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NOTE

Drawing on the Constitution: An Empirical Inquiry into the Constitutionality of Warrantless and Nonconsensual DWI Blood Draws

State v. McNeely, 358 S.W.3d 65 (Mo. 2012) (per curiam)

KEVIN STOCKMANN*

I. INTRODUCTION

In the early 1990s, approximately 50% of the total number of traffic fatalities that occurred in the United States were alcohol-related.¹ In response to this high percentage, the National Highway Traffic Safety Administration of the United States Department of Transportation recommended to Congress that all states set .08 blood-alcohol content (BAC) as the threshold for driving while intoxicated (DWI) offenses.² This was after Congress already encouraged, and in practical effect mandated,³ states to set their minimum drinking age to 21 years old by awarding federal subsidies to states that did so.⁴ Taking these actions into account, it is obvious that Congress has expressed a

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1. See Joseph F. Stanton, Note, *SJC Steers Off Course: DUI Breath Test Refusals Inadmissible*, 28 NEW ENG. L. REV. 1169, 1169 (1994) (citing BUREAU OF JUST. STATS., U.S. DEP'T OF JUST., SOURCEBOOK OF CRIMINAL STATISTICS (1992)). In 1991, approximately fifty percent of all traffic fatalities were alcohol-related. *Id.* In 1991, 19,900 of the total 41,462 automobile accidents were alcohol-related. *Id.* at 1169 n.2.

2. Kimberly S. Keller, *Sobering up Daubert: Recent Issues Arising in Alcohol-Related Expert Testimony*, 46 S. TEX. L. REV. 111, 112 n.2 (2004). To clarify, a .08 BAC means that .08% of a person's blood contains alcohol, not that .8% or 8% of a person's blood contains alcohol. See *infra* notes 146-49 and accompanying text.

3. See *South Dakota v. Dole*, 483 U.S. 203 (1987) (discussing the practical effects this action by Congress had on the states).

4. Stanton, *supra* note 1, at 1169, 1169 n.4.

clear intention “to combat this carnage” caused by drunk driving.⁵ However, the Fourth Amendment’s evidentiary limitations inherently conflict with this goal.⁶ While the Fourth Amendment may be in tension with certain aspects of law enforcement, this conflict is particularly contentious because Supreme Court precedent on this matter has largely left “questions attendant to bodily evidence . . . to the states.”⁷ Accordingly, what evidence may be used to convict an alleged drunk driver for DWI has long been an area of debate.

A variety of techniques and devices have been made available to law enforcement officers to apprehend an alleged intoxicated driver, but whether those methods have provided courts with admissible evidence is another question.⁸ Of all these methods,⁹ the blood draw has been widely heralded as the “gold standard of DWI evidence” because it is the least capable of being corrupted by errors on the part of the person administering the test.¹⁰ This widespread “primary authority given blood tests over all other forms of assessing intoxication has made the need for clear constitutional guidance all the more important.”¹¹ More specifically, exactly when a law enforcement officer can conduct a blood draw on an alleged drunk driver has been a hotly contested issue in recent years.¹²

In *Schmerber v. California*,¹³ the Supreme Court of the United States addressed when a police officer may order a blood draw on an alleged intoxicated driver without a warrant or the driver’s consent.¹⁴ In that case, the Court held that the circumstances presented “special facts” that justified the challenged warrantless and nonconsensual blood draw.¹⁵ However, the Court’s ambiguity as to what constituted “special facts” has generated a great deal of confusion.¹⁶ Courts have interpreted *Schmerber* in two distinct ways.

5. *See id.*

6. *See, e.g.,* Michael A. Correll, *Is There a Doctor in the (Station) House?: Reassessing the Constitutionality of Compelled DWI Blood Draws Forty-Five Years After Schmerber*, 113 W. VA. L. REV. 381, 381, 383-84 (2011).

7. *Id.* at 381.

8. Stanton, *supra* note 1, at 1169-72.

9. The most common methods of determining one’s BAC are the breathalyzer test, the urinalysis test, and the blood draw. *See* Correll, *supra* note 6, at 385-89.

10. *Id.* at 388-89.

11. *Id.* at 383.

12. As this Note explains, a police officer can obtain a blood draw on an alleged intoxicated driver when the driver consents or the police officer has a warrant. *See infra* notes 65-67 and accompanying text. Therefore, the issue is when a police officer may conduct a warrantless and nonconsensual blood draw.

13. 384 U.S. 757 (1966).

14. *Id.* at 766-67.

15. *Id.* at 771.

16. *See* Vitauts M. Gulbis, Annotation, *Admissibility in Criminal Case of Blood-Alcohol Test Where Blood Was Taken Despite Defendant’s Objection or Refusal to Submit to Test*, 14 A.L.R. 4TH 690, § 2(a) (originally published in 1982) [hereinafter A.L.R.].

Some have stated that the rapid dissipation of alcohol in an individual's bloodstream without more constitutes a "special fact" justifying such a blood draw.¹⁷ Others have held that more "special facts" are required for such a blood draw to be constitutional under the Fourth Amendment.¹⁸

In *State v. McNeely*,¹⁹ the Supreme Court of Missouri took its turn at interpreting *Schmerber* and stated that the rapid dissipation of alcohol in an individual's bloodstream by itself is not a "special fact" justifying a warrantless and nonconsensual blood draw on an alleged drunk driver.²⁰ Like many other courts, the Supreme Court of Missouri largely relied on interpreting the text of *Schmerber* to justify its decision.

This Note assesses how courts have interpreted the text of *Schmerber* to justify conclusions while determining whether policy justifications support any particular interpretation.²¹ It then considers whether empirical data may favor one interpretation of *Schmerber* by examining the dissipation rate of alcohol from an individual's bloodstream, the average time it takes a law enforcement officer to obtain a warrant for a blood draw on an alleged intoxicated driver, and the reliability of retrograde extrapolation.²² This Note confirms that neither the text of *Schmerber* nor the policy underlying its holding clearly favors a particular interpretation on the constitutionality of warrantless and nonconsensual blood draws on an alleged drunk driver.²³ It then concludes that empirical data supports the position that the rapid dissipation of an individual's BAC by itself is a "special fact" justifying a warrantless and nonconsensual blood draw.²⁴

17. See, e.g., *State v. Netland*, 762 N.W.2d 202, 214 (Minn. 2009); *State v. Machuca*, 227 P.3d 729, 736 (Or. 2010) (en banc); *State v. Bohling*, 494 N.W.2d 399, 406 (Wis. 1993).

18. See, e.g., *United States v. Chapel*, 55 F.3d 1416, 1418-20 (9th Cir. 1995); *State v. Johnson*, 744 N.W.2d 340, 344-45 (Iowa 2008); *State v. Rodriguez*, 156 P.3d 771, 780-82 (Utah 2007).

19. 358 S.W.3d 65 (Mo. 2012) (en banc) (per curiam), cert. granted, *Missouri v. McNeely*, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012).

20. *Id.* at 67.

21. See *infra* Part V.A.

22. See *infra* Part V.B.4. Retrograde extrapolation is the method used to assess one's BAC based on blood tests conducted hours after alcohol has dissipated, but not completely, from the bloodstream. See Lawrence E. Wines, *The Law and Science of Retrograde Extrapolation*, in UNDERSTANDING DUI SCIENTIFIC EVIDENCE: LEADING LAWYERS ON UNDERSTANDING NEW FORENSIC SCIENCE, CHALLENGING TESTING PROCEDURES AND RESULTS, AND CONSULTING EXPERTS FOR DEFENSE ARGUMENTS (2010 ed.), available at 2010 WL 1976216, at *1.

23. See *infra* Part V.A.

24. See *infra* Part V.B.4.

II. FACTS AND HOLDING

Tyler McNeely was driving above the posted speed limit along a Missouri state highway in Cape Girardeau during the early morning hours of October 3, 2010.²⁵ Corporal Mark Winder, a Missouri state highway patrolman, observed McNeely speeding and crossing the center line of the highway three times.²⁶ Corporal Winder pulled McNeely over at 2:08 a.m.²⁷

Corporal Winder initially planned on conducting a routine traffic stop for speeding.²⁸ However, Corporal Winder approached McNeely's truck and observed that McNeely's eyes were glassy and bloodshot, his breath smelt of alcohol, and his speech was slurred.²⁹ Corporal Winder's routine traffic stop then became a DWI investigation.³⁰

To help determine McNeely's BAC, Corporal Winder took several steps.³¹ First, he administered four different field sobriety tests.³² McNeely performed very poorly on each test.³³ Subsequently, Corporal Winder asked McNeely to give a breath sample into a portable breathalyzer to more precisely determine McNeely's BAC.³⁴ However, McNeely repeatedly refused consent.³⁵ Corporal Winder then arrested McNeely and began to transport him to the Cape Girardeau County Jail to administer a breath test.³⁶ McNeely refused to do a breath test there as well.³⁷ Corporal Winder then transported McNeely to the Saint Francis Medical Center to obtain a blood sample to more precisely determine McNeely's BAC.³⁸ Although McNeely also refused consent to a blood sample and Corporal Winder did not obtain a warrant to take one, a blood sample was taken.³⁹

The State of Missouri charged McNeely with DWI in the Circuit Court of Cape Girardeau County, Missouri.⁴⁰ McNeely filed a motion to suppress

25. State v. McNeely, No. ED 96402, 2011 WL 2455571, *1 (Mo. App. E.D. June 21, 2011), *transferred to* 358 S.W.3d 65 (Mo. 2012) (en banc) (per curiam), *cert. granted*, Missouri v. McNeely, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012).

26. *Id.*

27. *McNeely*, 358 S.W.3d at 67.

28. *See id.*

29. *Id.* at 67-68.

30. *Id.* at 68.

31. *See McNeely*, 2011 WL 2455571, at *1.

32. *Id.*

33. *Id.*

34. *See id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *See id.*

39. *Id.*

40. *Id.*

the blood sample evidence, arguing that the blood sample was taken in violation of the Fourth Amendment without a warrant or consent.⁴¹ The circuit court granted McNeely's motion.⁴² In its opinion, the court stated that the Fourth Amendment requires "exigent circumstances" to draw blood from an alleged drunk driver without a warrant or consent.⁴³ Additionally, the court noted that the only time such a blood draw has been qualified by the Supreme Court of the United States as an "exigent circumstance" was when there were "special facts" of a delay that would threaten the destruction of evidence, and no time to secure a warrant.⁴⁴ Because there was no evidence of a substantial delay between the traffic stop and the blood draw, the circuit court held that there was no evidence of any "special facts" to permit a warrantless and non-consensual blood draw.⁴⁵ The State brought an interlocutory appeal.⁴⁶

On appeal to the Court of Appeals for the Eastern District of Missouri, the State argued that the Supreme Court of the United States established that the rapid dissipation of alcohol in an individual's bloodstream is by itself a "special fact" constituting an "exigent circumstance" justifying a warrantless and nonconsensual blood draw on an alleged intoxicated driver.⁴⁷ McNeely, on the other hand, maintained that more "special facts" are required.⁴⁸ The appellate court agreed with the State.⁴⁹ The court noted that the rapid dissipation of alcohol in an individual's blood is sufficient without more to qualify as a "special fact" permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.⁵⁰ Therefore, the court stated that this "special fact" by itself creates an "exigent circumstance" justifying such a blood draw.⁵¹ The appellate court stated it would reverse the circuit court, yet it transferred the case to the Supreme Court of Missouri in light of the vagueness of Missouri law on this topic and the public interest in the issues involved.⁵²

41. *See id.* McNeely was charged for violating MO. REV. STAT. § 577.010 (2000). *Id.*

42. *Id.*

43. *Id.* (citing *Schmerber v. California*, 384 U.S. 757 (1966)).

44. *Id.* (citing *Schmerber*, 384 U.S. 757).

45. *See id.*

46. *Id.*

47. *State v. McNeely*, 358 S.W.3d 65, 70 (Mo. 2012) (en banc) (per curiam), *cert. granted*, *Missouri v. McNeely*, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012). The "exigent circumstances" exception to the Fourth Amendment's warrant requirement has been explicitly adopted by the Supreme Court of the United States, and it is explained more thoroughly later in this note. *See Payton v. New York*, 445 U.S. 573 (1980); *see also infra* note 84 and accompanying text.

48. *See McNeely*, 2011 WL 2455571, at *1.

49. *Id.* at *7. Because the court deferred to the Supreme Court of Missouri in deciding this case, its opinion was not legally binding. *Id.*

50. *Id.* at *4.

51. *Id.*

52. *Id.* at *7.

On transfer, the Supreme Court of Missouri affirmed the decision of the circuit court.⁵³ Though the parties maintained the same positions they had in the appellate court, the Supreme Court of Missouri denied the State's arguments and affirmed the grant of McNeely's motion.⁵⁴ The court noted that the Supreme Court of the United States explicitly stated that a court should not hold that the natural dissipation of blood-alcohol *per se* constitutes a "special fact" that constitutes an "exigent circumstance."⁵⁵ Therefore, the Supreme Court of Missouri held that when a warrantless and nonconsensual blood draw has been taken from an alleged intoxicated driver, it qualifies as an "exigent circumstance" only if "special facts" beyond the rapid dissipation of alcohol in an individual's bloodstream exist to justify the act.⁵⁶

III. LEGAL BACKGROUND

The Fourth Amendment provides, in pertinent part, that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation"⁵⁷ This clause fails to specify any standards for determining what is an unreasonable, and thus an unconstitutional, search or seizure.⁵⁸ Consequently, courts have faced, and continue to face, the task of addressing the hot-button issue of whether a police officer violates the Fourth Amendment by taking a warrantless and nonconsensual blood sample from an alleged intoxicated driver.⁵⁹ This Part first lays out the legal standards that the Supreme Court of

53. *State v. McNeely*, 358 S.W.3d 65, 67 (Mo. 2012) (en banc) (per curiam), cert. granted, *Missouri v. McNeely*, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012). This was an affirmation of the order granting of McNeely's motion to suppress the evidence, but McNeely still had to stand trial for DWI. *Id.* at 75.

54. *Id.* at 67.

55. *Id.* at 74 (citing *Schmerber v. California*, 384 U.S. 757, 772 (1966)). The Supreme Court of Missouri used this language of the Supreme Court of the United States as a major justification for not adopting such an approach. *See id.*

56. *Id.* The court stated the additional "special fact" required is that an officer must "reasonably believe" that he is "confronted with an emergency where the delay in obtaining a warrant would threaten the destruction of evidence." *Id.* (citing *Schmerber*, 384 U.S. at 770). "The question of whether an emergency exists sufficient to trigger the exigent circumstances exception . . . must be determined on a case-by-case basis." *Id.*

57. U.S. CONST. amend. IV.

58. *See id.*

59. Compare *State v. Netland*, 762 N.W.2d 202 (Minn. 2009) (examining the validity of a state statute that authorized criminal sanctions for refusal to take a chemical case), *State v. Machuca*, 227 P.3d 729 (Or. 2010) (en banc) ("[T]he evanescent nature of a suspect's blood alcohol content is an exigent circumstance that will ordinarily permit a warrantless blood draw[.]",) and *State v. Bohling*, 494 N.W.2d 399 (Wis. 1993) ("[T]he dissipation of alcohol from a person's blood stream consti-

the United States has set forth in interpreting the Fourth Amendment to determine this issue. This Part then analyzes how other courts have interpreted the Court's precedent on this matter. Finally, it concludes with a discussion of Missouri's stance on the subject.

A. Supreme Court of the United States Precedent on Warrantless, Non-Consensual Blood Draws

The Fourth Amendment protects against unreasonable searches and seizures of a person or a person's property.⁶⁰ There are generally two requirements for a search of a person or a person's property to be reasonable: probable cause and a warrant.⁶¹

Probable cause exists if there is a "fair probability" that evidence of a crime, or something else subject to lawful seizure, will be found in a particular place.⁶² This is judged on a totality of circumstances approach in which an individual must make the determination given all the circumstances.⁶³ Moreover, this "is a fluid concept" as it "turn[s] on the assessment of probabilities in particular factual contexts" that are "not readily . . . reduced to a neat set of legal rules."⁶⁴

As for the warrant requirement, a police officer is generally required to obtain prior approval of a search by a judge or magistrate as "searches conducted outside the judicial process . . . are *per se* unreasonable."⁶⁵ However, this rule is not absolute as it is subject to a "few specifically established and well-delineated exceptions."⁶⁶ Consent to a search is an exception to the warrant requirement and makes a warrantless search permissible.⁶⁷ A search

tutes a sufficient exigency to justify a warrantless blood draw."), *with United States v. Chapel*, 55 F.3d 1416 (9th Cir. 1995) (listing additional factors that must be present in order for a law enforcement officer to lawfully take a blood sample without a warrant or consent), *State v. Johnson*, 744 N.W.2d 340 (Iowa 2008) ("The evanescence of blood-alcohol was never special enough to create an exigent circumstance by itself." (quoting *State v. Rodriguez*, 156 P.3d 771 (Utah 2007)) (internal quotations omitted)), *and Rodriguez*, 156 P.3d at 772 (finding the "dissipation of alcohol in the blood, without more" did not create "an exigent circumstance under the Fourth Amendment").

60. U.S. CONST. amend. IV; *see, e.g.*, *Katz v. United States*, 389 U.S. 347, 352-53 (1967).

61. *See Katz*, 389 U.S. at 357.

62. *See Illinois v. Gates*, 462 U.S. 213, 238 (1983).

63. *Id.*

64. *Id.* at 232. A more thorough explanation of "probable cause," as well as the exceptions to this requirement, is not necessary because this note focuses on the Fourth Amendment's warrant requirement.

65. *Katz*, 389 U.S. at 357 (emphasis added).

66. *Id.*

67. *See Davis v. United States*, 328 U.S. 582, 593-94 (1946).

conducted incident to a lawful arrest is another exception, and allows a police officer making a lawful arrest to conduct a warrantless search on “the arrestee’s person” and the area “within his immediate control” to prevent the concealment or destruction of evidence.⁶⁸

It was not until 1966 in *Schmerber v. California* that the Supreme Court of the United States directly addressed whether a police officer’s warrantless and nonconsensual blood draw on an alleged drunk driver violated the Fourth Amendment.⁶⁹ In *Schmerber*, the Court first noted that ordinarily a police officer must obtain a warrant to obtain a blood sample from an alleged intoxicated driver.⁷⁰ However, the Court recognized that such a blood draw may be justified under the search incident to a lawful arrest exception in certain situations.⁷¹ The Court concluded that these circumstances presented “special facts” that invoked the search incident to a lawful arrest exception to the warrant requirement, thus no warrant was required.⁷² The “special facts” presented were that an individual’s BAC diminishes rapidly shortly after the individual stops drinking, and an unusual delay threatens the destruction of the chemical evidence.⁷³ However, the Court did not explicitly state whether the dissipation of alcohol in an individual’s bloodstream by itself constitutes a “special fact” that invokes the search incident to a lawful arrest exception, or whether more justifiable circumstances are needed to qualify as “special facts.”⁷⁴ The Court recognized that blood draws are highly evanescent evidence that must be obtained quickly as “the percentage of alcohol in the blood begins to diminish shortly after drinking stops.”⁷⁵ However, it also

68. See *Arizona v. Gant*, 556 U.S. 332, 338-39 (2009); *Chimel v. California*, 395 U.S. 752, 762-63 (1969).

69. 384 U.S. 757 (1966).

70. *Id.* at 770 (“[W]arrants are ordinarily required for searches of dwellings, and absent an emergency, no less could be required where intrusions into the human body are concerned.”). The Court also noted that probable cause existed when, upon making contact with the accused, the police officer discovered that the accused had several “symptoms of drunkenness.” *Id.* at 768-69. The “symptoms of drunkenness” that justified probable cause were that the defendant’s breath smelt like liquor, and his eyes were glassy and bloodshot. *Id.* Again, more in-depth analysis of probable cause is unnecessary as *McNeely* and this note focuses on the warrant requirement, and the facts of *McNeely* make it clear Corporal Winder had similar probable cause anyway. See *State v. McNeely*, 358 S.W.3d 65, 67-68 (Mo. 2012) (en banc) (per curiam) (describing how Corporal Winder observed that *McNeely*’s eyes were glassy and bloodshot, his breath smelt of alcohol, and his speech was slurred), cert. granted, *Missouri v. McNeely*, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012).

71. See *Schmerber*, 384 U.S. at 771.

72. *Id.* at 770-71 (“Particularly in a case such as this . . . we conclude that the attempt to secure evidence of blood-alcohol content in this case was an appropriate incident to petitioner’s arrest.”).

73. See *id.*

74. See *id.*

75. *Id.* at 770.

emphasized that “this judgment [was reached] only on the facts of the present record,” and simply because “the Constitution does not forbid the States minor intrusions into an individual’s body under stringently limited conditions” does not “indicate[] that [the Constitution] permits . . . intrusions under other conditions.”⁷⁶

Since *Schmerber*, the Court has explicitly adopted another exception to the warrant requirement known as the “exigent circumstances” exception.⁷⁷ This exception states that a police officer is permitted to perform a warrantless search of a person or a person’s property if “exigent circumstances” justify the action.⁷⁸ To evaluate whether such circumstances exist, the Court has laid out a two-step process.⁷⁹ First, a court must identify all of the relevant facts known to the officer at the time of the search.⁸⁰ Second, the court must use an objective standard of reasonableness to determine if those facts would give rise to a reasonable suspicion justifying the search.⁸¹ The Court has also held that the “exigent circumstances” exception shall not apply when a police officer has “created” or “manufactured” the need for a search.⁸²

The Court in *Schmerber* explicitly stated that the warrantless and non-consensual blood draw on the alleged drunk driver under review was justified under the search incident to a lawful arrest exception.⁸³ Since the Court adopted the “exigent circumstances” exception, however, the Court has explicitly stated that the *Schmerber* analysis was an early application of this later-established exception.⁸⁴ Nonetheless, the vagueness of *Schmerber* leaves much doubt as to when a warrantless and nonconsensual blood draw on an alleged drunk driver violates the Fourth Amendment’s warrant requirement.

76. *Id.* at 772.

77. *See* *Payton v. New York*, 445 U.S. 573, 587-88 (1980).

78. *Id.*

79. *Ornelas v. United States*, 517 U.S. 690, 696 (1996).

80. *Id.*

81. *Id.*

82. *Kentucky v. King*, 131 S. Ct. 1849, 1857-58 (2011) (quoting *United States v. Chambers*, 395 F.3d 563, 566 (6th Cir. 2005) (internal quotation marks omitted); *United States v. Gould*, 364 F.3d 578, 590 (5th Cir. 2004) (en banc)). A police officer “creates” or “manufactures” the need for a search when the officer gains entry “by means of an actual or threatened violation of the Fourth Amendment.” *Id.* at 1862. A police officer does not “create” or “manufacture” the need for a search when the police officer’s conduct preceding the exigency is “reasonable in the same sense.” *Id.* at 1858.

83. *Schmerber v. California*, 384 U.S. 757, 770-71 (1966) (“Particularly in a case such as this . . . we conclude that the attempt to secure evidence of blood-alcohol content in this case was an appropriate incident to petitioner’s arrest.”).

84. *See* *Winston v. Lee*, 470 U.S. 753, 759 (1985) (“[*Schmerber*] fell within the exigent-circumstances exception to the warrant requirement”).

B. Other Courts' Interpretations of *Schmerber*

Other courts have been more than inconsistent in their interpretations of *Schmerber*, and state courts of last resort have reached opposing conclusions on what constitutes “special facts” that permit a warrantless and nonconsensual blood draw.⁸⁵ This divergence can be attributed to the Supreme Court’s vague yet strong emphasis on the importance of stopping the destruction of evidence via the rapid dissipation of an individual’s BAC in alcohol-related cases.⁸⁶ Regardless, jurisdictions have interpreted *Schmerber* in one of two ways: that the rapid dissipation of alcohol in an individual’s bloodstream by itself constitutes a sufficient exigency to justify a warrantless and nonconsensual blood draw from an alleged intoxicated driver, or that more “special facts” are required to justify such action.⁸⁷

A number of jurisdictions have concluded that the rapid dissipation of alcohol in a person’s bloodstream by itself creates a “special fact” invoking the “exigent circumstances” exception permitting a warrantless and nonconsensual blood draw.⁸⁸ Some of these courts have explicitly stated that *Schmerber* held that this “special fact” creates a “single-factor exigent circumstance,” which permits such a blood draw.⁸⁹ Following the same reasoning, some state legislatures have amended their constitutions or enacted “implied consent” statutes to state that a driver consents to such a blood draw by applying for a license to drive.⁹⁰ Other courts have concluded that *Schmerber* stands for the proposition that this “special fact” creates an “exigent circumstance” that “ordinarily permit[s] a . . . blood draw of [this] kind,”⁹¹ yet there must be a “clear indication” before the blood draw that the evidence obtained “will produce evidence of intoxication.”⁹² These courts consider the rapid

85. See *infra* notes 88-98 and accompanying text.

86. See *State v. Bohling*, 494 N.W.2d 399, 402 (Wis. 1993).

87. *Id.* The latter jurisdictions have further diverged as to what facts are “special” enough to qualify as an “exigent circumstance” and permit a warrantless and nonconsensual blood draw on an alleged intoxicated driver. See *infra* notes 95-98 and accompanying text.

88. See, e.g., *State v. Netland*, 762 N.W.2d 202, 212 (Minn. 2009) (applying prior blood draw logic to a case in which a breathalyzer test was at issue); *State v. Shriner*, 751 N.W.2d 538, 549-50 (Minn. 2008); *State v. Machuca*, 227 P.3d 729, 736 (Or. 2010); *Bohling*, 494 N.W.2d at 400.

89. See, e.g., *Shriner*, 751 N.W.2d at 548. These courts hold that “whether exigent circumstances exist is an objective determination, and the [police] officer’s subjective state of mind is irrelevant.” *Id.* at 542. It follows that a warrantless and nonconsensual blood draw on an alleged drunk driver would always be permitted, so long as probable cause is present. See *id.*

90. A.L.R., *supra* note 16, § 2(a); see TEX. TRANSP. CODE ANN. § 724.011 (West, Westlaw through Reg. Sess. of 82nd Legis.).

91. *Machuca*, 227 P.3d at 736.

92. *Bohling*, 494 N.W.2d at 406.

dissipation of an individual's BAC by itself a "special fact" presenting an "exigent circumstance," and the "clear indication" is required to show that the driver was intoxicated, thus the rapid dissipation of the driver's BAC is threatening the destruction of BAC evidence.⁹³ Though these approaches differ slightly, these jurisdictions hold that the rapid dissipation of alcohol in an individual's bloodstream by itself constitutes a "special fact" invoking the "exigent circumstances" exception.

Concurrently, a number of other jurisdictions have adopted the opposite view that *Schmerber* requires more "special facts" beyond the rapid dissipation of an individual's BAC for a warrantless and nonconsensual blood draw to qualify as an "exigent circumstance."⁹⁴ However, these jurisdictions have diverged as to what facts beyond the dissipation of alcohol are "special" enough to qualify as an "exigent circumstance."⁹⁵ To start, some courts have held that the police officer must reasonably believe that an emergency exists.⁹⁶ Other courts have decided the "totality of the circumstances" must show that the "officer was confronted with an emergency."⁹⁷ Finally, some state legislatures have amended their constitutions or enacted statutes to explicitly set forth the standards that must be met in order to permit such a blood draw.⁹⁸ Notwithstanding these different standards as to what additional "special facts" are required, these jurisdictions clearly conclude that *Schmerber* requires more "special facts" beyond the rapid dissipation of an individ-

93. See, e.g., *id.* at 402, 406. To clarify, these courts require a "clear indication" that the driver was drunk, such as a smell of alcohol on the driver's breath, which in turn makes it clear that the rapid dissipation of the driver's BAC is threatening the destruction of the evidence. See *id.* at 406. This "special fact" by itself would then justify a warrantless and nonconsensual blood draw. *Id.* This must be distinguished from states that require more "special facts" causing a delay in the ability of the police officer to obtain a warrant, like the driver being in a car accident or an unreasonably long time to obtain a warrant.

94. See e.g., *United States v. Chapel*, 55 F.3d 1416 (9th Cir. 1995); *State v. Johnson*, 744 N.W.2d 340 (Iowa 2008); *State v. Rodriguez*, 156 P.3d 771 (Utah 2007).

95. See *Chapel*, 55 F.3d at 1419 ("The officer must still reasonably believe that an emergency exists in which the delay necessary to obtain a warrant would threaten the loss or destruction of evidence. The procedures used to extract the sample must still be reasonably and in accordance with accepted medical practices."); *Johnson*, 744 N.W. at 342 (outlining three statutory requirements for implied consent); *Rodriguez*, 156 P.3d at 780 ("Whether exigent circumstances are present to justify a warrantless intrusion depends on 'all of the circumstances surrounding the search or seizure and the nature of the of the search or seizure itself'" (quoting *United States v. Montoya De Hernandez*, 473 U.S. 531, 537 (1985))).

96. *Chapel*, 55 F.3d at 1419.

97. *Rodriguez*, 156 P.3d at 773.

98. See *Johnson*, 744 N.W.2d at 341 (citing IOWA CODE ANN. § 321J.6 (West, Westlaw through 2012 Reg. Sess.)).

ual's BAC for a warrantless and nonconsensual blood draw on an alleged drunk driver to qualify as an "exigent circumstance."

C. Missouri's Interpretation of *Schmerber*

Although the Supreme Court of Missouri did not address the *Schmerber* decision until *McNeely*, the Court of Appeals for the Western District of Missouri touched on the issue two decades earlier in *State v. LeRette*.⁹⁹ In *LeRette*, the appellate court explicitly stated that a warrantless and nonconsensual blood draw on an alleged drunk driver falls under the "exigent circumstances" exception.¹⁰⁰ Although the appellate court eventually concluded that the "exigent circumstances" exception permitted the blood draw in that case, it never addressed what the "special facts" were that justified its conclusion.¹⁰¹ In other words, the appellate court never decided whether or not the rapid dissipation of an individual's BAC by itself creates a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.¹⁰²

While Missouri case law has only skimmed the surface of this issue, Missouri statutory law has been more on point with the evolution of Missouri Revised Statutes section 577.041.1.¹⁰³ Before 2010, section 577.041.1 stated that if an alleged intoxicated driver refused a blood draw, then evidence of the driver's refusal was admissible in court but "none shall be given."¹⁰⁴ If a police officer ordered such a blood draw anyway, ordinarily the blood test results were not admissible in court.¹⁰⁵ The blood test results were admissible in court if the blood test was taken pursuant to a warrant, or the "exigent circumstances" exception applied.¹⁰⁶ The current version of section 577.041.1 provides that if an alleged intoxicated driver refuses a blood draw, then evidence of the driver's refusal is admissible in court.¹⁰⁷ However, this version

99. 858 S.W.2d 816 (Mo. App. W.D. 1993).

100. *Id.* at 819.

101. *Id.* ("[T]he exigent circumstances exception [was] established").

102. *See id.*

103. MO. REV. STAT. § 577.041.1 (Supp. 2011) (amending MO. REV. STAT. § 577.041.1 (2000)).

104. MO. REV. STAT. § 577.041.1 (2000) (amended 2010). The phrase "none shall be given" was interpreted to mean that no blood test could be administered in such a situation.

105. *See State v. Ikerman*, 698 S.W.2d 902, 905-06 (Mo. App. E.D. 1985) (citing MO. REV. STAT. § 577.041.1 (1984) (amended 2010)), *abrogated by State v. McNeely*, 358 S.W.3d 65 (Mo. 2012) (en banc) (per curiam), *cert. granted*, *Missouri v. McNeely*, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012)).

106. *State v. Smith*, 134 S.W.3d 35, 37-38 (Mo. App. E.D. 2003) (citing MO. REV. STAT. § 577.041.1 (1984) (amended 2000)).

107. MO. REV. STAT. § 577.041.1 (Supp. 2011) (amending MO. REV. STAT. § 577.041.1 (2000)).

does not contain the phrase “none shall be given.”¹⁰⁸ Prosecuting attorneys throughout Missouri have asserted that the deletion of this phrase means that the Missouri General Assembly has concluded that *Schmerber* holds that the rapid dissipation of an individual’s BAC by itself constitutes a “special fact” invoking the “exigent circumstances” exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.¹⁰⁹ In *McNeely*, however, the Supreme Court of Missouri rejected this proposition.¹¹⁰

IV. INSTANT DECISION

In *McNeely*, the Supreme Court of Missouri determined under what circumstances a warrantless and nonconsensual blood draw on an alleged intoxicated driver is constitutional within the Fourth Amendment.¹¹¹ In answering this question, the court, in a *per curiam* opinion,¹¹² divided its analysis into three steps.¹¹³

The court first addressed what the Supreme Court of the United States required in *Schmerber*.¹¹⁴ The court noted that *Schmerber* “rejected a *per se* exigency and explicitly warned against such expansive interpretations.”¹¹⁵ The Supreme Court of Missouri observed that *Schmerber* presented multiple “special facts” that justified the warrantless and nonconsensual blood draw in that particular instance.¹¹⁶ Therefore, the court in *McNeely* held that because *Schmerber* rejected a *per se* exception to the warrant requirement, and because multiple “special facts” were what qualified that blood draw as constitutional, *Schmerber* held that a warrantless and nonconsensual blood draw on an alleged drunk driver is constitutional only when more “special facts” are present.¹¹⁷

108. *Id.*

109. *See McNeely*, 358 S.W.3d at 68 n.2.

110. *Id.*

111. *Id.* at 67. The Court based its decision on federal law, not Missouri law. *See id.*

112. *Id.* A *per curiam* opinion is an opinion that is authored not by one judge, but by the court as a whole. BLACK’S LAW DICTIONARY 372 (9th ed. 2009). Judge Draper did not participate in the decision, and the rest of the judges joined the opinion. *McNeely*, 358 S.W.3d 65.

113. *McNeely*, 358 S.W.3d at 69-74.

114. *Id.* at 69.

115. *Id.* at 74.

116. *Id.* at 69-70. The “special facts” were the rapid dissipation of alcohol in a person’s bloodstream, and a time delay that sufficiently threatened the destruction of the evidence. *Id.* The time delay was created by the investigation of the scene of the accident, and the large amount of time needed to transport the driver to the hospital for injuries caused by the collision. *Id.* The injuries the driver sustained were the result of him driving his car into a tree. *See id.* at 69.

117. *Id.* at 70.

The court next considered whether other jurisdictions supported its interpretation of *Schmerber*.¹¹⁸ The court found that at least three other jurisdictions supported its finding that the dissipation of alcohol in an alleged drunk driver's bloodstream is not by itself a "special fact" to qualify as an "exigent circumstance."¹¹⁹ Moreover, the court stated that lower courts in Missouri have also interpreted *Schmerber* to mean more "special facts" are necessary to qualify as an "exigent circumstance."¹²⁰ The court found this authority instructive in supporting its interpretation of *Schmerber*.¹²¹

Finally, the court addressed whether other jurisdictions do not support its interpretation of *Schmerber*.¹²² The court first stated that three jurisdictions have adopted the rationale that the rapid dissipation of alcohol without more constitutes a "special fact" invoking the "exigent circumstances" exception.¹²³ However, the court noted that *Schmerber* explicitly refused to hold that the rapid dissipation of alcohol alone constitutes a "special fact," and it explicitly warned against such an expansive interpretation.¹²⁴ With this in mind, the court disagreed with these jurisdictions, finding the reasoning unpersuasive.¹²⁵

The Supreme Court of Missouri noted that although *Schmerber* couched its terms in the search incident to arrest exception to the warrant requirement, it has since been read, and should be read, as an early application of the "exi-

118. *Id.* at 69-73.

119. *Id.* at 70-71. The court first cited to a Supreme Court of Utah case with a similar interpretation of *Schmerber*. *Id.* at 70 (citing *State v. Rodriguez*, 156 P.3d 771 (Utah 2007)). In continuing its analysis, the court also cited to a case from the Supreme Court of Iowa that interpreted a state statute that required both probable cause and "special facts" to be present in such a situation. *Id.* at 71 (discussing *State v. Johnson*, 744 N.W.2d 340 (Iowa 2008)). Finally, the court noted that the United States Court of Appeals for the Ninth Circuit interpreted *Schmerber* similarly. *Id.* at 71-72 (citing *United States v. Chapel*, 55 F.3d 1416 (9th Cir. 1995)).

120. *Id.* at 72-73. The court mainly discussed a Court of Appeals for the Western District of Missouri case that held that "exigent circumstances" were present, but did not explicitly address what those facts were. *Id.* (citing *State v. LeRette*, 858 S.W.2d 816 (Mo. App. W.D. 1993), *abrogated by McNeely*, 358 S.W.3d 65). The Supreme Court of Missouri held that the appellate court inherently found that there were "special facts" beyond the dissipation of alcohol that qualified as an "exigent circumstance." *Id.*

121. *Id.* at 69-73.

122. *Id.* at 73-74.

123. *Id.* at 73. The court first discussed a Supreme Court of Wisconsin case that adopted such a *per se* rule. *Id.* (citing *State v. Bohling*, 494 N.W.2d 399 (Wis. 1993)). Then, the court stated the Supreme Court of Oregon also adopted that rule. *Id.* (citing *State v. Machuca*, 227 P.3d 729 (Or. 2010) (en banc)). Finally, the court noted that the Supreme Court of Minnesota also adopted the same rule. *Id.* at 73-74 (citing *State v. Netland*, 762 N.W.2d 202 (Minn. 2009)).

124. *Id.* at 74.

125. *Id.*

gent circumstances” exception.¹²⁶ It noted that whether there are sufficient “special facts” invoking the “exigent circumstances” exception should be determined on a case-by-case basis.¹²⁷ The court held that when a warrantless and nonconsensual blood draw has been taken on an alleged intoxicated driver, it qualifies as an “exigent circumstance” only if more “special facts” exist beyond the rapid dissipation of an individual’s BAC to justify the search.¹²⁸

V. COMMENT

The Supreme Court of the United States has explicitly recognized the Fourth Amendment’s inherent competing policy concerns. On the one hand, the Fourth Amendment seeks to protect “[t]he security of one’s privacy against arbitrary intrusion by the police.”¹²⁹ On the other hand, there should be equal emphasis on preserving evidence to protect society’s interest in eliminating criminal activity.¹³⁰ These seemingly irreconcilable goals are perhaps one of the reasons why the Court granted certiorari in *Schmerber*, so that it could address whether a warrantless and nonconsensual blood draw on an alleged intoxicated driver offends the Fourth Amendment.

As mentioned above, the Court in *Schmerber* ambiguously held that the “special facts” of the case justified a warrantless and nonconsensual blood draw on an alleged drunk driver.¹³¹ Much has been written on how *Schmerber*’s vagueness “ultimately produced a split in Fourth Amendment jurisprudence” in this area.¹³² However, significantly less commentary has focused on how quantitative data may be used to justify one interpretation of *Schmerber* over another. Accordingly, this Part conducts a two-part analysis. First, it explains how lower courts have traditionally justified their interpretations of *Schmerber*, and whether one interpretation is firmly supported by the text of *Schmerber*. Second, it focuses on how empirical data may justify one interpretation of *Schmerber* over the other. More specifically, this Part evaluates the dissipation rate of an individual’s BAC, the average time it takes a

126. *Id.* at 72 n.5.

127. *Id.* at 74.

128. *Id.*

129. *Wolf v. People*, 338 U.S. 25, 27 (1949), *overruled by* *Mapp v. Ohio*, 367 U.S. 643 (1961).

130. *See* *Schmerber v. California*, 384 U.S. 757, 770 (1966) (“The interests in human dignity and privacy which the Fourth Amendment protects forbid any such intrusions on the mere chance that desired evidence might be obtained. In the absence of a clear indication that in fact such evidence will be found, these fundamental human interests require law officers to suffer the risk that such evidence may disappear unless there is an immediate search.”); Correll, *supra* note 6, at 409-10.

131. *Schmerber*, 384 U.S. at 770-71.

132. *See, e.g.,* Correll, *supra* note 6, at 397-98, 403.

police officer to obtain a warrant for a blood draw on an alleged drunk driver, and the accuracy of retrograde extrapolation.¹³³

A. *Interpreting Schmerber with Text and Policy*

While *Schmerber*'s holding clearly sets precedent for similar claims, it left unanswered whether the Court intended for the dissipation of an individual's BAC without more to be considered a "special fact," or if more exigencies are required.¹³⁴ In answering this question, courts have justified their holdings on the text of *Schmerber* and various policy considerations.¹³⁵ With courts reaching opposite answers to this question, the question becomes obvious: which interpretation is correct?

A number of courts have concluded that *Schmerber* allows for the dissipation of an individual's BAC by itself to constitute a "special fact" invoking the "exigent circumstances" exception.¹³⁶ These courts have relied on the text of *Schmerber* that emphasizes how blood draws are highly evanescent evidence that must be obtained quickly as "the percentage of alcohol in the blood begins to diminish shortly after drinking stops."¹³⁷ These courts conclude that their "interpretation of *Schmerber* makes sense from a policy standpoint" because states' interests in enforcing drunk driving laws "[are] vital whereas the resulting intrusion on individual privacy [from a blood draw] is minimal."¹³⁸

The Supreme Court of Missouri and a number of other courts have found that *Schmerber* requires more "special facts" beyond the dissipation of alcohol from an individual's bloodstream to qualify as an "exigent circumstance."¹³⁹ In justifying their decisions, these courts have pointed to the text of *Schmerber* that states that the "judgment [was reached] only on the facts of the present record," and the judgment was permitted "under stringently lim-

133. Retrograde extrapolation is the method used to assess one's BAC based on blood tests conducted hours after alcohol has dissipated, but not completely, from the bloodstream. See Wines, *supra* note 22, at *1.

134. State v. Bohling, 494 N.W.2d 399, 402 (Wis. 1993).

135. See *infra* notes 137-42 and accompanying text.

136. See, e.g., State v. Netland, 762 N.W.2d 202, 212 (Minn. 2009); State v. Shriner, 751 N.W.2d 538, 549 (Minn. 2008); State v. Machuca, 227 P.3d 729, 736 (Or. 2010) (en banc); *Bohling*, 494 N.W.2d at 402.

137. *Machuca*, 227 P.3d at 652-53 (quoting State v. Heintz, 594 P.2d 385, 390 (Or. 1979) (en banc)) (internal quotation marks omitted).

138. *Bohling*, 494 N.W.2d at 405.

139. See, e.g., United States v. Chapel, 55 F.3d 1416 (9th Cir. 1995); State v. Johnson, 744 N.W.2d 340 (Iowa 2008); State v. McNeely, 358 S.W.3d 65 (Mo. 2012) (en banc) (per curiam), *cert. granted*, Missouri v. McNeely, No. 11-1425, 2012 WL 1899415 (U.S. Sept. 25, 2012); State v. Rodriguez, 156 P.3d 771 (Utah 2007).

ited conditions.”¹⁴⁰ These courts have generally stated that requiring more of a case-by-case analysis of the circumstances at hand “is the result of balancing the state’s interest in collecting evidence against the defendant’s interests in privacy and bodily integrity.”¹⁴¹

The two divergent interpretations of *Schmerber* both appear reasonable under a textual analysis and by reference to underlying policy concerns. Any further attempt to use these methods to determine which interpretation of *Schmerber* is correct is therefore seemingly futile. So, how can a court decide which interpretation of *Schmerber* best accords with Fourth Amendment decisions and sound public policy? With the advancements in modern technology, a plausible alternative is to further validate the opinion with an empirical analysis.

B. Empirically Justifying an Interpretation of *Schmerber*

With the advances of forensic science and medical technology in the years since *Schmerber*, the “human body has become an increasingly important source of valuable, necessary, and expected evidence.”¹⁴² More specifically, “[n]owhere has this development been more prolific . . . than the area of DWI blood draws for the purpose of . . . assessing [BAC].”¹⁴³ There is empirical knowledge about an individual’s BAC that was not available at the time *Schmerber* was decided.¹⁴⁴ Combined with statistics on the amount of time it takes for a police officer to obtain a warrant, knowledge on how quickly an individual’s BAC dissipates would provide context to an otherwise highly theoretical consideration of “exigent circumstances.” First, this Part analyzes these factors. Then, it examines the reliability of alternative methods of extrapolating an individual’s BAC retroactively from a delayed blood draw.

1. Dissipation Rate of Alcohol from the Bloodstream

The dissipation rate of alcohol determines how quickly an individual’s body will spontaneously destroy BAC evidence and, therefore, sheds light on whether the dissipation of alcohol in the bloodstream should by itself constitute a “special fact” invoking the “exigent circumstances” exception permitting a warrantless and nonconsensual blood draw. If the statistics show that alcohol dissipates quickly from the average person’s bloodstream, there is more support for the conclusion that the dissipation of an individual’s BAC

140. *McNeely*, 358 S.W. at 74 (quoting *Schmerber v. California*, 384 U.S. 757, 770 (1966)) (internal quotation marks omitted).

141. *See, e.g., Rodriguez*, 156 P.3d at 780.

142. Correll, *supra* note 6, at 383.

143. *Id.*

144. *Id.*

should by itself constitute a “special fact” invoking the “exigent circumstances” exception. If the statistics show that alcohol dissipates slowly from the average person’s bloodstream, there is more support for the opposite conclusion.

Before analyzing how quickly alcohol dissipates from the bloodstream, it is necessary to define how BAC is calculated.¹⁴⁵ BAC is commonly expressed as the milligrams of alcohol per deciliter of blood.¹⁴⁶ Where there are 100 milligrams of alcohol per deciliter of blood, .10% of the bloodstream contains alcohol and the BAC is .10.¹⁴⁷ It follows that where there are 80 milligrams of alcohol per every deciliter of blood, .08% of the bloodstream consists of alcohol and the BAC is .08.¹⁴⁸ A .08 BAC represents the threshold in which a person is legally intoxicated and therefore cannot drive.¹⁴⁹ Put algebraically, BAC can be calculated with a two-step process.¹⁵⁰ First, it is necessary to determine the milligrams of alcohol per deciliter of blood: (milligrams of alcohol present / deciliters of blood) = milligrams of alcohol per deciliter of blood.¹⁵¹ Then, this must be converted to BAC: (milligrams of alcohol per deciliter of blood / 1,000) = BAC.¹⁵²

A number of factors affect how much alcohol will reach the bloodstream, and how quickly the alcohol will dissipate from the bloodstream thereafter.¹⁵³ These rates vary according to many characteristics of a person, including, but not limited to, sex, weight, body fat, amount of body water, and drinking habits.¹⁵⁴ These rates are also affected by the presence of certain substances in an individual’s system, including, but not limited to, food,

145. See Jerry R. Balentine, *Alcohol Intoxication*, E-MED. HEALTH, http://www.emedicinehealth.com/alcohol_intoxication/page3_em.htm (last visited Nov. 12, 2012) (explaining how BAC is commonly calculated).

146. *Id.*

147. *Id.*

148. See *id.* It is important to note here that a .08 BAC means that .08% of the bloodstream contains alcohol. See *id.* A .08 BAC should not be construed to mean that .8% or 8% of the bloodstream contains alcohol.

149. The introduction to this note explains that Congress has encouraged states to set their threshold for DWI offenses to a .08 BAC by offering federal subsidies to those states that did so, which in practical effect mandated that states set their threshold for DWI offenses to a .08 BAC. See *supra* note 2 and accompanying text.

150. See Balentine, *supra* note 145.

151. See *id.*

152. See *id.*

153. See J.B. Saunders & A. Paton, *ABC of Alcohol: Alcohol in the Body*, 283 BRIT. MED. J. 1380, 1380 (1981); *Alcohol*, MERCK MANUAL FOR HEALTH CARE PROFS. (July 2008), <http://www.merck.com/mmpe/sec15/ch198/ch198g.html>; Nachman Brautbar, *Principles and Pitfalls in Alcohol Toxicity*, NACHMAN BRAUTBAR M.D., <http://www.environmentaldiseases.com/article-alcohol-toxicity.html> (last visited Nov. 12, 2012).

154. See Saunders & Paton, *supra* note 153, at 1380.

non-alcoholic drinks, and drugs affecting metabolism.¹⁵⁵ Although variations exist, “the following standards represent the generally accepted premises” to determine how much alcohol will reach the bloodstream, and how quickly the alcohol will dissipate from the bloodstream thereafter.¹⁵⁶

One serving of alcohol is defined as a single 12-ounce beer, a 6-ounce glass of wine, or a 1.5-ounce jigger of distilled liquor.¹⁵⁷ These servings contain approximately 10 to 15 grams of alcohol.¹⁵⁸ However, not all of the alcohol that is consumed will reach the bloodstream because alcohol is distributed evenly throughout a person’s body water.¹⁵⁹ Most body tissues are exposed to the same amount of alcohol as the bloodstream.¹⁶⁰ The liver is the only exception, as it is exposed to a greater amount of alcohol.¹⁶¹ The average adult has 400 deciliters of body water,¹⁶² of which 50 deciliters are blood.¹⁶³ For an average person, then, a little less than 1/8 of the alcohol he or she consumes will reach the bloodstream. For the purposes of calculating BAC and accounting for the liver’s increased exposure to alcohol, it is assumed that approximately 1/9 of the alcohol consumed will reach the bloodstream.

For an average person on an empty stomach, alcohol will reach maximum concentration in the bloodstream approximately 1 hour after consumption.¹⁶⁴ However, where other factors are present that affect this rate,¹⁶⁵ alcohol will reach maximum concentration in the bloodstream between 30 to 90 minutes after consumption.¹⁶⁶ After the alcohol reaches maximum concentration, an average person on an empty stomach eliminates approximately 15 milligrams of alcohol per deciliter of blood every hour.¹⁶⁷ The alcohol continues to dissipate at this linear rate until it has been completely eliminated from the system.¹⁶⁸ However, where other factors are present that affect this

155. *See id.*

156. Correll, *supra* note 6, at 389-90; *see also infra* notes 158-64.

157. Correll, *supra* note 6, at 389-90; *Alcohol*, *supra* note 153.

158. Correll, *supra* note 6, at 390; *Alcohol*, *supra* note 153.

159. Alex Paton, *ABC of Alcohol: Alcohol in the Body*, 330 *BRIT. MED. J.* 85, 85 (2005).

160. *Id.*

161. *Id.*

162. *See* Ken Kashubara, *About Water Weight*, E-HOW, http://www.ehow.com/about_4570468_water-weight.html (last visited Nov. 12, 2012).

163. *See* Anne Marie Helmenstine, *What Is the Volume & Chemical Composition of Blood?*, CHEMISTRY, <http://chemistry.about.com/cs/5/f/blbloodcomp.htm> (last visited Nov. 12, 2012).

164. Paton, *supra* note 159, at 86.

165. *See supra* notes 153-55 and accompanying text.

166. *See Alcohol*, *supra* note 153.

167. Correll, *supra* note 6, at 390 (citing Paton, *supra* note 159, at 86).

168. *See* Paton, *supra* note 159, at Figure 5.

rate,¹⁶⁹ the dissipation rate will be different.¹⁷⁰ In such a situation, the alcohol continues to dissipate at a different linear rate until it has completely eliminated from the system.¹⁷¹

If alcohol is consumed at high concentrations, such as consuming 48 grams which is approximately 4-5 servings, of alcohol in one sitting, the absorption and dissipation rates are not linear.¹⁷² Once the alcohol has reached maximum concentration, it will remain at maximum concentration for some period of time.¹⁷³ The exact amount of time varies according a number of factors.¹⁷⁴ After this period of time, the alcohol will initially dissipate at that individual's average dissipation rate.¹⁷⁵ However, the alcohol will not continue to dissipate at this rate until it is completely eliminated from the bloodstream.¹⁷⁶ Instead, this rate will get slower as alcohol continues to dissipate, therefore the alcohol will remain in the blood longer than it normally would.¹⁷⁷ The exact dissipation rate at any time subsequent to the initial dissipation varies according to a number of factors.¹⁷⁸

To clarify, suppose "Average Man" consumes two shots of 1.5-ounce liquor, each of which contain 15 grams of alcohol, at 9 p.m.¹⁷⁹ "Average Man" has consumed 30 grams of alcohol, which is equivalent to 30,000 milligrams of alcohol. Of these 30,000 milligrams of alcohol, approximately 3,333 milligrams reach "Average Man's" bloodstream.¹⁸⁰ This means that approximately 1 hour later, at 10 p.m., these 3,333 milligrams of alcohol will

169. *See supra* 153-55 and accompanying text.

170. Paton, *supra* note 159, at 86.

171. *See id.* at Figure 5.

172. *Id.* at Figure 4. For example, this would be the situation if an individual consumed six 1.5-ounce shots of liquor in one sitting. *Id.*

173. *See id.*

174. *Id.* at 86. The factors are those previously listed. *See supra* notes 153-55 and accompanying text.

175. Paton, *supra* note 159, at 86. Again, an average person on an empty stomach eliminates approximately 15 milligrams of alcohol per deciliter of blood every hour. Correll, *supra* note 6, at 390 (citing Paton, *supra* note 159, at 86).

176. Paton, *supra* note 159, at Figure 4.

177. *Id.*

178. *Id.* at 86. The factors are those previously listed. *See supra* notes 153-55 and accompanying text.

179. For the purpose of this hypothetical, assume "Average Man" is the average person upon which these generally accepted premises are based. It is important to note at the beginning of this hypothetical that "Average Man's" BAC may appear higher than one would think. This is mainly because these premises assume that the average person is drinking on an empty stomach, and also that the alcohol is consumed during one sitting rather than over a given period of time.

180. To calculate this, we are assuming only 1/9 of the alcohol will reach the bloodstream. *See supra* notes 158-64 and accompanying text. The math would look like this: 30,000 (milligrams of alcohol consumed) x 1/9 (assumption of how much blood reaches the bloodstream) = 3,333 milligrams of alcohol in the bloodstream.

reach maximum concentration in “Average Man’s” bloodstream.¹⁸¹ At 10 p.m. “Average Man” will have a BAC of about .06.¹⁸² Approximately two hours after 10 p.m., however, 1,500 milligrams of the alcohol will be eliminated from “Average Man’s” bloodstream and “Average Man” will only have 1,833 milligrams of alcohol remaining in his bloodstream.¹⁸³ At midnight, “Average Man” will have a BAC of about .03.¹⁸⁴ Approximately two hours after midnight, at 2 a.m., 1,500 more milligrams of alcohol will be eliminated from “Average Man’s” blood.¹⁸⁵

In relation to the issue addressed in this Note, suppose “Average Man” consumes 3 beers at 11 p.m., all of which were 12 ounces and contained 15 grams of alcohol.¹⁸⁶ At midnight, “Average Man” is driving to a friend’s house and is pulled over by a police officer. The police officer realizes that “Average Man” is slurring his speech and smells like alcohol, so he asks “Average Man” to consent to a blood test. “Average Man” refuses consent, so the police officer obtains a warrant and conducts a blood draw on “Average Man” at 2 a.m. “Average Man” consumed 45,000 milligrams of alcohol at 11 p.m. Of these 45,000 milligrams of alcohol, approximately 5,000 milligrams will reach “Average Man’s” bloodstream.¹⁸⁷ Approximately one hour

181. See *supra* note 164 and accompanying text.

182. To calculate this BAC, it is necessary to engage into the 2-step process previously explained. See *supra* notes 145-52 and accompanying text. First, it is necessary to determine the milligrams of alcohol per deciliter of blood: $3,333$ (milligrams of alcohol in the blood) / 50 (deciliters of blood) = 66.67 . Then, it is necessary to determine the BAC: $66.67 / 1,000 = .067$ BAC.

183. This Note previously explained that after alcohol reaches maximum concentration, someone like “Average Man” would eliminate approximately fifteen milligrams of alcohol per deciliter of blood every hour. See *supra* note 167 and accompanying text. “Average Man” has fifty deciliters of blood. See *supra* note 163 and accompanying text. Therefore, the math would look like this: $3,333$ (milligrams of alcohol in the blood) – $(15$ (milligrams that dissipate) $\times 50$ (per deciliter) $\times 2$ (hours passed)) = $1,500$ = $1,833$.

184. The result is obtained from the BAC formula previously provided. See *supra* notes 145-52 and accompanying text. First, the milligrams of alcohol per deciliter: $1,833$ (milligrams of alcohol present) / 50 (deciliters of blood) = 36.66 . Next, the BAC: 36.67 (milligrams of alcohol present) / $1,000 = .036$ BAC.

185. This analysis is the same as previously explained. See *supra* notes 157-63 and accompanying text.

186. Again, assume “Average Man” is the average person upon which these generally accepted premises are based. It is important to note at the beginning of this hypothetical that “Average Man’s” BAC may appear higher than one would think. This is mainly because these premises assume that the average person is drinking on an empty stomach, and also that the alcohol is consumed during one sitting rather than over a given period of time.

187. To calculate this, we are assuming only $1/9$ of the alcohol will reach the bloodstream. See *supra* notes 157-63 and accompanying text. The math would look like this: $45,000$ (milligrams of alcohol consumed) $\times 1/9$ (assumption of how much blood reaches the bloodstream) = $5,000$.

later, at midnight, those 5,000 milligrams of alcohol will reach maximum concentration in the bloodstream.¹⁸⁸ When “Average Man” was pulled over at midnight, “Average Man’s” BAC was .10.¹⁸⁹ When the blood draw was obtained, however, 1,500 milligrams of alcohol had already been eliminated from “Average Man’s” bloodstream and there were only 3,500 milligrams of alcohol remaining.¹⁹⁰ When the blood draw was conducted on “Average Man” at 2 a.m., “Average Man’s” BAC was .070.¹⁹¹ Thus, while “Average Man” was above the legal limit when he was pulled over, by the time of the blood draw he was not considered legally intoxicated.¹⁹²

Though these statistics may vary depending on the individual, a few conclusions are clear. First, alcohol typically begins to dissipate one hour after it is consumed.¹⁹³ Second, once alcohol begins to dissipate, an individual’s BAC decreases rapidly such that any delay in taking a blood draw could destroy evidence.¹⁹⁴ With this in mind, these statistics clearly favor the interpretation of *Schmerber* that states that the rapid dissipation of an individual’s BAC should by itself constitute a “special fact” invoking the “exigent circumstances” exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.¹⁹⁵ However, before conclusively deciding this, it is necessary to analyze whether the average time it takes for a police officer to obtain a warrant would normally create a delay that would threaten

188. See *supra* note 164 and accompanying text.

189. To calculate this BAC, it is necessary to engage in the two-step process previously explained. See *supra* notes 145-52 and accompanying text. First, it is necessary to determine the milligrams of alcohol per deciliter of blood: 5,000 (milligrams of alcohol in the blood) / 50 (deciliters of blood) = 100. Then, it is necessary to determine the BAC: 100/1,000 = .10 BAC.

190. This note previously explained that after alcohol reaches maximum concentration, someone like “Average Man” would eliminate approximately fifteen milligrams of alcohol per deciliter of blood every hour. See *supra* note 167 and accompanying text. “Average Man” has fifty deciliters of blood. See *supra* note 163 and accompanying text. Therefore, the math would look like this: 5,000 (milligrams of alcohol in the blood) – (15 (milligrams that dissipate) x 50 (per deciliter of blood) x 2 (hours passed)) = 1,500 = 3,500.

191. To calculate this BAC, it is necessary to engage in the two-step process previously explained. See *supra* notes 145-52 and accompanying text. First, it is necessary to determine the milligrams of alcohol per deciliter of blood: 3,500 (milligrams of alcohol in the blood) / 50 (deciliters of blood) = 70. Then, it is necessary to determine the BAC: 70 / 1,000 = .07.

192. The threshold for DWI offenses in Missouri is .08 BAC. MO. REV. STAT. § 577.010 (Supp. 2011).

193. Paton, *supra* note 159, at 86.

194. See *id.* Indeed, the destruction of at least some evidence is inevitable; even if a driver remains above the legal limit at the time of a blood draw, some alcohol will have dissipated between the first encounter with law enforcement and the subsequent blood draw.

195. See *supra* notes 88-93 and accompanying text.

the material destruction of BAC evidence by these alcohol absorption and dissipation rates.

2. Time to Obtain a Warrant

The average time it takes a police officer to obtain a warrant will affect whether the average dissipation rate of an individual's BAC should by itself constitute a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw. If the statistics show that the time it takes to obtain a warrant is so long that the average dissipation rate of an individual's BAC threatens the material destruction of evidence, there is more support for conclusion that this fact by itself should constitute a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver. If the statistics show that a warrant may be obtained without the dissipation rate of an individual's BAC threatening the destruction of much evidence, there is more support for the alternative interpretation of *Schmerber*.

In Missouri, as is likely true in most states, the time it takes to obtain a warrant to conduct a blood draw on an alleged drunk driver varies from place to place.¹⁹⁶ In general, police officers around Missouri have indicated that such a warrant can seemingly always be obtained within two to four hours from the time the alleged drunk driving occurred.¹⁹⁷ More specifically, officers from less populous area of Missouri claimed that the average time to obtain such a warrant is usually around one hour.¹⁹⁸ On the other hand, police officers from the larger cities in Missouri estimated that the average time to obtain this warrant ranges from about two hours to four hours.¹⁹⁹

The average amount of time it takes a police officer in Missouri to obtain a warrant for a blood draw in DWI cases is similar to the amount of time

196. To get estimates on how long it takes a police officer in Missouri to obtain a warrant for a blood draw on an alleged drunk driver, I interviewed police officers from the following areas: Saint Louis, Kansas City, Columbia, Cape Girardeau, and Springfield. Telephone Interview with Detective Anderson, Detective, Kansas City Police Department (Feb. 3, 2012) [hereinafter Anderson]; Telephone Interview with Tom Murphy, Police Officer, Saint Louis County Police Department (Feb. 3, 2012) [hereinafter Murphy]; Telephone Interview with Kevin Orr, Police Officer, Cape Girardeau Police Department (Feb. 3, 2012) [hereinafter Orr]; Telephone Interview with Scott Young, Lieutenant, Columbia Police Department (Feb. 3, 2012) [hereinafter Young]; Telephone Interview with Anonymous, Police Officer, Springfield Police Department (Feb. 5, 2012) [hereinafter Anonymous].

197. Anderson, *supra* note 196; Murphy, *supra* note 196; Orr, *supra* note 196; Young, *supra* note 196; Anonymous, *supra* note 196.

198. Orr, *supra* note 196; Young, *supra* note 196; Anonymous, *supra* note 196. The "less populous" areas included Columbia, Cape Girardeau, and Springfield.

199. Anderson, *supra* note 196; Murphy, *supra* note 196. The "larger cities" included Saint Louis and Kansas City.

it takes police officers in other states to obtain such a warrant. In the 1980s, it took approximately four hours to obtain this type of warrant in most states.²⁰⁰ Today, however, a police officer can obtain such a warrant much more quickly because most states now permit warrants to be obtained over the telephone or by fax machine.²⁰¹ Although more efficient methods of communication are now available to obtain a warrant, it still usually takes a police officer in any given state approximately one to two hours to obtain this warrant.²⁰²

Reviewing the statistics on alcohol absorption and dissipation rates, along with the average time it takes a Missouri police officer to obtain a warrant for a blood draw in a DWI case, one conclusion becomes clear. Because an individual's BAC typically begins to dissipate rapidly approximately one hour after drinking,²⁰³ and because it generally takes two to four hours to obtain a warrant of the type at issue, an alleged drunk driver's BAC will typically begin to dissipate rapidly before a police officer may obtain a warrant. Even after obtaining such a warrant, there will be additional time lost, and thus more time for the driver's BAC to dissipate, when the police officer must take the suspect to the proper facility to have blood drawn. This information clearly favors the interpretation of *Schmerber* that holds that the rapid dissipation of an individual's BAC by itself is a "special fact" invoking the "exigent circumstances" exception.²⁰⁴ However, before deciding this issue conclusively, it is necessary to analyze whether retrograde extrapolation is a viable alternative to retroactively determine an individual's BAC after alcohol has dissipated from the bloodstream.

3. Reliability of Retrograde Extrapolation

Retrograde extrapolation is the process by which a medical or scientific expert assesses an individual's BAC based on blood tests conducted hours after alcohol has dissipated partially, but not completely, from the bloodstream.²⁰⁵ While some believe that modern technology ensures the reliability of retrograde extrapolation, courts diverge greatly as to the admissibility of

200. *Oversight into the Administration of State and Local Court Adjudication of Driving While Intoxicated: Hearing Before the Subcomm. on Courts of the S. Comm. on the Judiciary*, 97th Cong. 93 (1982) (statement of Dr. Alasdair, Medical Director, Maryland Institute for Emergency Medical Systems).

201. E. John Wherry, Jr., *DWI Blood Alcohol Testing: Responding to a Proposal Compelling Medical Personnel to Withdraw Blood*, 18 SETON HALL LEGIS. J. 655, 667 (1994).

202. Affidavit of Lieutenant Greg Zarotney, *Platte v. Thomas Twp.*, 504 F. Supp. 2d 227 (E.D. Mich. 2007) (No. 1:05-CV-10200), 2006 WL 1967870, at *3.

203. See *supra* note 164 and accompanying text.

204. See *supra* notes 88-93 and accompanying text.

205. Wines, *supra* note 22, at *1.

such an estimation of BAC.²⁰⁶ If the methods of retrograde extrapolation are reliable, there is more support for the conclusion that more “special facts” beyond the rapid dissipation of an individual’s BAC are necessary to qualify as an “exigent circumstance.” If these methods are not reliable, there is more support for the opposite conclusion.

Proponents of using retrograde extrapolation in court ensure its reliability as the “principles underlying the procedure are clearly scientifically recognized.”²⁰⁷ However, only a few courts have ruled that evidence of an individual’s BAC determined by retrograde extrapolation may be admitted.²⁰⁸ Even these courts have admitted such evidence only if “certain factors are known [when conducting the retrograde extrapolation analysis], such as the length of the drinking spree, the time of the last drink, and the person’s weight.”²⁰⁹ Some courts also condition the admissibility of such evidence on the “expert’s ability to apply the science and explain it with clarity to the court.”²¹⁰ While other courts have concluded that evidence of an individual’s BAC determined by retrograde extrapolation may be admitted, these courts seem to be reluctant to conclude that retrograde extrapolation is *per se* reliable.

Many medical and scientific experts have been quick to criticize retrograde extrapolation, stating that it contains many technical inaccuracies.²¹¹ These critics emphasize that “the potential rate of error increases as time elapses from the event in question and the time the test is performed.”²¹² Also, they note that retrograde extrapolation “fail[s] to consider the individual’s specific elimination rate.”²¹³ To support this proposition, these critics emphasize the large number of factors that affect a person’s rate of alcohol absorption and dissipation.²¹⁴

Courts would be sensible to deem retrograde extrapolation unreliable, and therefore not admit evidence of an individual’s BAC when it is determined by such a method. First, the fact that the potential error rate increases as time elapses is alarming. This fact, coupled with the rapid dissipation of alcohol from the bloodstream and the time it takes for a police officer to obtain a warrant, means that using retrograde extrapolation in DWI cases will

206. *Id.* (“[T]here is great diversity of opinions, from completely rejecting the use of retrograde extrapolation, to allowing it with limitation, to allowing it unfettered”).

207. J. Nicholas Bostic, *Alcohol-Related Offenses: Retrograde Extrapolation After Wager*, 79 MICH. BAR J., June 2000, at 668, 671.

208. *Wines*, *supra* note 22, at *2.

209. *Mata v. State*, 46 S.W.3d 902, 915 (Tex. Crim. App. 2001).

210. *Id.* at 916.

211. *Keller*, *supra* note 2, at 124-25.

212. *Id.* at 126.

213. *Id.* at 125.

214. *Id.* at 128. The many factors which affect the rate of alcohol absorption and dissipation were discussed previously. See *supra* notes 154-56 and accompanying text.

have a large potential rate of error. Second, retrograde extrapolation can make assumptions about the average person, yet these assumptions will not apply to every specific individual. Because of the large number of factors that affect an individual's rate of alcohol absorption and dissipation,²¹⁵ retrograde extrapolation is inherently unreliable. While experts may agree that retrograde extrapolation may be reliable, many disagree as to what factors must be considered to ensure reliability in every case.²¹⁶ Thus, until a more reliable method of retrograde extrapolation exists, *Schmerber* should be interpreted as holding that the rapid dissipation of an individual's BAC by itself constitutes a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.

4. Rapid Dissipation of BAC by Itself is an Exigent Circumstance

The rapid dissipation of an individual's BAC is by itself a straightforward "special fact" qualifying as an "exigent circumstance" permitting a warrantless and nonconsensual blood draw on an alleged drunk driver. The empirical data objectively shows that alcohol typically begins to dissipate one hour after consumption,²¹⁷ it takes about two to four hours for a police officer to obtain the type of warrant at issue,²¹⁸ and retrograde extrapolation is not yet a viable alternative to retroactively assess an individual's BAC.²¹⁹ Furthermore, it is the driver's natural rate of alcohol dissipation, not the action of a police officer, that threatens the destruction of evidence. Therefore, courts should interpret *Schmerber* as holding that the rapid dissipation of alcohol from the bloodstream without more creates a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw on an alleged drunk driver.

VI. CONCLUSION

The Supreme Court of Missouri's decision in *McNeely* reflected one of two divergent interpretations of *Schmerber*. The court justified its analysis by interpreting the text of *Schmerber*, and stating the policy that supports its interpretation. However, upon further consideration of *Schmerber*, it becomes clear that neither its text nor the policy behind its decision clearly favors either Missouri's interpretation or the opposite conclusion. For this reason, it is vital for courts to find new ways to justify their interpretation of this case. With the advances in modern technology, empirical data now exists

215. See *supra* notes 154-56 and accompanying text.

216. Keller, *supra* note 2, at 127.

217. See *supra* note 164 and accompanying text.

218. See *supra* note 202 and accompanying text.

219. See *supra* notes 205-16 and accompanying text.

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that could help insulate a court's interpretation of *Schmerber* from reversal and help the court strike the proper balance of crime control and privacy protection. Upon a thorough analysis of the applicable statistics, the empirical data clearly indicates that the proper interpretation of *Schmerber* is the one that states that the rapid dissipation of an individual's BAC by itself is sufficient to constitute a "special fact" invoking the "exigent circumstances" exception permitting a warrantless and nonconsensual blood draw on an alleged intoxicated driver.