

IN THE SUPREME COURT OF CALIFORNIA

THE PEOPLE,)	
)	
Plaintiff and Respondent,)	
)	S157565
v.)	
)	Ct.App. 4/2 E041226
TIMMIE LANCE McNEAL,)	
)	San Bernardino County
Defendant and Appellant.)	Super. Ct. No. TRE038083
_____)	

A defendant accused of driving under the influence of alcohol can be charged under two separate code sections. The “generic DUI” provision prohibits driving “under the influence” of alcohol. (Veh. Code, § 23152, subd. (a) (hereafter § 23152(a).)¹ The “per se DUI” provision prohibits driving with a blood-alcohol level of 0.08 percent or more. (§ 23152, subd. (b) (hereafter § 23152(b).) This case concerns how a generic DUI charge can be proven, or defended, at trial.

The Vehicle Code requires all drivers who are lawfully arrested for DUI to submit to chemical testing of the blood or breath to determine the alcohol content of their blood. (§ 23612, subd. (a)(1)(A).)² Whereas a blood test directly measures the subject’s blood-alcohol level, a breath sample must be converted to derive a blood-alcohol percentage. The conversion factor, known as a “partition

¹ All unspecified statutory references are to the Vehicle Code.

² If blood and breath tests are not available, the driver’s blood-alcohol content is determined from a urine test. (§ 23612, subds. (a)(1)(A), (d)(2).)

ratio,” reflects the relationship between alcohol measured in a person’s breath and alcohol in the blood. Breath-testing machines in California incorporate a partition ratio of 2,100 to 1, which means the amount of alcohol in 2,100 milliliters of breath is considered equivalent to the amount of alcohol in 1 milliliter of blood. It is undisputed, however, that partition ratios can vary widely, both in the general population and within an individual.

Defendant was charged with generic and per se DUI after he produced a breath sample indicating a blood-alcohol concentration of 0.10 percent. By statute, if a chemical test within three hours of driving measures a driver’s blood alcohol at 0.08 percent or more, the driver is presumed to have been driving “under the influence” of alcohol. (§ 23610, subd. (a)(3) (hereafter § 23610(a)(3).) Defendant claims he was wrongly prevented from introducing evidence about partition ratio variability to rebut this presumption. In *People v. Bransford* (1994) 8 Cal.4th 885, 887-888 (*Bransford*), we confronted a similar claim in the context of the per se DUI offense. We concluded evidence about partition ratio variability is irrelevant in those cases because the Legislature incorporated a 2,100-to-1 partition ratio within its definition of the offense. (*Id.* at pp. 892-893.)

However, a generic DUI charge is defined differently, and the presumption is not part of that definition. A generic DUI charge requires proof that the defendant’s ability to drive safely was impaired because he had consumed alcohol. We conclude this difference is significant and hold that competent evidence about partition ratio variability may be admitted to defend against a generic DUI charge. Reversal is not required, though, because any error in this case was harmless under *People v. Watson* (1956) 46 Cal.2d 818, 836.

BACKGROUND

Defendant was stopped after an officer saw him drive through two red lights. Defendant’s eyes were watery and bloodshot, his speech was slurred, he smelled of alcohol, and he admitted he had consumed a beer. Defendant was arrested and given a breath test about an hour after the initial stop. Defendant

blew into the machine five times but produced only two samples sufficient for testing.³ Both valid samples registered a blood-alcohol level of 0.10 percent.

Defendant was charged with both generic and per se DUI.⁴ At trial, a prosecution expert testified that a person is too impaired to operate a motor vehicle safely if he displays slurred speech and bloodshot, watery eyes, commits traffic infractions, performs poorly on field sobriety tests, and records a blood-alcohol level of 0.10 percent in a breath test. A defense expert agreed that scientific authorities consider a person with a blood-alcohol level over 0.08 percent to be under the influence of alcohol. However, he considered defendant's test results unreliable because the machine's repeated failure to register sufficient samples suggested it was not functioning properly. The defense expert also testified that breath-testing machines have a margin of error of 0.02 percent.

After both sides had rested but before closing arguments, defense counsel moved to reopen to present expert testimony about partition ratio variability in connection with the generic DUI charge. The record does not disclose whether defendant intended to introduce evidence of his own partition ratio or evidence about the variability of partition ratios in the general population. The court denied the motion and instructed the jury regarding the statutory presumption of intoxication. (CALJIC No. 12.61.) Specifically, with regard to the generic DUI count, the jury was instructed: "If the evidence establishes beyond a reasonable doubt that at the time of the chemical analysis of the defendant's blood, breath or urine there was .08 percent or more, by weight, of alcohol in the defendant's

³ The test was administered using a Draeger Alcotest 7110 machine. To produce a valid sample for this machine, the subject must exhale at least 1.5 liters of breath over at least 4.5 seconds. (Taylor & Tayac, Cal. Drunk Driving Defense (4th ed. 2008) Forensic Chemist: Blood-Alcohol, § 12.40, p. 874 (hereafter Taylor & Tayac).) If the subject fails or refuses to exhale a sufficient volume of breath, the sample is considered invalid. (*Ibid.*)

⁴ He was also cited for two infractions for failing to stop at a red light. (§ 21453, subd. (a).)

blood, you may, but are not required [to,] infer that the defendant was under the influence of an alcoholic beverage at the time of the alleged offense.”

The jury convicted on the generic DUI charge but hung on the per se count. Defendant moved for a new trial, arguing he should have been permitted to introduce partition ratio evidence to rebut the presumption that he was under the influence of alcohol. (§ 23610(a)(3).) Defense counsel said his expert would testify that 30 percent of the population has a partition ratio other than 2,100 to 1. When the new trial motion was denied, defendant sought relief in the superior court’s appellate division, claiming the exclusion of his partition ratio evidence was reversible error. The appellate division concluded partition ratio evidence is relevant and admissible but found the error harmless given the strength of the evidence supporting the jury’s verdict.

The Court of Appeal transferred the case to itself on its own motion. That court distinguished between evidence about the variability of partition ratios in the general population and evidence showing the defendant had a nonstandard ratio. It concluded evidence challenging the validity of the statutory 2,100-to-1 ratio was irrelevant, but evidence that this particular defendant had a different partition ratio should have been admitted. The court reasoned that if the defendant’s own ratio differed significantly from the standard ratio, this fact could support an inference that the defendant was not actually impaired at the time of the offense. The court therefore held such personal partition ratio evidence is relevant and admissible in generic DUI cases. Although it found the defendant’s offer of proof insufficient to determine the precise nature of the partition ratio evidence he sought to introduce, the Court of Appeal concluded that even assuming defendant intended to present evidence about his own ratio, and assuming the issue was preserved for review, any error was harmless under *People v. Watson*, *supra*, 46 Cal.2d at page 836.

The People and defendant separately petitioned for review. We granted both petitions to address the admissibility of partition ratio evidence in section 23152(a) cases.

DISCUSSION

I. The Science of Alcohol Testing

Alcohol affects the central nervous system. When ingested, it is absorbed into the blood and carried through the carotid arteries to the brain. (*State v. Downie* (1990) 117 N.J. 450 [569 A.2d 242, 245] (*Downie*); *State v. Brayman* (1988) 110 Wn.2d 183 [751 P.2d 294, 297] (*Brayman*).) After passing through the brain, alcohol travels through venous blood to the liver and heart, and from there, to the lungs, where it diffuses into alveolar air space and is exhaled in the breath. (*Downie*, at pp. 245-246.) As a practical matter, it is impossible to measure the amount of alcohol in a person's carotid arteries or brain. (*Id.* at p. 246; Taylor & Tayac, *Forensic Chemist: Blood-Alcohol*, *supra*, § 12.2, p. 712.) However, most experts agree that measurements of alcohol in venous blood or breath give a good indication of the amount of alcohol in the brain during the post-absorptive phase.⁵ (*Downie*, at p. 246.)

When a subject blows into a breath-testing machine, the device measures the amount of alcohol vapor expelled into alveolar spaces deep in the lungs. From this measurement of breath alcohol, a blood-alcohol percentage can be computed using a mathematical constant. The conversion from breath alcohol to blood alcohol is based on the chemistry principle of "Henry's law," which holds that there is "a constant ratio between the concentration of alcohol in the blood and the concentration of alcohol in the alveolar air of the lungs." (Taylor & Tayac, *Forensic Chemist: Blood-Alcohol*, *supra*, § 12.19, p. 770.) Breath-testing

⁵ As the body absorbs ingested alcohol, blood-alcohol levels rise until they reach a peak. The rate of absorption depends on many variables, including the amount of food in the stomach, the amount of alcohol consumed, the time over which it was consumed, and numerous individual factors. (*Downie*, *supra*, 569 A.2d at pp. 245-246; Taylor & Tayac, *Forensic Chemist: Blood-Alcohol*, *supra*, § 12.2, pp. 712-714.) During active absorption, blood-alcohol levels are highest in arterial blood. (*Downie*, at p. 246; Taylor & Tayac, § 12:2, p. 712.) The post-absorptive phase occurs after the blood-alcohol level has peaked and begun to decline.

machines in California use a conversion factor of 2,100 to 1, meaning “the amount of alcohol in 2,100 milliliters of alveolar breath is equivalent to the amount of alcohol in 1 milliliter of blood.” (Cal. Code Regs., tit. 17, § 1220.4, subd. (f); see *People v. McDonald* (1988) 206 Cal.App.3d 877, 880.) This ratio is used, apparently without exception, in breath-testing devices throughout the United States. (See *Brayman, supra*, 751 P.2d at p. 297; *State v. McManus* (1989) 152 Wis.2d 113 [447 N.W.2d 654, 656].)

Nevertheless, courts here and across the country have long recognized that actual partition ratios vary, both among members of the population and within a single individual. In *Bransford, supra*, 8 Cal.4th at page 889, we noted that an individual’s ratio of breath-alcohol to blood-alcohol concentration can be influenced by many variables, including “body temperature, atmospheric pressure, medical conditions, sex, and the precision of the measuring device. [Citations.]” (See also *Brayman, supra*, 751 P.2d at p. 297 [mentioning, in addition to these factors, hematocrit level and elapsed time between drinking and breath-alcohol measurement].) Experts have also described a wide range of variability in partition ratios throughout the general population. In *People v. McDonald, supra*, 206 Cal.App.3d at page 880, for example, the people’s expert testified a person’s ratio could be as high as 2,700 to 1 or as low as 1,550 to 1, and in *Downie, supra*, 569 A.2d at page 247, the court noted that partition ratios measured in a group of experimental subjects ranged from a low of 1,706 to 1 to a high of 3,063 to 1.

Despite this recognized variability, most scientists agree that the 2,100-to-1 ratio roughly approximates or even underestimates the ratio of most people. In the late 1980’s, the New Jersey Supreme Court considered evidence presented by ten experts at a hearing addressing partition ratios and the reliability of breath test results. (*Downie, supra*, 569 A.2d at pp. 243-244.) These experts “generally agreed” that breath-testing machines using the 2,100-to-1 partition ratio “will usually underestimate the amount of alcohol in the blood” for several reasons. (*Id.* at p. 247.) “First, most people’s partition ratios may be closer to 2300:1 than to

2100:1. Second, the breathalyzer results are truncated, or the third decimal position is dropped when read. If a person reads .099 on the breathalyzer, the results will be shortened to read .09, thereby underestimating the breath alcohol. Third, a suspect may not provide enough deep breath to register all of the alcohol present in the alveolar air. Fourth, the breathalyzer's scale is set .003 below the start line and this gives suspects an added benefit.” (*Ibid.*) Several experts opined that the standard partition ratio is set artificially low, and the true mean ratio in the population is closer to 2,300 to 1. (*Id.* at p. 247.) Dr. Robert Borkenstein, inventor of the breathalyzer machine, stated that “breathalyzer researchers and members of the National Safety Council adopted the 2100:1 partition ratio instead of the more accurate 2300:1 ratio because they wanted to err on the low side and have almost no errors on the high side.” (*Id.* at p. 247.)⁶

II. Development of California Law Regarding Partition Ratio Evidence

California's first drunk driving statute, enacted in 1913, prohibited any “intoxicated person” from driving a motor vehicle on a public highway. (Stats. 1913, ch. 326, § 17, p. 646; see *Burg v. Municipal Court* (1983) 35 Cal.3d 257, 262.) The prohibition was later redefined as driving “under the influence” of alcohol. “To be ‘under the influence’ within the meaning of the Vehicle Code, the liquor or liquor and drug(s) must have so far affected the nervous system, the brain, or muscles as to impair to an appreciable degree the ability to operate a

⁶ See also *People v. Lepine* (1989) 215 Cal.App.3d 91, 94 (defense expert testified that the average partition ratio is 2,286 to 1); *People v. Pritchard* (1984) 162 Cal.App.3d Supp. 13, 16 (people's expert testified that 95 percent of the population falls within the range of 2,100 to 1, plus or minus a 10 percent margin of error); *People v. Gustafson* (1990) 194 Ill.App.3d 910 [551 N.E.2d 826, 829] (state's expert testified “he believed the 2,100:1 ratio was applicable to at least 95 [percent] of the population”); *State v. McManus*, *supra*, 447 N.W.2d at pages 656-657 (noting “the 2,100:1 ratio has been shown to either correctly estimate or underestimate a person's corresponding blood alcohol concentration with 94 percent accuracy”); *Brayman*, *supra*, 751 P.2d at page 300 (citing studies indicating breath tests underestimate blood-alcohol levels 80 to 91 percent of the time and overestimate them only 5 to 6 percent of the time).

vehicle in a manner like that of an ordinarily prudent and cautious person in full possession of his faculties. [Citations.]” (*Byrd v. Municipal Court* (1981) 125 Cal.App.3d 1054, 1058, italics omitted.) In 1969 the Legislature enacted a statutory presumption that a driver was under the influence if the driver’s blood contained 0.10 percent or more, by weight, of alcohol. (Stats. 1969, ch. 231, § 1, p. 565; *Burg v. Municipal Court*, at p. 263.) However, “[e]ven these laws, which considerably assisted the prosecution of ‘driving under the influence’ cases, proved inadequate in many respects. Under them, the ultimate question was defined in terms of the defendant’s subjective behavior and condition: ‘Was the defendant under the influence at the time he drove?’ Celerity and certainty of punishment were frustrated by the ambiguity of the legal criteria; no matter what his blood-alcohol level, a defendant could escape conviction merely by raising a doubt as to his intoxication. [Citations.]” (*Burg v. Municipal Court*, at p. 263.) These difficulties led the Legislature to create a new crime. Section 23152(b), added in 1981, made it unlawful for a person to drive with a blood-alcohol level of 0.10 percent or more, by weight, and specified that, “percent, by weight, of alcohol shall be based upon grams of alcohol per 100 milliliters of blood.” (Stats. 1981, ch. 940, § 33, p. 3578.) To secure a conviction for this new “per se DUI” offense, the prosecution no longer had to prove the accused driver was actually impaired at the time of the offense, but only that he drove with a blood-alcohol level at or exceeding 0.10 percent. (*Burg v. Municipal Court*, at p. 265.) In 1989, the Legislature further strengthened our state’s DUI laws by lowering the punishable blood-alcohol threshold from 0.10 percent to 0.08 percent. (Stats. 1989, ch. 1114, § 27, p. 4080; see *People v. Ireland* (1995) 33 Cal.App.4th 680, 689.)

Thus, after 1981 there were two parallel statutes making it a crime to drive while intoxicated. The generic DUI provision (§ 23152(a)) retained the historical approach, requiring proof that the defendant was actually impaired by his drinking. The per se DUI statute (§ 23152(b)) simply required proof that the

defendant had been driving with a blood-alcohol level over the legal limit. If the limit was exceeded, the statute was violated, and no additional proof of the defendant's impairment was required.

Throughout this time, both the per se DUI offense and the presumption of intoxication applicable to the generic DUI offense were defined based on measurements of blood alcohol. As a result, whenever a defendant elected to have a breath test instead of a blood draw, it was necessary to convert the breath results into an equivalent blood-alcohol percentage. (*Bransford, supra*, 8 Cal.4th at pp. 888-889; *People v. Ireland, supra*, 33 Cal.App.4th at p. 689.) A Department of Health Services regulation required that this conversion be made using a partition ratio of 2,100 to 1. (Cal. Code Regs., tit. 17, § 1220.4, subd. (f).)⁷

The mandated use of a standard partition ratio, in the face of scientific knowledge that such ratios vary greatly, provided fertile ground for defense arguments challenging the reliability of breath test results. Initially, courts permitted defendants to show only that their personal partition ratio differed from the norm. (*Bransford, supra*, 8 Cal.4th at p. 889.) Applying the judicially created "rule of convenience," these courts placed the burden on the defendant to produce evidence of a nonstandard personal ratio because this fact was considered to be peculiarly within the defendant's knowledge. (*People v. Pritchard, supra*, 162 Cal.App.3d at p. Supp. 16; *People v. Gineris* (1984) 162 Cal.App.3d Supp. 18, 23; *People v. Herst* (1987) 197 Cal.App.3d Supp. 1, 3-4.)

Later courts questioned this application of the rule of convenience when confronted with evidence showing that an individual's partition ratio can vary from time to time due to the influence of numerous external factors. (See, e.g., *People v. McDonald, supra*, 206 Cal.App.3d at p. 883.) This evidence directly

⁷ "A breath alcohol concentration shall be converted to an equivalent blood alcohol concentration by a calculation based on the relationship: the amount of alcohol in 2,100 milliliters of alveolar breath is equivalent to the amount of alcohol in 1 milliliter of blood." (Cal. Code Regs., tit. 17, § 1220.4, subd. (f).)

contradicted something the *Pritchard* line of cases had apparently assumed: “that one’s partition ratio is constant and can be measured by the defendant.” (*Ibid.*; see also *People v. Lepine*, *supra*, 215 Cal.App.3d at pp. 97-99.) Because partition ratios may vary depending on many factors, reliable measurements may be difficult and costly to acquire. Thus, some courts reasoned that defendants did not have substantially better access to evidence of their personal partition ratios and could not be expected to carry the burden of production on the issue. (*People v. McDonald*, at p. 883; *People v. Lepine*, at pp. 99-101; *People v. Thompson* (1989) 215 Cal.App.3d Supp. 7, 13.) Further, having freed defendants from the rule of convenience, these courts saw no reason to exclude *general* partition ratio evidence describing the variability of partition ratios among the general population. (*People v. Lepine*, at p. 100; *People v. Thompson*, at pp. Supp. 13-14; *People v. Cortes* (1989) 214 Cal.App.3d Supp. 12, 18.) After citing a string of out-of-state decisions permitting such evidence, one court reasoned: “[I]t seems clear from the evidence submitted in this case and from a host of opinions in this and other states, that the partition ratio may vary from time to time and from individual to individual. This being the case it is appropriate a jury be allowed to consider that fact. We trust in the general rules of evidence, the preparation of counsel and the good judgment of trial judges to insure that this question of partition ratio variability is presented to jurors in a proper, complete and understandable form.” (*People v. Lepine*, at p. 100, fn. omitted.)

The Legislature responded swiftly to these developments. In April 1989, legislators amended a pending Senate Bill on a related topic to specify for purposes of the per se DUI offense and the presumption of intoxication that the percentage of alcohol in a person’s blood is to be based upon grams of alcohol per 100 milliliters of blood “or grams of alcohol per 210 liters of breath.” (Sen. Amend. to Sen. Bill No. 1119 (1989-1990 Reg. Sess.) Apr. 27, 1989, p. 23; Stats. 1989, ch. 1114, §§ 24-25, pp. 4078-4079 [amending § 23152(b)]; Sen. Amend. to Sen. Bill No. 1119 (1989-1990 Reg. Sess.) Apr. 27, 1989, p. 26; Stats. 1989,

ch. 1114, §§ 34-35, pp. 4085-4086 [amending former § 23155, subd. (b)].) In so doing, the Legislature codified 2,100 to 1 as the partition ratio to be used in converting breath test results into blood-alcohol levels.

As we observed in *Bransford*, *supra*, 8 Cal.4th at page 890, scant explanation for these amendments appears in the legislative history of Senate Bill No. 1119, but more illumination can be found in the history of Assembly Bill No. 4318 (1989-1990 Reg. Sess.), enacted as Statutes 1990, chapter 708, section 1, page 3289. The purpose of Assembly Bill No. 4318 was to accelerate the effective date of the partition ratio amendments to section 23152(b) that had been enacted by passage of Senate Bill No. 1119. (Assem. Com. on Public Safety, com. on Assem. Bill No. 4318 (1989-1990 Reg. Sess.) as introduced May 15, 1990; see *People v. Ireland*, *supra*, 33 Cal.App.4th at p. 691.) Committee reports concerning this bill evince the Legislature's desire to prohibit challenges to breath test results based on the partition ratio. For example, the Assembly Committee on Public Safety observed that "[a]ttacks on the partition ratio may result in expensive and time consuming evidentiary hearings and undermine successful enforcement of driving under the influence laws." (Assem. Com. on Public Safety, com. on Assem. Bill No. 4318 (1989-1990 Reg. Sess.) as introduced May 15, 1990, p. 2.) The express purpose of Assembly Bill No. 4318 was to "[e]liminate the need for conversion of a breath quantity to a blood concentration of alcohol by statutorily defining driving under the influence in terms of the concentration of alcohol found in the breath when breath analysis is used." (*Ibid.*; see also Sen. Rules Com., Off. of Sen. Floor Analyses, Rep. on Assem. Bill No. 4318 (1989-1990 Reg. Sess.) Aug. 9, 1990, p. 1.)

The Legislature accomplished this purpose by defining the offense of per se DUI in terms of a prohibited level of blood alcohol or breath alcohol. As we explained in *Bransford*, *supra*, 8 Cal.4th at page 890, the amendment of section 23152(b) providing for an alternative measurement based upon breath changed the definition of the offense. In the per se DUI statute, the Legislature

has set a legal limit on permissible blood alcohol and has defined how that limit is to be measured in a breath sample. If the limit, measured as the statute sets out, is exceeded, the statute has been violated. Because section 23152(b) now defines the offense of per se DUI as the presence of a prohibited level of alcohol in either 100 milliliters of blood or 210 liters of breath, a conversion from breath to blood-alcohol concentration is no longer required to establish guilt. Accordingly, evidence attacking the standard partition ratio is no longer relevant in a per se DUI prosecution because the Legislature has codified the 2,100-to-1 ratio as *part of the offense*. (*Bransford*, at pp. 890-892.)

Assembly Bill No. 4318 did not amend former section 23155, however.⁸ The bill amended only the per se DUI offense (§ 23152(b)) and a similar offense of per se DUI causing bodily injury (§ 23153, subd. (b)). (Stats. 1990, ch. 708, §§ 1-4, pp. 2870-2872.) Thus, committee statements reflecting the Legislature’s desire to end the conversion of breath results to blood alcohol were all made in regard to changing the definition of the per se DUI offense. No legislative history clarifies exactly what the Legislature intended when it amended the presumption of intoxication applicable to generic DUI cases

III. Admissibility of Partition Ratio Evidence in Generic DUI Cases

Despite our holding in *Bransford* that partition ratio evidence is inadmissible in per se DUI cases, defendant argues partition ratio variability evidence should be admissible in generic DUI cases to rebut the presumption that a person who produces a certain breath result is actually “under the influence” of alcohol. (§§ 23152(a); 23610(a)(3).) This issue was not presented in *Bransford*, and we specifically declined to consider it. (*Bransford*, *supra*, 8 Cal.4th at p. 893, fn. 10.) Defendant’s claim does involve the same statutory language we interpreted in *Bransford*: “Percent, by weight, of alcohol in the person’s blood

⁸ As a result, partition ratio amendments to the statutory presumption of intoxication did not go into effect until January 1, 1992, the operative date set forth in Senate Bill No. 1119.

shall be based upon grams of alcohol per 100 milliliters of blood or grams of alcohol per 210 liters of breath.” (§ 23610(b); see *Bransford*, at p. 890, quoting § 23152(b).) However, in *Bransford* this language was used in the definition of a criminal offense. Here, it is part of a rebuttable *presumption*. The question is whether a defendant who has a blood-alcohol concentration of 0.08 percent or more measured by breath is entitled to rebut the presumption that he was “under the influence” in a section 23152(a) case by introducing evidence that use of a 2,100-to-1 partition ratio may have produced an inaccurate measure of his blood alcohol.

The Legislature passed section 23152(b) to facilitate the prosecution of drunk drivers. The creation of a per se DUI offense did away with the need to prove the defendant was actually impaired. However, impairment must still be proven for a charge of generic DUI under section 23152(a). In a generic DUI case, section 23610 creates a rebuttable presumption that the defendant was under the influence of alcohol if a chemical test measures his blood-alcohol concentration at 0.08 percent or higher. As relevant here, section 23610 states:

“(a) Upon the trial of any criminal action, or preliminary proceeding in a criminal action, arising out of acts alleged to have been committed by any person while driving a vehicle while under the influence of an alcoholic beverage in violation of subdivision (a) of Section 23152 or subdivision (a) of Section 23153, the amount of alcohol in the person’s blood at the time of the test as shown by chemical analysis of that person’s blood, breath, or urine shall give rise to the following presumptions affecting the burden of proof: [¶] . . . [¶]

“(3) If there was at that time 0.08 percent or more, by weight, of alcohol in the person’s blood, it shall be presumed that the person was under the influence of an alcoholic beverage at the time of the alleged offense.^[9]

⁹ Deleted subdivisions state that a blood-alcohol level between 0.05 and 0.08 gives rise to no presumption, and a blood-alcohol level under 0.05 gives rise to a presumption that the driver was *not* under the influence. (§ 23610(a)(1)-(2).)

“(b) Percent, by weight, of alcohol in the person’s blood shall be based upon grams of alcohol per 100 milliliters of blood or grams of alcohol per 210 liters of breath.

“(c) This section shall not be construed as limiting the introduction of any other competent evidence bearing upon the question of whether the person ingested any alcoholic beverage or was under the influence of an alcoholic beverage at the time of the alleged offense.”

Although section 23610 applies to chemical testing of the driver’s blood, breath, or urine, the presumption of intoxication arises only if the testing shows the presence of 0.08 percent or more of alcohol in the driver’s *blood*.

(§ 23610(a)(3).) The statute is not written to invoke a presumption based on a certain blood result or breath result; it is framed in terms of blood alcohol only. Thus, if the prosecution is relying on the result of a breath test, the breath result must be converted into a blood-alcohol equivalent for the section 23610 presumption to apply. Subdivision (b) sets this conversion factor at a ratio of 210 liters of breath to 100 milliliters of blood.

The logic of the presumption proceeds as follows. The Legislature has concluded that most people with a blood-alcohol concentration at or above 0.08 percent are too impaired to operate a vehicle safely. Breath tests are a convenient way to measure a suspect’s alcohol consumption, and they can be converted into an equivalent blood-alcohol level by applying a mathematical ratio. A conversion ratio of 2,100 to 1 is a safe standard to use because, for most people, it will produce an accurate or slightly low measure of alcohol in the blood. (See, e.g., *People v. Lepine*, *supra*, 215 Cal.App.3d at p. 94; *Downie*, *supra*, 569 A.2d at p. 247; *Brayman*, *supra*, 751 P.2d at p. 300.) Thus, if a driver’s breath test shows a converted blood-alcohol level of 0.08 percent or more, the measurement is generally accurate and may fairly be used to prove the driver was actually under the influence, as the generic DUI statute requires. Other evidence of actual impairment may include the driver’s appearance, an odor of alcohol, slurred

speech, impaired motor skills, slowed or erratic mental processing, and impaired memory or judgment. Conversely, absence of these manifestations may indicate that the driver was not impaired.

With regard to the inference to be drawn from a breath result, the question of whether a defendant's converted blood-alcohol level is accurate depends upon the validity of the 2,100-to-1 partition ratio. If the defendant's own partition ratio is the same as or higher than this standard ratio, his converted blood-alcohol result is valid or skewed in his favor. If, however, the defendant's own partition ratio at the time of testing is lower than the standard ratio, conversion of the breath result using the statutory formula produces an artificially high measure of his blood alcohol.

Evidence that a defendant has a comparatively low partition ratio would thus tend to show that a blood-alcohol concentration calculated with the standard 2,100-to-1 ratio overstates the actual amount of alcohol in his blood. For someone with an extremely low ratio of 1,100 to 1, for example, use of the 2,100-to-1 partition ratio would overstate blood-alcohol content by almost 50 percent. (See *State v. Burling* (1987) 224 Neb. 725 [400 N.W.2d 872, 876-877].)¹⁰ Evidence showing the defendant had a low partition ratio, and thus a lower concentration of blood alcohol than was reported, could also support an inference that he was not under the influence in violation of the generic DUI law. In addition, evidence about the variability of partition ratios in the general population is relevant to raise a reasonable doubt about the accuracy of a defendant's converted blood-alcohol level. Because partition ratios vary among individuals and the 2,100-to-1 ratio used by breath-testing machines is based on an average, there is a possibility that

¹⁰ *Burling's* holding that a breath test result must be reduced to 52.38 percent of the machine's reading (to reflect this potential margin of error) has been overruled by Nebraska's high court. (*State v. Baue* (2000) 258 Neb. 968 [607 N.W.2d 191, 200-201].)

the blood-alcohol level such a machine produces for a given defendant is inaccurate.

The People contend the Legislature rendered partition ratio evidence irrelevant when it amended section 23610(b) to state that blood-alcohol percentages “shall be based upon grams of alcohol per 100 milliliters of blood or grams of alcohol per 210 liters of breath.” According to the People’s reasoning, because the Legislature has placed a partition ratio in section 23610, no evidence can be offered to contradict or question that ratio in a particular case. Evidence that the defendant may have a different ratio is irrelevant, the People assert, because the Legislature has spoken and established 2,100 to 1 as the ratio to be used in every case. Our reasoning was similar when we construed the partition ratio amendments to section 23152(b) in *Bransford*, *supra*, 8 Cal.4th at page 892, but the People’s attempt to apply *Bransford* here overlooks an important difference in context. As noted, in *Bransford*, we were construing language in a statute that *defines an offense*. Section 23512(b) makes it a crime to drive with a blood-alcohol content of 0.08 percent or more as measured in grams of alcohol per 100 milliliters of blood or per 210 liters of breath. The crime itself is defined in terms of a prohibited blood or breath result. Here, we are considering language in a statute that *describes a rebuttable presumption*. Section 23610 permits, but does not require, the jury to infer that the defendant was under the influence if he had a blood-alcohol level of 0.08 percent or more. (See *People v. Milham* (1984) 159 Cal.App.3d 487, 505; see also CALJIC No. 12.61; CALCRIM No. 2110.) Although section 23610(b) incorporates the same conversion factor for breath test results as appears in section 23152(b), here this factor is not part of the definition of an offense and, like the rest of the presumption, it is rebuttable.

Moreover, section 23610 specifically mandates that it “shall not be construed as limiting the introduction of any other competent evidence bearing upon the question of whether the person ingested any alcoholic beverage or was under the influence of an alcoholic beverage at the time of the alleged offense.”

(§ 23610, subd. (c).) Thus, even in light of the presumption, a defendant charged under the generic 23152(a) provision is entitled to offer “other competent evidence” relevant to whether he was actually under the influence of alcohol.¹¹

Competent evidence that the 2,100-to-1 ratio does not accurately reflect the partition ratio for all people, or that the defendant’s partition ratio may have been lower, is relevant to this question. “ ‘Relevant evidence’ means evidence . . . having any tendency in reason to prove or disprove any disputed fact that is of consequence to the determination of the action.” (Evid. Code, § 210.) The central disputed fact in a generic DUI prosecution is whether the defendant was under the influence of alcohol while driving. The chemical test result is circumstantial evidence that supports an inference regarding that disputed fact. Specifically, when a defendant’s breath test result is equivalent to 0.08 percent or more of blood alcohol, section 23610 permits the jury to infer he was indeed under the influence of alcohol. The defendant is entitled to challenge this inference and can do so by, among other things, raising a reasonable doubt as to whether the test result was an accurate measure of his blood-alcohol level. Evidence casting doubt on the accuracy of the breath-to-blood conversion ratio is just as relevant as other evidence rebutting the presumption of intoxication from a breath test result, such

¹¹ The People assert that by “other competent evidence” the statute is referring to evidence “other” than the partition ratio set forth in subdivision (b). This overly narrow reading does not follow from the plain language of the statute. Clearly, the import of subdivision (c) is to preserve a defendant’s ability to rebut the presumption, not to limit the type of evidence that can be introduced. Moreover, the People’s interpretation of subdivision (c) makes little sense given that the subdivision existed in essentially its present form before the breath provision was added to subdivision (b). (Former § 23126, subd. (c), added by Stats. 1969, ch. 231, § 1, p. 565 [“The foregoing provisions shall not be construed as limiting the introduction of other competent evidence bearing upon the question whether the person was under the influence of intoxicating liquor at the time of the alleged offense”].) The reference to “other competent evidence” cannot have meant “other than the partition ratio” when no partition ratio was specified.

as evidence that the defendant had a high tolerance for alcohol or performed well in field sobriety testing.

Accordingly, we hold that evidence about partition ratio variability is relevant in generic DUI cases to rebut the presumption of intoxication in section 23610. Although the Court of Appeal distinguished between “general” and “personal” partition ratio evidence, concluding only the latter is potentially admissible, this distinction does not survive close scrutiny. Both types of evidence challenge the accuracy of a defendant’s reported blood-alcohol level, and therefore both can be used to support an inference that, despite a high breath test result, the defendant was not under the influence. Although the inference is less direct when the evidence is not tied to the defendant, and concerns only variability of partition ratios in the population at large, indirectness alone is not a reason to exclude evidence that is logically relevant to a defense.

We do agree with the Court of Appeal, however, that partition ratio evidence may not be used to negate the basic fact triggering the section 23610 presumption, and thereby defeat operation of the presumption itself. Because section 23610 expressly incorporates a 2,100-to-1 partition ratio, the defendant may not argue the presumption does not apply because a different ratio should have been used. The result of the statutorily mandated test remains admissible, and the jury is still properly instructed on the presumption. Defense evidence is relevant to rebut the presumption that the defendant was intoxicated, but not to remove the presumption altogether.

Our decision is in accord with those of the two other state courts that have discussed the admissibility of partition ratio evidence in generic DUI cases. In *State v. Hanks* (2001) 172 Vt. 93, 96 [772 A.2d 1087, 1089] (*Hanks*), the Vermont Supreme Court considered the effect of a statute that defined “alcohol concentration” for purposes of the state’s DUI laws to mean grams of alcohol per 100 milliliters of blood or per 210 liters of breath. The defendant in *Hanks* conceded this statute may have made evidence about partition ratio variability

inadmissible in cases alleging a violation of the state's per se DUI law, but he argued such evidence was still relevant in cases alleging the defendant drove "under the influence of intoxicating liquor" in violation of the generic DUI law. (*Id.* at pp. 1088, 1091.) The Vermont Supreme Court agreed. (*Id.* at p. 1091.) The court observed that "*any* evidence raising a doubt as to the defendant's condition, which is the ultimate question in a generic DWI prosecution . . . is relevant and admissible." (*Id.* at p. 1092, italics added.) Like California, Vermont has a statutory presumption that permits the jury to infer a person with a blood-alcohol concentration of 0.08 percent or more was under the influence of alcohol at the time of the offense. (23 Vt. Stat. Ann. § 1204, subd. (a)(2); see *Hanks*, at p. 1088.) The *Hanks* court explained that evidence about partition ratio variability is relevant to rebut this inference because it could cast doubt on the accuracy of the breath test result as an indicator of the defendant's impairment. (*Hanks*, at p. 1092.) Finally, the court observed, where the "defendant is charged with driving while under the influence rather than driving with an alcohol concentration exceeding the statutory limit, admitting scientifically accepted evidence concerning the variability of partition ratios will not negate a statutory offense or even an element of a statutory offense; rather, it will merely allow defendant to challenge the permissive inference and the State's charge that he was impaired." (*Id.* at pp. 1092-1093.)

An Arizona appellate court considered the same question, in light of similar statutes, and concluded evidence about partition ratio variability "is not relevant to a prosecution for per se DUI, but may be relevant to a prosecution for traditional DUI if, in the latter instance, the State introduces evidence of the defendant's breath alcohol level to support conviction." (*Guthrie v. Jones* (Ariz.Ct.App. 2002) 202 Ariz. 273, 274 [43 P.3d 601, 602] (*Guthrie*).) The court reasoned that when the prosecution relies on a breath test result to invoke Arizona's statutory presumption that the defendant was under the influence of alcohol (Ariz. Rev. Stat. § 28-1381, subd. (G)), partition ratio evidence casting doubt on that

presumption is relevant and admissible. (*Guthrie*, at p. 604.) The *Guthrie* court relied in part on statutory language similar to our section 23610, subdivision (c), concluding that the statute “does not limit the introduction of any other competent evidence bearing on the question of whether or not the defendant was under the influence of intoxicating liquor.” (Ariz. Rev. Stat. § 28-1381, subd. (H); *Guthrie*, at p. 604.)

We reach the same conclusion as the Vermont and Arizona courts. If the defendant in a section 23152(a) case offers competent evidence showing that the use of a 2,100-to-1 conversion ratio may have yielded an inaccurate representation of his blood-alcohol level, introduction of this evidence is permissible. In light of this decision, we need not consider whether a contrary interpretation of section 23610 would raise constitutional concerns. (See *Santa Clara County Local Transportation Authority v. Guardino* (1995) 11 Cal.4th 220, 230 [the court will not decide constitutional questions where other grounds are available and dispositive]; see also *Lyng v. Northwest Indian Cemetery Prot. Assn.* (1988) 485 U.S. 439, 445.)

Naturally, the proffered evidence must still satisfy standards of competence and all other applicable evidentiary requirements. We do not here consider how a party might establish partition ratio variability in general or in regard to an individual. In particular, we express no opinion as to whether evidence of an individual’s personal partition ratio has gained sufficient acceptance in the scientific community to be admissible. (See *People v. Kelly* (1976) 17 Cal.3d 24, 30-32.)

In addition, like all other evidence, partition ratio evidence must be timely offered. Here, defendant attempted to introduce this evidence only after both sides had rested. His motion to reopen was one addressed to the court’s sound discretion. (*People v. Jones* (2003) 30 Cal.4th 1084, 1110; *People v. Marshall* (1996) 13 Cal.4th 799, 836.) We need not discuss this procedural question further. Like the Court of Appeal, we may assume that defendant could have made an

adequate offer of proof, to be presented by a competent witness, and that the trial court would have allowed him to reopen. Nevertheless, defendant is not entitled to a reversal here, because any error in excluding the partition ratio evidence was harmless.

“As a general matter, the ‘[a]pplication of the ordinary rules of evidence . . . does not impermissibly infringe on a defendant’s right to present a defense.’ [Citations.]” (*People v. Fudge* (1994) 7 Cal.4th 1075, 1102-1103.) Because the trial court merely rejected some evidence concerning a defense, and did not preclude defendant from presenting a defense, any error is one of state law and is properly reviewed under *People v. Watson, supra*, 46 Cal.2d at page 836. (*People v. Fudge*, at p. 1103.) Having examined all the evidence, we conclude it is not reasonably probable defendant would have achieved a more favorable result absent the exclusion of partition ratio evidence.

The question for the jury was whether defendant was under the influence of alcohol when he drove through two red lights. Defendant was stopped at 11:00 p.m. When asked to produce his driver’s license, he initially could not find it. Asked why he ran the lights, defendant replied, at first, that he was chasing someone who had threatened him with a gun. Later, he said he was looking for his wife, or that his wife was following right behind him. The arresting officer saw no one else around. Defendant’s eyes were watery and bloodshot, his speech was slurred, and a strong odor of alcohol came from the interior of his car and from his person. His face was flushed and he had difficulty answering questions. When he got out of his car, he leaned on the vehicle for support as he made his way to the sidewalk. Defendant said he had consumed one beer and had taken medication that morning for diabetes; however, no evidence offered at trial showed defendant was diabetic. Defendant failed every one of the field sobriety tests he tried to perform. A preliminary alcohol screening test given at the scene showed the presence of alcohol in his breath. Based on defendant’s driving, appearance, and

performance on the field sobriety tests, the arresting officer formed an opinion that defendant was impaired due to the influence of alcohol.

In addition to this significant evidence of defendant's intoxication, the jury's verdict also indicates that the admission of partition ratio evidence was not reasonably likely to have produced a more favorable result. (See *People v. Watson, supra*, 46 Cal.2d at p. 836.) Although they found him guilty of generic DUI, the jury could not agree whether defendant was also guilty of per se DUI. They reported an unspecified split of "five to seven" on this issue. Thus, even without partition ratio evidence, nearly half the jury rejected the accuracy of defendant's breath test result and declined to find that he had exceeded the legal limit of 0.08 percent blood alcohol. Nevertheless, all jurors believed defendant was "under the influence" for purposes of section 23152(a). It is difficult to imagine that the jurors who rejected defendant's breath result in considering the per se DUI charge would have relied on this result, and the section 23610 presumption, to convict him of the generic DUI charge.

DISPOSITION

The judgment of the Court of Appeal is affirmed.

CORRIGAN, J.

WE CONCUR: GEORGE, C. J.
KENNARD, J.
BAXTER, J.
WERDEGAR, J.
CHIN, J.
MORENO, J.

See next page for addresses and telephone numbers for counsel who argued in Supreme Court.

Name of Opinion People v. McNeal

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Original Proceeding
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