

Grasping for Sticks, Gasping for Air, and Justitia: Pseudoscience and the Reification Fallacy in Minneapolis

“No human being is constituted to know the truth, the whole truth, and nothing but the truth; and even the best of men must be content with fragments, with partial glimpses, never the full fruition.”

Sir William Osler,
Osler aphorisms:
from his bedside teachings and writings.
United States: Thomas, 1968.

by

Rodney B. Nelson, III, M.D., F.A.C.P
23 Kane Street
Geneva, Illinois 60134
rbn3@aol.com

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"A man in peril of drowning catchest whatsoever cometh next to hand... be it never so simple a stick."

Sir Thomas More, *A Dialogue of Comfort Against Tribulation*, 1534¹

In *Principia Mathematica*, Alfred North Whitehead admonished scientists and those who profess to rely upon them: "Seek simplicity but distrust it."²

Scientists are wont to use reification or hypostatization to explain their observations.³ Physicians follow the first part of Whitehead's maxim while too often disregarding his warning. They construct models of their interpretations, often using primarily mechanistic paradigms. In short, they objectify the predicate, which results in oversimplification. H.L. MenckHnexplained: "For every complex problem, there is a solution that is clear, simple, and wrong."⁴

Each of the following two paragraphs contains a quote. The first quotes an expert witness, the second quotes the presiding Judge. The context is a murder trial.

"A healthy person subjected to what Mr. Floyd was subjected to would have died." This expert opinion lies at the evidentiary fulcrum of a murder conviction reached by a jury beyond reasonable doubt. From the context of the expert's testimony, the "what" refers to the defendant's actions over about 6 or 7 minutes that "caused death."⁵

"Proof beyond reasonable doubt is such proof as ordinarily prudent men and women would act upon in their most important affairs. Reasonable doubt is doubt based upon reason and common sense. It does not mean fanciful or capricious doubt, nor does it mean beyond all possibility of doubt."⁶ Hence "reasonable doubt" must lie somewhere on the continuum between imaginary doubt and absolute certainty.

Justitia is the Goddess of Justice. Her team is comprised of "ordinarily prudent" men and women. Uncommon times can make for uncommon sense.

Below is a clinical summary of a tragic case, followed by two questions that presume knowledge of the forensic autopsy findings and a body cam transcript.⁷ **WARNING:** Almost by definition, summaries are fraught with the confirmation bias fallacy ("cherry-picking") and summaries also presume all the relevant cherries are in the bushel basket.

A 46-year-old man was asleep in the driver's seat of an SUV. Little is known about his medical history, except he had high blood pressure, probably untreated, and suffered from substance use. He was an excellent basketball player. He had worked as a security guard at a shelter and other venues. He had been unemployed after the start of a pandemic. A police officer tapped a flashlight on the window. Another person in the SUV attempted unsuccessfully to arouse him. When the man awoke, the police officer was shouting commands, drew his pistol and pointed it toward the man's head. The man became distraught and

¹ [The saying 'Clutch at straws' - meaning and origin. \(phrases.org.uk\)](https://www.phrases.org.uk/meanings/the-saying-clutch-at-straws-meaning-and-origin/)

² Whitehead A.N., Russell B. 2nd Ed. Vol. III. Cambridge University Press; New York: 1963. (*Principia Mathematica*). [[Google Scholar](#)]

³ The process of turning a predicate into an object in a knowledge representation system is known as reification. *Hunt, Matthew (1996). "Notes on Semantic Nets and Frames" (PDF). Retrieved 28 April 2021.* Also known as *the fallacy of misplaced concreteness*, reification is a fellow traveler of hypostatization. The distinction between treating abstractions as material existents rhetorically or using them in arguments that result in false conclusions, is often difficult to detect, or even to describe, especially when the fallacious use is intentional. [The Autonomist's Notebook \(archive.org\)](#)

⁴ [H. L. Mencken - For every complex problem there is an... \(brainyquote.com\)](#)

⁵ The cause of death was posited by the expert to have been a type of asphyxiation. [Classification of asphyxia: the need for standardization - PubMed \(nih.gov\)](#)

⁶ [JuryInstructions04192021.pdf \(mncourts.gov\)](#)

⁷ [floyd-autopsy-6-3-20.pdf \(hennepin.us\)](#)

frightened and repeatedly apologized. He did not precisely follow police commands and was not initially combative.

The man, almost from the start, repeatedly said, "I can't breathe."⁸ After seating the man with his cuffed hands behind him on a sidewalk for a time, officers attempted to steer him into the back seat of a squad car from the curb side. He was "claustrophobic" and then he declared "I can't breathe. The man requested that he be allowed to lie on the ground. His request was denied. The man then collapsed to the ground. After a brief struggle, the man was forced into the vehicle. Moments later, the man was prone with his face on the pavement on the street side of the squad. Three police officers subdued the man. A crowd gathered. The man complained of pain and continued to shout, "I can't breathe." An officer had a knee pressing forcefully on the man's right posterior neck. Two other officers participated in the forceful subdual. Another officer suggested placing the man on his side in a recovery position. This was not done. Bystanders shouted that the man's breathing had ceased. The man became unresponsive and pulseless.

- 1) Which of the following could reasonably have been the proximate "but for" cause⁹ of the outcome in the above-described sequence? Choose all that apply.
 - a. Takotsubo cardiomyopathy.¹⁰
 - b. Acute coronary syndrome.¹¹
 - c. Opiate-induced apnea and pulmonary edema.¹²
 - d. Traumatic compression asphyxia.¹³
 - e. Positional asphyxia.¹⁴
 - f. Stress and exercise-related death due to sickle cell trait.¹⁵
 - g. Pheochromocytoma (paraganglioma or "pheo para") induced pulmonary edema.¹⁶
 - h. Pulmonary, cardiac, thyroid, or neurologic residuals from PCR-test-confirmed respiratory Covid-19 infection seven weeks prior?¹⁷
 - i. All of the above.
 - j. None of the above.¹⁸
- 2) If you selected more than one of the responses listed as "a" through "h," please rank them from the highest to the lowest level of probability of each being the proximate cause of the outcome. If you answered, "i." None of the above," suggest other alternate proximate cause(s) or write "indeterminate."

A fundamental difference between clinical medicine and criminal law is that, in the former, a good decision requires a reasonable risk/benefit-adjusted probability that a medical judgment will lead to a

⁸ [George Floyd arrest transcript.pdf \(archive.org\)](#).

⁹ [Proximate cause | Wex | US Law | LII / Legal Information Institute \(cornell.edu\)](#)

¹⁰ Dawson, Dana K. "Acute Stress-Induced (Takotsubo) Cardiomyopathy." *Heart* 104, no. 2: 96-102, 2018.

¹¹ Rodriguez-Paz P, et al. "Sometimes You Just Don't Know: Adventures in Octopus Trapping." *Catheterization and Cardiovascular Interventions* 96, no. 4 (2020): 830-30.

¹² Osler W. "Oedema of the lung complicating morphine poisoning." *Montreal General Hospital Report* 1880; 1:291-293.

¹³ Nolan JP et al. "Compression asphyxia and other clinicopathological findings from the Hillsborough Stadium disaster." *Emergency Medicine Journal* Published Online First: 03 September 2020.

¹⁴ "Positional Asphyxiation" is a term applied as a cause for a heterogeneous group of deaths. In adults the prone position is often, but not always, invoked as a major or sole factor. In this case, the knee to the neck was a factor in forcing the subject to remain prone. Another officer applied pressure to the back that also forced the maintenance of the prone position. But this second pressure on the torso may have contributed to restriction of chest expansion and abdominal compression. This increases the already great uncertainty over whether the posterior neck compression alone could have led to asphyxia. [Sudden deaths from positional asphyxia \(nih.gov\)](#)

¹⁵ Geoffrey T et al. "Complications Associated with Sickle Cell Trait: A Brief Narrative Review," *The American Journal of Medicine*, Vol 122, #6, 2009.

¹⁶ Leeuw, P et al. "Noncardiogenic Pulmonary Edema as the Sole Manifestation of Pheochromocytoma." *Hypertension* vol 8, #9: 810-12, 1986. [KnowPheoPara - Know More, Take Action](#)

¹⁷ Lania A et al on behalf of Humanitas COVID-19 Task Force. "Thyrotoxicosis in patients with COVID-19: the THYRCOV study." *Eur J Endocrinol*. 2020. doi: 10.1530/ EJE-20-0335.PMID: 32698147. [COVID-19 survivors have higher risk of death 12 months after infection \(medicalnewstoday.com\)](#)

¹⁸ "Excited Delirium" is a possible "other." Byard R. "Ongoing issues with the diagnosis of excited delirium." *Forensic Sci Med Pathol*, 14:149-151, 2018.

desirable outcome. In contrast, the latter demands the presumption of innocence, i.e., *in dubio pro reo*, so a guilty verdict must be reached beyond reasonable doubt.¹⁹

The cause of death is the specific injury or disease that leads to death. The manner of death determines how the injury or disease leads to death. The judiciary recognizes only five manners of death: natural, accident, suicide, homicide, and undetermined. This “cause and manner” duality has both utilities and flaws. Two benchmarks are needed to define the pivot point on each decisional balance scale: reasonable medical certainty and the legal construct of beyond reasonable doubt. The two balance scales have decidedly different tipping points, and those points are conceptual,²⁰ not fixed by any law of man or nature.

Laypersons and physicians who do not specialize in forensic pathology frequently conflate and confuse cause and manner. As an example, in the aftermath of the George Floyd autopsies, a dozen physicians, seven of whom being psychiatrists, apologized in *Scientific American* for the physicians, media, and City of Minneapolis whom they convicted of “structural gaslighting:”

“Both [autopsy] reports stated that the cause of Floyd’s death was homicide: death at the hands of another.

By inaccurately portraying the medical findings from the autopsy of George Floyd, the city of Minneapolis and media emboldened white supremacy, all under the cloak of authoritative scientific rhetoric. They took standard components of a preliminary autopsy report to cast doubt, to sow uncertainty—to gaslight America into thinking we didn’t see what we know we saw... As Ida B. Wells said, “Those who commit the murders write the reports.”

A similar conflict of interest between police departments and medical examiners offices continues today.”²¹

But what the presumed guilty “gaslighter” physicians actually did find was that homicide was the manner of death, but not the cause. The forensic pathologists disagreed on the cause of death. The cause of death is for “ordinarily prudent” peers of the accused to determine. The *Scientific American* self-appointed jury objectified the predicate. They indulged in a reification. For them, the video alone sufficed beyond reasonable doubt. Their objectified video became the murder. They simplified and then trusted their simplification implicitly, against the advice of Alfred North Whitehead. They admitted of no possibility of reasonable doubt. They were not alone.

The 2021 murder conviction in Minneapolis of Officer Derek Chauvin for the death of the subdued George Floyd centered on the cause and manner of death. The testimony of a pulmonary prosecution expert was viewed by many, including Juror #52, as pivotal. Beyond a reasonable doubt, the jury determined that the subdual was a substantial contributing factor to death *and but for that subdual*, the victim would not have died. The challenge inherent in this “but for” riddle has been recognized since 1664.

“The last Dictate of the Judgement, concerning the Good or Bad, that may follow on any Action, is not properly the *whole Cause*, but the last Part of it, and yet may be said to produce the Effect *necessarily*, in such Manner as the last Feather may be said to break a Horses Back, when there were so many laid on before as there want but that one to do it.” — *Thomas Hobbs*²²

Here is the problem with the “last feather” approach to assigning cause of death: *Post Hoc Ergo Propter Hoc*, e.g., “after this, therefore because of this.” This informal fallacy is at the root of most human superstitions plus many medical mistakes and scientific myths.²³ The neck subdual employed by Officer

¹⁹ Reasonable doubt was originally a protection not for criminal defendants, but rather for the “souls of the jurors.” Reasonable doubt was “designed to make conviction easier” by reassuring anxious jurors that they would not be damned for voting to spill the defendant’s blood. [Reasonable Doubt and the History of the Criminal Trial \(reviewing The Origins of Reasonable Doubt: Theological Roots of the Criminal Trial by James Q. Whitman\) \(uchicago.edu\)](#)

²⁰ i.e., They are hypostatized abstractions, see below.

²¹ The authors’ accusation also conflates “conflict of interest” with “identity of interest.” “Disinterest” (i.e., absence of bias) is the ethical requirement. [George Floyd’s Autopsy and the Structural Gaslighting of America - Scientific American Blog Network](#)

²² Hobbs, Thomas. “Of Liberty and Necessity”, in *Hobb’s Tripos*, 1684, p. 281

²³ Rudolf, R. D. (1938) *The Post Hoc Ergo Propter Hoc Fallacy in Medicine*, Canadian Medical Association Journal, 1938 Mar; 38(3): 281–284.

Chauvin was the last event in a sequence. The story began when an employee at Cup Foods confronted Mr. Floyd in his SUV over a suspected counterfeit \$20 bill.²⁴ This would have given Mr. Floyd a signal that the police were likely to appear. As will be seen below, Dr. Baker viewed the subdual as “more than Mr. Floyd could take,” the final feather.²⁵ Dr. Tobin opined that the subdual “used up his [Mr. Floyd’s] resources,” the last straw.

However, between the \$20 bill and his tragic death, Mr. Floyd may have taken a lethal dose of illicit drugs including heroin, fentanyl, methamphetamine and possibly carfentanil. The autopsy toxicology report contains a reference (vide infra) to the fact that an 800mcg dose of fentanyl held in the mouth causes a peak level in the blood about 25 minutes later. One mcg (microgram) is one millionth of a gram, or 0.08 milligrams. This very small single dose can lift the blood level of fentanyl to as high as 3 ng/ml, the threshold for lethality. For Mr. Floyd the clock may have been started by his own actions about 30 minutes before his death from an overdose of opioids.

The elephant in the courtroom was never given its due.²⁶ Fentanyl in blood toxicology testing is both a marker and a killer. Fentanyl “enhances” the effect of cocaine and heroin and is used to “cut” those street drugs. The street retail “package” is often the “stamp bag” which, in the case of heroin, contains about a tenth of a gram per bag.²⁷ Dr. Baker was quoted: “Mr. Floyd’s urine was tested for 4 things and are redundant, given the blood analysis. AB said, the only thing that matters is what’s in his blood.”²⁸

But Dr. Baker’s dismissal of the morphine in Mr. Floyd’s urine is oversimplified. “Morphine was found in Floyd’s urine, but not in his blood, [forensic toxicologist Dr. Daniel] Isenschmid [Ph.D.] testified, which could indicate the drug had been taken earlier since it remains in urine longer than blood.”²⁹ Dr. Isenschmid neglected to tell the jury that morphine is the metabolic product of heroin and codeine.³⁰

Carfentanil could have been in the mix.

The prosecution’s scientific/medical experts, almost to a person, answered question one of the above quiz unambiguously by choosing either “d” or “e,”³¹ But whether they chose one or both is unknown. One expert, without objection or rebuttal,³² testified to these observations and conclusions:

²⁴ [Derek Chauvin Trial: Cup Foods employee on George Floyd's counterfeit bill | FOX 9 K - YouTube](#)

²⁵ [Derek Chauvin trial: Medical examiner Andrew Baker says restraint, neck compression were ‘more than Mr. Floyd could take’ - The Washington Post](#)

²⁶ [The Elephant in the Room: Outbreak of Carfentanil Deaths in Minnesota and the Importance of Multiagency Collaboration - Rebecca M. Wilcoxon, Owen L. Middleton, Sarah E. Meyers, Julie Kloss, Sara A. Love, 2018 \(sagepub.com\)](#)

²⁷ The origin of the “stamp bag” term is from the little glassine bags used by stamp collectors. Also, the bags are often “stamped” with a logo of sorts.

²⁸ [ExhibitMtD08282020.pdf \(mncourts.gov\)](#) p022943

²⁹ [April 8, 2021 Derek Chauvin trial news \(cnn.com\)](#)

³⁰ [Metabolism and metabolomics of opiates: A long way of forensic implications to unravel - PubMed \(nih.gov\)](#)

³¹ Those who chose “d” or “e” indulged in binges of cherry picking. The prosecution’s Dr. Baker, who performed the forensic autopsy, did not put forward or use of the word “asphyxia” in either his autopsy report or the death certificate. Indeed, he invoked the “feather that broke the horses back” metaphor by calling the neck compression the thing that “tipped him over the edge.” But how? [Derek Chauvin trial: Medical examiner Andrew Baker says restraint, neck compression were ‘more than Mr. Floyd could take’ - The Washington Post](#) More than once in his autopsy report Dr. Baker noted “No facial, oral mucosal, or conjunctival petechiae” (Autopsy Report, or cit, p2 and p4). Such petechiae are a hallmark of compression asphyxia. In his testimony Baker pointed out that pressure on the posterior neck would not compress the airway. The forensic difference between the two types of “mechanical asphyxia” (“positional” and “traumatic”) was never explained to the jury. Nolan JP, et al. Compression asphyxia and other clinicopathological findings from the Hillsborough Stadium disaster. *Emerg Med J.* 2021 Oct;38(10):798-802. Vanezis, Peter. *Essential Forensic Medicine*. United Kingdom: Wiley, 2020. p163.

³² The prosecution called 38 witnesses; the defense called 7. The prosecution witnesses included four forensic scientist/chemists, one forensic chemist, two forensic pathologists and four clinicians - two ER physicians, one pulmonologist and one cardiologist. The only physician scientist called by the defense was a forensic pathologist. The defense witnesses did not include any physician clinicians. *Minneapolis Star Tribune*, 15 April 2021.

Expert: “You see his knuckle against the tire. And to most people, this doesn’t look terribly significant. But to a physiologist, this is extraordinarily significant because this tells you that he has used up his resources and he is now literally trying to breathe with his fingers and knuckles.”

Expert: “A healthy person subjected to what Mr. Floyd was subjected to would have died.”³³

Expert: “That’s the moment the life goes out of his body.”³⁴

The first quote invokes a novel “knuckle against tire” sign as being “extraordinarily” indicative of asphyxia by suffocation due to undue pressure on the lateral-posterior neck. Who was grasping to “catchest” Sir Thomas More’s “never so simple a stick?” Was it the deceased or the expert, or both? The jurors may have literally “catchest” their verdict from Dr. Tobin’s simple stick.³⁵

At least three related fallacies lurk here.

The first misapprehension is what Whitehead called the “fallacy of misplaced concreteness.”³⁶ This occurs when an abstract idea or opinion is presented as a concrete reality by invoking an ambiguous event (see “reification”). Perhaps the hypoxic and dying man had entered a delirium (he had been desperately calling “Mama.”) Was he reaching for a vision of his deceased mother? The second fallacy is “misleading vividness.” This error involves theatrically describing an occurrence in minute detail, even if it is an exceptional occurrence, to convince someone that it is more critical; third, the “used up his resources” final straw argument invokes the “appeal to emotion” fallacy.³⁷

³³ Astonishingly, the defense made no successful objection to this sweeping generalization for which no foundation had been laid. Dr. Tobin succeeded in objectifying the predicate. He ruled out any co-morbid disease as even a contributing cause of death when he opined that the subdual was both necessary and sufficient to produce death. His “concrete” numerical physiologic calculations related to respiratory rate, carbon dioxide, fentanyl effects, etc. were generally based on studies on normal resting subjects who were not on other drugs, and who had no co-morbid conditions, nor were the subjects participating in a struggle, etc. And his “confirmatory” lab tests are highly suspect because they all were taken after clinical death. Fentanyl effects were described but not in the context of physical and emotional stress and the combined effects of the respiratory suppressant in a drug cocktail that included respiratory stimulants. The defense did not successfully object to the self-described “physiologist’s” testimony on the cause of death. Physiologists are not clinicians and are not generally considered to be experts on cause of death. Causation and manner are in the domain of forensic pathologists. [The Frye Rule \(lsu.edu\)](#) is used in many states including Minnesota to determine the admissibility of expert testimony. Courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery. The “knuckle against tire” sign is not a well-recognized principle nor is it “literally” synonymous with asphyxia.

³⁴ Tobin Testimony: [Pulmonologist Martin Tobin Testimony Derek Chauvin Trial Transcript: Floyd's Respiratory Rates - Rev](#) This is a classic reification of objectifying the predicate “life.” Dr. Tobin’s narrative of the death is presented as being factual and based on science. But it was not. For example, his discussion of the pCO₂ level is another textbook example of reification. The “arterial blood gas level” that he claims he “calculated” was not obtained antemortem (before death) clinically or by his own testimony. A single snapshot elevated level of pCO₂ in a postmortem specimen (again – resuscitation never resulted in a pulse, blood pressure, or respiratory effort) cannot “prove” the elevation’s causal basis. Tobin’s “calculation” assumes his hypothesis of traumatic and/or positional mechanical asphyxia is correct. “If somebody doesn’t take a breath, carbon dioxide increases at a predictable rate. And that rate is up to 4.9 millimeters of mercury per minute that it increases.” BUT WHAT WAS THE BASELINE pCO₂ when Tobin’s 9 minutes plus started? “And so, it comes out virtually identical to the value that they’ve found in the emergency room of 89.” However, Dr. Tobin cherry picked the baseline pCO₂ as normal. With the fallacy of *Circulus in probando*, circular reasoning, Dr. Tobin simply begins with where he wants to end. [Circular reasoning - Wikipedia](#) Whatever the cause, Mr. Floyd was fighting for his life. One cannot assume that his last breath was a normal breath! Dr. Tobin’s counting the respirations was pure theatre. His recitation of “normal respiratory rates” was irrelevant and does not inform the jury of what range might be expected under the most extreme of abnormal stresses. Mr. Floyd could not have had either pure anion-gap metabolic (i.e., lactic) acidosis from lack of oxygen or pure respiratory acidosis from CO₂ narcosis at the time the CO₂ level was measured. [Carbon Dioxide Narcosis - StatPearls - NCBI Bookshelf \(nih.gov\)](#) “Narcosis” and “narcotic” come from the same root. I have not been able to find the actual pCO₂ hospital laboratory report in the trial record. Dr. Tobin’s reification seems to have been a purposeful deception, the most dangerous of all to Lady Justitia.

³⁰ Ironically, A USA TODAY “Fact Check” headline read: “Fact check: George Floyd's death ruled a homicide, not fentanyl overdose.” This is another conflation of “manner” and “cause.” [Fact check: George Floyd autopsy ruled his death a homicide \(usatoday.com\)](#)

³⁶ Whitehead, AN. *Science and the Modern World*. Free Press (Simon & Schuster). 1925, 1997, p52. The fallacies of reification, hypostatization, misplaced concreteness, and ambiguity are nearly synonymous yet nuanced.

³⁷ [Fallacies | Internet Encyclopedia of Philosophy \(utm.edu\)](#)

Juror #52 stated: “He [Dr. Martin Tobin] was the most excellent expert witness they could have had. He just solidified everything because he spoke so scientifically but elementary.” The juror found the defense’s medical expert, Dr. David Fowler, less convincing. “When Fowler was coming to the stand, I thought he might be able to possibly prove something else,” he said. “But he didn’t really tell me anything that I thought was concrete.” “We all agreed at some point that it was too much.”³⁸ Juror #52 needed to grasp the expert’s “solidified” and “elementary” “concrete” as his own “never so simple a stick.”

“Medicine is a science of uncertainty and an art of probability.”³⁹ This Sir William Osler aphorism describes the basis of the unbridged gulf between the legal doctrine of “beyond reasonable doubt” and medicine’s “reasonable certainty.” Today the latter concept is often recapitulated as the scientifically precise sounding “evidence-based medicine,” the phrase that replaced the equally but deliberately imprecise “clinical judgment.”

“If you hear hoofbeats think of horses, not zebras,⁴⁰ zorses, zonkies, or other zebroids.” Bayesian statisticians can demonstrate the wisdom of this ancient and pragmatic clinical maxim. But a wise physician does not assert this dictum to a family member of a loved one who has succumbed, despite its rarity, to an undiagnosed “pneo para.”⁴¹ Like all humans, jurors and physicians alike seek comfort in concrete dictums, pathways, and guidelines, even if these rules lead in opposite directions. Consider *Occam’s Razor* (“explanations that posit fewer entities are to be preferred to explanations that posit more,” versus *Hickam’s Hoosier Dictum* (“patients can have as many diseases as they damn well please”).⁴²

The Hennepin County Medical examiner’s final autopsy report contains many conclusions that reflect his “reasonable medical certainty” of the insignificance of many of his own findings, such as sickle cell trait,⁴³ complications from recent Covid-19 infection, a previously unrecognized paraganuloma (“pneo para”), etc. Rarity alone is not proof of absent causation, and often rare diagnoses become considerably less rare after they are sought out. Such a quest was not performed. The defense did not challenge the reasonableness of these exclusions.

In 1880 Dr. William Osler described what today is called a form of NCPE (non-cardiac pulmonary edema), i.e., heroin-induced pulmonary edema.⁴⁴ The deceased in the Minneapolis trial had repeatedly complained, “I can’t breathe,” before the fateful minutes of subdual began. Pills found in the deceased’s

²⁸ Barrett, J, Weiner D: “Derek Chauvin Juror: ‘We All Agreed at Some Point That It Was Too Much.’” *Wall Street Journal*, 29 April 2021. Fowler is a forensic pathologist. “Scientifically but elementary,” “prove,” solidified,” and “concrete” are key words of Juror 52. Of course, the defense was not required to “prove” an alternative hypothesis, only to raise reasonable doubt about the alleged hypothesis of mechanical asphyxiation (which was never succinctly or clearly presented as either traumatic or postional).

³⁹ “Uncertainty in medicine,” *The Lancet*, Vol 375, # 9727, 2010, p1666. [https://doi.org/10.1016/S0140-6736\(10\)60719-2](https://doi.org/10.1016/S0140-6736(10)60719-2)

⁴⁰ [when you hear hoofbeats, think of horses, not zebras - Wiktionary](#)

⁴¹ Davison D.L. et al. *Neurogenic Pulmonary Edema*. In: Vincent JL. (eds) *Annual Update in Intensive Care and Emergency Medicine*, 2012. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-25716-2_43 [Neurogenic Pulmonary Edema | SpringerLink](#)

⁴² Wallace T. Miller, "[Letter From the Editor: Occam Versus Hickam](#)", *Seminars in Roentgenology*, vol. 33 (3), 1998. p213.

⁴³ The lab specimen for this result was not drawn in a standard 5 mL whole blood EDTA (lavender-top) tube. A gray tube was used which created a pre-analytic confounding variable. [Hemoglobin S \(Quantitative\) | Test Detail | Quest Diagnostics](#)

⁴⁴ Sternbach G. “William Osler: narcotic-induced pulmonary edema.” *J Emerg Med.*;1(2):165-7, 1983

vehicle and in the police vehicle tested positive for the deceased's saliva and DNA, plus fentanyl and methamphetamine.⁴⁵ But this was months after death.

Was carfentanil (10,000 times more potent than morphine and 100 times more potent than fentanyl) present but hidden by artifactual dilution or by known masking substances?⁴⁶ Carfentanil had been in the "retail opiate market" in Minneapolis.⁴⁷



CARFENTANIL

- July 2016 – carfentanil was first identified in the U.S. drug supply.
- Some 5,000 times stronger than heroin — and 100 times stronger than fentanyl itself — carfentanil is so toxic that an amount smaller than a poppy seed can kill a person...
- Due to its extreme potency, **carfentanil is intended for large-animal use only and is inappropriate for use in humans**

The infographic includes a photograph of three small glass vials with black caps, labeled 'HEROIN', 'FENTANYL', and 'CARFENTANIL' from left to right. A ruler is visible on the right side of the vials for scale.

Here is what Dr. Baker said about carfentanil: "Baker said it takes such a tiny amount of the drug to kill a person that his lab was unable to detect it. It was only when our routine toxicological testing did not provide a cause of death that we turned to a reference laboratory to screen for novel opioids," he said. Baker suspects carfentanil played a role in as many as five other deaths..."⁴⁸

Narcotic-induced pulmonary edema is not always dose-dependent.⁴⁹ Did the defense call a chemist or toxicologist to explain the pitfalls in their crafts to the jury? Why did the defense not call a single clinician to clarify that each of the answers "a" thru "h" (and others) is possibly correct and then offer an opinion about levels of reasonable certainty/doubt?

⁴⁵ [Chauvin trial: Floyd DNA on meth-fentanyl pill found in police squad | MPR News](#) "Pills were found in the SUV Floyd was driving; one that contained DNA from Floyd's saliva was also found in the back of the police squad vehicle that briefly held Floyd."

⁴⁶ Swanson, D *et al*: "Fatalities Involving Carfentanil and Furanyl Fentanyl: Two Case Reports." *Journal of Analytical Toxicology*, 41:498–502, 2017. In the case at hand the level was reported as below the limit of detection, but the hair sample was not tested nor was the masking substance, 4-methylphenethyl acetyl fentanyl, shown to be absent. Carfentanil is so potent that a small amount cannot be dismissed automatically. Zawilska, Jolanta B., Katarzyna Kuczyńska, Wiktoria Kosmal, Katarzyna Markiewicz, and Piotr Adamowicz. "Carfentanil – from an Animal Anesthetic to a Deadly Illicit Drug." *Forensic Science International* 320 (2021/03/01/ 2021): 110715.

⁴⁷ [Minneapolis Opioid Dealer Sentenced To 80 Months In Prison | USAO-MN | Department of Justice](#)

⁴⁸ <https://www.mprnews.org/story/2017/03/30/carfentanil-linked-minnesota-opioid-overdose-deaths>

⁴⁹ Smith WR, et al. "Deposits of immunoglobulin and complement in the pulmonary tissue of patients with 'heroin lung'." *Chest*. 1978 Apr;73(4) 471-476.

On the subject of doses and blood levels, the prosecution led the jury to believe that Mr. Floyd's fentanyl level of 11 ng/ml was "normal" for a chronic user. The "tolerance" to opioids that develops over time is variable and difficult to predict. Mr. Floyd had recently been hospitalized for a drug overdose and a prosecution witness, as reported by the New York Times, described the sequence leading up to May 25, 2020.

"They tried to stop using the drugs many times and sought out various treatments, she said, but they relapsed together as recently as March 2020.

That month, Ms. Ross said, Mr. Floyd was hospitalized for several days after she found him doubled over in pain from an overdose. She recalled taking a new pill with him that month, the contents of which she did not know and which had a more stimulating effect.

Later that month, she thought they had both managed to quit again, but in the weeks before he died in May, a change in Mr. Floyd's behavior made her think that he had again begun using."⁵⁰

What was new in the new and improved pill? Carfentanyl? More importantly, what evidence for "tolerance" could be convincing in a person who was described by the prosecution witness as an intermittent user? Opioid tolerance can develop quickly, and it can disappear quickly after cessation of use.⁵¹ This may explain why the relationship of blood levels to lethality is so varied and inconsistent between users and within the experience of individuals.

What about the autopsy inconsistencies such as "the spleen is normal" and "the spleen is congested," "no sickled cells were seen" on a blood smear created more than half an hour after "the moment of death" from "asphyxia" in a subject with 38% S hemoglobin and evidence of sickling in all the organs?⁵² The blood smear "must" have at least shown drepanocytes, etc. Was near-absolute benignity of sickle cell trait assumed based on "old data,"⁵³ Or was it never considered as a cause of death? Why did the posterior neck where alleged homicidally lethal force was applied not show any evidence of trauma during the

⁵⁰ [George Floyd's Girlfriend Testifies About Drug Use - The New York Times \(nytimes.com\)](https://www.nytimes.com/2020/05/25/us/politics/george-floyd-girlfriend-testifies.html)

⁵¹ [Differential Opioid Tolerance and Opioid-induced Hyperalgesia | Anesthesiology | American Society of Anesthesiologists \(asahq.org\)](https://www.asahq.org/education/differential-opioid-tolerance-and-opioid-induced-hyperalgesia) Evidence suggests that tolerance to opioids' respiratory suppression effects is less than to other effects, such as euphoria. This raises the risk of death as bigger doses are sought for euphoria.

⁵² The official "moment of death" (exact time) was recorded as the time the heroic resuscitation efforts ceased at the hospital at 9:25 pm (21:25) and was not Dr. Tobin's "moment" of about 1 hour earlier. The description of the blood samples as "antemortem" in the autopsy report, while technically correct in a legal sense, does not convey the clinical reality. Mr. Floyd appeared unresponsive at about 20:25 and he was loaded into an ambulance at about 20:30 on 25 May 2020 CPR started shortly after and a mechanical chest compressor was employed.

Venous access for blood sampling and administration of resuscitation fluids and medicines was difficult as judged by the catheters placed in the bone marrow of both tibias and right femoral vein. The accuracy of laboratory tests such as toxicology is highly dependent on standardized collection technique. Interpretation of results without knowledge of the clinical context is fraught with errors. When resuscitation is completely unsuccessful to the point that no discernible pulse or respiration ever returns, the clinical time of death is better estimated as the time CPR started (about 8:35 pm (20:35) in the ambulance.) Criteria for when to stop cpr are not standardized. *Clarke's Analytical Forensic Toxicology*, second edition [c13.dvi \(pharmpress.com\)](https://www.pharmpress.com/) p338. BAKER Testimony: "I got a call from the BCA that a man had gone unresponsive in police custody while he was being restrained. He had died at Hennepin County Medical Center and that was largely what I knew going into the autopsy. I believe I was aware there had been pressure applied to his neck. But beyond that, that's what I knew going into the autopsy." [CNN.com - Transcripts](https://www.cnn.com/Transcripts) The Toxicology specimens were blood samples taken from an unspecified anatomic site.

The most likely source for the blood samples taken on the 25th was the right femoral catheter. If so, the toxicology specimens were thus diluted by intravenous fluids being infused upstream from the femoral sampling site, and likely were substantially diluted. Toxicology specimens are typically collected in gray-top tubes. The only gray top tube that might be considered "antemortem" was from 21:00 on the 25th and contained only 0.6 ml when it arrived at the forensic pathology lab. Some of the specimen may have been consumed through standard testing at Hennepin. However, a sample of 0.6 ml would contain only about 0.3ml of serum or plasma. Partial fills of vacuum tubes usually means the sample was not drawn from a free flowing vein as is required to get accurate standardized results.

⁵³ Heller, Paul, et al. "Clinical implications of sickle-cell trait and glucose-6-phosphate dehydrogenase deficiency in hospitalized black male patients." *New England Journal of Medicine* 300.18 (1979): 1001-1005. The absence of sickle cells on the peripheral smear of the blood raises the question of whether the correct blood specimen was examined.

described thorough and careful dissection of all the superficial and deep neck and back tissues? Many similar questions arise from the autopsy report.

The absence of autopsy evidence to support the diagnosis of either traumatic asphyxia or positional asphyxia is a startling discrepancy between the autopsy report and the guilty verdict. Absence of proof is not proof of absence, but the defendant is entitled by right to the benefit of reasonable doubt. The clinical context of the death excludes most of the numerous other mechanical means of homicidal asphyxia.

Etymologically, “asphyxia” means pulseless.⁵⁴ In the context of clinical medicine, the word implies death from lack of oxygen caused by one of many possible pathologic processes. The defense never did “pin down” exactly which of the myriad causes of asphyxia the prosecution was alleging resulted in the murder of Mr. Floyd.

Dr. Andrew Baker, the prosecution’s expert forensic pathologist, is on record as believing: “The autopsy revealed no physical evidence suggesting that Mr. Floyd died of asphyxiation.”⁵⁵ And, “AB said that if Mr. Floyd had been found dead in his home (or anywhere else) and there were no other contributing factors, he would conclude that it was an overdose death.”⁵⁶

The jury did not learn that Mr. Floyd’s blood level of fentanyl of 11 ng/ml was determined from blood samples that may have been taken from his femoral vein and subject to artifactual dilution.⁵⁷ That blood was likely obtained from a catheter in the groin near to and downstream from a tibial intraosseous catheter through which a large volume of intravenous fluid was most probably introduced. These catheters were described by Dr. Baker in his autopsy report (as was a left-arm catheter). As a result, the fentanyl level at the time of the police subdual was more likely than not higher than 11 ng/ml, perhaps substantially higher. In addition, the dilution of the blood could have rendered the myriad of other even more potent synthetic opioids such as carfentanil undetectable (i.e., below the limit of detection because of artifactual dilution).

The prosecution used Dr. Baker’s autopsy findings as part of its proof that “The Defendant caused the death of George Floyd.” This proof of cause was required for all three of the charged criminal counts. The toxicology report is included in the autopsy report and contains this:

“The mean peak plasma serum fentanyl concentration in adults given an 800 mcg oral transmucosal fentanyl preparation over 15 minutes is reported at 2.1 ng/mL (range, 1.4 - 3.0 ng/mL) at approximately 0.4 hours.

Signs associated with fentanyl toxicity include severe respiratory depression, seizures, hypotension, coma, and death. In fatalities from fentanyl, blood concentrations are variable and have been reported as low as 3 ng/mL.”

⁵⁴ [asphyxia | Etymology, origin and meaning of asphyxia by etymonline](#)

⁵⁵ [ExhibitMtD08282020.pdf \(mncourts.gov\)](#) p022941.

⁵⁶ *ibid*, p02944.

⁵⁷ The details are important, and some ambiguities exist in the toxicology findings contained in the autopsy report. The blood specimens used for toxicology testing came from “Hospital Blood” obtained on 25 May 2020 at 21:00. All the reported positive results (9 in total), including fentanyl, are listed as coming from “Hospital Blood.” In fact, of the nine reported positive blood drug tests, eight, (including fentanyl) came from specimen “001,” which was a lavender tube that contained a total of 2.8 mL of “Hospital Blood.” A “lavender tube” (only the “top” or “stopper/cap” is color coded) can be one of several variants of lavender tubes with fixed draw volumes ranging from 2ml to 10 ml. Generally, plastic containers use dry K2EDTA to prevent the blood from clotting. Glass lavender tubes contain liquid K3EDTA. If the tube were glass the liquid anticoagulant would further dilute the specimen. Both plastic and glass vacuum tubes are designed to collect a precise volume automatically. Neither contains a preservative. The ninth test, 4-ANPP (an intermediate in the synthesis of fentanyl from N-phenethyl-4-piperidone (NPP)). As such, 4-ANPP has been used as a precursor for the manufacture of fentanyl and related opioids) came from lavender tube 003. [Hematology tubes \(bd.com\)](#) Importantly, forensic toxicology specimens are usually drawn in grey top tubes that contain a preservative.

Fentanyl preparations (oral sprays and troches)⁵⁸ that deliver the drug rapidly from the oral mucosa into the bloodstream have been used lawfully to provide immediate relief to patients with severe cancer pain that “breaks through” long-acting pain regimens.⁵⁹ However, the current fentanyl overdose death epidemic is directly related to this rapid absorption property. The Covid-19 pandemic coincided with a spike in opioid accidental and suicidal deaths, and about 65% of the 100,000 deaths in one year involved fentanyl.⁶⁰

Illicit pills found months after death in both the deceased’s SUV and police vehicle tested positive for Mr. Floyd’s DNA from saliva plus methamphetamine and fentanyl. He was noted to have an unusual appearing whiteish substance around his mouth. The autopsy showed “white and gray...bits of bread” in the gastric contents. But this bread conclusion was reached before the pills were found in the vehicles and the gastric contents were never tested for drugs.

Mr. Floyd went from somnolence (“nodding off”)⁶¹ to agitation over a period of a couple minutes during which he complained of claustrophobia and shortness of breath. He asked to be allowed to lie on the ground before he was forcibly subdued lying prone on the pavement. That fentanyl was present in his blood at a level (11 ng/ml) well above the threshold known to be consistent with lethality is not in dispute. The actual level might have been significantly higher than reported, and this likelihood is supported by circumstantial evidence that cannot be easily dismissed as “fanciful or capricious” by an “ordinarily prudent person.”

The following is contained in the public files of the State of Minnesota: “On May 6, 2019, a year earlier, Mr. Floyd was arrested in North Minneapolis during a narcotics investigation. He was a passenger in a Maroon Ford Explorer “with unlicensed plates,” and was stopped on a tip. Just as he behaved a year later at 38th and Chicago [at Cup Foods], Officers who approached his car found Mr. Floyd “moving all around and acting extremely nervous,” how “he wouldn’t listen to my commands.” How he “continued to order him several times to stop moving around and to see his hands.” How “AP Floyd had also put something in his mouth and was attempting to eat them.” Def. Exh. 14 at p. 6, Bates 6530. Just like our case, Mr. Floyd had to be “physically remove[d] from the vehicle. He “then began to cry.” Id. A pat down search revealed \$594.00 on his person. Oxycodin [sic] pills fell out of his pant leg to the ground. He “appeared to be under the influence of narcotics.” Id. at 8 and 9. There were 274 pills found inside the car, in a leather bag, along with 17.95 grams of field tested cocaine, and 3.10 grams of “field test positive rock cocaine.” Id. at 14. The pills were of a distribution quantity, confirming the informant’s tip.”⁶²

The Judge in the Chauvin trial did not allow the entire police records from the May 2019 incident into evidence. This is an example of a divergence between law and medicine. A patient’s medical history is crucial in medical practice. Privacy is highly valued, but information is shareable both legally and ethically among members of the patient’s health care team. Using a history of alleged transgressions is often deemed unfairly prejudicial in law, and for obvious reasons. Nonetheless, had the medicolegal history of Mr. Floyd been known immediately to Officer Chauvin via an electronic record, naloxone and not subdual might well have been the first order of the day. If the medical examiner had had timely and complete information at the autopsy, Mr. Chauvin’s fate might also have been much different.

In both May 2019 and May 2020 episodes, as officers drew their guns and struggled to get Mr. Floyd out of the car, he called out for his mother, claimed he had been shot before and cried, and put what appeared to be pills in his mouth. Both searches turned up drugs in the cars. Officers noticed a white residue outside his mouth both times.

⁵⁸ [Actiq, Fentora \(fentanyl transmucosal\) dosing, indications, interactions, adverse effects, and more \(medscape.com\)](#)

⁵⁹ [transmucosal-fentanyl-products.pdf \(wa.gov\)](#)

⁶⁰ [A record 100 000 people in the US died from overdoses in 12 months of the pandemic, says CDC | The BMJ](#)

⁶¹ [What Does ‘Nodding Off Due to Drugs’ Mean? - Principles Recovery Center](#)

⁶² [Memorandum08172020.pdf \(mncourts.gov\)](#)

One of the final scenes in the Chauvin trial was the last-minute scramble over the issue of Mr. Floyd's carbon monoxide exposure from the nearby exhaust pipe of the police vehicle. The defense's final witness Dr. Fowler, a forensic pathologist, raised the CO issue. The defense had informed the prosecution in February 2021 that it intended to do so. The prosecution seemed surprised in April. Dr. Baker, the prosecution's forensic expert, overnight belatedly "found" a lab report that pertained to the CO question.⁶³

Briefly, there are two common ways to measure oxygen saturation. One is to *calculate* the saturation percent based on the partial pressure of oxygen from an arterial sample. This is "*pO2*". The second method is to measure saturation directly by "oximetry." This is "*sO2*".

And there are two common types of oximetry: pulse oximetry and CO-oximetry.⁶⁴ How did Dr. Tobin know the oxygen saturation was 98%? If he knew the CO level was not elevated from the "forbidden report" then his tap dance about the 2% was disingenuous. Why? Because pulse-oximetry done by the little \$20 gizmo you can buy at Walgreen's only measures light absorption from two wavelengths. It "lumps together" oxygen-carrying hemoglobin (O₂Hb), non-oxygen-carrying but normal hemoglobin (HHb) as well as carboxyhemoglobin (COHb) and methemoglobin (MetHb). The \$7000 CO-oximeter measures at least 4 wave lengths and quantitates the four hemoglobin types of interest.

Therefore, a 2-wavelength pulse-oximeter **may report a falsely high saturation** due to the large number of hemoglobin molecules occupied by or affected by CO and/or methemoglobin. But vital tissues may not be receiving sufficient oxygen.⁶⁵

Dr. Tobin testified that an arterial blood sample was obtained during CPR.⁶⁶ The carotid is the preferred pulse point checked during resuscitation of adults. Return of spontaneous circulation (ROSC) (i.e., the heart pumping blood) is an early benchmark toward CPR success. This never occurred in the case of Mr. Floyd. If an arterial sample was obtained it likely was from the femoral artery in the groin (carotids are dangerous to sample and radial pulses are rarely palpable during CPR alone.) Pulse Oximetry or Co-oximetry do not require a needle stick. If the 98% number came from a pulse-oximeter the 2% maximum CO rule is specious.⁶⁷ If it came from a Co-oximeter 4 wavelength report, then a mistrial declaration must be made based on the "hint" threshold. Dr. Tobin may have used the disallowed report and then camouflaged it.

Juror #52 stated: [Fowler's] contention that carbon monoxide poisoning may have killed Mr. Floyd didn't fly with the jury. I don't think anybody paid that any mind."⁶⁸

Juror #52 described the CO issue correctly. Sadly, for the defendant, no one involved in the trial seemed to give it "any mind." The truth, the whole truth, and nothing but the truth turned into just another opportunity for Dr. Tobin to demonstrate that "he may be right, he may be wrong, but he is never in doubt."

Cause and Manner of Death of Mr. George Floyd:

In the case of George Floyd, much evidence points to the cause of death being drug overdose. The manner of death was probably accidental. These conclusions cannot be scientifically confirmed, just

⁶³ [Judge warns of mistrial in Chauvin case if prosecution witness even 'hints' at 'newly discovered evidence' | TheHill](#)

⁶⁴ To add to the confusion, the basic "Co-Oximeter" is a two-wavelength pulse-oximeter. The "Co" has been conflated with CO, even by experts. If "science" is to be invoked, the methodology must be explained. The 4 channel" model costs \$7000. [Masimo Rad-57 Pulse CO-Oximeter - EMS Superstore \(theemssuperstore.com\)](#).

⁶⁵ [Pulse Oximetry Basic Principles and Interpretation | Iowa Head and Neck Protocols \(uiowa.edu\)](#)

⁶⁶ Raised elsewhere is the issue that all the lab tests were clinically post-mortem since ROSC was never reached. Reliability of lab results generally in this "tween" time has not been extensively studied. [Arterial blood gases during and their dynamic changes after cardiopulmonary resuscitation: A prospective clinical study - PubMed \(nih.gov\)](#)

⁶⁷ 2% is remarkably low for CO in smokers like Mr. Floyd. He had nicotine in his toxicology blood and the whole episode began with a purchase of cigarettes. "Normal" for a smoker is higher than 2%. [Carbon Monoxide Toxicity Workup: Laboratory Studies, Imaging Studies, Other Tests \(medscape.com\)](#)

⁶⁸ [Derek Chauvin Juror: 'We All Agreed at Some Point That It Was Too Much' - WSJ](#)

as they cannot be excluded beyond reasonable medical or legal doubt. These possibilities are neither “fanciful” nor “capricious.” Fentanyl can cause death by any of several pathophysiological mechanisms,⁶⁹ and these are not mutually exclusive.

- 1) Fentanyl suppresses breathing by “putting to sleep” the respiratory neurons in the brainstem that drive breathing. This depresses lung ventilation, causing blood oxygen to fall (which can cause agitation, hypoxia, i.e., asphyxia, and death) and carbon dioxide to rise (which can cause lethargy, sleepiness, coma, and death). Opioid-induced respiratory depression (OIRD) is life-threatening. One path to preventing OIRD is adding a respiratory stimulant to the opioid.⁷⁰ In the case of Mr. Floyd, methamphetamine stimulant was present but was overwhelmed by very recent fentanyl ingestion.
- 2) Fentanyl can cause water to flood the lungs rather abruptly, i.e., acute opiate-induced pulmonary edema. This makes the lungs difficult to expand (i.e., decreases lung compliance) and interferes with gas exchange. Few sensations are as frightening as not being able to get enough air. Shortness of breath — known medically as dyspnea — is often described as an intense tightening in the chest, air hunger, difficulty breathing, breathlessness, or a feeling of suffocation.⁷¹ Claustrophobia is typically thought to have one key symptom: fear of suffocation.⁷² Mr. Floyd repeated “I can’t breathe” and “I’m claustrophobic” many times, both before and after he was subdued. Mr. Floyd had pulmonary edema at autopsy.
- 3) Alternatively, fentanyl can also cause the death of alleged offenders in arrest settings that do not involve subdual.

As an aside, in some deaths during arrest, usually where a violent struggle occurs between several police officers and a drunken or drugged offender, the death of the latter occurs where no neck or chest pressure can be implicated. Though the mechanism is obscure and impossible to demonstrate objectively at autopsy, it has been provisionally ascribed to a catecholamine-induced cardiac arrhythmia from an exaggerated adrenal response.

As most of these victims are given energetic cardiopulmonary resuscitation, any markers of this catecholamine effect, such as contraction-band necrosis in the myocardium, cannot be differentiated from resuscitative artefacts.

Saukko, Pekka, and Knight, Bernard. *Knight's Forensic Pathology*. United States, CRC Press, 2015. p354.

Mr. Floyd’s cause of death is also consistent with the above textbook description of a syndrome that has been called “excited delirium.” One of the officers (Lane) suggested this diagnosis, as he was trained to recognize it.⁷³ For want of a better term, an anxiety provoked “panic disorder” attack occurs. This leads to agitation, rapid heart rate, sweating, tremors, and air hunger. Victims of PD during an attack complain of claustrophobia,

⁶⁹ For example, fentanyl can cause acute skeletal muscle rigidity causing ventilatory failure. [Wooden Chest Syndrome: A Case Report of Fentanyl-Induced Chest Wall Rigidity - PubMed \(nih.gov\)](#)

⁷⁰ [Opioid-induced respiratory depression: reversal by non-opioid drugs \(nih.gov\)](#)

⁷¹ <https://www.mayoclinic.org/symptoms/shortness-of-breath/basics/definition/sym-20050890>

⁷² Claustrophobia is a phobia and can lead to a “panic attack.” Mr. Floyd’s anxiety and desperation is palpable in the videos.

⁷³ [Police Bodycam Footage Shows New Details of George Floyd’s Fatal Arrest | THISDAYLIVE](#)

shortness of breath, and express feelings of impending doom. They ask for “air” and insist on open windows. Mr. Floyd clinically exhibited all these features.

In short, Mr. Floyd’s clinical presentation was consistent with either or both combined of the two most frequently observed fatal opiate overdose syndromes: (1) pharmacologic asphyxia due to suppression of the breathing center in the brainstem; or, (2) asphyxia by opiate-induced acute pulmonary edema. Nothing found at autopsy was inconsistent with this conclusion.

Mr. Floyd’s demise may have arisen from a fentanyl/amphetamine-associated panic attack—a controversial syndrome that is much less common than the two main fentanyl mechanisms described above. However, anxiety attacks are by no means rare, while death caused by such events are. In Mr. Floyd’s case, the presence of drugs, a 90% occlusion of a coronary artery, untreated hypertension, the presence of sickle cell trait, or his undiagnosed potentially catecholamine secreting paraganglioma (a possible source of extra adrenal hormones) in the pelvis may explain why this particular possible panic attack could have been fatal.

Critical to the understanding of fentanyl associated death is the knowledge that blood drug levels do not correlate well with lethality.⁷⁴ “There was also considerable overlap between fentanyl concentrations in fentanyl-related overdose deaths compared to hospitalized patients being treated for chronic pain. Fentanyl concentrations in postmortem cases must be interpreted in the context of the deceased’s past medical history and autopsy findings.” Prosecution witness and Medical Examiner Dr. Andrew Baker concluded this in a paper he co-authored in 2007.⁷⁵

Opioid overdose deaths now number 100,000 per year in the U.S. The vast majority are believed to be caused by accidental pharmacological asphyxiation, not in the manner of suicide or homicide.⁷⁶ Two-thirds involve fentanyl or its close cousins such as carfentanil. Traumatic or positional asphyxiation by police officers is possibly undercounted, but a total exceeding 100 per year in the U.S. seems close to impossible. In the Minneapolis tragedy the “hoofbeats sound like the common fentanyl horse” as the cause of George Floyd’s death. Many zebroids do exist, created by human breeding experiments, but they are rare.⁷⁷ To get over reasonable doubt about causation where fentanyl lurks, 100,000 deaths present a Bayesian prior-probability mountain too tall to climb in Mr. Floyd’s case.

The fog of war (German: *Nebel des Krieges*) is the uncertainty in situational awareness experienced by participants in military operations.⁷⁸ The police officers on the Minneapolis Cup Foods scene faced inadequate situational awareness. Indeed, the crime scene was chaotic and distracting. The EMT personnel moved Mr. Floyd to the ambulance before starting resuscitation efforts. They cited the need to “concentrate” on the resuscitation procedures without distraction. The EMT’s were criticized for this time-critical tactical decision.

Scientific inquiry is hamstrung under these conditions. Scientific opinions based on data filtered and distorted through dense fog must not be trusted. For example, Dr. Baker did not know that fentanyl containing pills almost must have recently been in Mr. Floyd’s mouth when he discovered the white and gray “bits of bread” in Mr. Floyd’s gastric contents that may have actually been “eaten” fentanyl containing drug packets. He also did not know until later that some people heard Mr. Floyd say on a

⁷⁴ [Reliability of postmortem fentanyl concentrations in determining the cause of death - PubMed \(nih.gov\)](#)

⁷⁵ [Fentanyl concentrations in 23 postmortem cases from the hennepin county medical examiner's office - PubMed \(nih.gov\)](#)

⁷⁶ If an “accidental” overdose of an illicit drug laced with fentanyl kills a person, the provider of the drug might well be considered to have committed homicide. There are few absolutes in medicine and law.

⁷⁷ [It’s a Zonkey! \(sheldrickwildlifetrust.org\)](#)

⁷⁸ [Joint Service Command and Staff College](#), Advanced Command and Staff Course Notes dated 2001.

recording: “I ate too many pills.” Dr. Baker, too, faced uncertainty caused by incomplete situational awareness. Some of the fog was created by judicial disallowance of key evidence.⁷⁹

The word “asphyxia” is a treacherously ambiguous term. The human brain is functionally “killed” by in as few as 4 or 5 minutes without sufficient oxygen. Asphyxia of the brain can be caused by cutting off the blood flow or by any other means that depletes the blood oxygen even if adequate blood flow continues. In frequency fentanyl is very near the top of the list of those causes. Pressure to the back of the neck is very near the bottom. My own personal view is that chemical asphyxiation due to an accidental overdose of opioids was the most likely cause of Mr. George Floyd’s tragic death. The clinical setting of going from “nodding off” to agitated confusion and then on to the rapid onset of drug induced coma followed by death within a half hour or so is completely congruent with the effects of rapid onset potent opioids. The people with him very probably knew of his drug use. If only they had informed the officers and implored them to administer naloxone, the outcome might well have been different.

No debate among experts occurred in Minneapolis. To a layperson the trial seemed more like a scripted theatrical political event than a judicial proceeding. Near the end of the trial the prosecutor, Mr. Blackwell, asked Dr. Fowler, a non-clinician, if he knew whether the police vehicle’s engine was running when Mr. Floyd was lying near its exhaust pipe. Anyone who is involved with either clinical medicine or criminal law would know that standard police procedure would be to leave the engine running to power the lights, siren, and equally importantly, the cameras, radios, and computers.⁸⁰ This was a “gotcha” game that hopefully juror #52 did not “pay it any mind” when he decided not to pay any mind to the entire carbon monoxide possibility.

One prosecution expert, Dr. Tobin, let it be known that he appeared as an expert witness without compensation.⁸¹ A sole defense expert on the use of force must have noticed what happened (vandalism) at his former home.⁸² CNN and other media outlets impeached the (sole) physician defense witness.⁸³ President Biden pronounced his guilty verdict before the jury rendered theirs.⁸⁴ Rep. Maxine Waters, declared her guilty verdict from Minneapolis before deliberations started.⁸⁵ The jury was not then sequestered. The theatre scenes that featured a courthouse surrounded by cement barricades, cyclone fences and razor wire were real.⁸⁶ Surely this war zone was not a setting where “ordinarily prudent men and women” could have been expected to calmly and dispassionately decide the fate of a fellow human being.

Was Officer Chauvin over-charged and under-defended? Was he over-sentenced as a result? The defense did not access a single clinical physician who might have imbued the jury with Sir William Osler’s admonition about certainty versus probability. Such medical experts for the defense may have been solicited. Perhaps those contacted, to a person, declined to participate based on the facts presented.⁸⁷ Or was their demur influenced by angst over the potential for the cancellation of their careers?

⁷⁹ [Memorandum08172020.pdf \(mncourts.gov\)](#) “Mr. Floyd refused Officer Lane’s command to keep his hand up. Look closely at Mr. Floyd’s mouth; there is a white spot on the left side of his tongue, at 20:29:41-44. Def. Exh. 9. Mr. Floyd rather than comply with Officer Lane’s reasonable instructions, turns his head away at 20:09:45; at 20:09:48, the white spot is gone. Def. Exhs. 10-12. Def. Exh. 13 is illustrative of what 2 milligrams of fentanyl, a lethal dose, looks like.”

⁸⁰ [Ask a trooper: Why do police leave their vehicles running? \(petoskeynews.com\)](#)

⁸¹ [Witness says footage shows 'moment the life goes out' of Floyd's body | TheHill](#)

⁸² “Pig’s head left at former home of use-of-force expert who testified on behalf of Derek Chauvin in murder trial.” *Chicago Tribune*, 19 April 2021.

⁸³ “He’s a hired gun.” “Fowler is being sued over ‘eerily similar’ death of Maryland teen” [George Floyd: Former medical examiner Dr. David Fowler says Floyd died due to his heart disease -- not Derek Chauvin - CNN](#), 15 April 2021.

⁸⁴ [Biden says he's 'praying' that jurors convict Derek Chauvin \(nypost.com\)](#)

⁸⁵ [PolitiFact | What Rep. Maxine Waters said about the Chauvin trial and why it matters](#)

⁸⁶ [Minneapolis fortifying buildings with fencing, concrete barricades, and razor wire before Chauvin trial | kare11.com](#)

⁸⁷ At least one source reported that the “the defense has 15 medical experts queued up.” [Chauvin trial: What George Floyd’s controversial autopsy report says - Vox](#)

As represented by the physicians who participated in the Minneapolis trial, how well did the medical profession perform as judged by the blindfolded Lady Justitia? Were the Disciples of Aesculapius in the courtroom as her advocate? Or were they all but one there as George Floyd's advocate? If they advocated for vengeance, then the tipping point for Justitia's scale must be recalibrated further toward reasonable doubt, and her sword at least scabbarded.

Sir Francis Bacon wrote, "Revenge is a kind of wild justice, which the more a man's nature runs to, the more ought law to weed it out."⁸⁸

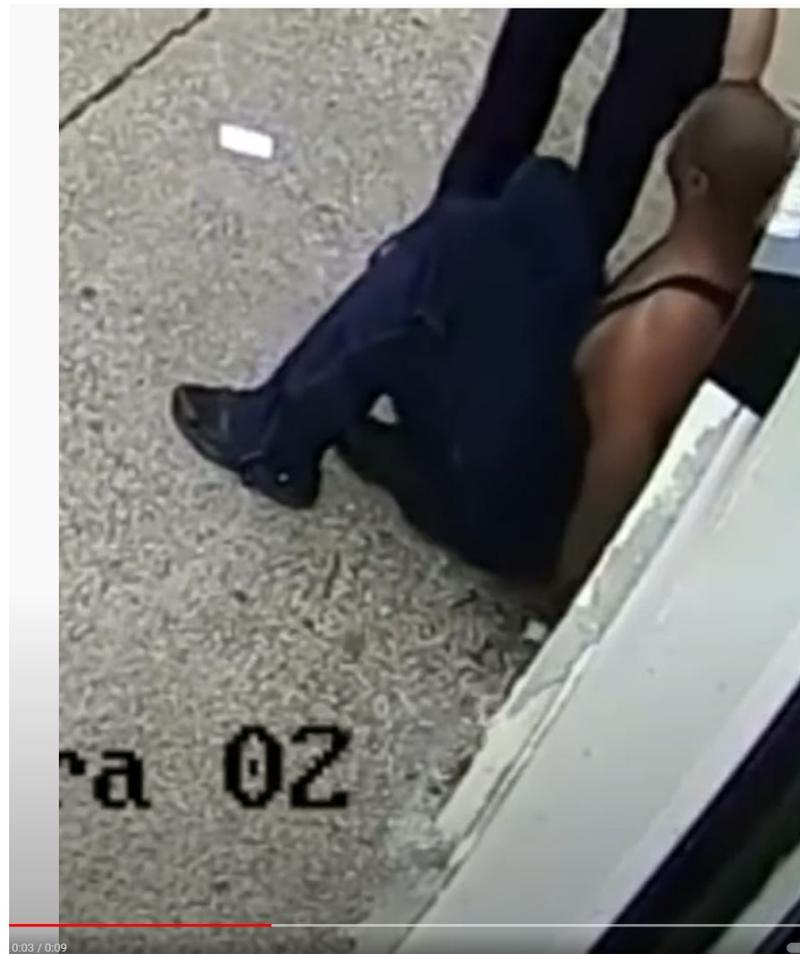
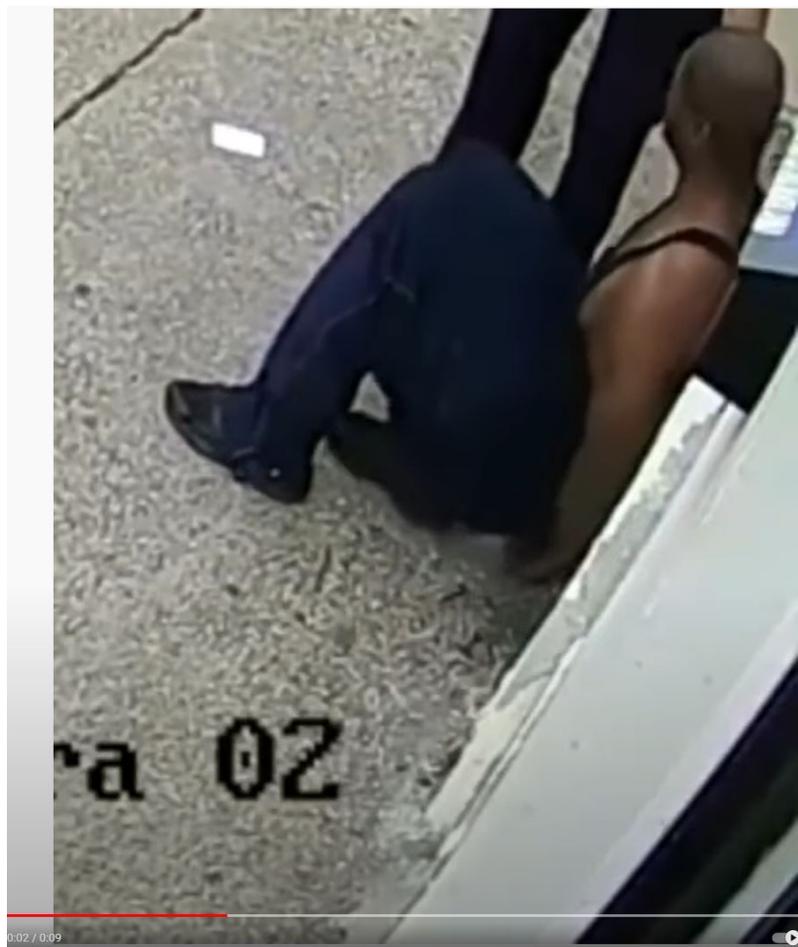
⁸⁸ Bacon, F. The Works of Frances Bacon, Baron of Verulem, Viscount St. Alban, and Lord High Chancellor of England: VOL. I In Five Volumes. United Kingdom, A. Millar, in the Strand, 1765. p568.



[New Security Video Shows Events Leading Up To George Floyd's Arrest | NBC News NOW - YouTube](#)

Upper left frame at 2:42 of video shows a white blur near Mr. Floyd's right lateral knee. The upper left frame shows a new object on the street just in front of the right toe. The bottom frame shows a white square object.

[George Floyd left hand Dropping Square White Baggie - YouTube](#)



George Floyd body cam footage from former officers Thomas Lane and J. Alexander Kueng

2020-05-25 20:15:39 -0500
AXON BODY 3 X6039A5AT



7:49 / 1:05:08

Scroll for details

[RAW: Released George Floyd body cam footage from former officers Thomas Lane and J. Alexander Kueng - YouTube](#)