IN THE COURT OF APPEALS OF NORTH CAROLINA

No. COA16-762

Filed: 7 March 2017

New Hanover County, Nos. 14 CRS 6705, 53596-97

STATE OF NORTH CAROLINA

v.

LORI LEE BABICH

Appeal by defendant from judgments entered 26 February 2016 by Judge Jay D. Hockenbury in New Hanover County Superior Court. Heard in the Court of Appeals 24 January 2017.

Attorney General Joshua H. Stein, by Special Deputy Attorney General Hal F. Askins, for the State.

Sharon L. Smith for defendant.

DIETZ, Judge.

Defendant Lori Lee Babich appeals her conviction for habitual impaired driving, challenging the admission of retrograde extrapolation testimony by the State's expert witness. That expert used Babich's 0.07 blood alcohol concentration one hour and forty-five minutes after the traffic stop to extrapolate that Babich had a blood alcohol concentration of 0.08 to 0.10 at the time of the stop. To reach this conclusion, the expert assumed that Babich was in a post-absorptive state at the time of the stop, meaning that alcohol was no longer entering Babich's bloodstream and

thus her blood alcohol level was declining. The expert conceded that there were no facts to support this assumption. The expert made this assumption not because it was based on any facts in the case, but because her retrograde extrapolation calculations could not be done unless Babich was in a post-absorptive state.

As explained below, we hold that the expert's testimony was inadmissible under the *Daubert* standard that applies to Rule 702 of the Rules of Evidence. Although retrograde extrapolation testimony often will satisfy the *Daubert* test, in this case the testimony failed *Daubert*'s "fit" test because the expert's otherwise reliable analysis was not properly tied to the facts of this particular case.

Although we conclude that this expert testimony was inadmissible under *Daubert*, we nevertheless uphold Babich's conviction. As explained below, in light of the strength of the State's evidence that Babich was appreciably impaired, there is no reasonable possibility that exclusion of the expert's testimony would have affected the outcome of this case. Accordingly, we find no prejudicial error in Babich's conviction and sentence.

Facts and Procedural History

On 16 May 2014 at approximately 3:20 a.m., Officer Britton Creech of the Wilmington Police Department saw Defendant Lori Lee Babich driving her vehicle at a high speed in a 45 mile-per-hour zone. After an initial radar reading of 83 miles per hour, Officer Creech began pursuing Babich. While following her, Officer Creech

registered a second radar reading of 91 miles per hour. Officer Creech then observed Babich brake before an intersection with a red light, slow down to approximately 45 miles per hour, and then cross the intersection despite the red light. Officer Creech pulled Babich over.

Babich immediately exited her vehicle and approached the officer. Officer Creech commanded Babich to stop and stay in her vehicle, but Babich did not comply, causing the officer to grab her and place her in handcuffs. The officer smelled alcohol on Babich's breath, Babich stumbled as she walked, and her eyes were glazed and red. Officer Creech removed the handcuffs and asked Babich to perform several field sobriety tests.

On the one-leg-stand test, Babich placed her foot on the ground two times and raised her arms for balance contrary to instructions. On the walk-and-turn test, Babich started over in the middle of the test and on three steps did not walk in a heel-to-toe manner as instructed. Finally, on the finger-to-nose test, Babich touched her face instead of her nose. Based on his observations and Babich's unsatisfactory performance on the sobriety tests, Officer Creech arrested Babich for driving while impaired.

At the police station, Officer Dwayne Ouellette, a certified chemical analyst, used an intoximeter breath testing instrument to administer a breath alcohol test to Babich. Officer Ouellette collected breath samples from Babich at 5:07 a.m. and 5:09

a.m. which both reported a breath alcohol concentration of 0.07. Babich had been stopped by Officer Creech at 3:26 a.m. and remained in his custody and under his observation until Officer Ouellette performed the breath test. During the time she was in custody, Babich did not consume any alcohol or have any opportunity to consume any alcohol.

The State charged Babich with reckless driving to endanger, driving while license revoked, speeding, driving while impaired, and habitual impaired driving. At trial, Bethany Pridgen, a forensic chemist with the Wilmington Crime Lab, testified as an expert witness for the State regarding retrograde extrapolation. Pridgen testified that she performed a retrograde extrapolation to estimate Babich's blood alcohol concentration at the time she was stopped. Based on her calculation, Pridgen gave a conservative estimate that Babich's blood alcohol concentration was between 0.08 and 0.10 at the time of the stop.

The jury convicted Babich of impaired driving, speeding, and reckless driving. Babich stipulated to three prior DWI convictions, constituting habitual status, and was sentenced to 19 to 32 months in prison. Babich timely appealed.

Analysis

I. Admissibility of the Retrograde Extrapolation Testimony

Babich contends that the retrograde extrapolation testimony of the State's expert witness was inadmissible under Rule 702(a)(1) because it was not based on

sufficient facts or data. As explained below, although retrograde extrapolation testimony can be scientifically reliable, we hold here that the opinion of the State's expert was not sufficiently tied to the particular facts of this case and thus fails the *Daubert* "fit" test.

We review a trial court's admission of expert testimony for abuse of discretion. *State v. Anderson*, 322 N.C. 22, 28, 366 S.E.2d 459, 463 (1988). Our Supreme Court recently confirmed that Rule 702(a) of the Rules of Evidence "incorporates the standard from the *Daubert* line of cases" in federal evidentiary jurisprudence. *State v. McGrady*, 368 N.C. 880, 888, 787 S.E.2d 1, 8 (2016). To be admissible under Rule 702(a), expert testimony "must meet the three-pronged reliability test that is new to the amended rule: (1) The testimony must be based upon sufficient facts or data. (2) The testimony must be the product of reliable principles and methods. (3) The witness must have applied the principles and methods reliably to the facts of the case." *Id.* at 890, 787 S.E.2d at 9.

In addition, even if expert scientific testimony might be reliable in the abstract, to satisfy Rule 702(a)'s relevancy requirement, the trial court must assess "whether that reasoning or methodology properly can be applied to the facts in issue." *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593 (1993). This ensures that "expert testimony proffered in the case is sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute." *Id.* at 591 (quoting *United States v.*

Downing, 753 F.2d 1224, 1242 (3d Cir. 1985)). The Supreme Court in *Daubert* referred to this as the "fit" test. *Id.*

We now apply these principles from Rule 702, *McGrady*, and *Daubert* to this case. At the outset, we note that Babich does not contend that *all* retrograde extrapolation of blood alcohol content is unreliable under Rule 702(a). Indeed, her own expert testified that retrograde extrapolation can be scientifically reliable if based on sufficiently reliable data. *See generally State v. Turbyfill*, __ N.C. App. __, __, 776 S.E.2d 249, 256 (2015) ("[B]lood alcohol extrapolation is a scientifically valid field, which principles have been tested, subjected to peer review and publication, and undisputedly accepted in the scientific community and in our courts."). Babich instead focuses on the key underlying assumption that the State's expert used in her retrograde extrapolation analysis—that Babich was in a post-absorptive state at the time of the stop.

To extrapolate Babich's blood alcohol level at the time of her arrest, the State's expert started with Babich's blood alcohol test at the police station, which occurred one hour and forty-five minutes after her arrest. Babich's blood alcohol concentration in that test was 0.07.

The State's expert then used a mathematical formula to extrapolate Babich's blood alcohol concentration at the time of the traffic stop based on her 0.07 blood alcohol level one hour and forty-five minutes later. To do so, the expert used data

from previous scientific research to devise an average alcohol elimination rate—a conservative estimate of the rate at which the average person eliminates alcohol from the bloodstream. Using this model, the expert opined that, because Babich had a blood alcohol concentration of 0.07 one hour and forty-five minutes after the traffic stop, she had a blood alcohol concentration of 0.08 to 0.10 at the time of the stop.

Importantly, this mathematical model is applicable only if the subject is in a "post-absorptive" or "post-peak" state—meaning that alcohol is no longer entering the subject's bloodstream and thus her blood alcohol level is declining. The State's expert acknowledged that there are many factors that can impact whether a person is in a post-absorptive or post-peak state, such as when the person last consumed alcohol (and how much was consumed), and whether the person consumed any food that could delay the alcohol's absorption into the bloodstream.

And, just as importantly, the State's expert conceded that she had *no factual information in this case* from which she could assume that Babich was in a post-absorptive state. But, because the expert's model would not work unless Babich was post-peak, the expert simply assumed that this was the case—although the expert readily conceded that she had no underlying facts to support this assumption:

> Q: Moving to this case in particular, Ms. Babich, you've not been provided any data whatsoever, facts about when her last consumption of alcohol was, or whether she consumed food, 30 to, I mean, 90 minutes prior?
>
> [STATE'S EXPERT]: No, I have not.

Q. So you're assuming that she did—she's in the post-absorptive state?

A. That's correct.

Q. And that's not based really on any fact?

A. Nope.

Q. There is no fact that you've been presented to make that assumption?

A. That's correct.

Q. You have to make an assumption?

A. In order to do the calculation, I make the assumption. . . .

Q. Again to clarify, for Ms. Babich specifically, if you have that information and if Ms. Babich was not in the post-absorptive state, would your opinion change?

A. For the time of the incident? Yeah. I mean, if there was information that told me that at the time of the incident, you know, she had had something to drink 20 minutes before, then I would be like, well, I don't believe she's post-peak so it wouldn't be a fair—it wouldn't be fair to make that calculation because I can't make that assumption now because I've been given other data.

Q. Would you make the calculation?

A. No.

Q. What if you had data about her consuming a beverage, the last consumption of alcoholic beverage being one hour before with food, she would not be in the post-absorptive state; correct?

A. Well, if I've been given that as a fact, now I have to make the assumption that she's pre-peak and—you cannot make the retrograde extrapolation calculation without assuming post-peak. So, yeah, it would definitely change. I wouldn't be able to do it, or I would say, well, within light of this type of information, I would now assume in the absorption phase during that time and then a retrograde extrapolation would not necessarily be an accurate assumption.

Q. So if Ms. Babich was not post-peak or not in the post-absorptive state, you would not have an opinion about her breath at the time?

A. That's correct.

In light of this testimony, the question posed in this case is straightforward: under *Daubert*, can an expert offer an opinion that extrapolates a criminal defendant's blood alcohol concentration where that extrapolation can be done only if the defendant was in a post-absorptive state, and the expert had no evidence on which to base the underlying assumption that the defendant was in a post-absorptive state? As explained below, we hold that expert testimony in this circumstance is inadmissible under *Daubert* because, as a matter of law, that testimony cannot satisfy the "fit" test.

To date, our State's appellate courts have not addressed this issue (either before or after the adoption of the *Daubert* methodology). But other courts have, and the majority of those courts have found that the evidence cannot satisfy the criteria of Rule 702(a).

For example, the New Mexico Supreme Court's decision in *State v. Downey* involved nearly identical facts. 195 P.3d 1244, 1252 (N.M. 2008). The state's expert assumed the defendant was in a post-absorptive state without any underlying facts to support that assumption. The court explained that "[g]iven that [the expert] did not have the facts necessary to plot Defendant's placement on the [blood alcohol concentration] curve, he could not express a reasonably accurate conclusion regarding the fact in issue: whether Defendant was under the influence of intoxicating liquor at the time of the collision." *Id.* The court held that the expert's testimony could not satisfy *Daubert*'s "fit" requirement because the expert did not have sufficiently reliable underlying facts to which he could apply his otherwise reliable methodology. *Id.* As the court explained, the expert's testimony "did not 'fit' the facts of the present case because he simply assumed for the purpose of his relation-back calculations that Defendant had ceased drinking prior to the collision and, therefore, was post-absorptive." *Id.*

The New Mexico Supreme Court then addressed the implications of this holding, explaining that retrograde extrapolation can be (and often will be) admissible. But, at a minimum, the expert must have some facts from which the expert can assume that the defendant is in a post-absorptive state:

> Experts may, and often do, base their opinions upon factual assumptions, but those assumptions in turn must find evidentiary foundation in the record. Here, by contrast, the State did not produce any evidence regarding when

> Defendant last consumed alcohol, much less the quantity
> consumed, which rendered [the expert's] assumption mere
> guesswork in the context of this particular case.
> Accordingly, because [the expert's] conclusions were
> nothing more than mere conjecture and should have been
> excluded, the trial court abused its discretion in permitting
> this evidence to go to the jury.
>
> We recognize that information regarding when a defendant
> had begun or ceased drinking may be difficult to obtain
> absent an admission from the defendant. We point out,
> however, that the State may be able to glean this
> information from third-party witnesses or from
> circumstantial evidence.

Id. (internal citations omitted).

Courts in other jurisdictions have reached the same conclusion when applying the *Daubert* test or similar evidentiary jurisprudence. *See, e.g.*, *People v. Floyd*, 11 N.E.3d 335, 342 (Ill. App. Ct. 2014); *State v. Wolf*, 605 N.W.2d 381, 385 (Minn. 2000); *State v. Dist. Ct. (Armstrong)*, 267 P.3d 777, 783 (Nev. 2011); *Commonwealth v. Petrovich*, 648 A.2d 771, 773–74 (Pa. 1994); *Mata v. State*, 46 S.W.3d 902, 916 (Tex. Crim. App. 2001).

We agree with the New Mexico Supreme Court's analysis in *Downey*. Applying the requirements of Rule 702(a), as interpreted by our Supreme Court in *McGrady*, we hold that, when an expert witness offers a retrograde extrapolation opinion based on an assumption that the defendant is in a post-absorptive or post-peak state, that assumption must be based on at least some underlying facts to support that assumption. This might come from the defendant's own statements during the initial

stop, from the arresting officer's observations, from other witnesses, or from circumstantial evidence that offers a plausible timeline for the defendant's consumption of alcohol.

When there are at least some facts that can support the expert's assumption that the defendant is post-peak or post-absorptive, the issue then becomes one of weight and credibility, which is the proper subject for cross-examination or competing expert witness testimony. But where, as here, the expert concedes that her opinion is based entirely on a speculative assumption about the defendant—one not based on any actual facts—that testimony does not satisfy the *Daubert* "fit" test because the expert's otherwise reliable analysis is not properly tied to the facts of the case. *Daubert*, 509 U.S. at 593. Accordingly, we hold that the trial court abused its discretion by admitting the challenged expert testimony in this case.

II.   Harmless Error Analysis

Because we conclude that the trial court erred in admitting the State's expert testimony, we must address whether that error prejudiced Babich. "An error is not prejudicial unless there is a reasonable possibility that, had the error in question not been committed, a different result would have been reached at trial." *State v. Mason*, 144 N.C. App. 20, 27–28, 550 S.E.2d 10, 16 (2001). "Where it does not appear that the

erroneous admission of evidence played a pivotal role in determining the outcome of the trial, the error is harmless." *Id.* at 28, 550 S.E.2d at 16.

A defendant may be convicted of driving while impaired if the State proves that the defendant drove "(1) While under the influence of an impairing substance; or (2) After having consumed sufficient alcohol that he has, at any relevant time after the driving, an alcohol concentration of 0.08 or more." N.C. Gen. Stat. § 20-138.1(a). The jury in this case was instructed on both alternative grounds.

In *State v. Taylor*, this Court held that any error in the admission of retrograde extrapolation testimony necessary to prove the second ground in N.C. Gen. Stat. § 20-138.1(a) was harmless because of the strength of the evidence that the defendant was appreciably impaired under the first ground. 165 N.C. App. 750, 758, 600 S.E.2d 483, 489 (2004). The evidence of appreciable impairment in *Taylor* consisted of the following: "that [the officer] smelled an odor of alcohol on defendant's person at the accident scene, that defendant needed assistance with walking to the patrol car, that defendant had difficulty writing his statement on the appropriate lines, that defendant had a 'blank face,' and that defendant did not perform satisfactorily on field sobriety tests administered by [the officer]." *Id.*

We are unable to distinguish this case from *Taylor*. Here, the State presented evidence that the officer saw Babich drive 80 to 90 miles per hour while approaching a red light, suddenly slow down, and then drive through the red light at

approximately 45 miles per hour. When the officer stopped Babich, he smelled alcohol on her breath and saw that she had glazed and bloodshot eyes. Babich also stumbled as she walked. Babich ignored the officer's instructions and repeatedly talked over him as he attempted to speak to her. Babich did not properly perform the field sobriety tests, including touching her face instead of her nose, using her other foot and hands to balance herself during the one-leg-stand test, and failing and starting over during the walk-and-turn test. Under *Taylor*, this evidence is sufficient to show that, even without the challenged expert testimony, there is no reasonable possibility that the jury would have reached a different result. Accordingly, although we find error in the trial court's evidentiary ruling, we hold that the error did not prejudice Babich and thus we uphold her conviction and sentence.

Conclusion

For the reasons discussed above, we hold that the trial court erred in admitting the retrograde extrapolation testimony of the State's expert witness, but find no prejudicial error.

NO PREJUDICIAL ERROR.

Judges BRYANT and HUNTER, JR. concur.