

IN THE COURT OF APPEALS OF THE
STATE OF OREGON

STATE OF OREGON,
Plaintiff-Respondent,

v.

RONALD CRAIG LUSARETA,
Defendant-Appellant.

Douglas County Circuit Court
12CR0137MI; A152238

George William Ambrosini, Judge.

Argued and submitted June 17, 2014.

Kyle Krohn, Deputy Public Defender, argued the cause for appellant. With him on the briefs was Peter Gartlan, Chief Defender, Office of Public Defense Services.

Joanna L. Jenkins, Senior Assistant Attorney General, argued the cause for respondent. With her on the briefs were Ellen F. Rosenblum, Attorney General, and Anna M. Joyce, Solicitor General.

Before DeVore, Presiding Judge, and Haselton, Chief Judge, and Garrett, Judge.

GARRETT, J.

Reversed and remanded.

GARRETT, J.

Defendant appeals a judgment convicting him of driving under the influence of intoxicants (DUII), ORS 813.010, and reckless driving, ORS 811.140. On appeal, defendant asserts that the trial court committed two errors. First, defendant assigns error to the trial court's admission of what defendant characterizes as expert opinion testimony regarding defendant's blood alcohol concentration (BAC) at the time that he was stopped. In his second assignment of error, defendant contends that the trial court erred in denying his motion for a judgment of acquittal on the ground that the state failed to prove venue. For the reasons set out below, we reject defendant's evidentiary argument. As to venue, we reverse and remand for further proceedings.

An Oregon State Police trooper stopped defendant at 4:34 p.m. after observing defendant's semi-trailer truck swerving in and out of his lane on Interstate 5, nearly colliding with several cars and the guardrail. The trooper noticed that defendant's speech was slurred and difficult to understand. The trooper also noticed that defendant smelled of alcohol, that defendant's eyes were red and glassy, and that defendant had urinated on himself. Defendant consented to perform field sobriety tests, which he failed. Defendant was arrested for DUII, and transported to the Douglas County Jail. About two hours after the stop, defendant submitted to a breath test that measured his BAC at 0.15 percent, well above the threshold of 0.08 percent needed to prove the crime of DUII. ORS 813.010(1)(a). Defendant was subsequently charged with DUII, reckless driving, and two counts of recklessly endangering another person.

At trial, defendant contended that, by the time of the breath test, his BAC had significantly *increased* from what it was when he was stopped. Defendant testified that he ate lunch and purchased four cans of beer, which he proceeded to drink while he was driving his truck. He testified that he drank three cans between mile post 174 and the rest area located at mile post 144. Defendant testified that he stopped at the rest area to throw away the three empty cans of beer, then continued to drive until he was pulled over at

mile post 119. At that point, according to defendant, he had not yet begun to feel the effects of the alcohol.

To rebut defendant's contention that his BAC was *lower* at the time of the stop than it was two hours later, the state called Howard, a forensic scientist with the Oregon State Police Forensic Services Division, to testify about the rate at which the body absorbs and eliminates alcohol. Citing several studies, Howard prepared to testify that, in her opinion, defendant's BAC would have been greater than 0.08 percent at the time he drove his vehicle. Defendant objected on the ground that Howard's testimony was "scientific" evidence and that, under *State v. O'Key*, 321 Or 285, 899 P2d 663 (1995), the state was required to demonstrate that that testimony was based on valid scientific principles.

Howard told the trial court that she would opine that, even giving defendant every benefit of the doubt, his BAC at the time he was stopped would have been between 0.15 and 0.12 percent. Howard based that opinion on several different studies. The first study was conducted by Rod Gullberg and Anthony McElroy, from the Washington State Patrol. Gullberg, who has a master's degree and is a trained statistician, conducted tests on 161 drivers who were arrested for DUII. Those drivers gave two breath samples: one sample immediately after being stopped and another sample approximately one hour later. The study found (1) that none of the drivers had a rising BAC one hour *after* being stopped, and (2) that in no instance did a breath test taken one hour later *overestimate* a driver's BAC at the time of the stop. The study further concluded that a breath analysis performed within *two* hours of a stop did not overestimate the BAC at the time of the stop. That study was published in a peer-reviewed journal.¹ Howard testified that she was aware that "other scientists in the Oregon State Police Crime Lab System" rely on the Gullberg study, but that she did not know whether forensic scientists around the country use it as well.

¹ See Rod Gullberg & Anthony McElroy, *Comparing Roadside with Subsequent Breath Alcohol Analyses and their Relevance to the Issue of Retrograde Extrapolation*, 47 *Forensic Sci Int'l* 57, 193-201 (1992), available at http://www.wsp.wa.gov/breathtest/docs/webdms/Studies_Articles/Comparing%20Roadside%20with%20Subsequent%20Breath%20Alcohol%20Analyses%20et%20al%2011-03-1992.pdf.

Although Howard testified to her belief that the Gullberg study is scientifically sound, she noted that the study did not account for several potentially relevant factors, including whether any of the drivers in the study had recently eaten a large meal, the type of alcohol they had consumed, or how quickly they had consumed it. According to Howard, all of those factors can affect how quickly alcohol is absorbed into a person's bloodstream. Thus, Howard turned to other studies showing that even under those "different drinking scenarios," most people reach 80 percent of their peak BAC within 15 minutes of their last drink. Howard specifically cited a study in which the subjects ate a "Thanksgiving type dinner" and then drank distilled spirits. That study found that "all of the subjects still reached 80% of their peak within the first 15 minutes."² Howard relied on those studies to derive her BAC range of between 0.15 and 0.12 percent at the time defendant was stopped. She reasoned that, assuming defendant's BAC peaked at 0.15 percent, he would have reached at least 80 percent of that BAC while driving (0.12 is 80 percent of 0.15).

Defendant argued that Howard's testimony was based on a novel method for calculating BAC that she had developed herself and that Howard's testimony did not satisfy the standard for admission of scientific evidence under *O'Key*. The state argued that Howard's testimony was not scientific evidence at all, and that it was based on defendant's chemical breath test and the facts of defendant's consumption as he recounted them, rather than a particular formula or novel approach to calculating BAC. The trial court agreed with defendant that Howard's testimony was scientific evidence. The court also concluded, however, that her testimony satisfied the foundational requirements of *O'Key*, and admitted the expert testimony over defendant's objection.

At trial, Howard was asked to make several assumptions based on defendant's theory of the case. She assumed that defendant took his last drink before he stopped at the

² A. W. Jones and A. Neri, *Evaluation of Blood-Ethanol Profiles After Consumption of Alcohol Together With a Large Meal*, 24 Can Soc Forensic Sci J 125, 165-73 (1991).

rest stop and then drove for about 30 minutes before he was pulled over. Howard testified that, given a breath test of 0.15 percent, a conservative estimate of defendant's BAC at the time of the stop, two hours before the test, would fall within a range between 0.12 and 0.15 percent. She testified that, regardless of the specific drinking scenario, alcohol is a "very simple molecule" that can be absorbed "very readily through the mucous membranes" in the stomach and small intestines. She testified that "numerous studies" show that "people will *** absorb the first amount of alcohol *** rather quickly and will reach about 80 [percent] of their peak [BAC] within the first 15 minutes or so after they finish drinking." She specifically referenced the Jones study and described Jones as "one of the most prolific researchers in the field of forensic alcohol." She also discussed the Gullberg study and its conclusion that "a breath test taken two hours after driving is a reasonable estimate, and certainly not an over-estimate, of the person's BAC at the time of driving[.]"

After the state's case-in-chief, defendant moved for a judgment of acquittal, arguing that the state had failed to prove that venue was proper in Douglas County. The trial court denied that motion, and the jury convicted defendant of driving under the influence of intoxicants (DUII) and reckless driving.

On appeal, defendant argues that Howard's testimony is scientific evidence derived from her personal methodology for calculating BAC and that the state failed to prove the scientific validity of the evidence as required by *State v. Brown*, 297 Or 404, 687 P2d 751 (1984), and *O'Key*, 321 Or 285.³ Like all expert testimony, scientific evidence is "admissible if it is relevant under OEC 401, would assist the trier of fact under OEC 702, and is not subject to exclusion under OEC 403." *Jennings v. Baxter Healthcare Corp.*, 331 Or 285, 301, 14 P3d 596 (2000) (citing *Brown*, 297 Or at 409).

³ Defendant also argues that the probative value of Howard's testimony was outweighed by the danger of unfair prejudice because the testimony was conclusive as to the only disputed element of the offense. We reject this argument without discussion.

Additionally, the Supreme Court has recognized that evidence that is perceived by jurors to be scientific in nature possesses an “unusually high degree of persuasive power.” *O’Key*, 321 Or at 291. Thus, where an expert is prepared to offer “scientific evidence,” the rules of evidence collectively require the court to “identify and evaluate the probative value of the proffered scientific evidence, consider how that evidence might impair rather than help the trier of fact, and decide whether truthfinding is better served by admission or exclusion.” *Id.* at 299 (footnote omitted). In other words, it is the court’s function to ensure that the persuasive appeal of scientific evidence is legitimate. *Id.* “[I]n the absence of a clear case, a case for judicial notice, or a case of *prima facie* legislative recognition,” trial courts have an obligation to ensure that expert scientific testimony is scientifically valid. *Id.* at 293. Scientific validity is assessed based on the “reliability of the methods and procedures utilized to produce the proffered evidence.” *State v. Helgeson*, 220 Or App 285, 291, 185 P3d 545 (2008).

Rather than precisely defining scientific evidence, the Supreme Court has explained that evidence is scientific if it “draws its convincing force from some principle of science, mathematics and the like.” *Brown*, 297 Or at 407. That includes “proffered expert scientific testimony that a court finds possesses significantly increased potential to influence the trier of fact.” *O’Key*, 321 Or at 293. We review a court’s determination that scientific evidence is admissible for errors of law. *Jennings*, 331 Or at 299.

Here, there is no doubt that Howard’s testimony was scientific in nature. When an expert couches her testimony in the “vocabulary of scientific research” she “effectively announce[s] to the jury that the basis of her testimony [is] ‘scientific.’” *State v. Whitmore*, 257 Or App 664, 672, 307 P3d 552 (2013). Howard’s testimony was of that kind: She introduced herself as a “forensic scientist with the Oregon State Police Forensic Laboratory”; she described the biological processes that allow alcohol to be absorbed relatively quickly into the blood stream; she explained that her estimation of defendant’s BAC was supported by peer-reviewed forensic science studies. The jury would have understood that Howard’s opinions were based on her expertise in the

field of forensic science and would have afforded that testimony an “unusually high degree of persuasive power.” *O’Key*, 321 Or at 291.

The question, therefore, is whether Howard’s testimony met the criteria for admissibility. The legislature has specifically recognized the validity of blood alcohol tests as a measure of BAC.⁴ *Helgeson*, 220 Or at 285. Expert opinion testimony, however, must be shown to possess the “requisite indices of scientific validity.” *Whitmore*, 257 Or App at 672; see also *State v. Perry*, 347 Or 110, 120-21, 218 P3d 95 (2009).

The Supreme Court has announced numerous factors that are relevant to the question of whether a scientific technique is valid. In *Brown*, 297 Or at 417, the Supreme Court suggested seven nonexclusive factors that should be considered: (1) the technique’s general acceptance in the field; (2) the expert’s qualifications and stature; (3) the use which has been made of the technique; (4) the potential rate of error; (5) the existence of specialized literature; (6) the novelty of the invention; and (7) the extent to which the technique relies on the subjective interpretation of the expert. The court clarified, however, that those are not the only factors to be used and pointed to 11 other factors identified by Justice McCormick in his article *Scientific Evidence: Defining a New Approach to Admissibility*, 67 Iowa L Rev 879, 911-12 (1982):

“(1) The potential error rate in using the technique;

“(2) The existence and maintenance of standards governing its use;

“(3) Presence of safeguards in the characteristics of the technique;

“(4) Analogy to other scientific techniques whose results are admissible;

⁴ Under Oregon’s DUII statute, a violation can be shown when a person “[h]as 0.08 percent or more by weight of alcohol in the blood of the person as shown by chemical analysis of the breath or blood of the person made under ORS 813.100, 813.140 or 813.150.” ORS 813.010(1)(a). ORS 813.160(1)(b) provides that subject to certain certification requirements, a chemical analysis of a person’s breath is valid under ORS 813.300.

“(5) The extent to which the technique has been accepted by scientists in the field involved;

“(6) The nature and breadth of the inference adduced;

“(7) The clarity and simplicity with which the technique can be described and its results explained;

“(8) The extent to which the basic data are verifiable by the court and jury;

“(9) The availability of other experts to test and evaluate the technique;

“(10) The probative significance of the evidence in the circumstances of the case; and

“(11) The care with which the technique was employed in the case.”

Brown, 297 Or at 417 n 5.

Defendant attacks the validity of Howard’s testimony on several fronts. He argues that her testimony was based on her own “personal methodology” that has not been approved by any court, is not subject to institutional safeguards, and has an unknown potential error rate. He also argues that her application of that methodology to the facts of his case was flawed. Finally, he argues that the studies that she relied on came from a single discipline and do not appear to have been acknowledged by other scientific disciplines. We find none of those arguments persuasive.

First, contrary to defendant’s position, Howard’s testimony was not based on a novel scientific technique that she personally developed. Rather, she simply referred to studies that had been conducted by other scientists and published in peer-reviewed journals. Moreover, Howard’s testimony was not based on her own application of an identifiable scientific technique, such as retrograde extrapolation, which is used by experts to estimate a defendant’s actual BAC at the time of driving. Retrograde extrapolation requires an expert to perform a mathematical calculation while considering and accounting for many different variables that may affect the accuracy of the result. See *State v. Baucum*, 268 Or App 649, 658-664, ___ P3d ___ (2015) (discussing variables affecting the reliability of retrograde extrapolation).

Similarly, her testimony was far different from that of the expert in *Marcum v. Adventist Health System/West*, 345 Or 237, 193 P3d 1 (2008). In that case, a medical doctor offered opinion testimony about the medical causation of the plaintiff's injuries using a technique known as "differential diagnosis," a process by which "a doctor develops a list of all diseases that might cause a patient's symptoms and then, by a process of elimination, narrows the list." *Id.* at 245-47 (quoting *Jennings*, 331 Or at 291). Retrograde extrapolation and differential diagnosis are methodologies that may require an expert witness to exercise a great deal of independent judgment about how they should be applied in a particular case. By contrast, Howard simply explained what various studies have to say about alcohol absorption rates. She then applied the conclusions of those studies to the facts of this case in a straightforward manner. In short, the only scientific principles and techniques at issue in Howard's testimony are those contained in the studies themselves.

Second, we disagree with defendant's argument that Howard failed to carefully apply the results from those studies. Defendant argues that Howard mistakenly testified that the two breath tests in the Gullberg study were taken two hours apart when, actually, they were taken only about one hour apart. Defendant is correct that the tests themselves were taken only one hour apart. The conclusion of that study, however, is that a breath analysis that is conducted within two hours of a stop is a good estimate of a person's BAC at the time of driving. Thus, Howard applied that study correctly. More importantly, Howard's familiarity with the Gullberg study was demonstrated by her ability to identify its possible shortcoming—that it did not consider how other factors that might affect the pace of alcohol absorption. To account for that, she referred to the Jones study, which found that, even after a large meal followed by rapid drinking, test subjects reached 80 percent of their peak BAC within 15 minutes. Howard's discussion of both of those studies demonstrates that she understood the circumstances of defendant's case and made an effort to discuss studies that were directly relevant to those circumstances. We conclude that Howard's testimony demonstrates that she

was familiar with the scientific principles being applied in those studies and conscientious in their application.

Third, we do not agree with defendant's suggestion that the methodologies contained in the studies cited by Howard are accepted only in the field of "forensic science" or are otherwise of questionable validity. As the state points out, the techniques used in those studies were to dose the subjects with alcohol and then test their BAC to determine how quickly the alcohol was absorbed. Defendant has not explained why those techniques are potentially invalid, and we can think of no reason why they should be. Indeed, as mentioned above, Oregon has legislatively recognized the validity of blood alcohol tests.

Thus, we reject each of defendant's challenges to the scientific validity of the evidence on which Howard relied as well as defendant's challenges to Howard's applications of the studies. Additionally, other factors weigh in favor of the conclusion that Howard's testimony was scientifically valid. The studies that she cited were published in peer-reviewed journals. Furthermore, the evidence in this case establishes that alcohol absorption rates have been extensively studied. Howard testified that "four or five additional studies" also show that a person will generally "reach at least 80 [percent] of their peak [BAC] within the first 15 minutes after they stop *** drinking." That testimony was not contradicted. In fact, similar testimony has been received in other cases. See [*State v. Eumana-Moranchel*](#), 352 Or 1, 9, 277 P3d 549 (2012) (expert testified that "80 percent of consumed alcohol enters the blood within five to 10 minutes, and 100 percent enters the blood within 30 to 60 minutes").

For the foregoing reasons, we conclude that the trial court correctly admitted Howard's opinion testimony.

Defendant also assigns error to the trial court's denial of his motion for a judgment of acquittal, arguing that the state failed to prove that venue was proper in Douglas County. For the reasons that follow, we reverse and remand on this issue.

After the parties filed their briefs in this case, the Supreme Court decided [*State v. Mills*](#), 354 Or 350, 312 P3d

515 (2013). In *Mills*, the court held that, under Article I, section 11, of the Oregon Constitution, venue is not a material allegation that the state is required to prove beyond a reasonable doubt at trial. *Id.* at 371. Rather, a criminal defendant has a waivable constitutional right to object to improper venue by way of a pretrial motion. *Id.* at 371-73. Although the defendant in *Mills* waited until trial to challenge venue, the court concluded that “it would be unfair to defendant to hold that he forfeited the opportunity to challenge venue, in light of the fact that the law in effect at the time of trial permitted him to wait until the state rested to raise the issue.” *Id.* at 373. Consequently, the court reversed the trial court’s judgment and remanded the case for further proceedings, explaining:

“If, on remand, defendant elects not to challenge venue under Article I, section 11, the trial court judgment must be reinstated. If defendant challenges venue under Article I, section 11, the trial court may hold an evidentiary hearing at which the state will have the opportunity to establish—and defendant will have the opportunity to contest—that Washington County is the appropriate venue. If the court concludes that the state has met its burden of establishing venue, the judgment of the circuit court must be reinstated.”

Id. at 373-74.

In subsequent cases that presented the same unfairness identified in *Mills*, we have employed the same remedy notwithstanding arguments for judicial economy or a defendant’s failure to seek a remand to the trial court. *See, e.g., State v. Piatt*, 264 Or App 180, 331 P3d 1051 (2014) (reversing and remanding where the record unambiguously established that the defendant resided in the county in which he was tried, making venue proper under ORS 131.325); *State v. Burton*, 261 Or App 534, 323 P3d 516, *rev den*, 355 Or 703 (2014) (reversing and remanding where the defendant neither filed a memorandum citing *Mills* nor requested a remand to the trial court); *State v. Weilert*, 261 Or App 529, 323 P3d 513 (2014) (reversing and remanding where uncontradicted evidence showed that the charged offenses took place in two residences that were located in the county in which the defendant was tried).

Defendant asserts that a remand is required under *Mills*. Like the defendant in *Mills*, defendant waited until trial to raise the issue of venue and did so by way of a motion for judgment of acquittal. In light of the law at the time of defendant's trial, "it would be unfair to defendant to hold that he forfeited the opportunity to challenge venue." *Mills*, 354 Or at 373. Accordingly, we reverse the trial court's judgment on this issue and remand for further proceedings consistent with *Mills*.

Reversed and remanded.