IN THE SUPREME COURT OF THE STATE OF CALIFORNIA

PEOPLE, STATE OF CALIFORNIA,	)	**S195423**
Plaintiff/Respondent,	)	Court of Appeal No. D059012
v.	)	
TERRY VANGELDER,	)	Superior Court App. Div. No. CA221258
Defendant/Appellant.	)	Super. Ct. No. M039138

ANSWER TO THE PETITION FOR REVIEW
FILED BY PETITIONER SAN DIEGO CITY ATTORNEY

SUPREME COURT
FILED

AUG 26 2011

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TABLE OF CONTENTS

Page

TABLE OF AUTHORITIES ii

INTRODUCTION 1

STATEMENT OF CASE AND FACTS 7

A: Dr. Hlastala's Credentials 7

B: The Proffered Testimony 8

C: The Holding of the Court of Appeal 11

ARGUMENT

I. THE DEFENSE HAS A RIGHT TO SHOW THAT BREATH ALCOHOL SAMPLING DATA DOES NOT COMPLY WITH TITLE 17 REGULATIONS TO MEASURE "ESSENTIALLY ALVEOLAR AIR" AND WAS FURTHER AFFECTED BY OTHER PHYSIOLOGICAL VARIABLES TO COMPROMISE THE ACCURACY OF THE MEASUREMENT 13

A: There Was no Partition Ratio Defense Proffered 13

B: Petitioner's Argument that No Competent Evidence Demonstrated that Bronchial Alcohol Effects Breath Test Results is Refuted by the Proffered Testimony 18

C. Petitioner Made No People v. Kelly (1976) 17 Cal.3d 24 Objection at Trial 19

CONCLUSION 20

Certificate of Service of Word Count 22

PROOF OF SERVICE

TABLE OF AUTHORITIES

FEDERAL CASES

California v. Trombetta (1984) 467 U.S. 479 20

STATE CASES

Magee v. Superior Court (1973) 8 Cal.3d 949 20

People v. Adams (1976) 59 Cal.App.3d 567 .... 16, 21

People v. Bransford (1994) 8 Cal.4th 885 18

People v. Bui (2001) 86 Cal.App.4th 1187 20

People v. Clark (1993) 5 Cal.4th 950 20

People v. Geier (2007) 41 Cal.4th 555 20

People v. Ireland (1995) 33 Cal.App.4th 680 6

People v. Kaurish (1990) 52 Cal.3d 648, 688 20

People v. Kelly (1976) 17 Cal.3d 24 19

People v. McDonald (1988) 206 Cal.App.3d 877 5

People v. McNeal (2009) 46 Cal.4th 1183 .... *passim*

People v. Soojian (2010) 190 Cal.App.4th 491 .... 12, 13

People v. Surplice (1962) 203 Cal.App.2d 784 13

People v. Watson (1956) 46 Cal.2d 818 12

People v. Williams (2002) 28 Cal.4th 408 .... 2, 15, 16

STATE STATUTES

Health & Safety Code §100700 16

Penal Code §1020 21

Vehicle Code § 23152 .... 1, 9, 13, 15

Vehicle Code §23610 20

STATE REGULATIONS

Title 17 Cal. Code Regs. [CCR] § 1215.1 14

Title 17 CCR § 1219.3 14

Title 17 § 1220.4 15

Title 17 CCR § 1221.5 15

MISCELLANEOUS

Hlastala, "Paradigm Shift for the Alcohol Breath Test," 55 J. Forensic Sciences 451 15

Opinion of the Calif. Attorney General, Opn. # 88-1102, 72 Ops.Cal.Atty.Gen. 226 (Oct. 26, 1989) 16

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TO THE HONORABLE CHIEF JUSTICE, AND THE HONORABLE ASSOCIATE JUSTICES OF THE SUPREME COURT OF CALIFORNIA

I. INTRODUCTION

On August 8, 2011, petitioner, the San Diego City Attorney, filed a petition for review in this Court following the published opinion of the Court of Appeal, Fourth Appellate District, Division One, filed July 1, 2011.[1] The decision unanimously reversed the order of the Superior Court of San Diego County Appellate Division which had affirmed without opinion the appellant's conviction for a one count violation of Vehicle Code § 23152(b), driving with a blood alcohol of .08 or greater. The basis of the holding was the improper exclusion of the proffered testimony of a defense expert witness, Dr. Michael Hlastala, who would have given opinions based on his years of research and peer reviewed publication that breath machines inaccurately measure breath alcohol. A new trial was ordered.

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[1] The Opinion is found as Exhibit A to the petitioner's petition for review and shall be cited at "Opn." in this Answer. The opinion was written by Justice Huffman with Justices Nares and Benke concurring.

The petition does not warrant review. The fundamental assumption in the petition is that the proffered evidence was partition ratio testimony. But Vangelder did not call a chemist, toxicologist or biologist to testify that individuals vary generally in their partition coefficient or that his specific partition ratio was below the norm. Rather, he called a respiratory physiologist, Dr. Michael Hlastala, to testify, based on published research by himself and others, that the breath alcohol concentration of the last sample of exhaled breath is an inaccurate estimator of the concentration in the breath and that none of the measurement is from the alveolar sacs. For purposes of Dr. Hlastala's testimony, one could assume *arguendo* that every human being has the identical partition coefficient. Dr. Hlastala's testimony about the inaccurate measurement of the alcohol concentration in the last sample of exhaled breath is unaffected and completely independent of that issue. Dr. Hlastala testified he was not addressing the partition ratio and its relationship between blood and breath: "I'm not talking about comparing it [breath] to blood." (2RT 357.)

The question presented does not meet the requirements for review. First, the defense proffer was *not* that breath machines must measure "purely alveolar air" and failed to do so. (As stated in the Petition [Pet.], p. 1.) As the Opinion finds, Dr. Hlastala's testimony, based over two decades of research, is that the breath machines get essentially *no* alveolar air to measure out the mouth. This fact alone is a relevant basis for admission of the testimony given the regulatory requirements that "essentially alveolar" air be sampled, measured and expressed under Title 17 of the California Code of Regulations [hereafter CCR]. (*See* People v. Williams (2002) 28 Cal.4th 408, 414 [non-compliance with CCR regulations in administering a breath test constitutes relevant evidence which a defendant may put before

the jury].)

The proffered testimony is no "end run around [People v.] Bransford [(1994) 8 Cal.4th 885]" or the partition ratio exclusionary rule, as the Petition claims at p. 1. In fact, the Petition omits one of the two parts of Dr. Hlastala's proffered testimony which stated that essentially no alveolar air is measured for alcohol content because the breath is already saturated with alcohol from the upper regions of the lung and throat (prong one). He further testified that other physiological factors impact the accuracy of the breath alcohol measurement (prong two). Thus, the "issue presented," as stated on page 2 of the Petition, focuses solely on the latter prong of the proffered testimony (physiological factors in the airway affecting data sampling). It does not deal with the alveolar sac issue. In any event, petitioner is wrong on both issues.

Specifically, the Petition's issue concerns "an expert [who] testifies that (1) the deep lung breath sample measured by breath testing devices is affected by physiological factors in the airway," thus making the sample inaccurate. (Pet. 2.) The question is not reflective of the first prong of the proffer. Dr. Hlastala testified, without refutation, that there is essentially *no* deep lung (alveolar) air being sampled because of the breath saturation with alcohol from the upper bronchial regions of the lung and trachea.

As the Opinion found, the proffered testimony was relevant, reliable and undisputed. Neither prosecution nor the trial court took issue with Dr. Hlastala's expertise or the scientific basis for his opinions. Rather, they, like petitioner, grounded their positions on the notion that what he proffered

was prohibited partition ratio evidence.[2]

As the Opinion states, they were wrong. The subject of the proffered testimony was that breath testing inaccurately measures breath alcohol out the mouth before the machine converts it through the partition ratio. Dr. Hlastala, an expert who has studied breath alcohol physiology for over two decades and has testified in 30 state courts, understood the difference between the legal construct of partition ratio and the subject matter of his testimony. He repeatedly denied it involved partition ratio. Nothing he proffered would have addressed the variability of the partition ratio much less the ratio itself.

The Petition argues that the law has never required "pure alveolar" air be measured. (Pet. 4.) Vangelder never argued that. He argued that the requirement of Title 17 is that "essentially alveolar" air be measured. Because the prosecutor put on no evidence contradicting Dr. Hlastala's testimony, petitioner's argument reduces itself to this: the law and regulations may require sampling and measurement in terms of essentially alveolar air, but even if zero measured breath alcohol is from the deep lung, it is good enough. Wrong.

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[2]"[W]hich 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." (People v. McNeal (2009) 46 Cal.4th 1183, 1188.) A partition ratio defense is premised on the science that the ratio is not uniform and varies within the general population. Evidence of such variability is relevant and admissible to defend against the 23151(a) count in DUI cases: "we hold that evidence about partition ratio variability is relevant in generic DUI cases to rebut the presumption of intoxication in section 23610." (Id., at p. 1200.) However, "evidence of the relationship between breath alcohol and blood alcohol level...is inadmissible." (Pet. 2.)

Petitioner's position is not based on law or science. The law (Title 17) requires "essentially alveolar air" be the source of the breath test. The science is premised on alveolar air being sampled because the partition ratio is based on the exchange of gases at the deep lung level which is 2100/1.[3] If the breath alcohol comes from other areas of the lung, trachea or throat, there is no scientific basis for application of the partition ratio once breath alcohol is sampled and measured. As this Court has described it:

> 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, supra, Forensic Chemist: Blood-Alcohol, § 12.19, p. 770.) Breath-testing 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 [254 Cal. Rptr. 384].)

People v. McNeal, *supra* at 1191 (italics added.)

The contested issue at trial had nothing to do with the Dr. Hlastala's

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[3] "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." (People v. McNeal (2009) 46 Cal.4th 1183, 1190-1191.) The Petition recognizes the premise of the breath test is an analysis of "the last portion of the breath under the theory that it approximates the alveolar air space where the gas exchange is occurring under principles of Henry's Law. [Citation]." (Pet. 8.)

credentials or his science. As the prosecutor stated to the trial court about Dr. Hlastala: "he's obviously very qualified, I don't have any argument with the science." (2RT 364.) The prosecutor, like the trial judge, simply misconstrued his testimony as prohibited partition ratio evidence leading to the trial court's exclusion of his relevant testimony. That is where the trial court erred. Petitioner failed to show the Court of Appeal (and here in its petition) that the proffered expert testimony was partition ratio evidence. As Dr. Hlastala testified, his opinions had nothing to do with the ratio but were focused solely on the accuracy of the sampling of the breath alcohol out the mouth before the ratio is even applied.

The Opinion states: "Although breath test results are admissible if a reliable foundation for them is laid, we think that such competent evidence of their potential inaccuracy, because of physical variabilities leading to poor data in sampling, should have been allowed to be considered, as going to the weight to be accorded the testing results." (Opn., at 25.)

The Petition asserts that "black box" testing provides verification of the breath measurements when compared to blood measurements. (Pet. 8-9, 13.) That evidence was not presented and nothing precludes the prosecution from presenting such evidence to a jury to that effect or anything else relevant to rebut defense evidence. But mislabeling the proffered evidence as something it is not (*i.e.,* partition ratio) is an improper means of avoiding confrontation of the defense evidence. A jury can make its decision best when presented all relevant evidence.[4] Dr. Hlastala's testimony was surely relevant.

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[4] Petitioner cites in support of its "black box" validation People v. Ireland (1995) 33 Cal.App.4th 680, 686,where a witness testified to supportive correlation studies. Such evidence was not presented in this case.

The Petition should be denied.

II. STATEMENT OF CASE AND FACTS

Vangelder accepts for purposes of this Answer the statements of the case and facts as set forth in the Opinion. (Opn. pp. 1-11.) He supplements the facts on the proffer of Dr. Hlastala as follows.

A. Dr. Hlastala's Credentials.

Dr. Michael Hlastala is a professor at the University of Washington medical school, specifically in the Department of Physiology and Biophysics and is a professor of Bioengineering. (2RT 322.) He became a full professor in 1982. While he teaches, his primary job is research. (Ibid.) He has a bachelor's degree in physics and a Ph.D. in Physiology. (RT 322-323.)

Dr. Hlastala serves on committees for the National Institute of Health, aids in the review of grant proposals and conducts peer review of scientific papers. (RT 323-324.) He has been awarded a Guggenheim Fellowship and has studied abroad at the Medical Research Institute in Germany for experimental medicine. (RT 322-323.)

He has published over 400 publications, 174 of them peer-reviewed articles, and a textbook. (RT 324.) His focus of work and research has been studying the physiology of the human body and specifically the study of alcohol and human physiology. (2RT 324.) This work includes study of "the way that alcohol is measured in testing procedures." (RT 324.) Dr. Hlastala has testified as an expert witness on the effects of alcohol and breath testing issues in approximately 30 states. (RT 325.)

The prosecutor stated he had no objection to Dr. Hlastala being

deemed an expert.[5] The trial court agreed. (RT 325; *see* Opn. at 18: "the prosecutor conceded the expert qualifications of this witness, and the court agreed.")

B. The Proffered Testimony.

Dr. Hlastala stated that the EC/IR breath test (as used in this case) is not scientifically accurate. (RT 325.) He diagramed the lung and explained the process of how inhalation brings oxygen into the lungs for exchange to the blood where it is metabolized and provides energy. (RT 327.) The assumption of breath test machines is that they pick up essentially alveolar air at the bottom of the lungs and the exhaled breath measured out of the mouth would reflect the level of breath alcohol in the deep lungs. (RT 327.)

Dr. Hlastala testified that the expired air in a breath test is not at all deep lung air but rather is alcohol-laden breath from the upper regions of the lungs (bronchial and trachea). He testified that before an inhalation reaches the lung's bottom where alveolar sacs are located, the breath is fully saturated with alcohol so that no alveolar air is acquired.

> 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,

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[5] *See also* 2RT 338: "[Prosecutor:] The court's recognized there is a scientific basis....the doctor is not here as some sort of quack." 2RT 339: "I'm not attacking the accuracy of his representation to the jury." 2RT 364: "he's obviously very qualified, I don't have any argument with the science."

> 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 [alveolar] sac, it's already filled up and saturated. (2RT 328.)

At this point, his testimony was stopped and a lengthy argument ensued about whether Dr. Hlastala was giving prohibited "partition ratio" testimony.[6] The trial court initially stated that it "doesn't matter how the alcohol gets into the breath. If there's a certain amount of alcohol per 210 liter[s] of breath, he's violated the law." (2RT 331.) The court also seemed to assume the "b" count was not rebuttable. (2RT 340, 341; *see* Opn. 18.)

The prosecutor argued this was partition ratio testimony. (2RT 334.) He argued: "It doesn't make any difference whether that blood or breath came, you know, if some of the alcohol came from the mucus or trachea." (Ibid.)[7] The trial court agreed that breath out the mouth was the only issue: "you measure the breath and whatever you have there. If it's above or below as a matter of law, that's in violation." (2RT 335.) The court repeated that the testimony was partition ratio evidence. (Id. at 336.) Defense counsel disagreed and noted that nothing Dr. Hlastala was saying had anything "to do with 2100 to 1 ... [and] nothing to do with blood." (Id. at 336-337.)

At the proffer session, Dr. Hlastala testified that the pattern of breathing causes the breath test to be inaccurate. (2RT 349.) Other factors

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[6] This case was tried prior to the holding in People v. McNeal (2009) 46 Cal.4th 1183, which held that partition ratio evidence is relevant and admissible to defend against the generic DUI Veh. Code § 23152(a) count.

[7] He also argued "we don't care whether the breath accurately reflected the blood or not." (2RT 339.)

that also influence breath measurement accuracy are body and breath temperature and the number of red blood cells. (2RT 349-350.) These all affect the breath value measured but are unrelated to the equilibrium process that is fundamental to the partition ratio. (Id. at 350.) He denied that what he was speaking to was a camouflaged effort to challenge the partition ratio. Rather, his testimony related to "factors within the body such as breathing influence, how much alcohol comes out into the breath." (Id. at 350-351.)

The inaccuracy is in "the variability and how the alcohol comes out of the mouth." (Id. at 351.) This is "because the basic assumption that all of the [breath testing] manufacturers have used is that the breath that it measured is directly related to water in the lungs, which is directly related to what's in the blood. And in recent years, we've learned that, in fact, that's not the case." (2RT 352-353.) "I'm not talking about the partition ratio. I'm talking about factors that influence the breath, breath-alcohol." (2RT 357.) "I'm not talking about comparing it to blood." (2RT 357.) He stated the variability of test results is endemic to a remote test like breath. The "more remote, the more variable." (2RT 354.)

At the conclusion of the proffer session, the trial court held to its initial ruling that the "b" count "criminalizes ... a certain breath level" (2RT 360) and that Dr. Hlastala's testimony "runs afoul of the prohibition against partition-ratio evidence." (Id. at 362.) The court excluded all testimony on the issue: "No questions to this expert, which will solicit any testimony by him to be a fact that the breath sample that was measured here was not representative other than if it had contained mouth-alcohol." (2RT 365.) The court instructed counsel not to argue the testimony that the breath machine is not scientifically valid in its breath measurement. (2RT

364-365.)

C. The Holding of the Court of Appeal.

The Opinion properly framed the narrow issue in the case:

> The question presented on review of this per se DUI conviction is whether the trial court prejudicially erred in refusing to allow scientific testimony to be presented that would have raised doubts about the reliability of the EC/IR and PAS breath testing devices, with respect to the physiological variables that can affect the sample of breath or air taken. (Opn. 11.)
>
> [I]f the air sample taken by the EC/IR breath test device is defective or inaccurate, how can the blood-alcohol level be correctly calculated, even with the use of a standardized partition ratio? (Opn. 19.)
>
> Dr. Hlastala testified "regarding whether the breath getting down to the alveolar air sacs, and being measured, is 'already filled up and saturated,' by alcohol elsewhere in the airways." (Opn. 24.)
>
> Other concerns which factored similar points relevant to partition ratio are "variances ... 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." (Ibid.)
>
> Although breath test results are admissible if a reliable foundation for them is laid, we think that such competent evidence of their potential inaccuracy, because of physical variabilities leading to poor data in sampling, should have been allowed to be considered, as going to the weight to be accorded the testing results. (Id. at 25.)

Exclusion of the evidence was prejudicial given that this was a marginal breath alcohol reading, Vangelder performed well on the field tests and skillfully in his antecedent driving, there were problems in

administering the PAS test, and the jury hung on the generic DUI count. (Id. at 26.) Further, the jury hung on the generic DUI "a" count even with the jury instruction[8] stating that Vangelder could be presumed driving under the influence if he had a .08 blood alcohol. The prosecution argued to the jury that the breath reading alone could suffice to show Vangelder was under the influence for the "a" count. (2RT 454.) It is thus a testament to the weakness of the .08 "b" count that the jury hung on the "a" count.

Here, "[e]ven a small error could possibly turn a marginally legal reading into an illegal reading." (Opn. 25.) But for the exclusion, Vangelder had a reasonable chance for a better outcome. (People v. Watson (1956) 46 Cal.2d 818, 836.) In People v. Soojian (2010) 190 Cal.App.4th 491, 520-521, the Court of Appeal held that Watson error is demonstrated where there is a reasonable chance that the absence of the error would have changed a single juror's mind.

The error was prejudicial.

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[8] The instruction stated: "If the People have proved beyond a reasonable doubt that the defendant's blood alcohol was 0.08 percent or more at the time of the chemical analysis, you may, but are not required to, conclude that the defendant was under the influence of an alcoholic beverage at the time of the alleged offense." (CT 120.)

ARGUMENT

I. THE DEFENSE HAS A RIGHT TO SHOW THAT BREATH ALCOHOL SAMPLING DATA DOES NOT COMPLY WITH TITLE 17 REGULATIONS TO MEASURE "ESSENTIALLY ALVEOLAR AIR" AND WAS FURTHER AFFECTED BY OTHER PHYSIOLOGICAL VARIABLES TO COMPROMISE THE ACCURACY OF THE MEASUREMENT.

A. There Was no Partition Ratio Defense Proffered.

The 2100:1 partition ratio used in breath testing machines is simply a ratio between two numbers, blood and breath, meaning that the amount of alcohol in 2,100 milliliters of breath is considered equivalent to the amount of alcohol in 1 milliliter of blood. (People v. McNeal, *supra* at 1188.) That ratio may be affected by a number of factors that can move the numbers up or down. If a defendant presents a "partition ratio" defense, he or she is arguing that the ratio numbers fluctuate in the population generally or that the specific defendant's ratio is less than 2100:1, resulting in the breath alcohol reading being inflated. That defense is available for attacking the Vehicle Code § 23152(a) driving under the influence count due to the presumption, but not the (b) count per McNeal.

Petitioner raised no such defense. Yet, the trial court excluded the expert's testimony by characterizing it as such. The Opinion properly found an abuse of discretion.[9]

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[9] "[T]he trial court seemed to assume that the .08 breath test result could not be rebutted in any fashion...." (Opn. 18; *see* 2RT 340, 341.) That assumption of law was erroneous. (People v. Soojian (2010) 190 Cal.App.4th 491, 521 [misapplication of law is an abuse of discretion].) Further, the court's misapplication of the facts in deeming the proffer as nothing more than partition ratio evidence was also an abuse. (People v. Surplice (1962) 203 Cal.App.2d 784, 791 ["To exercise the power of judicial discretion all the

(continued...)

The Petition accuses the Opinion as setting up a "straw man" requirement that breath machines "only" measure alcohol in alveolar air. (Pet. 12.) The assertion itself is a straw man argument. Dr. Hlastala never testified that "pure" alveolar air" was not being testing. He stated that *no* alveolar air was sampled by the machine. By regulation, a breath test must sample "essentially alveolar" air.[10] Title 17 CCR § 1219.3 states that the air to be measured by the breath machine must be "essentially alveolar" (deep lung air):

> A breath sample shall be expired breath which is essentially alveolar in composition. The quantity of the breath sample shall be established by direct volumetric measurement. The breath sample shall be collected only after the subject has been under continuous observation for at least fifteen minutes prior to collection of the breath sample, during which time the subject must not have ingested alcoholic beverages or other fluids, regurgitated, vomited, eaten, or smoked.

As noted, the sampling of alveolar air is the premise for the *subsequent* conversion of breath alcohol to a blood alcohol reading:

> 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

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[9](...continued)
material facts in evidence must be both known and considered, together also with the legal principles essential to an informed, intelligent and just decision"].)

[10] The definition in Title 17 CCR §1215.1(m) states that "Alveolar" refers to the smallest air sacs in the lungs and to that portion of the expired breath which is in equilibrium with respect to alcohol with the immediately adjacent pulmonary blood".

milliliter of blood.

(Title 17 CCR § 1220.4(f).) Further, the results are to be stated based on alveolar air sampling. (*See* 17 CCR § 1221.5: "Expression of Analytical Results: Results of breath alcohol analysis shall be expressed as set forth in Section 1220.4.")

Because the scientific standards behind breath test accuracy are premised on the regulations embodied in Title 17 (People v. Williams, *supra* at 415-416), accuracy requires that "essentially" alveolar breath be tested. If that essentially alveolar air is not being tested, then the scientific premise supporting the test's accuracy is unsupported. That failing is why Dr. Hlastala's research[11] shows the inaccuracy of breath test results.

The Petition's argument that the statute (Veh. Code § 23152(b)) does not mention alveolar air and thus only concerns itself with "the general term of breath" is itself a breath-taking assertion. The statute reads:

> It is unlawful for any person who has 0.08 percent or more, by weight, of alcohol in his or her blood to drive a vehicle.
>
> For purposes of this article and Section 34501.16, percent, by weight, of alcohol in a person's blood is based upon grams of alcohol per 100 milliliters of blood or grams of alcohol per 210 liters of breath.
>
> In any prosecution under this subdivision, it is a rebuttable presumption that the person had 0.08 percent or more, by weight, of alcohol in his or her blood at the time of driving the vehicle if the person had 0.08 percent or more, by weight, of alcohol in his or her blood at the time of the performance of a chemical test within three hours after the driving.

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[11] The research was summarized in his paper: Hlastala, "Paradigm Shift for the Alcohol Breath Test," 55 J. Forensic Sciences 451 (March 2010).

The law requires breath machines to comply with Title 17. Under Health & Safety Code § 100700(a):

> Laboratories engaged in the performance of forensic alcohol analysis tests by or for law enforcement agencies on blood, urine, tissue, or breath for the purposes of determining the concentration of ethyl alcohol in persons involved in traffic accidents or in traffic violations *shall comply* with Group 8 (commencing with Section 1215) of Subchapter 1 of Chapter 2 of Division 1 of *Title 17 of the California Code of Regulations*, as they exist on December 31, 2004, until the time when those regulations are revised pursuant to Section 100703. (Italics added.)

As this Court has stated, noncompliance with Title 17's CCR regulations is relevant and admissible evidence going to weight. (*See* People v. Williams (2002) 28 Cal.4th 408, 414; *see also* People v. Adams (1976) 59 Cal.App.3d 559, 567.)[12] The assertion in the Petition that only "general breath" is at issue is meritless.

The Petition seems to recognize this as it next takes up the regulations. (Pet. pp. 12-13.) Petitioner appears to agree (as it must) that "essentially alveolar air" must be sampled. However, petitioner argues that all the regulation requires is testing air out of the mouth. This is wrong as most obviously demonstrated by the regulation requiring a 15 minute wait prior to testing to insure no mouth alcohol comes out the mouth to contaminate the test. *See* 17 CCR § 1219.3.) Mouth alcohol can artificially increase an alcohol reading. (*See* Opn. p. 17.) But the Petition states that

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[12] As stated in an Attorney General Opinion, a California peace officer may not lawfully use breath testing devices unless the equipment and procedures used comply with regulations of State Department of Health Services. (Opn. # 88-1102, 72 Ops.Cal.Atty.Gen. 226 [Oct. 26, 1989].)

the machines properly measure the breath "sample of the end of that exhalation [that] is taken." (Pet. p. 13.) If that were the only legal requirement, it would render Title 17 regulations obsolete. The requirement, as stated several times in the regulations, is that "essentially alveolar" air be tested. The word "essentially" means "inherently" or "constituting essence" or "of the utmost importance," "basic, indispensable, necessary."[13] Petitioner's analyses either assumes that "essentially alveolar" is presumed to be part of the out-the-mouth sampling (as stated at Petition, p. 14), or that it is irrelevant from where in the lung the air tested emanates. Both formulations are wrong.

Far from Petitioner's view of what "essentially alveolar" air constitutes, Dr. Hlastala's testimony was that because of saturation, no alveolar air is being tested, but rather alcohol from other regions. Unless the regulations mean nothing, this testimony is relevant and should have been admitted. It is relevant because if the alcohol measured in breath is wrong, the later partition ratio conversion is wrong. It is relevant additionally because the assumption of the breath test (and the regulations) relies on the gas exchange at the alveolar region. If the breath test is measuring mostly air from the bronchial, trachea or throat, there is no scientific foundation for the conversion using the partition ratio.

As this Court stated in McNeal, the premise of the test is:

> 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

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[13] http://www.merriam-webster.com/dictionary/essential.

"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, supra, Forensic Chemist: Blood-Alcohol, § 12.19, p. 770.)

(McNeal, *supra* at 1191.)

B. Petitioner's Argument that No Competent Evidence Demonstrated that Bronchial Alcohol Effects Breath Test Results is Refuted by the Proffered Testimony.

The simple answer to this contention (made at Pet. 14-15) is that Dr. Hlastala was conceded by the prosecution to be an expert and the prosecutor had no issues with his science. He testified the effects of non-alveolar air alcohol on breath tests made the results inaccurate. (2RT 351-353.) If the prosecution desires to challenge his evidence (supported by his research and that of others), the time to do so is in the courtroom and not on appeal.

The petitioner asserts that the affects of the contribution of throat, tracheal, and bronchial alcohol to the breath is "accounted for" by the legislatively-mandated partition ratio. (Pet. 15.) This ignores that the partition ratio is premised on an exchange of gases from blood to alveolar sacs in a location of relative equilibrium. There is no such equilibrium process at work in the other regions that provide the breath alcohol.

Finally, the Petition asserts that Dr. Hlastala stated that the same factors that affect breath alcohol measurement are the variables in the partition ratio. (Pet. p. 14.)

Dr. Hlastala's opinion about influences on breath measurement were premised on several factors that were not mentioned in the People v. Bransford (1994) 8 Cal.4th 885, 889 discussion of partition ratio variables. Dr. Hlastala testified that a breath test measurement may be inaccurate

based on the manner in which a breath sample is delivered to the machine, the major contributions of alcohol from the bronchial and tracheal airways, and the lack of alcohol from the alveolar sacs. He included as other factors affecting "breath value" the person's hematocrit (red blood cell count)[14] and body and breath temperature.

Bransford stated factors influencing partition ratio variations could "include body temperature, atmospheric pressure, medical conditions, sex, and the precision of the measuring device." (Id. at 889.) When these were made part of the court's questioning of Dr. Hlastala, he testified he was *not* relying on atmospheric pressure (2RT 355) *or* machine precision in his opinion on breath measuring inaccuracy. (2RT351.) Further, he testified that in this case gender was not a likely influencing factor. (2RT 355-356.) While a medical condition like a lung disease could be a factor affecting breath value (2RT 356), there was no such issue in this case. Thus, of the factors recited in Bransford, only temperature (breath and body) are included in Dr. Hlastala's list. It can hardly be a remarkable point that temperature may influence more than one thing. As the Opinion states, it is "not dispositive that similar variables must be considered, when different types of analysis are concerned." (Opn., p. 24.)

C. Petitioner Made No People v. Kelly (1976) 17 Cal.3d 24 Objection at Trial

Finally, the Petition's concluding citation to People v. Kelly, *supra*, (Pet., p. 16) is meritless given that the prosecutor conceded both Dr. Hlastala's credentials and "science." The issue at the proffer hearing was

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[14] Hematocrit was not mentioned in Bransford, but was in People v. McNeal (2009) 46 Cal.4th1183, 1191.

not a contest on the accuracy of his science. The issue was whether he was really testifying to partition ratio. Petitioner thus waived any Kelly challenge by his failure to raise it at trial. Indeed, he *conceded* the science behind Dr. Hlastala's testimony and argued only that it was excludable as partition ratio evidence. Objection to scientific evidence regarding a Kelly foundation is waived unless raised in the trial court (People v. Clark (1993) 5 Cal.4th 950, 1018); it must be a specific objection to the precise area of science contested (People v. Geier (2007) 41 Cal.4th 555, 611); finally, a court has no sua sponte duty to consider the issue. (People v. Kaurish (1990) 52 Cal.3d 648, 688.)

Further, even if a Kelly challenge had been raised, it would have been meritless because Dr. Hlastala's testimony was expert opinion unrelated to the introduction of a new scientific technique or device. (*See* People v. Bui (2001) 86 Cal.App.4th 1187, 1195.)

Finally, the statement that there was a purported lack of evidence in the scientific community that bronchial vessels in the airway have impact on breath results fails because Dr. Hlastala gave such testimony and that testimony was uncontested. (Pet., p. 16.)

CONCLUSION

Vangelder had a right to introduce his defense to the accuracy of the breath results produced by the prosecution.[15] As People v. Adams, *supra,*

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[15] The U.S. Supreme Court has often recognized that the right to present a defense requires that a defendant be given "a meaningful opportunity to present a complete defense." (California v. Trombetta (1984) 467 U.S. 479, 485.) This Court has stated "[T]he constitutional rights to counsel and to present a defense in a criminal case are among the most sacred and sensitive of our civil rights." (Magee v. Superior Court (1973) 8 Cal.3d 949, 954.)

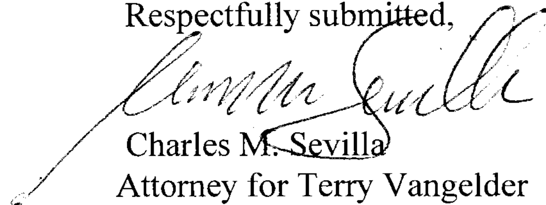
(continued...)

59 Cal.App.3d 567, states: "In the present case, as the regulations were not followed, appellants were entitled to attempt to discredit the results by showing that noncompliance affected their validity...." The Opinion correctly decided the issue.

The premise of the rule of law is the search for truth. The law does not enshrine disputed scientific assumptions behind impenetrable protective barriers. While most citizens do not become involved in murder and rape prosecutions, many have contact with the criminal justice system in the context of DUI cases. Drunk driving prosecutions have a profound impact on the average citizen's perception of the fairness and legitimacy of the criminal justice system. Elemental fairness requires a citizen accused be allowed to contest the State's case with relevant evidence.

For the above reasons, petitioner's petition should be denied.

Respectfully submitted,



August 24, 2011

Charles M. Sevilla
Attorney for Terry Vangelder

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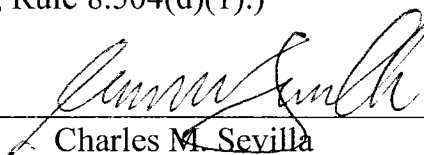
[15](...continued)
Relevant California statutes themselves authorize the defense evidence proffer at the trial to counter that produced by the prosecution. Under Vehicle Code §23610(c), presumptions about chemical test results established by other subdivisions in the section, "shall not be construed 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." (*See also* Penal Code § 1020: "All matters of fact tending to establish a defense other than specified in the fourth, fifth, and sixth subdivisions of Section 1016, may be given in evidence under the plea of not guilty.")

CERTIFICATION OF WORD COUNT

This brief is double and proportionally spaced in 13 point Word Perfect Times Roman and, according to Word Perfect 13 software, contains 6,034 words. (Rules of Court, Rule 8.504(d)(1).)

August 24, 2011 

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IN THE SUPREME COURT OF THE STATE OF CALIFORNIA

PEOPLE, STATE OF CALIFORNIA, Plaintiff/Respondent, v. TERRY VANGELDER, Defendant/Appellant.	**S195423** Court of Appeal No. D059012 Superior Court App. Div. No. CA221258 Super. Ct. No. M039138

PROOF OF SERVICE

I, the undersigned, say that I am over 18 years of age, a resident of the County of San Diego, State of California, and not a party to the within action; that my business address is 1010 Second Ave., Suite 1825, San Diego, California, 92101. That I served the within Answer to the State's Petition for Review on Terry Vangelder as well **and** by delivering by first class mail a copy to:

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the same delivered and deposited in the U.S. mail at San Diego, California on August 24, 2011. I certify under penalty of perjury that the foregoing is true and correct. Executed on this 24th day of August 2011 in San Diego, California.