

STATE V. DOWNEY, 2008-NMSC-061, 145 N.M. 232, 195 P.3d 1244

CASE HISTORY ALERT: see [§11](#), [§40](#), [§41](#) - affects 2007-NMCA-046

**STATE OF NEW MEXICO,
Plaintiff-Respondent,
v.
HARRY L. DOWNEY,
Defendant-Petitioner.**

Docket No. 30,263

SUPREME COURT OF NEW MEXICO

2008-NMSC-061, 145 N.M. 232, 195 P.3d 1244

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ORIGINAL PROCEEDINGS ON CERTIORARI, Stephen K. Quinn, District Judge

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JUDGES

PETRA JIMENEZ MAES, Justice. WE CONCUR: EDWARD L. CHÁVEZ, Chief Justice, PATRICIO M. SERNA, Justice, RICHARD C. BOSSON, Justice, CHARLES W. DANIELS, Justice

AUTHOR: PETRA JIMENEZ MAES

OPINION

MAES, Justice.

{1} The question presented in this appeal is whether the trial court properly executed its gatekeeping function in determining that (1) the State's witness, Ron Smock, was qualified to testify as an expert concerning the science of retrograde extrapolation; and (2) Smock's expert testimony was reliable and admissible pursuant to the criteria

established in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and *State v. Alberico*, 116 N.M. 156, 861 P.2d 192 (1993). We assume without deciding that the trial court properly qualified Smock as an expert witness. Nonetheless, we conclude that the trial court improperly admitted Smock's expert testimony because it was predicated on factual assumptions unsupported by the record and, therefore, was unreliable and inadmissible under *Daubert* and *Alberico*. We further conclude that the improper admission of Smock's testimony was prejudicial to Defendant and, therefore, we vacate Defendant's conviction and remand the case to the trial court for a new trial.

I. FACTS AND PROCEDURAL HISTORY

{2} At approximately 7:00 p.m. on July 13, 2001, sixty-eight-year-old Harry Downey (Defendant) was driving in the southbound lane of Highway 286. Annabeth Austin (Victim) was a passenger in a vehicle traveling in the opposite direction driven by her husband, Dorman Austin. Austin and Victim were following behind Victim's son, Cody Coffey, who was approximately one-quarter to one-half of a mile ahead. As Coffey passed Defendant, neither Coffey nor Austin noticed anything unusual about Defendant's driving. Soon thereafter, Defendant's vehicle suddenly swerved into the northbound lane. Although Austin tried to avoid a collision, the front passenger side of Austin's vehicle struck the rear of Defendant's vehicle, killing Victim. After the collision, Defendant left the scene to summon emergency medical assistance, but returned approximately five to ten minutes later.

{3} Alicia King, a state police officer, arrived at the scene of the collision sometime between 7:00 and 7:30 p.m. Approximately five or ten minutes after her arrival, she interviewed Defendant. During this conversation, Defendant spoke clearly, and Officer King did not detect the odor of alcohol on Defendant's breath. Defendant did seem to be disoriented, but Officer King attributed this to the shock of the collision and Defendant's age.

{4} Florian Chavez, a sergeant with the state police, arrived at the scene of the collision sometime after 7:00 p.m. Soon thereafter, he interviewed Defendant, who explained that "he had been driving southbound toward Melrose and another vehicle had struck him from behind." Sergeant Chavez observed that Defendant's "eyes were red, bloodshot, and watery, and that his speech was -- it was kind of slurred." He detected an "unusual smell" on Defendant's breath, one that he did not recognize. After speaking to Defendant, Sergeant Chavez continued to investigate the scene of the collision. Due to conflicting evidence concerning the cause of the collision, Sergeant Chavez requested the aid of Jeff Vick, a sergeant with the state police, to assist with accident reconstruction.

{5} Sergeant Vick arrived at the scene at approximately 8:30 p.m. After inspecting the condition of the vehicles, Sergeant Vick concluded that the accident could not have been caused by an in-line, rear-end collision as indicated by Defendant. Accordingly, Sergeant Vick approached Defendant to seek clarification concerning the cause of the accident. Defendant repeated the information that he had reported to Sergeant Chavez;

namely, that he had been traveling southbound on Highway 286 when he was suddenly struck from behind. During this conversation, Sergeant Vick noticed that Defendant's speech "did not seem real clear," but he attributed the lack of clarity to Defendant's age. At that time, Sergeant Vick did not detect the odor of alcohol on Defendant's breath or "reach any conclusions about [Defendant's] condition, really, except [that] he was coherent and he was speaking" clearly.

{6} After speaking to Defendant, Sergeant Vick inspected the vehicles involved in the collision a second time. Sergeant Vick again concluded that Defendant's description of events was inconsistent with the physical evidence and, therefore, he decided to re-interview Defendant. During his second conversation with Defendant, which occurred approximately five to ten minutes after the first, Sergeant Vick detected the "odor of alcoholic beverage." He asked Defendant whether he had been drinking, and Defendant adamantly responded "no, that he had not, he can't drink, he has diabetes." Thereafter, Sergeant Vick reported to Sergeant Chavez that Defendant smelled of alcohol, and that he suspected Defendant had been drinking.

{7} In response, Sergeant Chavez approached Defendant and asked whether he had been drinking. Defendant responded: "Just two cokes. I don't drink. I can't drink, but I have diabetes." In speaking to Defendant, Sergeant Chavez again detected an unusual odor with which he was unfamiliar, so he requested the assistance of Sandy Loomis, a Curry County deputy sheriff who has experience in the investigation of alcohol-related offenses. Deputy Loomis arrived at the scene of the collision sometime between 9:30 and 10:00 p.m. Deputy Loomis explained to Defendant that he was there to determine whether he was intoxicated, and asked him to recite the alphabet. As Defendant recited the alphabet, Deputy Loomis noticed a "strong odor of alcoholic beverage" on his breath, that his speech was "thick[-]tongued," and that his eyes were bloodshot and watery. Deputy Loomis reported his observations to Sergeant Chavez.

{8} At approximately 10:00 p.m., three hours after the collision, Sergeant Chavez conducted a series of field sobriety tests. First, Sergeant Chavez administered the "one-leg stand," wherein the subject is instructed to stand on one leg and count to thirty. Defendant failed this test. Second, Sergeant Chavez conducted the "walk-and-turn" test, wherein the subject is instructed to place one foot in front of the other, heel-to-toe, for nine steps, then to pivot and return in a similar fashion. Defendant failed this test. Sergeant Chavez took Defendant into custody and transported him to the Clovis police station.

{9} In the meantime, Officer King and Sergeant Vick continued to investigate the scene of the accident. On the side of the road, approximately eight feet away from the site of the collision, they discovered some tools and a 1.7 liter bottle of whiskey with approximately one-fourth of the liquor remaining. After documenting the location of these items, Officer King transported the bottle of whiskey to the Clovis police station. Defendant admitted to Officer King that the bottle of whiskey belonged to him, but informed her that it had been stored in the bed of his pickup truck the whole time.

{10} Sometime before midnight, Officer King transported Defendant to Plains Regional Hospital for the administration of a blood alcohol content (BAC) test. At approximately 1:00 a.m., six hours after the collision, a sample of Defendant's blood was drawn. When tested, Defendant's blood sample had a BAC equal to 0.04 grams per 100 milliliters (0.001) of whole blood.

{11} The State charged Defendant in a two-count information with driving on the wrong side of a roadway, contrary to NMSA 1978, Section 66-7-308 (1978), and homicide by vehicle, contrary to NMSA 1978, Section 66-8-101 (1978, as amended through 1991). The latter charge was predicated on two alternate theories of culpability: (1) operation of a motor vehicle while under the influence of intoxicating liquor, contrary to NMSA 1978, Section 66-8-102 (1953, as amended through 1999); and (2) operation of a motor vehicle in a reckless manner, contrary to NMSA 1978, Section 66-8-113 (1953, as amended through 1987).

{12} At Defendant's trial, witnesses offered conflicting testimony about whether Defendant had exhibited any signs of intoxication following the collision. Austin testified that he spoke to Defendant immediately following the collision, and although he noticed that Defendant's complexion was red, he did not detect the odor of alcohol on Defendant's breath, or see any alcoholic beverages inside of his vehicle. Ronnie Faust, a Melrose resident who had a brief conversation with Defendant at approximately 8:00 p.m., also testified that he did not detect the odor of alcohol on Defendant's breath. Dustin Vineyard and Billy McGuinness, emergency medical technicians who each separately evaluated Defendant following the collision, both testified that they did not notice the smell of alcohol on Defendant's breath, or any slurring of Defendant's speech. Otho Rogers, a local pastor who had a brief conversation with Defendant sometime between 7:30 and 8:00 p.m., testified that Defendant's speech was "thick[-]tongued," and that he smelled of whiskey.

{13} The State proffered Ron Smock as an expert witness in the fields of chemistry and toxicology. The subject of Smock's proposed testimony was the science of retrograde extrapolation, which calculates an individual's prior BAC level on the basis of a subsequently administered BAC test. Essentially, the purpose of Smock's testimony was to relate the results of Defendant's BAC test back six hours to the time of the collision to establish that he had been under the influence of intoxicating liquor while driving contrary to Section 66-8-101.

{14} Smock testified that he was the chief toxicologist, certifying scientist, and assistant director of Drug Detection Services, a company that tests substances for the presence of alcohol and illicit drugs. He explained that he has thirty-four years of laboratory experience and has specialized in drug abuse testing for the past twenty-four years. Smock further explained that, although he does not possess a college or professional degree, he has the equivalent of a Bachelor of Science in medical technology on the basis of his extensive laboratory training and experience. Although Smock previously had been qualified as an expert witness in state court approximately

three hundred times, only one of those times involved the science of retrograde extrapolation.

{15} During voir dire, Defendant asked Smock to explain his training and experience specifically with respect to retrograde extrapolation. Smock responded that, although he personally had not conducted any scientific research in the field, he had read three scholarly articles and an excerpt from a textbook to familiarize himself with “the specifics on the elimination and absorption of alcohol primarily.” Smock explained that, according to these materials, the body absorbs and eliminates alcohol at a steady rate within a specified range of values. By using a range of values, rather than a precise number, Smock testified that he could account for the various factors that may affect the individual rate at which a person absorbs or eliminates alcohol, such as “empty stomach, full stomach, [and] the shock and the adrenaline at the time of an incident.”

{16} Defendant objected to the admission of Smock’s testimony, claiming that he was not qualified to offer an expert opinion. At this point, the trial court excused the jury and permitted the State to tender a synopsis of Smock’s proposed testimony. The State explained that Smock was prepared to testify that “based upon research and studies that he relied upon, that alcohol is processed out of the human body at [an average] rate of .015 to .022” grams per hundred milliliters of blood per hour. The State further explained that Smock would assume that Defendant had not consumed any alcohol after the time of the collision and, therefore, was post-absorptive. On the basis of the average hourly rate of elimination and this assumption, Smock would testify that Defendant had a BAC in the range of .075 to .11 at the time of the collision.

{17} Defendant objected to the admission of Smock’s testimony, noting that it did not account for various factors that affect the rate at which alcohol is absorbed or eliminated, such as the type of alcohol consumed, the presence of a full or empty stomach, different metabolic rates, stress, and adrenaline. Additionally, Defendant pointed out that, because Smock did not know when Defendant had begun or stopped drinking, and because a second BAC test never was administered, it was impossible to determine whether Defendant was pre-absorptive, post-absorptive, or at the peak of absorption. Defendant, therefore, claimed that Smock’s relation-back testimony was unreliable and inadmissible under *Alberico* or, alternatively, that it was more prejudicial than probative under Rule 11-403 NMRA.

{18} The trial court rejected Defendant’s claim, concluding that evidence of retrograde extrapolation is reliable and admissible under *State v. Baldwin*, 2001-NMCA-063, 130 N.M. 705, 30 P.3d 394, and *State v. Cavanagh*, 116 N.M. 826, 867 P.2d 1208 (Ct. App. 1993). The Court further concluded that because Smock’s testimony was not offered to pinpoint an “exact, precise blood alcohol content” at the time of the collision, but only was offered to establish a broad range of possible values, he was qualified to testify as an expert witness. Thereafter, Smock testified before the jury in conformance with the State’s tender.

{19} Defendant subsequently moved to strike Smock's expert testimony, claiming that his calculations were based on "assumptions that . . . cannot [be tied] into the facts in this case." The State responded that the evidentiary support for Smock's assumptions would be adduced later in the trial but, regardless, the range of values utilized account for the variables that may affect the rate at which alcohol is metabolized. The trial court noted that retrograde extrapolation "is an imprecise process" and denied Defendant's motion.

{20} Defendant offered his own expert witness regarding retrograde extrapolation, Edward Reyes, a pharmacist and professor emeritus at the University of New Mexico School of Medicine. Doctor Reyes explained that, when alcohol is ingested, it is absorbed by the body until a peak BAC is reached, and then it is eliminated from the body by the breath, sweat, liver, or kidneys. Doctor Reyes further explained that the body neither absorbs nor eliminates alcohol at a constant average rate, but that there are a variety of factors that affect the speed with which alcohol is metabolized, including medications, stress, adrenaline, age, weight, and food consumption. To calculate an individual's BAC accurately, one must know the precise rate at which alcohol is absorbed or eliminated based on these enumerated factors, and whether the individual is in the pre-absorptive, peak, or post-absorptive phase of the BAC curve. In Dr. Reyes' expert opinion, there were too many unknown variables to relate the results of Defendant's BAC test to his BAC six hours earlier at the time of the collision. Specifically, it was unclear at what rate Defendant would have absorbed or eliminated the alcohol in his system, and it was equally unclear whether he was in the pre-absorptive, peak, or post-absorptive phase of the BAC curve at the time the BAC test was administered.

{21} At the conclusion of the trial, the jury rendered a general verdict finding Defendant guilty of the crime of homicide by vehicle, contrary to Section 66-8-101, and not guilty of the crime of driving on the wrong side of a roadway, contrary to Section 66-7-308. Defendant appealed the conviction.

{22} The Court of Appeals, in a divided opinion, affirmed Defendant's conviction, concluding that the trial court properly had (1) concluded that Smock was qualified to testify as an expert witness; and (2) admitted Smock's expert testimony under *Alberico*.

¹Court of Appeals also rejected Defendant's claim that he had been deprived of his constitutional right to a speedy trial. *Downey*, 2007-NMCA-046, ¶ 50. The Court's resolution of this claim is not at issue in this appeal.

1 See *State v. Downey*, 2007-NMCA-046, ¶¶ 11, 33, 141 N.M. 455, 157 P.3d 20. The Court rejected Defendant's claim that Smock's testimony was unreliable and inadmissible because it was predicated on factual assumptions unsupported by the record, concluding that "such a challenge goes to the weight of the expert's testimony rather than to its admissibility." *Id.* ¶ 1. The dissenting opinion, however, concluded that Smock's testimony should have been excluded because "the method used . . . [was] so flawed that it cannot be deemed sufficiently reliable." *Id.* ¶ 54 (Bustamante, J.,

dissenting). The dissent explained that there was no basis in the record for Smock's assumption that Defendant was post-absorptive at the time the collision occurred and, consequently, Smock's "approach provides no more than theoretically possible values untethered from the actual case at hand." *Id.* ¶ 57.

{23} On appeal to this Court, Defendant renews the claims that he raised in the Court of Appeals; namely, that the trial court improperly qualified Smock as an expert witness and improperly admitted Smock's expert testimony under *Daubert* and *Alberico*. Defendant also claims that the error in admitting Smock's testimony was prejudicial, and that the admitted evidence was not harmless.

II. STANDARD OF REVIEW

{24} "The admission or exclusion of evidence is within the discretion of the trial court. On appeal, the trial court's decision is reviewed for abuse of discretion." *State v. Hughey*, 2007-NMSC-036, ¶ 9, 142 N.M. 83, 163 P.3d 470. "An abuse of discretion arises when the evidentiary ruling is clearly contrary to logic and the facts and circumstances of the case." *State v. Armendariz*, 2006-NMSC-036, ¶ 6, 140 N.M. 182, 141 P.3d 526. As we observed in *Alberico*,

[a]n appellate court should be wary of substituting its judgments for that of the trial court. An abuse of discretion standard of review, however, is not tantamount to rubber-stamping the trial judge's decision. It should not prevent an appellate court from conducting a meaningful analysis of the admission [of] scientific testimony to ensure that the trial judge's decision was in accordance with the Rules of Evidence and the evidence in the case.

116 N.M. at 170, 861 P.2d at 206 (citation omitted); accord *State v. Anderson*, 118 N.M. 284, 292, 881 P.2d 29, 37 (1994).

III. DISCUSSION

{25} Rule 11-702 NMRA provides that "[i]f scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise." Rule 11-702 therefore predicates the admissibility of expert testimony on the satisfaction of three requirements: (1) that the expert be qualified; (2) that the testimony be of assistance to the trier of fact; and (3) that the expert's testimony be about scientific, technical, or other specialized knowledge with a reliable basis. *Alberico*, 116 N.M. at 166, 861 P.2d at 202. Our inquiry is also to determine the role of the trial judge as gatekeeper, which has been described as "ensur[ing] that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Daubert*, 509 U.S. at 589, quoted with approval in *Anderson*, 118 N.M. at 291, 881 P.2d at 36.

A. Whether Smock was qualified to testify as an expert witness

{26} We first address Defendant's claim that the trial court improperly determined that Smock was qualified to testify as an expert witness with respect to retrograde extrapolation. Under Rule 11-702, "a witness must qualify as an expert in the field for which his or her testimony is offered before such testimony is admissible." *State v. Torres*, 1999-NMSC-010, ¶ 45, 127 N.M. 20, 976 P.2d 20. In most cases, this means that the "calling party must qualify the witness to testify as an expert first, before any substantive testimony is given." *Id.* (internal quotation marks and citation omitted). "In order to testify, it must appear that an expert witness has acquired sufficient knowledge, skill, training, or experience that such testimony will aid the fact finder, but no set criteria can be laid down to test such qualifications." *Smith v. Smith*, 114 N.M. 276, 281, 837 P.2d 869, 874 (Ct. App. 1992). The use of the disjunctive "or" in Rule 11-702 permits a witness to be qualified under a wide variety of bases, "knowledge, skill, experience, training, or education," and underscores that broad discretion intentionally is given to the trial court to determine whether expert testimony will assist the trier of fact. *State v. McDonald*, 1998-NMSC-034, ¶ 20, 126 N.M. 44, 966 P.2d 752.

{27} Defendant claims that Smock lacked sufficient knowledge, skill, training, and experience to testify as an expert witness because he failed to realize or understand that additional facts were necessary to permit the reliable application of retrograde extrapolation. This is the same argument that Defendant raises in support of his second claim regarding the reliability and admissibility of Smock's expert testimony. Because Defendant does not argue in any meaningful way that the trial court abused its discretion when it determined that Smock was qualified to testify, we assume without deciding that the trial court properly qualified Smock as an expert witness and turn our attention to Defendant's second claim.

B. Whether Smock's testimony was reliable and admissible under *Daubert* and *Alberico*

{28} Defendant focuses on two arguments in support of his claim that Smock's expert testimony was unreliable and inadmissible under *Daubert* and *Alberico*: (1) Smock's testimony was predicated on factual assumptions unsupported by the evidence adduced at trial; and (2) Smock used a range of values to calculate Defendant's BAC at the time of driving, rather than a precise value unique to Defendant. We agree with Defendant's first argument and, therefore, we need not reach his second.

{29} We note that Defendant does not challenge the validity or reliability of the science of retrograde extrapolation generally, but rather claims only that the evidence in the present case was insufficient to permit its reliable application. We, therefore, need not decide whether retrograde extrapolation is a valid scientific method. Instead, we assume without deciding that retrograde extrapolation is a valid scientific method, and focus on Defendant's claim that the evidence was insufficient to permit its reliable application under the present factual circumstances.

{30} As previously explained, expert testimony is inadmissible under Rule 11-702 unless it will assist the trier of fact. *Alberico*, 116 N.M. at 166, 861 P.2d at 202. This

requirement “goes primarily to relevance.” *Daubert*, 509 U.S. at 591; see also *Alberico*, 116 N.M. at 168, 861 P.2d at 204. One aspect of relevance “is whether 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.” *United States v. Downing*, 753 F.2d 1224, 1242 (3d Cir. 1985). As the United States Supreme Court observed in *Daubert*, this requirement “has been aptly described by Judge Becker as one of ‘fit.’” 509 U.S. at 591. The primary inquiry is whether the scientific methodology “fits” the facts of the case and thereby proves what it purports to prove. Accordingly, for scientific evidence to be admissible under Rule 11-702, “the reasoning or methodology underlying the testimony [must not only be] scientifically valid,” it also must be “properly . . . applied to the facts in issue.” *Daubert*, 509 U.S. at 591 (emphasis added).

{31} Smock testified that his relation-back calculations were predicated on three essential facts: (1) the time of the collision; (2) the time of the blood draw; and (3) the results of Defendant’s BAC test. Smock did not know when Defendant had begun or ceased drinking and, therefore, he assumed that “no beverages were consumed during this time period” and that Defendant was post-absorptive both at the time the BAC test was administered and at the time of driving.² Using an average elimination rate of .015 to .022 grams per hundred milliliters of blood per hour, Smock calculated backward six hours and concluded that Defendant must have had a BAC between .075 to .11 at the time of driving.

{32} “Expert testimony may be received if, and only if, the expert possesses such facts as would enable him to express a reasonably accurate conclusion as distinguished from mere conjecture.” *Leon, Ltd. v. Carver*, 104 N.M. 29, 35, 715 P.2d 1080, 1086 (1986); see also Rule 11-703 NMRA; *Duran v. Lovato*, 99 N.M. 242, 245, 656 P.2d 905, 908 (Ct. App. 1982), *cert. denied*, 99 N.M. 226, 656 P.2d 889 (1983). Smock did not know when Defendant had consumed his last drink and, therefore, whether Defendant was pre-absorptive, post-absorptive, or at the peak of alcohol absorption either at the time of the collision, or at the time his BAC test was administered. This information is critical to perform retrograde extrapolation calculations because if Defendant was in the pre-absorptive phase of the BAC curve, both at the time of the collision and at the time his BAC test was administered, then his BAC at the time of the collision would have been *lower than* the results of his BAC test. On the other hand, if Defendant was in the post-absorptive phase of the BAC curve, both at the time of the collision and at the time his BAC test was administered, then his BAC at the time of the collision would have been *higher than* the results of his BAC test as Smock testified. If Defendant peaked somewhere in between, then his subsequent BAC could have been higher or lower depending on the facts and circumstances.

{33} Given that Smock did not have the facts necessary to plot Defendant’s placement on the BAC 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. Smock’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.

{34} 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 Smock's assumption mere guesswork in the context of this particular case. Accordingly, because Smock's expert 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. *See, e.g., Hathaway v. Bazany*, 507 F.3d 312, 318-19 (5th Cir. 2007) (concluding that testimony of expert witness was unreliable and inadmissible because it was premised on a series of factual assumptions unsupported by the evidence).

{35} 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. *See, e.g., State v. Day*, 2008-NMSC-007, ¶ 3, 143 N.M. 359, 176 P.3d 1091 (noting that the defendant was placed into police custody immediately after the police "recovered a half-full twelve-ounce can of Budweiser beer on the seat of the car which was still cool to the touch, 'a freshly opened can'"); *Cavanaugh*, 116 N.M. at 828, 867 P.2d at 1209 (noting that defendant failed a field sobriety test before he got behind the wheel of a car and "sped off").

{36} The State claims that circumstantial evidence existed in the present case to support Smock's factual assumption because "[n]o one saw [D]efendant drinking or eating after the collision." Although no one saw Defendant drinking or eating at any time, either before, or during the collision, and immediately following the collision, Defendant drove away from the scene and did not return for approximately ten minutes. It is unclear what, if anything, aside from summoning emergency medical assistance, Defendant did during this time period. Moreover, Defendant was not under the custody or control of the police until sometime after 10:00 p.m., approximately three hours after the collision. He, therefore, was able to move about the accident scene freely and was not under direct police supervision. Although most eyewitnesses reported that Defendant sat inside his vehicle during much of this time period, at least one eyewitness observed Defendant walking alongside of the roadway in the vicinity where his whiskey bottle ultimately was recovered. On the basis of these facts, we conclude that it is impossible to pinpoint to a reasonable certainty the time at which Defendant had begun or ceased drinking at least for the purpose of applying the science of retrograde extrapolation. Accordingly, we conclude that Smock's factual assumptions were unsupported by the circumstantial evidence adduced at trial.

{37} Our conclusions herein are consistent with our recent decision in *Hughey*, 2007-NMSC-036, wherein we determined that the trial court improperly had excluded expert testimony regarding retrograde extrapolation. In that case, as in this case, the question before the trial court was "whether sufficient facts were known . . . to accurately apply retrograde extrapolation." *Id.* ¶ 10. We concluded that sufficient facts were known, noting that:

The State's expert testified that the generally accepted time to reach peak alcohol level is fifteen minutes to an hour after the alcohol is absorbed. *Working from the assumption that [d]efendant stopped drinking at 8:30 p.m., as she told police, a reasonable inference arguably might be drawn that [d]efendant had reached her peak alcohol level by the time the accident occurred and that her BAC at the time of the accident was higher than .10. . . . [W]e believe that the testimony of the State's expert raises a question of fact that should be resolved by a jury rather than by the trial court prior to trial.*

Id. ¶ 15 (citation omitted; emphasis added). Thus, in *Hughey*, the State's expert witness possessed sufficient facts to support her conclusion that the defendant was at her peak alcohol level at the time the accident occurred and, consequently, her relation-back calculations were reasonably accurate and of assistance to the jury. By contrast, in the present case, Smock did not possess any facts to support his assumption that Defendant was post-absorptive at the time the accident occurred and, consequently, his relation-back calculations were not reasonably accurate, nor were they of assistance to the jury. We, therefore, conclude that *Hughey* is factually distinguishable from the present case.

{38} In light of our conclusion that Smock's testimony improperly was admitted, we need not reach Defendant's alternate claim that his BAC at the time of driving could not accurately be calculated on the basis of a range of elimination values as opposed to a specific value unique to him. See Kimberly S. Keller, *Sobering Up Daubert: Recent Issues Arising in Alcohol-Related Expert Testimony*, 46 S. Tex. L. Rev. 111, 123-24 (2004-05) (noting that "[g]eneral extrapolation is a methodology that 'works backward' by focusing primarily on a BAC test result in relation to the individual's weight and gender. Proponents of general extrapolation argue that so long as 'justifiable assumptions are made that are based on sound principles of pharmacology, toxicology, and physiology,' general extrapolation is reliable and admissible. Opponents of the admissibility of general extrapolation argue that extrapolation is admissible only if the expert has knowledge of and factors into the methodology specific characteristics about the individual in question"); see also *Day*, 2008-NMSC-007, ¶ 31 (noting, in a per se DWI case that "[d]etermining the shape of the [BAC] curve is a science. The exact shape of the curve depends on a number of factors, including inter alia the type of alcohol consumed, the time period over which the alcohol was consumed, the time of the last drink, and when and what the defendant last ate" (citations omitted)). We, therefore, express no opinion on this issue.

C. Harmless error

{39} We next address whether the improper admission of Smock's expert testimony was harmless. "Error in the admission of evidence in a criminal trial must be declared prejudicial and not harmless if there is a reasonable possibility that the evidence complained of might have contributed to the conviction." *State v. Fairweather*, 116 N.M. 456, 461, 863 P.2d 1077, 1082 (1993) (internal quotation marks and citation omitted). Smock testified that, at the time of the accident, Defendant had a BAC within a range of

BAC values, nearly all of which were over the legal limit. See § 66-8-102 (C)(1) (“It is unlawful for . . . a person who has an alcohol concentration of eight one hundredths or more in his blood or breath to drive a vehicle within this state.”). No other witness offered direct affirmative evidence indicating that Defendant was under the influence of intoxicating liquor at the time of driving. Moreover, the evidence was conflicting with respect to whether Defendant had exhibited any behavioral signs of intoxication following the collision. On the basis of these facts, we conclude that the “effect of the ‘scientifically reliable’ extrapolation evidence was almost certainly to tip the balance in favor of the State.” *Bagheri v. State*, 119 S.W.3d 755, 764 (Tex. Crim. App. 2003). Accordingly, the improper admission of Smock’s expert testimony was prejudicial to Defendant.

D. Remedy

{40} Lastly, we address whether Defendant is entitled to a new trial, or whether his conviction may be affirmed on the alternate theory of culpability under which the case was submitted to the jury; namely, operation of a motor vehicle in a reckless manner contrary to Section 66-8-113. Because the jury rendered a general verdict, it is impossible to determine under which theory of culpability Defendant was convicted: operation of a motor vehicle while under the influence of intoxicating liquor, or operation of a motor vehicle in a reckless manner. As we observed in *Campos v. Bravo*, “a conviction under a general verdict must be reversed if one of the alternative bases of conviction is legally inadequate” and it is “impossible to tell which ground the jury selected.” 2007-NMSC-021, ¶ 19, 141 N.M. 801, 161 P.3d 846 (internal quotation marks and citation omitted). *Accord Yates v. United States*, 354 U.S. 298, 312 (1957) (“[W]e think the proper rule to be applied is that which requires a verdict to be set aside in cases where the verdict is supportable on one ground, but not another, and it is impossible to tell which ground the jury selected.”), *overruled on other grounds by Burks v. United States*, 437 U.S. 1, 2 (1978); *State v. Olguin*, 120 N.M. 740, 741, 906 P.2d 731, 732 (1995). We conclude that the general verdict must be reversed because it may have rested on an invalid legal basis in light of the improper and prejudicial admission of Smock’s expert testimony. Accordingly, we vacate Defendant’s conviction of homicide by vehicle and remand the case to the trial court for a new trial.

IV. CONCLUSION

{41} Assuming without deciding that the State’s expert witness was qualified to testify with respect to the science of retrograde extrapolation, we nonetheless conclude that the trial court improperly admitted the witness’ testimony because it was unreliable under *Daubert* and *Alberico*. The State’s expert witness did not possess the facts necessary to conduct a retrograde extrapolation analysis and, therefore, his conclusions were mere conjecture and could not assist the jury in determining the fact in issue: Was Defendant under the influence of intoxicating liquor at the time of driving? We conclude that it is reasonably possible that the improper admission of this evidence contributed to the jury’s verdict and, therefore, we vacate Defendant’s conviction and remand the case to the trial court for a new trial.

{42} IT IS SO ORDERED.

PETRA JIMENEZ MAES, Justice

WE CONCUR:

EDWARD L. CHÁVEZ, Chief Justice

PATRICIO M. SERNA, Justice

RICHARD C. BOSSON, Justice

CHARLES W. DANIELS, Justice

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EV-RC Relevancy, Materiality & Competency

1Court of Appeals also rejected Defendant's claim that he had been deprived of his constitutional right to a speedy trial. *Downey*, 2007-NMCA-046, ¶ 50. The Court's resolution of this claim is not at issue in this appeal.

2The record reflects that Smock was not informed of any facts that might have affected his conclusions:

[DEFENSE COUNSEL]: One of [the assumptions] I think I heard you tell [the State] was that you assumed that [Defendant] had nothing to drink between roughly 7:15 and 1:05 . . . in the morning; is that correct?

[SMOCK]: That's correct.

[DEFENSE COUNSEL]: But you don't know that. That's an assumption. That's why we call it an assumption; correct?

[SMOCK]: Correct.

[DEFENSE COUNSEL]: Did you know, for example, Mr. Smock, that [Defendant] left the accident scene to go get ambulance or emergency personnel and that one or two witnesses testified yesterday he was gone from, and I'll let the jury rely on their memory, five to, let's say, ten, fifteen, twenty minutes, whatever the time was, went into Melrose and came back? Did you know that, that during that time period he was not under police observation?

[SMOCK]: No, I did not.

[DEFENSE COUNSEL]: Okay. Did you know, and I'd ask you to assume hypothetically, that even when he was out at the accident scene, he sat in his vehicle for an extended period of time where he was not under police observation?

[SMOCK]: I'm not -- was not aware of that.