IN THE SUPREME COURT OF CALIFORNIA

THE PEOPLE OF THE STATE OF CALIFORNIA,

Plaintiff and Appellant,

v.

TERRY VANGELDER,

Defendant and Respondent.

Case No. S195423

APPELLANT'S REPLY BRIEF ON THE MERITS

Fourth Appellate District, Division One, Case No. D059012
San Diego County Superior Court, Case No. M039138
The Honorable Gregory W. Pollack, Judge

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ARGUMENT

I

PARTITION RATIO EVIDENCE IS NOT RESTRICTED TO COMPARISONS OF BREATH ALCOHOL TO BLOOD ALCOHOL BUT INCLUDES THE EXCLUSION OF THE PHYSIOLOGICAL PROCESSES THAT CAUSE THOSE DIFFERENCES DUE TO THE USE OF A STANDARD CONVERSION FACTOR

A. PARTITION RATIO TESTIMONY IS IRRELEVANT IN PER SE DUI CASES

After alcohol is ingested it is absorbed by the body and carried by the blood to the lungs, where some of it is vaporized into the air and expelled with the breath. The breath-test machine is designed to correlate the alcohol in the breath to the alcohol in the blood using a ratio of 2100:1, known as the partition ratio. However, "[t]he 2100:1 partition ratio, in its absolute simplicity belies the fact that each subject's partition ratio is affected by a host of complex physiological variables." *State v. Downie*, 117 N.J. 450, 459 (1990). The many variables that affect the ratio or correlation include body temperature, atmospheric pressure, medical condition, sex, hematocrit, and the precision of the measuring device.

People v. Bransford, 8 Cal. 4th 885, 889 (1994); *People v. McNeal*, 46 Cal. 4th 1183, 1191 (2009).The debate over the partition ratio and the factors that affect it has been raging since the 1930s. *Downie*, 117 N.J. at 457.[1]

In California, however, with respect to violations of Vehicle Code section 23152(b), the debate has been put to rest. In *Bransford* this Court held that "evidence about partition ratio variability is irrelevant [in per se cases] because the Legislature incorporated a 2,100-to-1 partition ratio within its definition of the offense." *Bransford*, 8 Cal. 4th at 892-93.

In this case the defense expert sought to attack the breath-test machine by testifying that the breath-test result is affected by physiological variables. The People objected that this testimony violated *Bransford's* prohibition against partition ratio testimony, and the trial court sustained the objection. Respondent dismisses *Bransford* as irrelevant, because the defense expert did not correlate the breath-test result to a blood alcohol level. Respondent misapprehends *Bransford.*

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[1] The conversion factor of 2100:1 is used, "apparently without exception, in breath testing devices throughout the United States. *McNeal*, 46 Cal. 4th at 1191. According to Dr. Borkenstein, the inventor of the breathalyzer machine, 2300:1 is a more accurate conversion factor but researchers and members of the National Safety Council adopted the 2100:1 ratio because they wanted to err in favor of the person tested. *Id.* at 1192.

The conversion factor is determined empirically, using a "black box" method. For example, in the hearing conducted for *Downie*, 117 N.J. 450, 461-62, Dr. Jones testified concerning empirical studies conducted in Sweden which indicated that 98.2 percent of the population had a partition ratio greater than 2100:1 (to their benefit), and Dr. Dubowski testified concerning paired blood/breath sample studies, which showed that in 2.3 percent of the cases the 2100:1 ratio overestimated the blood-alcohol level, to the detriment of the subject. Individuals desiring to present their individual partition ratio as evidence would determine the ratio by simultaneously measuring their breath-alcohol concentration and blood-alcohol concentration over a period of time. *Bransford*, 8 Cal. 4th at 889.

B. *BRANSFORD* PROHIBITS PARTITION RATIO TESTIMONY IRRESPECTIVE OF CORRELATION TO BLOOD ALCOHOL

The defense expert sought to defend his testimony as not related to partition ratio because, he insisted, he was not talking about a correlation to blood. Respondent similarly makes the specious argument that because the expert did not correlate the breath result to a blood result, the testimony did not involve partition ratio. But this argument misapprehends *Bransford.*

Courts have long recognized that actual partition ratios vary, both among the population and within a single individual. *McNeal*, 46 Cal. 4th at 1191. What does it mean to say that "partition ratios vary"? It means that the blood-breath correlation between an identical blood alcohol level in two individuals would vary. They would both be in the magnitude of 2100:1, but the actual conversion number, if empirically tested, would vary. The result of the variability would be that if the standard 2100:1 ratio were applied to both individuals, they would have different breath results. The variation is caused by a host of physiological factors, including body temperature, hematocrit, atmospheric pressure, breathing patterns, and others.

Respondent argues that these factors that cause breath test variability do not involve partition ratio if the correlation to blood is not discussed. In other words, it would not violate *Bransford's* prohibition against partition ratio testimony for the expert to testify that a number of physiological factors affect the breath test result, so long as the expert refrains from explaining that these factors affect the correlation to blood. This argument eviscerates *Bransford.*

C. RESPONDENT'S ARGUMENT CONTRAVENES LEGISLATIVE INTENT

In *Bransford* this Court looked to the legislative history and determined that the language of Vehicle Code section 23152(b) criminalizes the act of driving either with the specified blood-alcohol level or with the specified breath-alcohol level. That history indicated the Legislature thought partition ratio evidence was unnecessarily complicated, expensive, time consuming for the courts, and that it did not promote but instead undermined successful enforcement of the legislative scheme. *Bransford*, 8 Cal. 4th at 891; *see also People v. Ireland*, 33 Cal. App. 4th 680, 689 (1995). It was well known that an individual's partition ratio may be different than the standard partition ratio, an individual's partition ratio may change over time, and physiological factors (such as breathing pattern, temperature and hematocrit) can change a person's partition ratio. *People v. Lepine*, 215 Cal. App. 3d 91, 94 (1989); *see also Ireland*, 33 Cal. App. 4th at 689. Thus it was with this understanding of partition ratio variability that the Legislature sought to eliminate the confusion, time, and expense that partition ratio evidence caused in drunk driving trials. With this in mind, this Court in *Bransford* held that partition ratio variability evidence was irrelevant to the per se DUI charge. Accordingly, to again allow all those same physiological factors of partition ratio and their attendant evils for a per se DUI charge, with the only limitation being the reference to the effect on blood alcohol, would not serve the legislative intent as determined by *Bransford*.

In this case Respondent's expert was not so much criticizing the accuracy of the breath machine as used in this case, but by calling the entire breath testing procedure "scientifically inaccurate," he was attacking the propriety of all breath testing. Such an attack might be proper in order to

seek change by the Legislature, but is not the proper way to put forth such a claim to the jury.

II

A DEEP LUNG AIR SAMPLE IS VALID REGARDLESS OF THE SOURCE OF THE ALCOHOL

Respondent argues that he should be able to attack the breath-test result by introducing testimony that alcohol vaporizes into the breath in regions of the airway other than the alveolar area. However, whether breath alcohol samples contain alcohol from bronchial vessels or other portions of the airway is not relevant because it would not violate any breath alcohol testing regulation or scientific principal of proper sampling.

Respondent's expert testified that air drawn into the lungs may pick up alcohol as it travels down to the alveolar region, and from that testimony Respondent imputes a violation of Title 17 of the California Code of Regulations. However, the laws and regulations governing drunk driving and breath alcohol testing do not require the alcohol in breath testing samples to be only from alcohol that originates from the blood vessels next to the alveoli, as opposed to alcohol that originates from the bronchial vessels (bronchial alcohol) and migrates down the airway and into the alveolar region during inhalation. The per se DUI charge of Vehicle Code section 23152(b) prohibits a person from driving while having a breath alcohol level of .08 percent or more per 210 liters of breath. This crime does not restrict the measurement to alveolar air, or to alveolar alcohol, but only refers to the general term of breath. The regulations governing the collection of breath alcohol samples require such samples to be "*expired breath* which is essentially alveolar in composition." California Code of Regulations, Title 17, section 1219.3 (emphasis added). The regulations do not make any statements requiring that the source of that alcohol come

directly from the blood in the alveolar region. To the extent that Respondent argues that the regulations require that the breath sample contain no alcohol which originates from any area other than the alveolar region, then his argument is not supported by the laws and regulations.

Respondent repeatedly argues that the breath test is invalid because the machine does not test alveolar or deep lung air. Respondent states his expert "said . . . (the breath sample) lacked any alveolar air." (Respondent's Answer Brief on the Merits [hereafter cited as RAB] at 4 n.2.) In his Statement of Facts Respondent states his expert "testified that the expired air in a breath test is not deep lung air." (RAB at 4 n.2, at 8.) It is worth noting that this statement in the Statement of Facts, that is so important to Respondent's position, is without citation to the record. However, Respondent's expert's only testimony in this regard was his testimony that alcohol in the blood comes to the airway via the bronchial blood vessels and when a person inhales this alcohol may be brought down to the region of the air sacks (the alveolar region). The entirety of this portion of testimony is as follows:

> And we have, in the airway, a lot of mucus and water and that mucus lining in the airway plays an important role in protecting us from particles and things we inhale goes on to this mucus, then comes out to the mouth. And it mostly—it would get those things we swallow and goes into the digestive system. But if we have alcohol, there are little blood vessels that come along here, and these blood vessels, those are called "bronchial vessels." And so they bring alcohol so there's a lot of alcohol if you have alcohol in your bloodstream. Now, what happens is if we inhale and we pick up alcohol from this mucus and by the time we pick it up here, and by the time we get down to this air sack, it's already filled up and saturated.

(TR. at 328, lines 3–18.) This testimony only indicates that the alveolar air gets alcohol from bronchial blood vessels in the airway; it in no way is a

statement that a breath sample has no alveolar air. In fact his testimony admits that "[the breath] gets down to the air sack." To the extent that Respondent argues that expired breath contains no alveolar air, then his argument is not supported by the record or by common sense—obviously the last-expired breath that is captured comes from the deep lung or alveolar region.

III

RESPONDENT'S EXPERT FAILED TO MEET HIS BURDEN THAT HIS TESTIOMNY WAS NOT PARTITION RATIO

In the present case Respondent failed to meet his burden that his expert was not discussing partition ratio variability. The trial court held a hearing pursuant to Evidence Code section 403 to determine if the defense expert's testimony as to physiological factors which affect the accuracy of the breath test was distinct from partition ratio evidence. As the proponent of this evidence Respondent had the burden to produce the existence of the preliminary facts to substantiate that his testimony was not partition ratio variability evidence. Evidence Code section 403(a)(1). The proffered expert testimony was that breath testing was not scientifically accurate because the physiological factors of breathing pattern, hematocrit level, and temperature (body/breath temperature) cause variability in breath testing. The trial court knew that case law held these physiological factors to be partition ratio evidence that caused partition ratio variability. (TR. at 345–346); *Bransford*, 8 Cal. 4th at 889; *Ireland*, 33 Cal. App. 4th at 693. However, the expert failed to meet his burden because he did not distinguish these physical factors from partition ratio variability. (TR. at 328, lines 3-18.)

The expert testified that the breath test was not scientifically accurate because of the breathing patterns (speed of exhalation), temperature, and hematocrit. These physiological factors are all known to be partition ratio factors that can cause the amount of alcohol in a breath sample to vary.

> [T]he ratio of 2,100 to 1 is not constant and varies from individual to individual and from time to time . . . . [¶] [V]ariations in partition ratios are the function of whether the individual is still absorbing alcohol at the time the sample was taken, the temperature of the lungs, the speed of exhalation, the depth of exhalation, the amount of humidity in the air, the amount of mucus in the lungs and the individual's hematocrit, i.e., the ratio of blood cells to total blood volume.

Ireland, 33 Cal. App. 4th at 689 (*quoting Lepine*, 215 Cal. App. 3d at 94).

Respondent relies on the Opinion of the Court of Appeal that "those variances are separately said to affect the ability of the device to read alcohol levels in a gaseous form, in the breath, before any conversion to blood-alcohol concentration is performed." (RAB at 22; Opn., 24.) However, that statement from the Opinion demonstrates a fundamental misunderstanding of the basic science involved.

The observation that there is variation in partition ratios is the exact same observation that there is the variation in the amount of alcohol in the breath sample. The partition ratio physiological factors of breathing patterns, temperature, and hematocrit all affect how much alcohol is in a breath sample, and these factors can vary between individuals and from time to time. There was absolutely no evidence presented by Respondent's expert that the factors of individual breathing patterns, body or breath temperature, and hematocrit affected the breath test in any way that was separate or distinct from partition ratio variability.

Respondent's expert's only attempt at a distinction between the physical factors of breathing pattern, temperature, and hematocrit and partition ratio was the conclusion "I'm talking about factors that influence breath alcohol and not comparing it to blood, but how the breath sample will change under different circumstances." (TR. at 357:17-358:3.) Such a conclusion could only be considered a distinction if partition ratio evidence referred only to the comparisons of breath alcohol to blood alcohol, and not to the physiological processes that cause such differences. Such a conclusion would neither be logical or consistent with the legislative intent found by this Court in *Bransford.*

In addition, Respondent's expert explicitly compared breath to blood. When Respondent's expert called breath testing scientifically inaccurate, he stated his primary reason for doing so was that the basic assumption of breath machines that the breath the machine measures is directly related to water in the lungs, which is related to what's in the blood, is incorrect. (TR. at 352-353.) Respondent's expert testified that "the standard" is blood, and therefore the breath test, as an indirect measurement, is relatively inaccurate. (TR. at 354.) According to this expert a breath test to be "scientifically accurate" means that it reflects blood alcohol test, a clear comparison to blood.

IV

THERE IS NO EVIDENCE SUPPORTING A RISING BLOOD ALCOHOL DEFENSE

Respondent argues any error was prejudicial, in part because Respondent's alcohol level was rising at the time of the test. Respondent fails to address that there was no evidence to establish a rising blood alcohol defense.

The preliminary alcohol screening (hereinafter PAS) breath test results taken some eleven to fifteen minutes after driving were .095 and .086. The breath test results by the Intoxilyzer approximately twenty-eight minutes later were .08. There was no evidence as to the third digit because as required by statute they are only reported to two digits. The blood test taken fourteen minutes after the Intoxilyzer breath test was .088.

The test results of the breath and blood tests alone do not indicate a rising alcohol level. If anything the PAS breath tests compared to the Intoxilyzer demonstrates a falling alcohol level, not a rising alcohol level. The PAS tests compared to the blood test indicates a falling alcohol level. The Intoxilyzer test result compared to the blood test does not indicate a rising or falling alcohol level because there is no information regarding the third digit of the Intoxilyzer result.

The excluded expert's testimony did not indicate a rising alcohol defense. The excluded testimony from the expert was only that there could be variability in breath testing. Respondent's expert's excluded testimony did not indicate how much variability there could be or in which direction (whether indicative of a higher or lower breath alcohol level) such variability would be. Thus even if the expert's testimony was not excluded, the expert's testimony was not affirmative evidence that Respondent's breath alcohol level was lower than indicated by the tests any more than the evidence the jury already had the evidence before them that accuracy of the breath machines were plus or minus .01. Thus there is no indication that the excluded expert's testimony would have independently added to the evidence that the breath tests could be lower than .08 and thereby indicate a rising alcohol by comparison to the later blood test showing a .088.

The only other possible evidence for a rising alcohol defense requires evidence of recent ingestion of alcohol to indicate being in the absorption phase of the alcohol process. However, Respondent concedes that his drinking history was not supported by the evidence and in such case "the effect is to remove that testimony from the evidentiary mix." (RAB at 29-30 (quoting *Beck Development Co., v. Southern Pacific Transportation Co.*, 44 Cal. App. 4th 1160, 1205 (1966).)

Without credible testimony of drinking near the time of the stop or affirmative evidence of tests results indicating a rising blood alcohol level, there was no evidence to establish a rising alcohol defense. Without any evidence of a rising blood alcohol defense, and only considering the uncontested blood test which established a blood alcohol result of .088, there was no reasonable probability that the jury would have reached a different result regarding Respondent having a .08 alcohol level at the time of driving even if the expert's testimony had not been excluded.

CONCLUSION

For the above stated reasons, Appellant respectfully requests that this Court reverse the judgment of the Court of Appeal.

Dated: January 10, 2012

JAN I. GOLDSMITH, City Attorney

By _____
Jonathan I. Lapin
Deputy City Attorney

Attorneys for Plaintiff/Appellant

CERTIFICATE OF COMPLIANCE
[CRC 8.204(c)(1)]

Pursuant to California Rule of Court, Rule 8.204(c)(1), I certify that this Appellant's Reply Brief on the Merits contains 2,873 words and is printed in a 13-point typeface.

Dated: January 10, 2012

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IN THE SUPREME COURT OF CALIFORNIA

DECLARATION OF SERVICE BY MAIL	Supreme Ct. No. S195423 Court of Appeal No. D059012 San Diego Sup. Ct. App. No. CA221258 Case No. M039138 *People v. Terry Vangelder*

I, Janette A. Myers, declare that I am, and was at the time of service of the papers herein referred to, over the age of eighteen years and not a party to the action; and I am employed in the County of San Diego, California, in which county the within-mentioned mailing occurred. My business address is 1200 Third Avenue, Suite 700, San Diego, California, 92101-4103. I served the following document(s): **APPELLANT'S REPLY BRIEF ON THE MERITS,** by placing a copy thereof in a separate envelope for each addressee named hereafter, addressed to each such addressee respectively as follows:

Charles M. Sevilla
1010 Second Avenue, Suite 1825
San Diego, CA 92101

The Honorable Gregory W. Pollack
Judge of the Superior Court
220 West Broadway
San Diego, CA 92101

San Diego Superior Court
Clerk of the Appellate Division
220 West Broadway
San Diego, CA 92101

Court of Appeal State of California
Fourth Appellate District, Division One
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I then sealed each envelope and with the postage thereon fully prepaid, deposited each in the United States mail at San Diego, California on Jan. 10, 2012.

I declare under penalty of perjury that the foregoing is true and correct. Executed on Jan. 10, 2012, at San Diego, California.

Janette A. Myers

PROOF OF SERVICE BY MAIL
C.C.P. §§ 1013(a); 2015.5