that a police officer had not testified falsely because, if he had, his career would have been at risk. The trial court gave instructions reminding the jury of the argumentative nature of closing arguments, its role, as fact finder, to accept or reject any testimony, and its duty to subject all testimony to the same level of scrutiny. *Id.* at 160. We concluded that a "reasonable jury would be able to fulfill properly its role and discern argument from evidence without undue prejudice to the defendant." *Id.* Here, the trial court reminded jurors at several points during the trial that they should rely on their own recollection of the testimony and evidence. The last of these admonitions occurred in response to Petitioner's objection following closing arguments. The court, after taking a lunch recess, reminded the jury that "it shall be your recollection of this testimony individually and collectively that shall control during your deliberations."

In *Spain*, our conclusion that the prosecutor's improper remarks did not prejudice the

defendant was grounded in more than just the trial court's jury instructions; we also considered the "relative lack of severity of the improper remarks" and the absence of a negative impact those remarks had on the defense theory of the case. *Id.* at 161. In contrast, the prosecutor's remarks here misrepresented a key piece of scientific evidence and challenged the defense's central theory of the case that Petitioner's cousin was the more likely perpetrator of the crime. The court's general cautionary instructions did not suffice to cure the potential prejudice to the defendant under these circumstances.¹¹

In the end, the DNA analysis offered the only direct evidence that Petitioner might have been in White's truck.¹² There was no eyewitness who saw him there, no murder weapon recovered, and no other traces of Petitioner's presence found at the scene. Setting the DNA aside, the remainder of the prosecution's evidence provided only circumstantial

¹¹ At trial, defense counsel did not request a curative instruction nor suggest any particular language for the court to use in giving such an instruction. The State argues that the various jury instructions given at trial negated any prejudice from the prosecutor's remarks and the propriety of a curative instruction need not be considered. *See Tibbs v. State*, 72 Md. App. 239, 252 (1987) (concluding that, because defense counsel requested only a mistrial and not a curative instruction, the appropriateness of an instruction was not properly before the court). Because we conclude that a mistrial was the appropriate remedy under these circumstances, we need not speculate on whether a more specific curative instruction could have remedied the harm from the prosecutor's statements or whether a curative instruction could be an appropriate remedy under a different set of facts. *See Hill v. State*, 355 Md. 206, 220 (1999) (noting a curative instruction can act as an alternative to a mistrial by remedying "any error or prejudice").

¹² We note that the jury acquitted Petitioner of first-degree premeditated and felony murder, the more serious of the charges against him, choosing to convict him instead of second-degree murder. The jury also acquitted Petitioner of the robbery charges. These acquittals suggest that jurors had at least some doubts about the prosecution's theory of the case.

support for the assertion that Petitioner killed White.¹³ As a result, we hold that the prosecutor's remarks likely misled the jury "to the prejudice of the accused" and order that Petitioner be granted a new trial.

**JUDGMENT OF THE COURT OF
SPECIAL APPEALS REVERSED;
CASE REMANDED TO THAT COURT
WITH DIRECTIONS TO REMAND
THE CASE TO THE CIRCUIT COURT
FOR PRINCE GEORGE'S COUNTY
FOR A NEW TRIAL. COSTS TO BE
PAID BY PRINCE GEORGE'S
COUNTY.**

¹³ Contrast this with *Commonwealth v. Buckman*, 957 N.E.2d 1089, 1102 (Mass. 2011), in which the Supreme Judicial Court of Massachusetts held that a prosecutor's improper characterization of DNA evidence in closing argument did not likely affect the jury's verdict given that there was overwhelming evidence of guilt "from two independent sources of expert forensic evidence, fingerprint identification, and DNA analysis." *See also State v. Roman Nose*, 667 N.W.2d 386, 402 (Minn. 2003) (prosecutor's comments that nobody other than the defendant contributed to the DNA sample was not misconduct where the DNA analyst testified that "the predominant DNA profile matched [the defendant] and that she could not eliminate [the victim or victim's boyfriend] as possible contributors to the weaker DNA profile").