

The Light Just Turned Yellow for Retrograde Extrapolation

Author : Shea Denning

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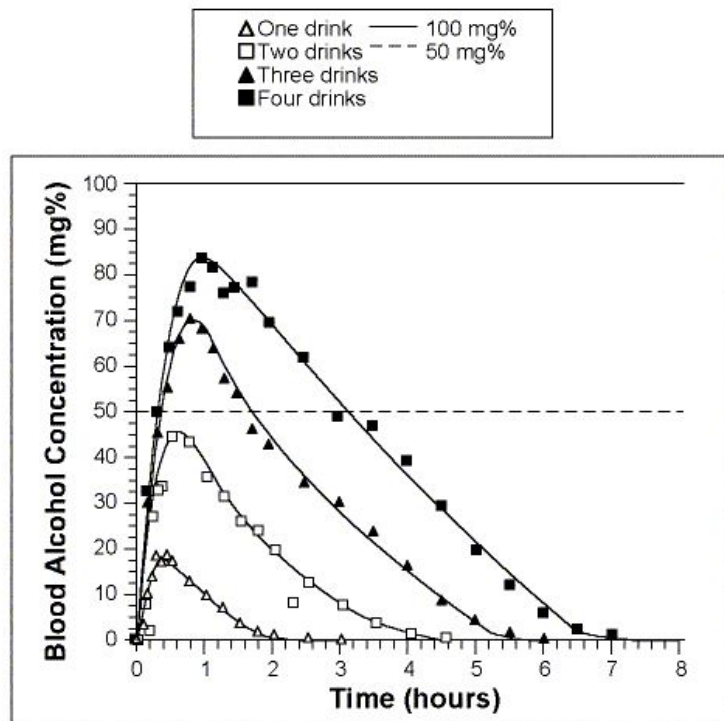
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I [wrote](#) in September 2015 that the court of appeals' view of the admissibility of retrograde extrapolation under *Daubert* did not look much different from its take on the admissibility of that evidence under old Rule 702. As of yesterday, it does. The court of appeals in [State v. Babich](#), ___ N.C. App. ___ (2017), changed the green light for retrograde extrapolation testimony in DWI cases to yellow.

Where we were. The North Carolina Court of Appeals has, on several occasions, liberally approved the admission of retrograde extrapolation testimony. For example, the court in *State v. Turbyfill*, ___ N.C. App. ___, 776 S.E.2d 249 (2015), held that a field technician for the Forensic Tests for Alcohol branch of DHHS (FTA), who was trained as a law enforcement officer, was properly allowed to testify about a retrograde extrapolation he performed using an FTA form, notwithstanding his inability to explain the basis for his calculations. And in *State v. Green*, 209 N.C. App. 669 (2011), the court of appeals held that the trial court properly allowed the head of the FTA to testify regarding the defendant's specific alcohol concentration at the time of an earlier accident based on various assumptions about how many drinks the defendant consumed before he submitted to a breath test some three hours later. In only [one extreme case](#), when the head of the FTA testified about a retrograde extrapolation he performed based on the smell of alcohol, had the court of appeals found error in the admission of expert testimony on retrograde extrapolation. *State v. Davis*, 208 N.C. App. 26 (2010).

What happened yesterday. The court of appeals held in *State v. Babich* that the trial court abused its discretion in admitting expert testimony from a forensic chemist that the defendant's alcohol concentration at the time she drove was between 0.08 and 0.10. The chemist reached this conclusion by applying a mathematical formula to Babich's .07 breath test result that assumed Babich was eliminating alcohol at an average rate for the hour and forty-five minutes between the time Babich's car was stopped and her breath was tested. Because no facts supported the expert's assumption that Babich's body was eliminating rather than absorbing alcohol during this time, the court held that her testimony was inadmissible under *Daubert*. (A chart depicting the rates of alcohol absorption and alcohol elimination for subjects in one scientific study is reprinted below.)



Blood alcohol concentration (BAC) after the rapid consumption of different amounts of alcohol by eight adult fasting male subjects.* (Adapted from Wilkinson et al., *Journal of Pharmacokinetics and Biopharmaceutics* 5(3):207-224, 1977.)

100 mg% is the legal level of intoxication in most States. 50 mg% is the level at which deterioration of driving skills begins. (*JAMA* 255:522-527, 1986.)

*If the same number of drinks are consumed over a longer period of time, BAC's will be lower.

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Facts. Babich was driving 83 miles per hour in a 45-mile-per-hour zone at 3:20 a.m. when a Wilmington police officer began to follow her. Babich sped up to 91 miles per hour, braked at an intersection with a red light, slowing her car down to 45 miles per hour, and then drove through the intersection at that speed, despite the red light. The officer pulled her over. After observing several signs of impairment, the officer arrested Babich for driving while impaired. Babich provided breath samples at 5:07 and 5:09 a.m., which revealed an alcohol concentration of 0.07.

Babich was charged with reckless driving to endanger, driving while license revoked, speeding, driving while impaired, and habitual impaired driving.

Trial. Bethany Pridgen, a forensic chemist with the Wilmington Crime Lab, testified at Babich's trial as an expert on retrograde extrapolation. In addition to opining about Babich's alcohol concentration at the time she drove, Pridgen testified that the formula she used could be applied only if alcohol was no longer entering the person's bloodstream and the person's blood alcohol level was declining. She acknowledged that [many factors](#) affect alcohol absorption,

including when the person last consumed alcohol, how much was consumed, and whether the person consumed food. Pridgen had no information about those factors, but assumed for purposes of her calculations that Babich's body was already in the alcohol-elimination phase when she was pulled over by police.

The jury convicted Babich of impaired driving, speeding and reckless driving. [Babich stipulated to three prior DWI convictions](#), and thus also was convicted of habitual impaired driving. She was sentenced to 19 to 32 months imprisonment.

On appeal. Babich argued on appeal that the trial court erred in allowing Pridgen to testify about her calculations as they were not based on sufficient facts or data. The court of appeals agreed, holding that the testimony did not satisfy the *Daubert* "fit" test as it was not sufficiently tied to the facts of the case in a way that would aid the jury. The court cited several appellate court decisions from other states reaching the same conclusion on similar facts. The court held that an expert opinion on retrograde extrapolation that assumes the defendant is in the alcohol elimination phase must be based on facts that support that assumption. These facts can come from the defendant's statements, the officer's observations, from other witnesses, or from circumstantial evidence. But they cannot simply be assumed. When "at least some facts" support the expert's assumption that the defendant's body is eliminating alcohol, the testimony is admissible, and the issue becomes one of weight and credibility.

Babich did not win. Despite the court of appeals' determination that the trial court erred, it did not grant Babich a new trial. The court determined that, even without the impermissible expert testimony, there was no reasonable possibility that the jury would have reached a different result. Thus, the court upheld Babich's conviction and sentence.

This may be big. The *Babich* court's conclusion that the trial court abused its discretion in admitting retrograde extrapolation testimony of the sort that state courts have routinely admitted for years may signal its willingness to more rigorously review other aspects of this testimony and the experts who provide it. *Babich* cites as support the Texas Court of Criminal Appeals' decision in *Mata v. Texas*, 46 S.W.3d 902 (Tex. Crim. App. 2001) (en banc), which established a far higher standard for the admissibility of such testimony than has ever applied in North Carolina. *Mata* stated that while the science of retrograde extrapolation "can be reliable in a given case," the expert "must demonstrate some understanding of [its] difficulties" and "an awareness of the subtleties of the science and the risks inherent in any extrapolation." *Id.* at 916.